

*In the opinion of Sidley Austin LLP, Federal Tax Counsel, under existing law and assuming compliance with the provisions of the Internal Revenue Code of 1986, as amended (the "Code"), as described herein, interest on the Series 2016A Bonds will not be includable in the gross income of the owners of the Series 2016A Bonds for purposes of federal income taxation. Interest on the Series 2016A Bonds will not be an item of tax preference for purposes of the federal individual or corporate alternative minimum tax but will be includable in the computation of the alternative minimum tax on corporations imposed by the Code. In the opinion of Peck, Shaffer & Williams, a division of Dinsmore & Shohl LLP, Bond Counsel, interest on the Series 2016A Bonds will be exempt from certain Ohio taxes. See "TAX MATTERS" herein.*



**\$125,630,000**  
**AMERICAN MUNICIPAL POWER, INC.**  
**GREENUP HYDROELECTRIC PROJECT REVENUE BONDS**  
**SERIES 2016A**

DATED: DATE OF ISSUANCE

DUE: FEBRUARY 15, AS SHOWN ON THE INSIDE COVER PAGE

The Series 2016A Bonds will be issued by American Municipal Power, Inc. ("AMP") in book-entry only form through The Depository Trust Company, which will act as securities depository. Purchases of the Series 2016A Bonds will be made in book-entry form through DTC participants in denominations of \$5,000 or any integral multiple thereof. Payments of principal and interest on the Series 2016A Bonds will be made to beneficial owners by DTC through its participants. See Appendix F hereto. The Series 2016A Bonds will bear interest at the rates, and mature on the dates, as described on the inside cover hereof. Interest on the Series 2016A Bonds will accrue from their Issuance Date and will be paid each February 15 and August 15, commencing on August 15, 2016 as more fully described herein.

The Series 2016A Bonds are subject to redemption prior to maturity as described herein.

The Series 2016A Bonds are being issued and will be secured under the Master Trust Indenture, as supplemented, dated as of March 1, 2016 and between AMP and U.S. Bank National Association, as trustee. The Master Trust Indenture, as so supplemented and as further supplemented and amended from time to time, is herein called the "Indenture".

The Series 2016A Bonds are being issued to (i) finance the purchase price of a 48.6% undivided ownership interest (the "AMP Interest") in the Greenup Hydroelectric Facility, a 70.2 MW run-of-the-river hydroelectric generating facility located on the Greenup Locks and Dam on the Ohio River (the "Greenup Facility"); (ii) provide funds to make a deposit to the Construction Account established under the Indenture to finance AMP's share of certain capital expenditures at the Greenup Facility; (iii) repay draws on AMP's line of credit made to finance certain expenditures relating to the acquisition of the AMP Interest prior to the date of issuance of the Series 2016A Bonds; (iv) fund a portion of the interest due on the Series 2016A Bonds on August 15, 2016; and (v) pay the costs of issuance of the Series 2016A Bonds.

AMP has entered into a Power Sales Contract dated as of November 1, 2009 (the "Power Sales Contract") with 47 municipalities in the States of Kentucky, Ohio, Michigan and Virginia (the "Participants"). Each Participant is a member of AMP and owns and operates its own electric system (each, an "Electric System"). Under the terms of the Power Sales Contract, each Participant agrees to pay from the revenues of its Electric System, on a take-or-pay basis, for its respective share of electric power and energy from the AMP Interest.

The Series 2016A Bonds are special and limited obligations of AMP payable from and secured solely by the Trust Estate pledged under the Indenture, which includes payments to be made to AMP by the Participants pursuant to the Power Sales Contract.

**THE SERIES 2016A BONDS ARE NOT OBLIGATIONS OF OR GUARANTEED BY THE STATE OF KENTUCKY, OHIO, MICHIGAN OR VIRGINIA, THE MEMBERS OF AMP, THE PARTICIPANTS OR ANY POLITICAL SUBDIVISION OR INSTRUMENTALITY THEREOF. NEITHER THE FAITH AND CREDIT NOR THE TAXING POWER OF THE STATE OF KENTUCKY, OHIO, MICHIGAN OR VIRGINIA, OR ANY POLITICAL SUBDIVISION, INCLUDING THE MEMBERS OF AMP AND THE PARTICIPANTS, IS PLEDGED FOR THE PAYMENT OF THE SERIES 2016A BONDS. AMP HAS NO TAXING POWER.**

*The Series 2016A Bonds are offered, subject to prior sale, when, as and if issued and accepted by the Underwriters, subject to the approval of legality by Peck, Shaffer & Williams, a division of Dinsmore and Shohl LLP, Bond Counsel, and certain other conditions. Certain legal matters will be passed upon for AMP by its General Counsel and Taft Stettinius & Hollister LLP, and by its Federal Tax Counsel, Sidley Austin LLP, and for the Underwriters by Nixon Peabody LLP. It is expected that delivery of the Series 2016A Bonds will be made on or about May 11, 2016, through the facilities of DTC.*

**The Huntington Investment Company**  
**Morgan Stanley**

**BofA Merrill Lynch**

**J.P. Morgan**  
**RBC Capital Markets**  
**Wells Fargo Securities**

**KeyBanc Capital Markets**  
**US Bancorp**

Purchases of Series 2016A Bonds involve certain investment risks as described herein. This cover page is only a brief and general summary. Investors must read the entire Official Statement to obtain essential information for making an informed investment decision. This Official Statement is dated May 4, 2016 and the information contained herein speaks only as of that date.

# MATURITY SCHEDULE, INTEREST RATES, YIELDS, AND CUSIPs

**\$125,630,000**  
**AMERICAN MUNICIPAL POWER, INC.**  
**GREENUP HYDROELECTRIC PROJECT REVENUE BONDS**  
**SERIES 2016A**

<b><u>DUE</u></b> <b><u>FEBRUARY 15</u></b>	<b><u>PRINCIPAL</u></b> <b><u>AMOUNT</u></b>	<b><u>INTEREST</u></b> <b><u>RATE</u></b>	<b><u>YIELD</u></b>	<b><u>CUSIP<sup>(1)</sup></u></b>
2018	\$ 330,000	3.00%	0.82%	02765UKL7
2019	1,265,000	3.00	0.94	02765UKM5
2020	1,685,000	4.00	1.10	02765UKN3
2021	1,750,000	5.00	1.24	02765UKP8
2022	1,840,000	5.00	1.39	02765UJU9
2023	1,930,000	5.00	1.54	02765UJV7
2024	2,030,000	5.00	1.68	02765UJW5
2025	2,130,000	5.00	1.84	02765UJX3
2026	3,235,000	5.00	2.00	02765UJY1
2027	3,395,000	5.00	2.14†	02765UJZ8
2028	3,565,000	5.00	2.24†	02765UKA1
2029	3,745,000	5.00	2.34†	02765UKB9
2030	3,930,000	5.00	2.41†	02765UKC7
2031	4,130,000	5.00	2.48†	02765UKD5
2032	4,335,000	5.00	2.56†	02765UKE3
2033	4,550,000	5.00	2.62†	02765UKF0
2034	4,780,000	3.00	3.10	02765UKG8
2035	4,920,000	4.00	3.04†	02765UKH6
2036	5,120,000	4.00	3.07†	02765UKJ2

**\$29,420,000 5.00% Term Bonds due February 15, 2041 –Yield 2.90%<sup>†</sup> CUSIP<sup>(1)</sup> 02765UKK9**

**\$37,545,000 5.00% Term Bonds due February 15, 2046 –Yield 2.96%<sup>†</sup> CUSIP<sup>(1)</sup> 02765UKQ6**

<sup>(1)</sup> Copyright 2016, American Bankers Association. CUSIP® is a registered trademark of the American Bankers Association. CUSIP data herein is provided by CUSIP Global Services (CGS), which is managed on behalf of The American Bankers Association by S&P Capital IQ. This information is not intended to create a database and does not serve in any way as a substitute for the CGS database. CUSIP numbers have been assigned by an independent company not affiliated with AMP and are included solely for the convenience of the registered owners of the applicable Series 2016A Bonds. Neither AMP nor the Underwriters are responsible for the selection or uses of these CUSIP numbers, and no representation is made as to their correctness on the applicable Series 2016A Bonds or as included herein. The CUSIP number for a specific maturity is subject to being changed after the execution and delivery of the Series 2016A Bonds as a result of various subsequent actions including, but not limited to, a refunding in whole or in part or as a result of the procurement of secondary market portfolio insurance or other similar enhancement by investors that is applicable to all or a portion of certain maturities of the Series 2016A Bonds.

† Priced at the stated yield to the February 15, 2026 optional redemption date at a redemption price of 100%.

# AMERICAN MUNICIPAL POWER, INC.

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The incumbent municipalities (located in Ohio unless otherwise noted) on the AMP Board of Trustees (the “Board of Trustees”) and their representatives to the Board are as follows:

Trustee	Representative	Employment
Bowling Green	Brian O’Connell	Director of Utilities, City of Bowling Green
Bryan	Brian Carlin	Director of Utilities, Bryan Municipal Utilities
Carey	Roy Johnson	Village Administrator, Village of Carey
Cleveland	Ivan Henderson	Commissioner, Cleveland Public Power
Coldwater, MI	Paul Beckhusen	Director, Coldwater Board of Public Utilities
Cuyahoga Falls	Mike Dougherty	Superintendent, Cuyahoga Falls Electric Department
Danville, VA	Jason Grey	Interim Director of Utilities, City of Danville
DEMEC	Patrick McCullar	President/CEO, Delaware Municipal Electric Corporation
Dover	Dave Filippi	Plant Superintendent, Village of Dover Electric System
Ephrata, PA	Tom Natarian	Director of Operations, Borough of Ephrata
Hamilton	Kevin Maynard	Director of Electric, City of Hamilton
Montpelier	Pamela Lucas, Secretary	Village Manager, Village of Montpelier
Napoleon	Monica Irelan	City Manager, City of Napoleon
New Martinsville, WV	Chuck Stora	Hydro Plant Manager, City of New Martinsville
Newton Falls	Tracy Reimbold, Treasurer	Finance Director, Village of Newton Falls
Oberlin	Steve Dupee, Chair	Director, Oberlin Municipal Light & Power System
Orrville	Jeff Brediger, Vice Chair	Director of Utilities, City of Orrville
Piqua	Ed Krieger	Director, Piqua Municipal Power System
Wadsworth	Robert Patrick	Director of Public Service, City of Wadsworth
Westerville	Chris Monacelli	Acting Electric Utility Manager, City of Westerville Electric System

The President and General Counsel of AMP are ex officio members of the Board of Trustees.

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Jolene Thompson	Executive Vice President, Member Services and External Affairs
Pamala Sullivan	Executive Vice President, Power Supply and Generation
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Brannon Kelley	Chief Information Officer
Chris Easton	Chief Risk Officer
Marcy Steckman	Chief Accounting Officer

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Phil Meier	Vice President, Hydroelectric Development & Operations
Rachel Gerrick, Esq.	Deputy General Counsel
Lisa McAlister, Esq.	Deputy General Counsel, FERC/RTO Affairs

**AMP Counsel**  
Taft Stettinius & Hollister LLP  
Columbus, Ohio

**Bond Counsel**  
Peck, Shaffer and Williams, a division of  
Dinsmore & Shohl LLP  
Columbus, Ohio

**Federal Tax Counsel**  
Sidley Austin LLP  
New York, New York

**Financial Advisor**  
Ramirez & Co., Inc.  
New York, New York

**Financial Products Advisor**  
Kensington Capital Advisors LLC  
Charlotte, North Carolina

**Trustee**  
U.S. Bank National Association  
Columbus, Ohio

<sup>†</sup> See “AMERICAN MUNICIPAL POWER, INC. – AMP Executive Management and Senior Staff – *Succession Planning*” herein.

The information contained in this Official Statement has been obtained from AMP, DTC and other sources believed to be reliable. This Official Statement is submitted in connection with the sale of the securities described herein and may not be reproduced or used, in whole or in part, for any other purpose. The information contained in this Official Statement is subject to change without notice and neither the delivery of this Official Statement nor any sale made by means of it shall, under any circumstances, create any implication that there have not been changes in the affairs of any party since the date of this Official Statement.

Certain statements included or incorporated by reference in this Official Statement constitute “forward-looking statements.” Such statements are generally identifiable by the terminology used, such as “plan,” “project,” “expect,” “anticipate,” “intend,” “believe,” “estimate,” “budget” or other similar words. The achievement of certain results or other expectations contained in such forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause actual results, performance or achievements described to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. AMP does not plan to issue any updates or revisions to those forward-looking statements if or when its expectations or events, conditions or circumstances on which such statements are based occur.

The Underwriters have provided the following sentence for inclusion in this Official Statement: They have reviewed the information in this Official Statement in accordance with, and as a part of, their responsibilities to investors under the federal securities laws as applied to the facts and circumstances of this transaction, but they do not guarantee the accuracy or completeness of such information.

No broker, dealer, salesman or other person has been authorized to give any information or to make any representations other than those contained in this Official Statement in connection with the offering made hereby and, if given or made, such information or representations must not be relied upon as having been authorized by AMP or the Underwriters. This Official Statement does not constitute an offer or solicitation in any jurisdiction in which such offer or solicitation is not authorized, or in which the person making such offer or solicitation is not qualified to do so or to any person to whom it is unlawful to make such offer or solicitation.

The Series 2016A Bonds will not be registered under the Securities Act of 1933, as amended, and will not be listed on any stock or other securities exchange. Neither the Securities and Exchange Commission nor any other federal, state, municipal or other government entity or agency has or will have passed upon the adequacy of this Official Statement or approved the Series 2016A Bonds for sale.

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In making an investment decision, investors must rely on their own examination of the terms of the offering, including the merits and risks involved. These securities have not been recommended by any federal or state securities commission or regulatory authority. No commission or authority has confirmed the accuracy or determined the adequacy of this document.

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IN CONNECTION WITH THIS OFFERING, THE UNDERWRITERS MAY ENGAGE IN TRANSACTIONS THAT STABILIZE, MAINTAIN OR OTHERWISE AFFECT THE MARKET PRICE OF THE SERIES 2016A BONDS. SUCH TRANSACTIONS, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

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Build America Mutual Assurance Company (“BAM”) makes no representation regarding the Series 2016A Bonds or the advisability of investing in the Series 2016A Bonds. In addition, BAM has not independently verified, makes no representation regarding, and does not accept any responsibility for the accuracy or completeness of this Official Statement or any information or disclosure contained herein, or omitted herefrom, other than with respect to the accuracy of the information regarding BAM, supplied by BAM and presented under the heading Appendix I – “Reserve Alternative Instrument Provider” and Appendix J – “Specimen Municipal Bond Debt Service Reserve Insurance Policy”.

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**OFFICIAL STATEMENT**  
**\$125,630,000**  
**AMERICAN MUNICIPAL POWER, INC.**  
**GREENUP HYDROELECTRIC PROJECT REVENUE BONDS**  
**SERIES 2016A**  
**INTRODUCTION**

**PURPOSE**

This Official Statement, which includes the cover and inside cover pages and appendices attached hereto, contains information concerning (a) American Municipal Power, Inc. (“AMP”), an Ohio nonprofit corporation established pursuant to the laws of the State of Ohio, (b) AMP’s Greenup Hydroelectric Project Revenue Bonds, Series 2016A (the “*Series 2016A Bonds*”) and (c) the Greenup Hydroelectric Facility, a 70.2 MW run-of-the-river hydroelectric generating facility located on the Greenup Locks and Dam on the Ohio River (the “*Greenup Facility*”), in which AMP will acquire a 48.6% undivided ownership interest (the “*AMP Interest*”). AMP will acquire the AMP Interest in the Greenup Facility from the City of Hamilton, Ohio (“*Hamilton*”), an AMP Member, pursuant to a series of agreements referred to herein as the “*AMP-Hamilton Agreements*”.

The Series 2016A Bonds are being issued by AMP to (i) finance the purchase price of the AMP Interest; (ii) provide funds to make a deposit to the Construction Account established under the Indenture to finance AMP’s share of certain capital expenditures at the Greenup Facility; (iii) repay draws on AMP’s Line of Credit (as hereinafter defined) made to finance certain expenditures relating to the acquisition of the AMP Interest; (iv) fund a portion of the interest due on the Series 2016A Bonds on August 15, 2016; and (v) pay the costs of issuance of the Series 2016A Bonds. See “PLAN OF FINANCE” and “ESTIMATED SOURCES AND USES OF FUNDS” herein.

**AUTHORIZATION FOR SERIES 2016A BONDS**

The Series 2016A Bonds will be issued and secured under the Master Trust Indenture, dated as of March 1, 2016 (the “*Master Trust Indenture*”), entered into between AMP and U.S. Bank National Association, Columbus, Ohio, as trustee (the “*Trustee*”), as supplemented by the First Supplemental Indenture (the “*First Supplemental Indenture*”), dated as of March 1, 2016 and between AMP and the Trustee. The Master Trust Indenture, as so supplemented and further supplemented and amended from time to time, is herein called the “*Indenture*”. The Series 2016A Bonds and any additional bonds issued under the Indenture on parity with the Series 2016A Bonds (collectively, with the Series 2016A Bonds, “*Bonds*”) and any Parity Debt are herein called collectively “*Parity Obligations*”. The Board of Trustees of AMP by a resolution adopted on February 18, 2016, authorized the issuance and sale of the Series 2016A Bonds and approved the form and authorized the execution and delivery of the Master Trust Indenture and the First Supplemental Indenture.

**AMP**

AMP was formed under Ohio Revised Code Chapter 1702 as a nonprofit corporation in 1971. Under applicable law, AMP has perpetual existence and the duration of its existence is not otherwise limited by its certificate of incorporation or by any agreement with its member municipalities (the “*Members*”).

AMP operates on a cooperative nonprofit basis for the mutual benefit of its Members, all of which own and/or operate municipal electric utility systems that include distribution facilities (except in the case of DEMEC (as hereinafter defined)) and in some cases (including DEMEC) generation assets (each, an “*Electric System*” and collectively, the “*Electric Systems*”). As of April 21, 2016, AMP had 133 Members – 83 municipalities in Ohio, 29 boroughs in Pennsylvania, six cities in Michigan, five municipalities in Virginia, five cities in Kentucky (two of which are Members through their electric plant boards), two cities in West Virginia, one city in Indiana, one town in Maryland and The Delaware Municipal Electric Corporation (“*DEMEC*”), a political subdivision and joint action agency of the State of Delaware with nine municipal members.

AMP has obtained letters from the Internal Revenue Service (the “*IRS*”) determining that AMP is exempt from federal income tax under Section 501(c)(12) of the Internal Revenue Code of 1986, as amended (the “*Code*”), provided that at least 85% of AMP’s total revenue consists of amounts collected from its Members for the sole purpose of meeting losses and expenses (which includes debt service). AMP believes that it has met the requirements for maintenance of its 501(c)(12) status each year since it received the ruling. AMP intends to retain its 501(c)(12) status. See “AMERICAN MUNICIPAL POWER, INC.” and “TAX MATTERS”.

AMP has also obtained letters from the IRS determining that its income is excludable from federal income tax under Section 115 of the Code on the basis that the income of AMP is derived from the exercise of an essential governmental function and will accrue to a state or a political subdivision thereof. See “AMERICAN MUNICIPAL POWER, INC.” and “TAX MATTERS”.

AMP has also received private letter rulings to the effect that it may issue on behalf of its Members obligations the interest on which is excludable from the gross income of holders thereof for federal income tax purposes and that it is a wholly owned instrumentality of its Members with the consequence that use of tax-exempt financed facilities by AMP will not result in private use under the Code. See “AMERICAN MUNICIPAL POWER, INC. – Tax Status” and “TAX MATTERS”.

## **GREENUP HYDROELECTRIC FACILITY**

The Greenup Hydroelectric Facility is a 70.2 MW run-of-the-river hydroelectric generating facility located on the Greenup Locks and Dam on the Ohio River (including related equipment and associated transmission facilities, the “*Greenup Facility*”). The Greenup Facility entered commercial operation in 1982. Hamilton has owned and operated, and held the Federal Energy Regulatory Commission (“*FERC*”) license for, the Greenup Facility since 1988. In accordance with the AMP-Hamilton Agreements, Hamilton filed a Partial Transfer Application with FERC and FERC will add AMP as a co-licensee, effective as of the date of acquisition of the AMP Interest, to the FERC license for the Greenup Facility. In accordance with, and subject to the provisions of, the Greenup Operating Agreement (as hereinafter defined), Hamilton will continue to operate the Greenup Facility after AMP acquires the AMP Interest. See “– OWNERSHIP AND OPERATION OF THE GREENUP FACILITY” below, “THE GREENUP FACILITY – BACKGROUND – *AMP-Hamilton Agreements*” and APPENDIX G – “Consulting Engineer’s Report”.

## **OWNERSHIP AND OPERATION OF THE GREENUP FACILITY**

In June 2008, Hamilton received a FERC license to operate a hydroelectric generation facility to be constructed on the Captain Anthony Meldahl Locks and Dam, an existing dam on the Ohio River (such hydroelectric project, the “*Meldahl Project*”). Shortly thereafter, AMP and Hamilton entered into negotiations to jointly develop, construct and operate the Meldahl Project and to provide for the acquisition by AMP of an undivided ownership interest in the Greenup Facility. In March 2009, AMP



and Hamilton executed a series of agreements (the “*AMP-Hamilton Agreements*”) pursuant to which AMP committed to finance the development and the construction of the Meldahl Project and to acquire, within 60 days of the date on which the Meldahl Project entered commercial operation, a 48.6% undivided ownership interest in the Greenup Facility for a purchase price of \$139 million (the “*Purchase Price*”). The Meldahl Project entered commercial operation on April 12, 2016.

After the acquisition of the AMP Interest, AMP and Hamilton will be responsible for an aliquot share equal to their respective undivided ownership interests in the Greenup Facility (51.4% for Hamilton and 48.6% for AMP) of the operating and maintenance expenses of the Greenup Facility. In addition, the AMP-Hamilton Agreements provide that Hamilton will continue to operate the Greenup Facility and will be entitled to a \$1/MWh “adder”, which adder shall be indexed to account for inflation, for each MWh of energy delivered to AMP from the Greenup Facility.

Under the terms of the Power Sales Contract, dated as of November 1, 2009 (the “*Power Sales Contract*”) between AMP and 47 Members in Kentucky, Michigan, Ohio and Virginia (the “*Participants*”), AMP has agreed to sell, and the Participants have agreed to purchase, the available capacity and energy from the Greenup Facility allocable to the AMP Interest. See Appendix A – “The Participants”.

## **OTHER**

This Official Statement includes information regarding and descriptions of AMP, the Greenup Facility, the Participants and the Series 2016A Bonds, and summaries of certain provisions of the Power Sales Contract and the Indenture. Such descriptions and summaries do not purport to be complete or definitive, and such summaries are qualified by reference to such documents, copies of which may be obtained from AMP or the Underwriters. Descriptions of the Indenture, the Series 2016A Bonds, the Power Sales Contract and AMP-Hamilton Agreements are qualified by reference to bankruptcy laws affecting the remedies for the enforcement of the rights and security provided therein and the effect of the exercise of police and regulatory powers by federal and state authorities.

## **PLAN OF FINANCE**

### **PROPOSED FINANCING**

On the date of delivery of the Series 2016A Bonds, AMP will utilize a portion of the proceeds of the Series 2016A Bonds to pay Hamilton the Purchase Price of the AMP Interest. AMP will also utilize a portion of the proceeds of the Series 2016A Bonds to (i) provide funds to make a deposit to the Construction Account established under the Indenture to finance AMP’s share of certain capital expenditures at the Greenup Facility; (ii) repay draws on AMP’s Line of Credit made to finance certain expenditures relating to the acquisition of the AMP Interest; (iii) fund a portion of the interest on the Series 2016A Bonds payable in the first year after the acquisition of the AMP Interest; and (iv) pay the costs of issuance of the Series 2016A Bonds.

### **RESERVE ALTERNATIVE INSTRUMENT**

On the date of delivery of the Series 2016A Bonds, Build America Mutual Assurance Company (“*BAM*”) will issue its Municipal Bond Debt Service Reserve Insurance Policy (the “*Reserve Alternative Instrument*”) in an aggregate principal amount of \$8,652,775, which is equal to the initial Parity Common Reserve Account Requirement (as defined herein). See “SOURCES OF PAYMENT AND SECURITY FOR THE SERIES 2016A BONDS – PARITY COMMON RESERVE ACCOUNT” and Appendix I – “Reserve Alternative Instrument Provider” and Appendix J – “Specimen Municipal Bond Debt Service Reserve Insurance

Policy” for a description of the Reserve Alternative Instrument, and BAM. AMP will deposit the Reserve Alternative Instrument to the credit of the Parity Common Reserve Account.

## **ESTIMATED SOURCES AND USES OF PROCEEDS OF THE SERIES 2016A BONDS**

The sources and uses of funds in connection with the issuance of the Series 2016A Bonds are estimated to be as follows:

### **SOURCES:**

Par Amount	\$125,630,000
Net Offering Premium	21,832,548
Total Sources	<u>\$147,462,548</u>

### **USES:**

Payment of Purchase Price <sup>1</sup>	\$139,000,000
Deposit to Construction Fund	3,815,000
Repayment of Draws on Line of Credit <sup>2</sup>	1,700,000
Deposit to Capitalized Interest Account	955,819
Costs of Issuance <sup>3</sup>	1,991,729
Total Uses	<u>\$147,462,548</u>

1 In the Participation Agreement, Hamilton has covenanted to utilize a portion of the Purchase Price to defease indebtedness allocable to the Greenup Facility.

2 Certain of the Underwriters or their affiliates are parties to the Line of Credit with AMP (see “AMERICAN MUNICIPAL POWER – Liquidity”). As a result, certain of the Underwriters or their affiliates will receive a portion of the proceeds of the Series 2016A Bonds. See “UNDERWRITING” herein.

3 Includes underwriting discount and rating agency, Trustee, consultant and legal fees, the premium for the Reserve Alternative Instrument and other expenses related to the issuance of the Series 2016A Bonds.

## **SOURCES OF PAYMENT AND SECURITY FOR THE SERIES 2016A BONDS**

The Series 2016A Bonds are payable from and secured solely by the Trust Estate pledged under the Indenture. The Series 2016A Bonds are equally and ratably secured and are payable solely from the Gross Receipts (subject to the provisions of the Master Trust Indenture which permit AMP to apply such Gross Receipts to the payment of AMP Operating Expenses) and certain amounts held under the Indenture. The Gross Receipts include payments made by the Participants under the Power Sales Contract (excluding amounts paid for transmission service and amounts representing administration fees, which are retained by AMP), and the investment income on moneys and securities held by the Trustee in certain subfunds, accounts and subaccounts established pursuant to the Indenture.

THE SERIES 2016A BONDS ARE SPECIAL AND LIMITED OBLIGATIONS OF AMP PAYABLE SOLELY FROM THE REVENUES, MONEYS, SECURITIES AND FUNDS PLEDGED THEREFOR IN THE INDENTURE. THE PAYMENT OF THE SERIES 2016A BONDS IS NOT GUARANTEED BY AMP, ITS MEMBERS OR THE PARTICIPANTS. NEITHER THE FAITH AND CREDIT NOR THE TAXING POWER OF THE MEMBERS, THE PARTICIPANTS, THE STATE OF KENTUCKY, MICHIGAN, OHIO OR VIRGINIA OR ANY POLITICAL SUBDIVISION OR INSTRUMENTALITY THEREOF IS PLEDGED FOR THE PAYMENT OF THE SERIES 2016A BONDS. AMP HAS NO TAXING POWER.

## **THE INDENTURE**

The Series 2016A Bonds are secured under the Indenture by the “Trust Estate” which includes the Gross Receipts (except as stated above), AMP’s rights under the Power Sales Contract (subject to certain reserved rights), and certain other amounts credited to certain subfunds, accounts and subaccounts under the Indenture. For a description of the other subfunds, accounts and subaccounts established pursuant to the Indenture, as well as other provisions of the Indenture, see APPENDIX D – “Summary of Certain Provisions of the Master Trust Indenture”.

The pledge of the Gross Receipts is subject to the provisions of the Indenture permitting AMP to apply such Gross Receipts to the payment of AMP Operating Expenses. AMP Operating Expenses generally will include all of AMP's costs and expenses reasonably related to the operating and maintenance of the AMP Interest and the satisfaction of AMP's obligations pursuant to the Power Sales Contract. See Appendix D – "Summary of Certain Provisions of the Master Trust Indenture – Definitions" for the definition of AMP Operating Expenses.

#### **PARITY COMMON RESERVE ACCOUNT**

Pursuant to the Indenture, all the Series 2016A Bonds are secured by amounts on deposit in the Parity Common Reserve Account of the Bond Subfund, including the investments, if any, thereof, which amounts are pledged to the Trustee as additional security for the payment of the principal of, and interest on, and premium, if any, on such Bonds. AMP may elect to secure additional Parity Obligations with amounts held in the Parity Common Reserve Account (the Series 2016A Bonds and any other Parity Obligations having the benefit of the Parity Common Reserve Account, collectively, "*PCRA-Secured Parity Obligations*").

Under the Indenture, AMP is required to deposit and maintain an amount equal to the Parity Common Reserve Requirement in the Parity Common Reserve Account. The Parity Common Reserve Requirement is defined in the Indenture, as of any date of calculation, as an amount in respect of the outstanding PCRA-Secured Parity Obligations, including the Series 2016A Bonds, equal to the least of (i) the maximum Debt Service Requirements for such Parity Obligations in any Fiscal Year ("*MADS*"), (ii) 125% of the average annual Debt Service Requirements for such outstanding Parity Obligations, and (iii) 10% of the original principal amount of such Parity Obligations, provided that if a Series of such Tax Exempt Parity Obligations has more than a de minimis amount of original issue discount or original issue premium, as described in Treasury Regulation Section 1-148-1(b), the issue price of such Parity Obligations is substituted for the principal amount of such Parity Obligations. Amounts held in the Parity Common Reserve Account are to be applied to make payment of the principal of, sinking fund redemption price of, or interest on, PCRA-Secured Parity Obligations, including the Series 2016A Bonds, in the event that amounts on deposit in the Bond Subfund are not sufficient therefor. As of the date of delivery of the Series 2016A Bonds, the Parity Common Reserve Requirement will be in the amount of \$8,652,775, which is equal to maximum annual debt service, calculated in accordance with the Indenture, on the Series 2016A Bonds. See Appendix D – "Summary of Certain Provisions of the Master Trust Indenture" for a description of the Parity Common Reserve Account and the Parity Common Reserve Account Requirement.

On the date of delivery of the Series 2016A Bonds, Reserve Alternative Instrument Provider will issue the Reserve Alternative Instrument in an aggregate principal amount of \$8,652,775, which is equal to the initial Parity Common Reserve Account Requirement. See Appendix I – "Reserve Alternative Instrument Provider" and Appendix J – "Specimen Municipal Bond Debt Service Reserve Insurance Policy". AMP will deposit the Surety Bond to the credit of the Parity Common Reserve Account.

Additional Parity Obligations, including additional Bonds, may be secured by the Parity Common Reserve Account or by a Special Reserve Account or may have no debt service reserve. If AMP undertakes to issue additional PCRA-Secured Parity Obligations, AMP may do so only if the amount to the credit of the Parity Common Reserve Account immediately following their issuance shall be at least equal to the Parity Common Reserve Account Requirement.

## THE POWER SALES CONTRACT

*General.* Under the Power Sales Contract, each Participant is entitled to receive its Project Share from the AMP Interest in the Greenup Facility. In exchange therefor, each Participant is required to make monthly payments to AMP in amounts equal to such Participant's proportionate share (equal to such Participant's Project Share) of AMP's Revenue Requirements, which will include the fixed and variable costs incurred by AMP in connection with the AMP Interest, including debt service on the Series 2016A Bonds. With the exceptions discussed below, each Participant's obligation to make payments pursuant to the Power Sales Contract is a limited obligation payable solely out of the revenues, and as an operating expense, of its Electric System. In the case of the City of Coldwater, Michigan (3.45% Project Share), the City of Wyandotte, Michigan (3.39% Project Share) and the City of Marshall, Michigan (1.14% Project Share) in certain circumstances as more fully described in APPENDIX C – "Summary of Certain Provisions of the Power Sales Contract – *Rates and Charges; Method of Payment*," their obligations under the Power Sales Contract may be payable from the revenues of their respective Electric Systems on a basis subordinate to the payment of the operating expenses of their Electric Systems and to debt service on their outstanding (but not future) senior Electric System revenue bonds until such revenue bonds are retired.

The Power Sales Contract shall remain in effect until the (i) expiration of the FERC license with respect to the Greenup Facility and the first renewal thereof, provided, however, that the Power Sales Contract shall not terminate until the date the principal of, premium, if any, and interest on all Bonds (as defined in the Power Sales Contract) have been paid or deemed paid in accordance with the Indenture; and (ii) a Super Majority of the Participants recommends the Power Sales Contract be terminated; provided, however, that each Participant shall remain obligated to pay to AMP its respective share of the costs of terminating, discontinuing, disposing of, and decommissioning the AMP Interest unless AMP, in its sole discretion, elects not to terminate, discontinue, dispose of or decommission in connection with or prior to the termination of the Power Sales Contract.

*Take-or-Pay.* Each Participant's obligation to make payments pursuant to the Power Sales Contract is a "Take-or-Pay" obligation of such Participant. Therefore, the Power Sales Contract provides that such payments are not subject to any reduction, whether by offset, counterclaim, or otherwise, shall not be conditioned upon the performance by AMP or any other Participant of its obligations under the Power Sales Contract, or any other agreement, and such payments shall be made whether or not the AMP Interest is operable, operating and notwithstanding the suspension, interruption, interference, reduction or curtailment, in whole or in part, for any reason whatsoever, of the Greenup Facility or the Participant's Project Share, including Step Up Power (as defined below), if any.

*Step Up Provisions.* The Power Sales Contract contains a "Step Up" provision that requires, in the event of a default by a Participant (the "*Defaulting Participant*"), the non-defaulting Participants (the "*Non-Defaulting Participants*") to purchase a pro rata share, based upon each Non-Defaulting Participant's original Project Share, of the Defaulting Participant's entitlement to its Project Share which, together with the shares of the other Non-Defaulting Participants, is equal to the Defaulting Participant's Project Share ("*Step Up Power*"). Under the terms of the Power Sales Contract, no Non-Defaulting Participant is obligated to accept Step Up Power in excess of 25% of such Non-Defaulting Participant's original Project Share. See Appendix C – "Summary of Certain Provisions of the Power Sales Contract."

*Enforceability of the Power Sales Contract; Legislation.* In December 2007, the Franklin County, Ohio, Court of Common Pleas issued an order validating a power sales contract relating to the Combined Hydroelectric Projects (as hereinafter defined) between AMP and the Members from Ohio executing such power sales contract (for purposes of this paragraph, the "Ohio Hydro Participants"). Specifically, the court held that Take-or-Pay and Step Up provisions, similar to those in the Power Sales

Contract, constitute valid and binding obligations of the Ohio Hydro Participants. Based on such validation order and the constitutional home-rule powers granted Ohio municipalities, Ohio State Counsel is of the opinion that such provisions are binding and enforceable obligations of the Ohio Participants. The Michigan and Virginia Participants have specific legislative authority to enter into long-term power sales agreements, such as the Power Sales Contract, which include Take-or-Pay and Step Up provisions. Kentucky State Counsel is of the opinion that the Kentucky Participants have the power under Kentucky statutes applicable to municipal electric systems to enter into and perform their obligations under the Power Sales Contract. See “APPROVAL OF LEGAL MATTERS – Power Sales Contract” herein.

*AMP to Control Enforcement.* So long as AMP is not in default under the Indenture, AMP will retain the authority to enforce the provisions of the Power Sales Contract against Defaulting Participants. Furthermore, events of default under the Power Sales Contract are not automatically Events of Default under the Indenture.

#### **RATE COVENANT AND COVERAGE**

AMP has covenanted under the Indenture that, so long as the Series 2016A Bonds remain outstanding thereunder, it will fix, and if necessary adjust, rates and charges so that the Net Revenues will be sufficient to provide an amount in each Fiscal Year at least equal to the greater of (y) 110% of the Debt Service Requirements for such Fiscal Year on account of the Bonds and any Parity Debt then outstanding and (z) 100% of the sum of the Debt Service Requirements for such fiscal year on account of the Bonds and Parity Debt then outstanding and the amount required to make all other deposits required by the Indenture and to pay all other obligations of AMP related to the AMP Interest, including any Subordinate Obligations, as the same become due.

#### **INCURRENCE TEST**

Generally, in order to incur Parity Obligations, including additional Bonds, to finance additional Costs related to the AMP Interest, AMP must be able to comply with the terms of the Incurrence Test set forth in the Indenture. AMP may comply with the Incurrence Test with respect to such additional Parity Obligations by providing the Trustee an Officer’s Certificate, which may rely upon certificates or other documentation delivered by an Independent Consultant, certifying that for each Fiscal Year thereafter for which sufficient proceeds of the Parity Obligations and other available funds have not been set aside with the Trustee to pay the interest due in such Fiscal Year, in the signer’s good faith estimation, (i) the Debt Service Coverage Ratio will be not less than 1.10x the Maximum Annual Debt Service Requirement for all of the Parity Obligations, including the proposed additional Parity Obligations, that will be Outstanding immediately following the issuance of such proposed Parity Obligations and (ii) the Debt Service Coverage Ratio is not less than 1.00x the Maximum Annual Debt Service Requirement for all of the Indebtedness, including the proposed additional Parity Obligations, that will be Outstanding immediately following the issuance of such proposed Parity Obligations.

For a more detailed explanation of the Incurrence Test, including its application to Parity Obligations issued to refund Outstanding Indebtedness, see Appendix D – “Summary of Certain Provisions of the Master Trust Indenture – Certain Covenants of AMP”.

### DEBT SERVICE REQUIREMENTS

The following table sets forth the debt service requirements for the Series 2016A Bonds. Principal of and interest on the Series 2016A Bonds is shown in the table below in the year in which the same comes due. Numbers may not add to totals due to rounding.

<u>Year Ending December 31,</u>	<u>Principal</u>	<u>Interest</u>	<u>Total Debt Service</u>
2016	-	\$1,576,263	\$1,576,263
2017	-	6,036,750	6,036,750
2018	\$ 330,000	6,031,800	6,361,800
2019	1,265,000	6,007,875	7,272,875
2020	1,685,000	5,955,200	7,640,200
2021	1,750,000	5,877,750	7,627,750
2022	1,840,000	5,788,000	7,628,000
2023	1,930,000	5,693,750	7,623,750
2024	2,030,000	5,594,750	7,624,750
2025	2,130,000	5,490,750	7,620,750
2026	3,235,000	5,356,625	8,591,625
2027	3,395,000	5,190,875	8,585,875
2028	3,565,000	5,016,875	8,581,875
2029	3,745,000	4,834,125	8,579,125
2030	3,930,000	4,642,250	8,572,250
2031	4,130,000	4,440,750	8,570,750
2032	4,335,000	4,229,125	8,564,125
2033	4,550,000	4,007,000	8,557,000
2034	4,780,000	3,821,550	8,601,550
2035	4,920,000	3,651,450	8,571,450
2036	5,120,000	3,450,650	8,570,650
2037	5,325,000	3,215,125	8,540,125
2038	5,590,000	2,942,250	8,532,250
2039	5,870,000	2,655,750	8,525,750
2040	6,165,000	2,354,875	8,519,875
2041	6,470,000	2,039,000	8,509,000
2042	6,795,000	1,707,375	8,502,375
2043	7,135,000	1,359,125	8,494,125
2044	7,490,000	993,500	8,483,500
2045	7,865,000	609,625	8,474,625
2046	<u>8,260,000</u>	<u>206,500</u>	<u>8,466,500</u>
<b>Total</b>	<u><b>\$125,630,000</b></u>	<u><b>\$120,777,288</b></u>	<u><b>\$246,407,288</b></u>

## THE SERIES 2016A BONDS

### GENERAL

The Series 2016A Bonds will be dated their date of delivery, will bear interest from that date at the rates per annum set forth on the inside cover page hereof, payable semiannually on February 15 and August 15 of each year, commencing August 15, 2016, and will mature on February 15 in each of the years and in the principal amounts set forth on the inside cover page hereof.

The Series 2016A Bonds will be issuable only in fully registered form in denominations of \$5,000 or any integral multiple thereof. Interest on any Series 2016A Bond will be paid to the person in whose name such bond is registered as of the applicable Regular Record Date, which is February 1 for interest due on February 15, and August 1 for interest due on August 15.

### REDEMPTION

Optional Redemption. From any available moneys, AMP may, at its option, redeem prior to their respective maturities, in whole or in part, the Series 2016A Bonds stated to mature after February 15, 2026 on any date beginning February 15, 2026, at a Redemption Price of par, together with interest accrued to the date fixed for redemption.

Mandatory Sinking Fund Redemption. The Series 2016A Bonds due on February 15, 2041 and February 15, 2046 are Term Bonds subject to mandatory sinking fund redemption on the Principal Payment Date in the following years in the following principal amounts at a Redemption Price equal to par, together with interest accrued to the date of redemption:

#### Series 2016A Term Bonds Maturing on February 15, 2041

<u>Year</u>	<u>Principal Amount</u>
2037	\$5,325,000
2038	5,590,000
2039	5,870,000
2040	6,165,000
2041*	6,470,000

\* Final Maturity

#### Series 2016A Term Bonds Maturing on February 15, 2046

<u>Year</u>	<u>Principal Amount</u>
2042	\$6,795,000
2043	7,135,000
2044	7,490,000
2045	7,865,000
2046*	8,260,000

\* Final Maturity

In determining the amount of Term Bonds of a particular maturity to be redeemed with any sinking fund installment, there will be deducted the principal amount of any Term Bonds of such maturity which have been purchased, to the extent permitted by the Indenture, with amounts in the 2016A Sinking Fund Subaccount in the Sinking Account of the Bond Subfund (exclusive of amounts deposited from proceeds of Series 2016A Bonds). In addition, if any Term Bonds of a particular maturity are (a) purchased or redeemed with amounts other than moneys on deposit in the 2016A Sinking Subaccount or (b) deemed to have been paid within the meaning of the Indenture and, with respect to the Term Bonds of such maturity which have been deemed paid, irrevocable instructions have been given to the Trustee to redeem or purchase the same on or prior to the due date of the sinking fund installment to be credited, the Term Bonds of such maturity may be credited against any future sinking fund installment established for the Term Bonds of such maturity as determined by AMP at any time.

*Selection of Bonds to be Redeemed.* The Series 2016A Bonds may be redeemed only in the principal amount of \$5,000 or any integral multiple thereof. If less than all Series 2016A Bonds shall be called for optional redemption, such Series 2016A Bonds shall be redeemed from the maturity or maturities selected by AMP. If less than all Series 2016A Bonds of any maturity are to be redeemed, the particular Series 2016A Bonds to be redeemed shall be selected by the Trustee by such method as the Trustee in its sole discretion shall determine.

*Defeasance.* The Series 2016A Bonds may be defeased as described in Appendix D – “Summary of Certain Provisions of the Master Trust Indenture – Defeasance.”

#### **NOTICE OF REDEMPTION**

Unless waived by any owner of Series 2016A Bonds to be redeemed, official notice of any such redemption shall be given by the Trustee by certified mail, return receipt requested, at least 30, but not more than 90, days prior to the redemption date to each registered owner of the Series 2016A Bonds to be redeemed at the address shown on the bond register.

With respect to optional redemptions, such notice may be conditioned upon moneys being on deposit with the Trustee on or prior to the redemption date in an amount sufficient to pay the redemption price on the redemption date. If such notice is conditional and moneys are not received, such notice shall be of no force and effect, the Trustee shall not redeem such Series 2016A Bonds and the Trustee shall give notice, in the same manner in which the notice of redemption was given, that such moneys were not so received and that such Series 2016A Bonds will not be redeemed.

The failure of any owner of Series 2016A Bonds to receive such notice, or any defect therein, shall not affect the validity of any proceedings for the redemption of any Series 2016A Bonds. Any notice mailed as provided in this section shall be conclusively presumed to have been duly given and shall become effective upon mailing, whether or not any owner receives such notice.

**So long as DTC is effecting book-entry transfers of the Series 2016A Bonds, the Trustee shall provide the notices specified above only to DTC. It is expected that DTC will, in turn, notify the Direct Participants, that the Direct Participants will, in turn, notify the Indirect Participants and that the Direct Participants and the Indirect Participants will notify or cause to be notified the Beneficial Owners. Any failure on the part of DTC, a Direct Participant or an Indirect Participant, or failure on the part of a nominee of a Beneficial Owner of a Series 2016A Bond (having been mailed notice from the Trustee, a Direct Participant, an Indirect Participant or otherwise), to notify the Beneficial Owner of the Series 2016A Bond so affected, shall not affect the validity of the redemption of such Series 2016A Bond.**



## THE GREENUP FACILITY

### GENERAL

The Greenup Facility is a run-of-the-river hydroelectric generating facility located on the Ohio River between Grays Branch, Kentucky, and Franklin Furnace, Ohio, constituting an integral part of the Greenup Locks and Dam maintained by the United States Army Corps of Engineers (the “*Army Corps*”). The generating plant utilizes three 24.3 MW bulb turbines. The Greenup Facility entered commercial operation in December 1982 and has been owned and operated by Hamilton since 1988.

For the ten-year period between 2004 and 2014, the Greenup Facility has, on average, generated 273,699 MWh per year. For detailed operational data relating to the Greenup Facility, see Appendix G – “Consulting Engineer’s Report – Historical and Projected Performance”.

### BACKGROUND

*General.* In 2002, AMP completed a strategic plan, including a 20-year power supply needs analysis. The plan identified the need for additional base load and intermediate generating resources to meet the increasing demands of its Members, concluding that ownership of generating facilities would, in the long term, be less expensive than purchasing power on the open market. In addition, AMP’s strategic plan concluded that AMP’s Members would benefit from the pursuit of a diverse portfolio of power supply resources, including run-of-the-river hydroelectric, which would reduce project and regulatory risk.

In 2006, AMP commissioned R.W. Beck, Inc., an SAIC Company (“*R.W. Beck*” and now “*Leidos*”), to develop long-term power supply plans for its Members. In February 2007, R. W. Beck prepared a report for each Member that included a 20-year load forecast, a 20-year optimal power supply plan and the key inputs and assumptions used to develop the plan. In developing the plan for each Member, a generation expansion plan was developed assuming that the Member could participate in future AMP generating resources, including run-of-the-river hydroelectric generation. The run-of-the-river hydroelectric generation identified in the power supply plans included the Combined Hydroelectric Projects (as defined below) and the Meldahl Project. After the execution of the AMP-Hamilton Agreements, the long-term power supply plans were updated to reflect the actual energy and capacity available from the Meldahl Project and the AMP Interest in the Greenup Facility.

*Meldahl Project and the Greenup Facility.* In an effort to diversify and expand its hydroelectric portfolio, Hamilton sought and, on June 25, 2008, secured the FERC license to construct and operate the Meldahl Project. AMP provided Hamilton with technical and legal support during the period in which the latter was pursuing the FERC license to operate the Meldahl Project. In addition, AMP submitted an affidavit to FERC committing to support financially the development and construction of the Meldahl Project.

Upon Hamilton’s receipt of the FERC license relating to the Meldahl Project, AMP and Hamilton entered into negotiations to jointly construct and operate the Meldahl Project. At the same time, AMP and Hamilton, motivated by a desire to provide additional diversity to their generation portfolios, determined that it would be in both parties best interests to pursue the possibility of a sale by Hamilton and purchase by AMP of an ownership interest in the Greenup Facility. In 2009, these negotiations culminated in the execution of the AMP-Hamilton Agreements, pursuant to which AMP agreed to finance the development and construction of the Meldahl Project and Hamilton agreed to sell to AMP the AMP Interest in the Greenup Facility after the Meldahl Project entered commercial operation.

*AMP-Hamilton Agreements.* The principal AMP-Hamilton Agreements relevant to the ownership and operation of the Greenup Facility consist of: (a) the Meldahl-Greenup Participation Agreement (the “*Participation Agreement*”) and (b) the Greenup Project Operating Agreement (the “*Greenup Operating Agreement*”).

The basic terms of each agreement are summarized below:

*Participation Agreement:* The Participation Agreement provided the framework and basic terms pursuant to which the Meldahl Project was developed and AMP will purchase the Greenup Facility. AMP paid Hamilton upon execution of the Participation Agreement \$2.43 million for the right to participate in the Meldahl Project and will pay another \$2.43 million upon the addition of AMP to the FERC License as a co-licensee with Hamilton (collectively, the \$4.86 million payments are referred to herein as the “*Participation Payment*”). AMP agreed to finance the Meldahl Project and to sell Hamilton a 51.4% share of the available energy and capacity from the Meldahl Project pursuant to the Meldahl Power Sales Contract (as hereinafter defined). Hamilton agreed to sell AMP the AMP Interest in the Greenup Facility upon the placement of the Meldahl Project into commercial operation. Hamilton will continue to operate the Greenup Facility pursuant to the Greenup Operating Agreement, will operate the Meldahl Project and will be entitled to a \$1/MWh adder, which adder shall be indexed to account for inflation, for each MWh of energy delivered to AMP from the AMP Interest in the Greenup Facility and the Meldahl Project.

The Participation Agreement also contains substantive provisions relating to the operation of the Greenup Facility and, specifically, the role of the Greenup Management Committee, which has representatives from both AMP and Hamilton, established under the terms of the Greenup Operating Agreement (the “*Management Committee*”). Under the terms of the Participation Agreement, decisions relating to (i) annual operating and capital budgets; (ii) budget amendments; (iii) expenditures not provided for in an approved budget, unless in the discretion of Hamilton in its capacity as the Project operator, with the concurrence of the AMP Chief Executive Officer or any Senior Vice President, where circumstances reasonably allow, such expenditure must be made to address an emergency or to comply with a FERC license condition and the circumstances do not reasonably allow time to seek advance approval of such expenditure; (iv) the execution or termination of any contract; (v) the authorization of any construction delay or change order; (vi) making or submitting applications for, amending or changing or accepting any conditions to the license or regulatory approvals; and (vii) the issuance of purchase orders in excess of \$25,000, require the approval of both AMP and Hamilton.

*Greenup Operating Agreement.* Under the terms of the Greenup Operating Agreement, Hamilton will continue to provide services and personnel to manage and operate the Greenup Facility. Hamilton will ensure that the Greenup Facility is operated in compliance with the terms of the FERC License and the terms of the AMP-Hamilton Agreements. As noted earlier, Hamilton has over 25 years’ experience operating the Greenup Facility. As discussed above and in the following section, AMP will have a significant oversight function through its representation on the Management Committee.

## **OPERATION OF THE GREENUP FACILITY**

As noted above, the Greenup Facility will be operated by Hamilton pursuant to the terms of the Greenup Operating Agreement. Hamilton has owned and operated an electric utility system since 1893. Currently, Hamilton’s Electric System is the second largest municipally-owned electric system in Ohio and is a fully integrated electric generation, transmission and distribution system. Hamilton’s Electric System has approximately 125 full-time employees. Hamilton has operated the Greenup Facility since Hamilton purchased the facility in May 1988.

By and through its representation on the Management Committee, AMP will have an oversight function with respect to the operations of the Greenup Facility. AMP staff has significant hydroelectric generation experience gained from its operation of the Belleville Hydroelectric Plant, a hydroelectric plant located on the Ohio River that has been in commercial operation since 1999. AMP has managed the construction of over 300 MW of run-of-the-river hydroelectric power generation at existing dams on the Ohio River, including the Meldahl Project. Certain of such generation facilities have recently achieved commercial operation. See “AMERICAN MUNICIPAL POWER, INC. – OTHER PROJECTS.”

## **CAPITAL IMPROVEMENT PROGRAM**

Beginning in 2014, AMP, in consultation with Hamilton, began an investigation of the long-term capital requirements for the Greenup Facility. Based upon this investigation, AMP identified a program of required equipment and other long-term major maintenance items. In addition, as permitted by the AMP-Hamilton Agreements, AMP engaged Leidos in early 2015 to conduct a condition assessment (the “*Condition Assessment*”) to determine if the Greenup Facility was in substantially the same condition as it was at the time of execution of the AMP-Hamilton Agreements.

The Condition Assessment concluded that the Greenup Facility was in comparable condition to that found in connection with AMP’s initial investigation of the Greenup Facility in 2008, but, given the age of the facility, would require significant capital investment over the next decade. As noted, the AMP-led investigation and the Condition Assessment detailed a program of major maintenance (the “*Major Maintenance Program*”) that would be required over the next ten years, a program with which Hamilton has agreed. The primary goals of the Major Maintenance Program are to repair and replace various equipment items due to age, improve safety and performance and extend the life of the Greenup Facility. In total, AMP and Hamilton estimate that the Major Maintenance Program will cost approximately \$24 million over the next ten years, of which AMP’s share will be approximately \$11 million. With the exception of approximately \$3.8 million financed with a portion of the proceeds of the Series 2016A Bonds, AMP anticipates its share of the cost of the Major Maintenance Program will be recovered from the Participants through the Power Sales Contract.

## **FERC LICENSE**

As discussed earlier, Hamilton and AMP will be co-licensees under the FERC license relating to the Greenup Facility on or about the date of the acquisition by AMP of the AMP Interest. The FERC license expires on February 28, 2026, approximately 26 years prior to the final maturity of the Series 2016A Bonds. Hamilton and AMP expect to file an application for a new license prior to the expiration of the current license. Under existing law, an application for a new license must be filed no later than two years prior to the expiration of the original license.

AMP believes, based on past precedent, that FERC will issue a license renewal on a timely basis. FERC has only once denied an application for a new license by an existing licensee. If, in connection with the FERC license renewal, FERC chooses to award the license to a party other than AMP and Hamilton, the new licensee will be required, prior to taking possession of the Greenup Facility, to pay AMP and Hamilton the fair market value of the Greenup Facility, plus severance damages.

## **INTERCONNECTION**

The Greenup Facility is served by an approximately 14.4-mile transmission line located in Greenup County, Kentucky that transmits the power to an American Electric Power utility connection.

## **TAXES**

AMP currently pays Ohio personal property, real estate and applicable sales taxes and has assumed their applicability in respect of the ownership and operation of the AMP Interest, but could challenge the application of those taxes in the future.

## **CONSULTING ENGINEER'S REPORT**

Leidos has been retained by AMP as Consulting Engineer under the Power Sales Contract. Leidos, a nationally-recognized engineering and consulting firm, has prepared a consulting engineer's report, including as a part thereof the Condition Assessment (the "*Consulting Engineer's Report*") regarding the Greenup Facility and the AMP Interest, which is attached as Appendix G hereto. The Consulting Engineer's Report contains information not set forth elsewhere in this Official Statement and should be read in its entirety.

## **AMERICAN MUNICIPAL POWER, INC.**

### **NONPROFIT CORPORATION**

AMP was formed in 1971 as a nonprofit corporation under Ohio Revised Code Chapter 1702. Under applicable law, AMP has perpetual existence and the duration of its existence is not otherwise limited by its certificate of incorporation or by any agreement with its Members. AMP must file, however, at certain times, Statements of Continued Existence with the Ohio Secretary of State pursuant to Ohio Revised Code § 1702.59. AMP has made all such required filings and is in good standing.

As of April 21, 2016, AMP had 133 Members – 83 municipalities in Ohio, 29 boroughs in Pennsylvania, six cities in Michigan, five municipalities in Virginia, five cities in Kentucky (two of which are Members through their electric plant boards), two cities in West Virginia, one city in Indiana, one town in Maryland and DEMEC.

### **TAX STATUS**

AMP obtained a determination letter from the IRS on July 31, 1980, supplemented by letters dated January 19, 1981 and December 16, 1987, determining that the income of AMP is excludable under Section 501(c)(12) of Code, provided that at least 85% of AMP's total revenue consists of amounts collected from its Members for the sole purpose of meeting losses and expenses (which includes debt service). AMP believes that it has met the requirements for maintenance of Section 501(c)(12) status each year since it received the initial letter. AMP intends to retain its Section 501(c)(12) status.

AMP has also obtained a private letter ruling (the "*Section 115 Ruling*") from the IRS determining that its income is excludable under Section 115 of the Code because the income of AMP is derived from the exercise of an essential governmental function and will accrue to a state or a political subdivision thereof. The Section 115 Ruling complements AMP's 501(c)(12) status and provides some flexibility in respect of AMP's operations.

AMP has also received private letter rulings to the effect that it may issue, on behalf of its Members, obligations the interest on which is excludible from the gross income of holders of the obligations for federal income tax purposes and that it is a wholly owned instrumentality of its Members with the consequence that use of tax-exempt financed facilities by AMP will not result in private use under the Code. See also "TAX MATTERS".

Under Ohio law, AMP currently pays Ohio personal property, real estate and applicable sales taxes, but AMP could challenge the application of those taxes in the future.

#### **AFFILIATES; SERVICES**

AMP is closely aligned with another Ohio statewide municipal power organization. The Ohio Municipal Electric Association (“*OMEA*”) is the legislative liaison for the state’s municipal electric systems. AMP has also facilitated the formation of a number of municipal joint ventures pursuant to Ohio Revised Code § 715.02 and the Ohio Constitution. In addition to Ohio Municipal Electric Generating Agency (“*OMEGA*”) Joint Ventures 1, 2, 4, 5 and 6 (See “*AMERICAN MUNICIPAL POWER, INC. – Other Projects – JVs 1, 2, 4, 5 and 6; Combustion Turbine Project*”), the Municipal Energy Services Agency (“*MESA*”) has also been formed. Together with AMP employees, MESA provides management and technical services to AMP and its Members. AMP and MESA combined employ approximately 190 people.

AMP purchases wholesale electric power and energy and resells the same to its Members at rates based on cost and a service fee structured to recover AMP’s costs. AMP also develops alternative power resources for its Members to meet their short- and long-term needs, including generation projects owned or operated by AMP. See “*AMERICAN MUNICIPAL POWER, INC.–Other Projects*” below. In 2015, the total cost of power sold or arranged by AMP for its Members, including wholesale power arranged by AMP and power sold by AMP to Members under the power sales contracts relating to AMP’s generation projects, was approximately \$1.137 billion, at an average rate of \$73.42/MWh, which rate includes capacity, energy and delivery related services.

AMP’s Energy Control Center monitors loads and transmission availability, dispatches, buys and sells power and energy for its Members, 24 hours a day, 365 days a year and controls AMP and Member-owned generation. In-house engineering, operations, safety, power supply, rate, legal, financial, risk management and environmental staff is available at AMP’s headquarters to assist Member communities in addition to performing AMP duties and providing support to the joint ventures.

#### **RELATIONSHIP WITH THE ENERGY AUTHORITY**

AMP is a member of The Energy Authority (“*TEA*”), a nonprofit power marketing corporation that is owned by AMP and other public power entities. TEA assists in wholesale marketing and related responsibilities of its members. TEA’s mission is to maximize the value of its members and other public power partners’ assets in the wholesale energy markets. TEA also provides its members with natural gas procurement and management services for supplying physical natural gas used in the generation of electricity, services which AMP utilizes in connection with the Fremont Energy Center. See “*–Other Projects – AMP Fremont Energy Center*” below.

AMP is also a member of TEA Solutions, a sister company of TEA (“*TEA Solutions*”). As with TEA, TEA Solutions is owned by AMP and other public power utilities. TEA Solutions was created to bring further economies of scale and market experience to TEA’s members by providing portfolio management, RTO trading, bilateral power trading, power supply management, natural gas trading services and risk management services.

#### **AMP’S INTEGRATED RESOURCE STRATEGY AND APPROACH TO SUSTAINABILITY**

Wind, run-of-the-river hydroelectric, landfill gas, solar and fossil fuels, collectively, are all part of AMP’s generation resource mix. AMP’s integrated resource strategy is consistent with its corporate sustainability commitment, and includes a portfolio consisting of fossil fuel and a variety of renewable

generation projects, energy efficiency initiatives and carbon management activities described below. In addition, AMP's actions are guided by a set of Environmental Stewardship Principles approved by the AMP Board of Trustees.

*Renewable Energy.* As noted above, wind, run-of-the-river hydroelectric, solar and landfill gas are all part of the renewable generation portfolio mix currently owned by AMP or its Members. AMP has recently completed or is currently constructing approximately 300 MW of run-of-the-river hydroelectric power generation at existing dams on the Ohio River, including the Meldahl Project. See “- Other Projects – *Combined Hydroelectric Projects*” herein. These hydroelectric projects have brought significant economic benefits to the region. AMP is also evaluating other hydroelectric generating facilities, including the R.C. Byrd hydroelectric project (the “*R.C. Byrd Project*”), which would be a run-of-the-river hydroelectric facility located at the R.C. Byrd Locks and Dam on the Ohio River. The City of Wadsworth, Ohio (“*Wadsworth*”), an AMP Member, has filed a license application for the R.C. Byrd Project with FERC.

In addition, AMP entered into a power purchase agreement for 52 MW of wind generation and has developed an approximately 3.5 MW solar facility in the City of Napoleon, Ohio. See “- Other Projects – *Napoleon Solar Project*” herein. Additional solar sites, aggregating over 70 MW, have been considered for potential development during the 2016-2017 time period based on Member interest. To facilitate the development of such solar sites, AMP has entered into a power purchase agreement with a wholly-owned subsidiary of NextEra Energy Resources (“*NextEra*”), pursuant to which AMP will agree purchase up to 71.1 MW of power and energy from solar facilities designed, built, owned and operated by NextEra. Each such solar facility will be sited within the service area of a Member and interconnected to such Member's transmission system. AMP intends to sell such power and energy to Members pursuant to the terms of a power sales contract between AMP and participating Members.

*Energy Efficiency.* In 2010, partly in connection with a consent decree (“*Consent Decree*”) relating to Richard H. Gorsuch Station (“*Gorsuch Station*”), a now-retired coal-fired generating facility, AMP executed a 3-year contract with the Vermont Energy Investment Corp. (“*VEIC*”) to implement a set of state-of-the-art energy efficiency services for AMP's Members. AMP fulfilled its obligations regarding the Consent Decree in 2013. The contract with VEIC was renewed for the period of 2014-2016. VEIC is a nationally recognized leader in developing energy efficiency programs. The contract created an Ohio-based turnkey entity – Efficiency Smart – which utilized VEIC's technical expertise and financial incentives for participating Members to provide a portfolio of energy efficiency services to all major retail customer classes (i.e., residential, commercial, and industrial). The program currently has 28 participating Members and, as of December 31, 2015, had achieved 158,071 MWh of energy savings since its inception. AMP's contract with VEIC is performance-based, meaning a portion of VEIC's fee is at risk if the contract's performance targets are not met. The savings claims are verified by an independent third party evaluation, measurement and verification team headed by Integral Analytics. Participating Members also receive a performance guarantee from VEIC. AMP is negotiating a new contract with VEIC and is planning to provide its Members with additional program options.

*Carbon Management.* AMP is taking action to report and reduce CO<sub>2</sub> and other greenhouse gas (“*GHG*”) emissions, while also investing in CO<sub>2</sub> offset projects. AMP includes an annual fee assessment on all AMP-owned fossil fuel generation which funds various CO<sub>2</sub> offset projects, primarily focused on forestry and landfill gas projects that capture or reduce CO<sub>2</sub> and methane, throughout its footprint. To date, AMP has coordinated with the Ohio Department of Natural Resources, Appalachian Regional Reforestation Initiative, American Chestnut Foundation, Green Forests Work and local entities to plant more than 200 acres of seedlings in Ohio, including a substantial portion on former strip-mined land. AMP is planting an additional 180,000 seedlings at 260 acres of reclaimed mine land within three Ohio State Forests in the spring of 2016. In 2014, after conducting a request for proposals, AMP contracted to

purchase over 250,000 tons of verified carbon offsets, investing in forestry and landfill gas projects across Member states, including Virginia, Michigan, Pennsylvania and Kentucky, all of which have been certified by the Climate Action Reserve and the Verified Carbon Standard.

## **GOVERNANCE**

AMP is governed by a Board of Trustees. The current Member Trustees and their representatives are shown immediately following the inside cover page of this Official Statement. The AMP Board of Trustees consists of 20 members, currently DEMEC and 19 communities, each of which designates a representative to the Board. Twelve of these Trustee communities are chosen by their fellow public power communities in each of AMP's Member service groups (DEMEC constitutes its own service group), which assures representation by at least one community from each state that has five or more Members. The other eight are elected at large. The officers of AMP are: Chair of the Board, Vice Chair, Secretary, Treasurer, President and General Counsel. The President and General Counsel are appointed by the Board of Trustees and are *ex officio* members of the Board.

Board of Trustees committees concentrate on vital functions of the organization. Current committees include finance, hydro projects, Prairie State project, AMP Fremont Energy Center project, Efficiency Smart, green power development, joint ventures oversight, legislative, member services, mutual aid, personnel, policy, power supply and generation, risk management and transmission/regional transmission organizations.

## **AMP EXECUTIVE MANAGEMENT AND SENIOR STAFF**

The principal members of the executive management and senior staff of AMP, with information concerning their background and experience, are listed below.

### *Executive Management*

*Marc Gerken, P.E.*, has served as President and Chief Executive Officer of AMP since February 2000. Previously, Mr. Gerken served as Vice President of Business and Operations at AMP from January 16, 1998. He is a 1977 graduate of the University of Dayton, beginning his public service career in 1990 with the City of Napoleon, serving as city engineer. In 1995, he was named city manager of Napoleon and served in that capacity until his employment by AMP. Mr. Gerken is a past Chairman of the American Public Power Association ("APPA") and a former member of its Board of Directors and is also past President of the Board of Directors of the National Hydropower Association. Mr. Gerken also serves on the Board of Directors of TEA. He holds a B.S. in Civil Engineering from the University of Dayton and is a registered professional engineer in the States of Ohio and Florida.

*John Bentine* has served as AMP's General Counsel since 1981 and is an *ex officio* member of the AMP Board of Trustees. Prior to April 2012, when he became AMP's "in house" General Counsel, Mr. Bentine was in private practice in Columbus, Ohio. Mr. Bentine served for several years as managing partner of his former law firm, Chester Willcox & Saxbe LLP, that merged into Taft Stettinius & Hollister LLP on January 2, 2012, and chaired his former firm's management committee from 1998 to 2008. He is admitted to practice in Ohio and before the U.S. District Court, Southern District of Ohio. Before entering private practice in 1981, he served as an assistant and a senior assistant city attorney, City of Columbus, 1978-1981, and as an assistant attorney general and counsel to the Public Utilities Commission of Ohio, 1975-1978. Mr. Bentine holds a B.B.A. from Marshall University and a J.D., *cum laude*, from The Ohio State University.

*Jolene Thompson* serves as Executive Vice President, Member Services and External Affairs of AMP. Ms. Thompson has been part of the AMP member relations area since 1990, also serving as Executive Director of OMEA since 1997. She is a registered lobbyist in Ohio and Washington, D.C. She oversees human resources, energy policy, energy efficiency, environmental compliance, government relations, media and public relations, NERC compliance, safety compliance, technical services and business operations. Ms. Thompson currently serves on the boards of directors of APPA and Transmission Access Policy Study Group. She holds a B.A. in Journalism from Otterbein University.

*Pamala Sullivan* serves as Executive Vice President, Power Supply & Generation of AMP. Ms. Sullivan provides oversight to AMP's power supply and generation operations, including the company's energy trading floor, commodity procurement, power supply planning, transmission affairs, generation development and operations. Before joining AMP in 2003, Ms. Sullivan was vice president, director of marketing, for a consulting engineering firm specializing in power generation and distribution, where she was responsible for developing and implementing marketing plans and strategies. She holds a B.S. in Electrical Engineering from the University of Toledo.

*Robert Trippe* has served as Chief Financial Officer of AMP since April 1991, and oversees debt management and member credit. Before joining AMP, he served with Ernst & Young in Kansas City, where he became involved in public utility work. Mr. Trippe went on to work for Detroit Edison, serving as Director of Corporate Accounting. He served as Chief Financial Officer for Detroit Edison's diversified operations from 1984 to 1991. Mr. Trippe holds a B.S. in accounting and finance from Missouri State University.

*Scott Kiesewetter* serves as Senior Vice President, Generation Operations. Mr. Kiesewetter was named senior vice president of generation operations in 2014 and oversees all functions of the Power Generation Group, including all generation resources. He has worked for AMP since 1992 in various positions both at headquarters and generation facilities. His experience with the organization includes engineering and supervisory positions at Gorsuch Station and at headquarters overseeing transmission/distribution design, distributed generation, operations engineering/accounting, new plant engineering and project development. For more than 20 years he has served in several roles within the organization, gaining experience across-the-board from generation to the Energy Control Center. Since 2005, he has served primarily in the area of project development. His efforts have included work on the Prairie State Energy Campus, the American Municipal Power Generating Station and construction completion and start-up of the AMP Fremont Energy Center. Prior to AMP, Kiesewetter held various positions with the Philadelphia Electric Company both in its corporate offices and at the Peach Bottom Atomic Power Station. He holds a B.S. in electrical engineering from The Ohio State University with a concentration in power engineering.

*Branndon Kelley* serves as Chief Information Officer. Mr. Kelley has been with AMP since 2009 and has more than 14 years of experience in IT operations, infrastructure, application development, project management, executive leadership, strategy and business development. Mr. Kelley has led a complete IT transformation at AMP and was recently named Intelligent Utility's CIO of the Year. He oversees all information technology, information security and supervisory control and data acquisition functions, projects and people. He is responsible for setting, facilitating and leading technology strategy and tactical execution. He was the 2012 chair for TechTomorrow and the 2013 chair for the APPA IT Committee. Mr. Kelley has a B.S. in Computer Information Systems from DeVry University and a MBA in Finance and General Management from the Keller School of Management.

*Chris Easton* serves as Chief Risk Officer. Mr. Easton joined AMP in 2014, bringing 30 years of experience with municipal electric system management. He spent his career with the City of Wadsworth, retiring as director of public service in 2014, and also served 10 years as the Wadsworth representative on



the AMP Board of Trustees. He holds a B.S. in geography from Ohio University and a MPA from the University of Akron.

*Marcy Steckman* serves as Chief Accounting Officer. Ms. Steckman joined AMP in 2013 and is responsible for all treasury, cash management, financial planning and analysis, financial reporting, and Member billing activities. She held similar financial leadership positions with American Electric Power, Ohio Power Company, Huntington National Bank, and Nationwide Mutual Insurance Company. Ms. Steckman holds a B.S. in Accounting from the University of Akron and is a Certified Public Accountant in the State of Ohio. She is a member of the Ohio Society of Certified Public Accountants, the Central Ohio Association of Financial Professionals, and the National Association of Professional Women.

#### *Senior Staff*

*Pete Crusse* serves as Vice President, Hydroelectric Construction. Mr. Crusse joined AMP in 2011. Bringing with him more than 32 years of experience in the construction industry, he is responsible for the construction of the Combined Hydroelectric Project and the Meldahl Project. During his time with Smoot Construction, he worked on many diverse and complex projects, including the 32-story Vern Riffe Center in downtown Columbus, renovation of the Ohio Statehouse and many other high-profile projects. He was promoted to his current position at AMP in 2012 and holds a B.S. in industrial technology from the University of Wisconsin-Stout.

*Phil Meier* serves as Vice President, Hydroelectric Development and Operations. Mr. Meier came to AMP in 1989, and worked as a power coordinator and planning engineer. He was project manager for the OMEGA JV5 Belleville hydroelectric project from 1993 to 1999, director of information systems, and CIO from 2001 to 2006. He was promoted to assistant vice president for hydroelectric development in 2006, and then named vice president of hydro development and operations in 2013. He holds a B.S. in electronics engineering technology from the DeVry Institute.

*Lisa McAlister* serves as Deputy General Counsel, FERC/RTO Affairs. Ms. McAlister joined AMP in 2012. She was previously Of Counsel at Bricker & Eckler LLP, and represented the Ohio Manufacturers' Association and the OMA Energy Group. Prior to that, she was a senior attorney and partner elect at McNees Wallace & Nurick LLC, representing industrial customers on energy issues. She holds a B.A. from Elon University and a J.D. from The Ohio State University.

*Rachel Gerrick* serves as Deputy General Counsel. Ms. Gerrick joined AMP in 2012. Prior to coming to AMP, she served as associate assistant attorney general at the Ohio Attorney General's Office in the Business Counsel Section. Before that, she was an associate in the Columbus office of Squire, Sanders & Dempsey LLP and in the Chicago office of Winston & Strawn LLP. She holds a B.A. in economics and history from Emory University and a J.D. from the University of Virginia School of Law.

#### *Succession Planning*

AMP is committed to succession planning at every level of the organization. AMP staff and its Board of Trustees have developed a strategic approach for succession planning to ensure the organization is well-positioned for the future. In 2015, AMP announced that Mr. Trippe will be retiring effective June 30, 2016. On April 13, 2016, AMP announced that Ms. Steckman, who currently serves as AMP's Vice President of Accounting and Chief Accounting Officer, will succeed Mr. Trippe as Chief Financial Officer. In early 2016, AMP announced that Mr. Bentine will be retiring from full-time work effective January 2017. On April 13, 2016, AMP also announced that Ms. Gerrick and Ms. McAlister, who joined the legal department in 2012 as part of the Board-approved succession planning for Mr. Bentine, will become co-general counsel effective upon Mr. Bentine's retirement. Both Mr. Trippe and Mr. Bentine

will continue in a consultancy capacity after retirement. In addition, in early 2016, the organization announced that Ms. Sullivan and Ms. Thompson had been named executive vice presidents.

## LIQUIDITY

AMP is party to a Credit Agreement dated as of January 10, 2012, as amended (the “*Line of Credit*”), with a syndicate of commercial banks led by J.P. Morgan Chase Bank, National Association, with a total available line of \$750 million, which total availability, subject to certain conditions, may be increased to \$1 billion. The current expiration date of the Line of Credit is January 10, 2020. AMP may, subject to certain limitations, borrow directly on the Line of Credit or request the issuance of letters of credit against the Line of Credit to support its operations, to provide interim financing for its projects and to pay its obligations to TEA and TEA Solutions, including capital contributions. As of March 31, 2016, \$439,164,000 had been drawn or reserved on the Line of Credit, approximately \$414.3 million of which is supported by Member commitments, including draws on the Line of Credit used to refund obligations or provide working capital for other AMP projects and secured by the respective trust documents as subordinated obligations. See “–Other Projects – *JV 1, 2, 4, 5 and 6; Combustion Turbine Project*”, “–*AMPGS*”, “– *Prairie State Energy Campus*”, “– *Combined Hydroelectric Projects*”, “– *Meldahl Hydroelectric Project*”, “– *Napoleon Solar Project*” below.

## OTHER PROJECTS

Several of the studies of alternative power supply and transmission arrangements AMP has made or commissioned have resulted in cooperative undertakings by AMP and one or more of its Members. Included among these projects are the following:

*JVs 1, 2, 4, 5 and 6; Combustion Turbine Project.* In 1992, AMP began sponsoring the creation and organization of project specific joint ventures (the “*JVs*”) among certain of its Members and other AMP owned or controlled projects for the purpose of acquiring certain electric utility assets. Several, described below, remain active.

- *OMEGA JV1* (21 Members): OMEGA JV1 owns 9 MW of distributive generation, located in Cuyahoga Falls, Ohio (the largest participant), consisting of six 1.5 MW Caterpillar diesel units. This project was installed by AMP and later sold to OMEGA JV1 at AMP’s net cost. OMEGA JV1 has no debt.
- *OMEGA JV2* (36 Members): OMEGA JV2 owns 138.65 MW of distributed generation, consisting of two 32 MW gas-fired turbines, one 11 MW gas-fired turbine, one 1.6 MW diesel generator and thirty-four 1.825 MW diesel generators. AMP is responsible for the operation of the JV2 Project. As of March 31, 2016, \$7,079,538 principal amount of JV2 Obligations was outstanding and held on the Line of Credit.
- *OMEGA JV4* (4 Members): OMEGA JV4 owns a 69 kV transmission line located in Williams County, Ohio that electrically connects Members Bryan, Montpelier and Pioneer, providing additional reliability to their Electric Systems and the ability to make power sales to one industrial customer. AMP constructed the initial phase of the line in 1995 and then transferred title to the participants in December 1995 at no markup of its cost. OMEGA JV4 has no debt.
- *OMEGA JV5* (42 Members): In 1993, OMEGA JV5 assigned to a trustee the obligations of its participants to make payments for their respective ownership shares in the “*Belleville Project*,” a 42 MW run-of-the-river hydroelectric generating facility on an

Army Corps dam near Belleville, Ohio, an associated transmission line in Ohio and backup diesel generation owned by OMEGA JV5. AMP is responsible for operation of the Belleville Project. The hydroelectric generation associated with the Belleville Project has been operational since June 1999. The diesel generation units have been in service since 1995. The Federal Energy Regulatory Commission license for the Belleville Project runs through August 31, 2039. As of March 31, 2016, \$30,956,502 of the 2001 Belleville Beneficial Interest Certificates (“2001 BICs”) with a final maturity of 2030 was outstanding. The 2001 BICs are capital appreciation bonds with a final aggregate maturity amount of \$56,125,000. In addition, on February 15, 2014, AMP redeemed \$70,990,000 of the 2004 Belleville Beneficial Interest Certificates with the proceeds of a draw on the Line of Credit, which draw was evidenced by the proceeds of a note (the “JV5 Note”). On January 29, 2016, OMEGA JV5 caused the issuance of \$49,745,000 Belleville Beneficial Interest Refunding Certificates, Series 2016 (the “2016 BICs”) to pay the outstanding balance of the JV5 Note and to pay costs of issuance. The 2016 BICs bear interest at a variable rate, mature on February 1, 2024 and are subject to redemption and mandatory tender at the option of the holder commencing February 15, 2021. As of March 31, 2016, \$48,780,000 aggregate principal amount of the 2016 BICs was outstanding. The 2001 BICs and 2016 BICs are non-recourse to AMP.

- *OMEGA JV6* (10 Members): OMEGA JV6 owns four 1.8 MW wind turbines located in Bowling Green, Ohio. AMP is responsible for the operation of the JV6 Project. All indebtedness associated with OMEGA JV6 was retired in August 2015.
- *Combustion Turbine Project* (33 Members – AMP-owned, not a JV): In August 2003, AMP financed, with a draw on its Line of Credit, the acquisition of three gas turbine installations, located in Bowling Green, Galion and Napoleon, Ohio (each of which is an AMP Member), plus an inventory of spare parts. Each installation consists of two gas-fired turbine generators, one 32 MW and one 16.5 MW, with an aggregate nameplate capacity for all three installations of 145.5 MW. On December 13, 2006, AMP refinanced its obligations on the Line of Credit attributable to the purchase with the issuance of its \$13,120,000 Multi-Mode Variable Rate Combustion Turbine Project Revenue Bonds, Series 2006 (the “CT Bonds”). On December 1, 2013, the outstanding CT Bonds were redeemed with the proceeds of a draw on the Line of Credit. As of March 31, 2016, \$2,489,617 on the Line of Credit was allocable to the refunding of the CT Bonds.

*AMPGS (81 Members)*: Until November 2009, AMP had been developing a 960 MW twin unit, supercritical boiler, coal-fired, steam and electric generating facility, to be known as the American Municipal Power Generating Station (“AMPGS”), in Meigs County, in southeastern Ohio, on the Ohio River. AMP had planned for AMPGS to enter commercial operation in 2014 at a total capital cost of approximately \$3 billion. In the fourth quarter of 2009, however, the estimated capital costs increased by 37% and Bechtel Power Corporation (“Bechtel”), the EPC (engineer, procure and construct) contractor, would not guarantee that the costs would not continue to escalate. As a result of the estimated cost increases and prior to the commencement of major construction at the project site, the 81 AMP Members that had subscribed for capacity from AMPGS (“AMPGS Participants”) voted to cease development of AMPGS as a coal fired project.

In February 2011, AMP filed a complaint against Bechtel stemming from cancellation of the AMPGS project. In the complaint, AMP alleges breach of contract, gross negligence and breach of fiduciary duty on the part of Bechtel and seeks to recover, among other things, approximately \$100 million of cost that AMP incurred with respect to the AMPGS project prior to its cancellation. Bechtel

filed an answer denying any liability and a counterclaim seeking \$383,566 from AMP related to a termination payment that Bechtel alleges it is entitled to as a result of AMP terminating the AMPGS project for convenience. On June 30, 2014, AMP received an adverse decision, denying in part and granting in part Bechtel's Motion for Summary Judgment. The Board of Trustees and the AMPGS Participants voted to authorize the continuation of legal action related to the cancellation of the AMPGS project. On October 21, 2014, the federal district court issued an Order granting AMP's request to certify a key issue of state law to the Ohio Supreme Court. On December 24, 2014, the Ohio Supreme Court agreed to hear AMP's request that the Court determine whether, as a matter of Ohio law, reckless conduct by a breaching party renders a contractual limitation of liability clause unenforceable. As a result of the Supreme Court's ruling, the litigation between AMP and Bechtel will be stayed until the Supreme Court renders its decision, after which the case will return to the federal district court for further proceedings. Oral argument was held on October 27, 2015.

All costs associated with the litigation, as well as Bechtel's counterclaim, are project costs recoverable from the AMPGS Participants under their power sales agreement with AMP, although the Board of Trustees has determined it appropriate to pay a portion of those costs, to be recovered from the proceeds, if any, of the sale of project assets.

As of March 31, 2016, \$36,947,578 on AMP's Line of Credit was allocable to the stranded costs recoverable from the AMPGS Participants and \$34,969,522 on AMP's Line of Credit was allocable to plant held for future use.

*Prairie State Energy Campus (68 Members):* On December 20, 2007, AMP acquired a 23.26% undivided ownership interest (the "*PSEC Ownership Interest*") in the Prairie State Energy Campus ("*PSEC*"), a two-unit, supercritical coal-fired power plant designed to have a net rated capacity of approximately 1,582 MW and associated facilities in southwest Illinois. The PSEC Ownership Interest is held by AMP 368 LLC, a single-member Delaware limited liability company ("*AMP 368 LLC*"). AMP is the owner of the sole membership interest in AMP 368 LLC. Construction of the PSEC commenced in October 2007. Unit 1 of the PSEC commenced operations in the second quarter of 2012 and Unit 2 of the PSEC commenced operations in the fourth quarter of 2012.

From July 2008 through September 2010, AMP issued five series of Prairie State Energy Campus Revenue Bonds (collectively, the "*Initial Prairie State Bonds*") to finance PSEC project costs and PSEC related expenses. The Initial Prairie State Bonds consist of tax-exempt, taxable and tax advantaged Build America Bonds issued in the original aggregate principal amount of \$1,696,800,000. In 2015, AMP issued two series of refunding bonds (the "*Prairie State Refunding Bonds*") and, together with the Initial Prairie State Bonds, the "*Prairie State Bonds*") to refund the tax-exempt Initial Prairie State Bonds issued in 2008 and 2009. As of March 31, 2016, AMP had \$1,576,845,000 aggregate principal amount of Prairie State Bonds and approximately \$9.4 million aggregate principal amount of subordinate obligations, consisting of notes evidencing draws on the Line of Credit, outstanding under the indenture securing the Prairie State Bonds.

AMP sells the power and energy from the PSEC Ownership Interest pursuant to a take-or-pay power sales contract (the "*Prairie State Power Sales Contract*") with 68 Members (the "*Prairie State Participants*"). The Prairie State Bonds are net revenue obligations of AMP, secured by a master trust indenture, payable primarily from the payments to be made by the Prairie State Participants under the terms of the Prairie State Power Sales Contract.

During the shakedown period following commercial operation of the PSEC, there were numerous unscheduled outages and derates for equipment adjustments and breakdowns and other operational issues. While these types of issues are common during the shakedown period for new supercritical coal-fired

generation plants, PSEC experienced higher-than-expected downtime as compared with similar plants. In a continuing effort to remediate these problems, PSGC has implemented numerous improved operational procedures, equipment upgrades and repairs in order to increase reliability. Such remedial measures include optimizing the various plant equipment and systems such as fuel delivery, boiler combustion, air quality control system, ash handling and water supply; verifying that equipment installation and initial startup were completed according to specifications; and enhanced and ongoing training of operators and maintenance staff as they learn the operating characteristics of equipment and optimizing procedures for equipment startup, operation shut-down and normal operation. PSGC has also made significant management, structural and personnel changes.

For calendar year 2015, PSEC produced 11,116,104 MWh of electric power, surpassing the 2014 total of 9,640,095 MWh. This increased generation has been driven by increased reliability, and is reflected by an increase in the equivalent availability factor (80.88% in 2015 versus 72.48% in 2014) and net capacity factor (77.71% in 2015 versus 67.16% in 2014). Over the next five years, AMP expects to finance its share of improvements with funds on hand, including remaining proceeds of the Initial Prairie State Bonds, rather than issue additional indebtedness.

On April 13, 2016, Peabody Energy Corporation and certain of its affiliates (“*Peabody*”), which through a wholly-owned subsidiary owns a 5.06% undivided ownership interest in the PSEC, filed voluntary petitions under Chapter 11 of the Bankruptcy Code in the United States Bankruptcy Court for the Eastern District of Missouri. Peabody secured a debtor-in-possession facility and noted in a press release that it “believes that it has sufficient liquidity to operate its business worldwide post-petition.” To date, Peabody has met its obligations under the project agreements relating to the PSEC.

*AMP Fremont Energy Center (87 Members):* On July 28, 2011, AMP acquired from FirstEnergy Generation Corporation (“*FirstEnergy*”) the Fremont Energy Center (“*AFEC*”), a combined cycle, natural gas fueled electric generating plant, then nearing completion of construction and located in Fremont, Sandusky County, Ohio. Following completion of the commissioning and testing, AMP declared AFEC to be in commercial operation as of January 20, 2012. AFEC has a capacity of 512 MW (unfired)/675 MW (fired) and consists of two combustion turbines, two heat recovery steam generators and one steam turbine and condenser.

AMP subsequently sold a 5.16% undivided ownership interest in AFEC to Michigan Public Power Agency and entered into a power sales contract with the Central Virginia Electric Cooperative for the output associated with a 4.15% undivided ownership interest in AFEC. The output of AFEC associated with the remaining 90.69% undivided ownership interest (the “*90.69% Interest*”) is sold to AMP Members pursuant to a take-or-pay power sales contract with 87 of its Members (the “*AFEC Power Sales Contract*”).

In 2012, to provide permanent financing for the 90.69% Interest, AMP issued, in two series, \$546,085,000 of its AMP Fremont Energy Center Project Revenue Bonds (the “*AFEC Bonds*”), consisting of taxable and tax-exempt obligations. The AFEC Bonds are net revenue obligations of AMP, secured by a master trust indenture and payable from amounts received by AMP under the AFEC Power Sales Contract. As of March 31, 2016, \$520,620,000 aggregate principal amount of AFEC Bonds was outstanding.

From January 2012 through December 2015, AFEC produced approximately 11,827,000 MWh of electric power with a capacity factor of approximately 51% and an equivalent availability factor of approximately 85%. AFEC has also maintained an excellent safety record with zero lost time accidents and zero recordable injuries dating back to AMP’s acquisition of AFEC.

*Combined Hydroelectric Projects (79 Members).* AMP has recently completed or is currently developing three hydroelectric projects, the Cannelton, the Smithland and the Willow Island hydroelectric generating facilities (the “*Combined Hydroelectric Projects*”), all on the Ohio River, with an aggregate generating capacity of approximately 208 MW. Each of the Combined Hydroelectric Projects entails the installation of run-of-the-river hydroelectric generating facilities on existing Army Corps dams and includes associated transmission facilities. The Combined Hydroelectric Projects, including associated transmission facilities, are being or have been constructed and will be operated by AMP. AMP holds the licenses from FERC for the Combined Hydroelectric Projects.

To provide financing for the Combined Hydroelectric Projects, in 2009 and 2010 AMP issued, in seven series, \$2,045,425,000 of its Combined Hydroelectric Projects Revenue Bonds (the “*Combined Hydroelectric Bonds*”), consisting of taxable, tax-exempt and tax advantaged obligations (Build America Bonds, Clean Renewable Energy Bonds and New Clean Renewable Energy Bonds). The Combined Hydroelectric Bonds are net revenue obligations of AMP, secured by a master trust indenture and payable from amounts received by AMP under a take-or-pay power sales contract with 79 of its Members. As of March 31, 2016, \$1,995,529,118 aggregate principal amount of the Combined Hydroelectric Bonds and approximately \$111.4 million aggregate principal amount of subordinate obligations, consisting of notes evidencing draws on the Line of Credit, were outstanding under the indenture securing the Combined Hydroelectric Bonds

The first unit at Willow Island entered commercial operation on January 2016 and the second unit at Willow Island entered commercial operation on February 2016. The first unit at Cannelton entered commercial operation on January 2016 and the second unit entered commercial operation in March 2016. As of April 1, 2016, AMP anticipated that the remainder of the Combined Hydroelectric Project units will enter commercial operation as follows: the third unit at Cannelton in May 2016; the first unit at Smithland in September 2016, the second unit at Smithland in October 2016 and the third unit at Smithland in November 2016.

AMP anticipates that it will issue approximately \$150 million additional Combined Hydroelectric Bonds to finance certain additional capital costs, including interest on such Combined Hydroelectric Bonds during construction, and to repay amounts outstanding under the Line of Credit in the second or third quarter of 2016.

*Meldahl Hydroelectric Project (48 Members).* As noted above, AMP, together with Hamilton, developed and constructed the Meldahl Project, a 105 MW, three-unit hydroelectric generation facility on the Captain Anthony Meldahl Locks and Dam, an existing Army Corps dam on the Ohio River, and related equipment and associated transmission facilities. The Meldahl Project entered commercial operation on April 12, 2016.

In order to finance the construction of the Meldahl Project and related costs, in 2010 and 2011 AMP issued six series of its Meldahl Hydroelectric Project Revenue Bonds (the “*Meldahl Bonds*”) consisting of taxable, tax-exempt and tax advantaged obligations (Build America Bonds, Clean Renewable Energy Bonds and New Clean Renewable Energy Bonds). On August 1, 2014, AMP redeemed all of its outstanding Series 2011A Meldahl Bonds (“*Meldahl 2011A Bonds*”) with the proceeds of a draw on its Line of Credit. As of March 31, 2016, \$622,320,000 aggregate principal amount of the Meldahl Bonds and approximately \$97.5 million aggregate principal amount of subordinate obligations, consisting of notes evidencing draws on the Line of Credit relating to the refunding of the Meldahl 2011A Bonds, issuance costs relating to the Series 2010E Meldahl Bonds and additional capital expenditures, were outstanding under the indenture securing the Meldahl Bonds. The Meldahl Bonds are secured by a master trust indenture and payable from amounts received by AMP under a take-or-pay power sales contract with 48 of its Members.

AMP anticipates that it will issue approximately \$100 million additional Meldahl Bonds to finance, or reimburse AMP for the cost of financing, certain capital costs, and to refund the draws on the Line of Credit in the second or third quarter of 2016.

*Napoleon Solar Project (3 Members).* AMP owns the Napoleon Solar Project, a 3.54 MW solar installation, located in Napoleon, Ohio. The Napoleon Solar Project entered commercial operation in August 2012. The output of the Napoleon Solar Project is sold pursuant to the terms of a take-or-pay power sales contract with three of AMP's Members. The cost of the Napoleon Solar Project was financed with the proceeds of a draw on the Line of Credit. As of March 31, 2016, \$7,909,272 on AMP's Line of Credit was allocable to the financing or refinancing of costs related to the Napoleon Solar Project.

## **THE PARTICIPANTS**

### **GENERAL**

Each of the Participants is a Member of AMP. The Electric Systems owned by the Participants provide, among other things, electric utility service primarily to retail consumers located in their respective service areas. With the exception of the City of Cleveland, Ohio, each Participant is the only authorized supplier of electricity within its corporate limits. Cleveland is in direct competition with Cleveland Electric & Illuminating ("CEI"), an operating company of First Energy Corporation.

### **PROJECT SHARES**

The 47 Participants, together with their respective Project Shares (in kW), are listed in Appendix A hereto. The Project Shares of the six largest Participants aggregate 56.43% of all of the Participants' Project Shares. These six Participants, the Cities of Cleveland, Wadsworth, Orrville and Bowling Green, Ohio, the City of Danville, Virginia and the City of Paducah, Kentucky (the "*Large Participants*") have been designated by AMP as materially "obligated persons" for purposes of Rule 15c2-12 (as hereinafter defined). Appendix B to this Official Statement contains certain financial and other information about the Large Participants. Under the terms of the Power Sales Contract, AMP may designate other Participants as materially obligated persons. See "CONTINUING DISCLOSURE AGREEMENT."

### **ENFORCEABILITY OF CONTRACTS AND BANKRUPTCY**

The enforceability of the various legal agreements relating to the AMP Interest and the Series 2016A Bonds may be limited by bankruptcy, reorganization, insolvency, moratorium or other similar laws affecting the rights of creditors or secured parties generally and by the exercise of judicial discretion in accordance with general principles of equity. The Power Sales Contract and other agreements relating to the AMP Interest are executory contracts. If AMP or any of the parties with which AMP has contracted under such agreements (including the Power Sales Contract) is involved in a bankruptcy proceeding, the relevant agreement could be discharged in return for a claim for damages against the party's estate with uncertain value. In such an event, the Gross Receipts could be materially and adversely affected. Similarly, in the event that AMP is involved in a bankruptcy proceeding, exercise of the remedies afforded to the Trustee under the Indenture may be stayed.

*AMP.* In the event of a bankruptcy of AMP, a party in interest might take the position that the remittance to the Trustee by AMP of the payments received from the Participants pursuant to the Power Sale Contract constitutes a preference under bankruptcy law if such remittance were deemed to be paid on account of a preexisting debt. If a court were to hold that the remittance of funds constitutes a preference, any such remittance within 90 days of the filing of the bankruptcy petition could be avoidable, and funds could be required to be returned to the bankruptcy estate of AMP. Because the payments by the

Participants will be commingled by AMP with other payments by the Participants and its other Members pending the transfer of such payments to the Trustee, the risk that a court would hold that a remittance of those funds by AMP to the Trustee was a preference is increased. If AMP is considered an “insider” with the Participants, any such remittance made within one year of the filing of the bankruptcy petition could be avoidable as well if the court were to hold that such remittance constitutes a preference. In either case, the Trustee would be merely an unsecured creditor of AMP.

*Municipal Bankruptcy.* Chapter 9 of the Federal Bankruptcy Code (the “*Bankruptcy Code*”) contains provisions relating to the adjustment of debts of a state’s political subdivisions, public agencies and instrumentalities (each an “eligible entity”), such as the Participants. Pursuant to the Bankruptcy Code, political subdivisions, public agencies and instrumentalities must be specifically authorized under state law to file a petition under Chapter 9. States are free to pass, and amend, legislation granting or denying such entities the authority to file a petition under the Bankruptcy Code. Under the Bankruptcy Code and in certain circumstances described therein, an eligible entity may be authorized to initiate Chapter 9 proceedings without prior notice to or consent of its creditors, which proceedings may result in a material and adverse modification or alteration of the rights of its secured and unsecured creditors, including holders of its bonds and notes.

In almost all cases, political subdivisions, public agencies and instrumentalities must have specific statutory authorization under state law to constitute an eligible entity. Moreover, prior to initiating any Chapter 9 proceedings certain otherwise eligible entities must first participate in a state-sponsored rehabilitation process before filing a Chapter 9 petition. See “– *Ohio Participants*” and “– *Michigan Participants*” herein.

*Ohio Participants.* The State Auditor is charged with monitoring the fiscal health of Ohio municipal corporations. On the request of a municipal corporation, or upon the occurrence of certain triggering events, such as casual general fund deficits exceeding a certain threshold, the State Auditor may place any municipal corporation in fiscal watch (“*Fiscal Watch*”). If a municipal corporation is placed on Fiscal Watch, the State Auditor will provide various administrative and technical expertise, at the state’s expense, in an effort to alleviate the conditions which led to the Fiscal Watch.

Again, on the request of a municipal corporation, or upon the occurrence of certain more onerous triggering events, such as large general fund deficits or a default on debt obligations, the State Auditor may place a municipal corporation in fiscal emergency (“*Fiscal Emergency*”). If a Fiscal Emergency is determined to exist, the municipality is subjected to state oversight through a seven-member Financial Planning and Supervision Commission (the “*Commission*”). The Commission is assisted by certified public accountants designated as the Financial Supervisor to be engaged by the Commission. The Auditor of State may also be required to assist the Commission.

The Commission or, when authorized by the Commission, the Financial Supervisor, among other powers, shall require the municipal corporation to establish monthly levels of expenditures and encumbrances consistent with the financial plan and shall monitor such monthly levels and require justification to substantiate any departure from an approved level. Expenditures may not be made contrary to an approved financial plan. Moreover, the Commission must approve the issuance of additional cashflow or long-term borrowing and may require the use of certain credit enhancements, such as the use of a fiscal agent to handle debt service payments, in connection with the issuance of such indebtedness.

A municipality must develop and submit a detailed financial plan for the approval or rejection of the Commission; develop an effective financial accounting and reporting system; prepare budgets, appropriations and expenditures that are consistent with the purposes of the financial plan; and may only



issue debt on a limited basis, the purpose and principal amount of which must be approved by the Commission.

In October 2014, the State Auditor determined that Niles, Ohio, a Participant with a Project Share of 1.41% was in Fiscal Emergency. As of April 1, 2016, Niles remains in Fiscal Emergency. The finding of the State Auditor that led to the determination that such Niles was in Fiscal Emergency did not identify the electric funds as funds running a deficit and, as of April 1, 2016, Niles did not have a deficit in its electric fund. Pursuant to Section 118.02(C) and Section 5705.14(D) of the Ohio Revised Code, electric utility revenues in a municipality's electric fund are not available to be transferred to other funds to remedy deficits therein, absent specific court approval. As of April 1, 2016, Niles is current on all of its obligations payable to AMP.

The Ohio Revised Code permits a political subdivision, such as any of the Ohio Participants, upon approval of the State Tax Commissioner, to file a petition stating that the subdivision is insolvent or unable to meet its debts as they mature, and that it desires to effect a plan for the composition or readjustment of its debts, and to take such further proceedings as are set forth in the Bankruptcy Code as they relate to such subdivision. The taxing authority of such subdivision may, upon like approval of the State Tax Commissioner, refund its outstanding securities, whether matured or unmatured, and exchange bonds for the securities being refunded. In its order approving such refunding, the State Tax Commissioner shall fix the maturities of the bonds to be issued, which shall not exceed thirty years. No taxing subdivision is permitted, in availing itself of the provisions of the Bankruptcy Code, to scale down, cut down or reduce the principal sum of its securities except that interest thereon may be reduced in whole or in part.

*Michigan.* Local governments in Michigan are prohibited from voluntarily becoming debtors under Chapter 9 of the U.S. Bankruptcy Code without first complying with applicable State law requirements. Pursuant to the Local Financial Stability and Choice Act, Act 436, Public Acts of Michigan, 2012, as amended ("*Act 436*"), the State Treasurer is charged with monitoring the fiscal health of Michigan political subdivisions. Under Act 436, upon the occurrence of one or more financial triggers, the State Treasurer may conduct a preliminary review of a local government. If the State Treasurer conducts a preliminary review upon the occurrence of a triggering event, and makes a finding of probable financial stress, and that finding is confirmed by the local emergency financial assistance loan board, the Governor is required to appoint a review team to undertake a local financial management review. Upon receipt of a report from the review team, the Governor is required to determine whether or not a financial emergency exists in the local government. If the Governor determines that a financial emergency exists, the Governor shall provide the governing body and chief administrative officer of the local government with a written notification of the determination. The chief administrative officer or the governing body of the local government has seven days after the date of the notification to request a hearing conducted by the State Treasurer. Following the hearing, or if no hearing is requested, the Governor shall either confirm or revoke the determination of the existence of a financial emergency. A local government for which a financial emergency determination has been confirmed to exist may, by resolution adopted by a vote of 2/3 of the members of its governing body elected and serving, appeal this determination within ten business days to the Michigan court of claims.

If the Governor confirms that a financial emergency exists, the governing body of the local government has seven days to select one of the following: (1) a consent agreement with the State to address the financial emergency, (2) the appointment of an emergency manager with broad powers to address the financial emergency and operations of the local government, (3) a neutral mediation process with creditors and other interested parties, or (4) Chapter 9 bankruptcy, with the Governor's approval. If the governing body of the local government does not make a choice within seven days, the local government will be placed in neutral mediation.

In addition to the option available to a Michigan local government upon a finding of a financial emergency to request the Governor's approval for a Chapter 9 bankruptcy filing, a Chapter 9 bankruptcy filing may also be initiated by an emergency manager appointed to a local government upon a determination that no alternative exists to address the financial emergency, or if the neutral mediation process fails to result in an agreement. The Governor's approval is required for a bankruptcy filing in either scenario.

*Virginia.* The existing law of Virginia does not specifically authorize, as required by the Bankruptcy Code, its municipalities to file for bankruptcy under the Bankruptcy Code. Virginia does not have statutory provisions respecting fiscal emergencies of municipalities or their public utilities similar to those of the provisions of Ohio and Michigan law discussed above.

*Kentucky.* Section 66.400 of the Kentucky Revised Statutes permits municipalities, for the purpose of enabling such municipality to take advantage of the provisions of the Bankruptcy Code, and for that purpose only, to file a petition stating that the municipality is insolvent or unable to meet its debts as they mature, and that it desires to effect a plan for the composition or readjustment of its debts, and to take such further proceedings as are set forth in the Bankruptcy Code as they relate to such municipality.

Section 96.720 of the Kentucky Revised Statutes controls receivership for boards of municipal electric plants. In the event that a municipal electric board issues bonds and then defaults on the payment of those bonds, the holders of not less than twenty-five percent of the outstanding bonds may petition the court of competent jurisdiction to appoint a receiver to administer the electric plant on behalf of the board. Such a receiver has the power to charge and collect rates sufficient to provide for the payment of any obligations.

## **CERTAIN FACTORS AFFECTING AMP, THE PARTICIPANTS AND THE ELECTRIC UTILITY INDUSTRY**

### **GENERAL**

Various factors will affect the operations of AMP and the electric utility systems operated by the Participants, as well as the sellers and transmitters of electric power. They include, for example: (a) retention of existing retail customers by Participants, (b) local, regional and national economic conditions, (c) the market price of electricity and the market price of alternate forms of energy, (d) the price of commodities and equipment used in electric generating facilities, (e) energy conservation measures, (f) the price of coal and natural gas, (g) the availability of alternate energy sources, (h) climatic conditions, (i) government regulation and deregulation of the energy industries, (j) the price and availability of transmission service, (k) technological advances in fuel economy and energy generation devices, and (l) "self-generation" or "distributed generation" (such as photovoltaic arrays, microturbines and fuel cells) by industrial and commercial customers and others.

AMP is unable to predict the impact of the foregoing factors, and other factors, on the Participants and their electric operations. However, the electricity supply and services to be provided by AMP are intended to maintain and improve the competitive position of the Participants by providing them with services and with competitive prices for all or a portion of their required electricity supply.

The following sections under this caption provide brief discussions of some of the factors that affect the operations of AMP and the electric utility systems operated by the Participants. These discussions do not purport to be comprehensive or definitive, however, and the matters discussed are subject to change subsequent to the date hereof.

## FEDERAL ENERGY LEGISLATION

*The Energy Policy Act of 1992.* The Energy Policy Act of 1992 (“EPACT 1992”) made fundamental changes in the federal regulation of the electric utility industry, particularly in the area of transmission access under Sections 211, 212 and 213 of the Federal Power Act. The purpose of these changes, in part, was to bring about increased competition in the electric utility industry. As amended by EPACT 1992, Sections 211, 212 and 213 of the Federal Power Act provide FERC authority, upon application by any electric utility, federal power marketing agency or other person or entity generating electric energy for sale or resale, to require a transmitting utility to provide transmission services (including any enlargement of transmission capacity necessary to provide such services) to the applicant at rates, charges, terms and conditions set by FERC based on standards and provisions in the Federal Power Act. Under EPACT 1992, electric utilities owned by municipalities and other public agencies which own or operate electric power transmission facilities that are used for the sale of electric energy at wholesale are “transmitting utilities” subject to the requirements of Sections 211, 212 and 213.

*The Energy Policy Act of 2005.* The Energy Policy Act of 2005 (“EPACT 2005”) addressed a wide array of energy matters affecting the entire electric utility industry, including AMP and the electric systems of the Participants. It expanded FERC’s jurisdiction to require open access transmission by municipal utilities that sell more than four million megawatt hours of energy annually and to order the payment of refunds under certain circumstances by municipal utilities that sell more than eight million megawatt hours of energy annually. No Participant is able to predict when, if ever, its sales of electricity would reach either four million or eight million megawatt hours, although no Participant now sells more than 1.7 million megawatt hours annually. EPACT 2005 provided for mandatory reliability standards to increase the electric grid’s reliability and minimize blackouts, criminal penalties for manipulative energy trading practices and the repeal of the Public Utility Holding Company Act of 1935, which prohibited certain mergers and consolidations involving electric utilities. EPACT 2005 also authorized FERC to issue a permit authorizing the permit holder to obtain transmission rights of way by eminent domain if FERC determines that a state or locality has unreasonably withheld approval and if the facilities for which the permit is sought will significantly reduce transmission congestion in interstate commerce and protect or benefit consumers;. EPACT 2005 contained provisions designed to increase imports of liquefied natural gas and incentives to support renewable energy technologies. EPACT 2005 also extended for 20 years the Price-Anderson Act, which concerns nuclear power liability protection, and provides incentives for the construction of new nuclear plants.

*Energy Independence and Security Act of 2007:* The Energy Independence and Security Act of 2007 (“EISA 2007”) was designed to boost energy independence and reduce dependence on imported oil. The most prominent features of the legislation were provisions updating the fuel economy standard for automobiles and expanding the renewable fuel standard for ethanol in gasoline. EISA 2007 included several elements impacting the electric utility sector. The legislation updated appliance efficiency standards for a wide array of consumer products. EISA 2007 also set lighting standards, including the discontinuation of incandescent light bulbs. In addition, the legislation began federal involvement in development of the “smart grid,” including standard-setting on interoperability, establishment of federal research and development efforts, and creation of an advisory task force.

*Consolidated Appropriations Act of 2016.* In lieu of passing the 12 separate appropriations bills to fund the various functions of the federal government for its 2016 fiscal year, Congress enacted the Consolidated Appropriations Act of 2016 (the “Consolidated Appropriations Act”). In addition to setting spending levels for federal agencies, the legislation included a number of extensions of expired or expiring tax provisions, including the Production tax credit for wind projects (the “Wind PTC”), which had expired December 31, 2015. The Consolidated Appropriations Act retroactively extended and phased out the Wind PTC. The Wind PTC is now available to projects that commence construction prior to

December 31, 2020, with the credit reduced by 20% for projects commencing construction in 2017; 40% for projects commencing construction in 2018; and 60% for projects commencing construction in 2019. In addition, the Consolidated Appropriations Act extended and phased out the investment tax credit for solar projects (the “*Solar ITC*”), which was set to expire the end of 2016. Under the Consolidated Appropriations Act, the Solar ITC is extended for projects commencing construction prior to January 1, 2022 and gradually phases out the tax credit over five years. For eligible projects that commence construction in 2020, the Solar ITC will be reduced from 30% to 26%; the Solar ITC will be 22% for projects commencing construction in 2021 and the Solar ITC will decrease to 10% for projects commencing construction in 2022 and 2023. In addition, the Consolidated Appropriations Act includes the Cybersecurity Information Sharing Act of 2015, which enables information sharing between federal agencies and business and provides liability protection for information disclosure by businesses complying therewith. The legislation also authorizes municipal utilities to shield sensitive data and information from disclosure under public sunshine laws.

*2015 Energy Policy Act.* On Dec 3, 2015, the House of Representatives approved the North American Energy Security and Infrastructure Act of 2015 (“*NAESIA*”). The House-passed bill includes significant reforms of the regulatory process governing licensing of hydropower projects by FERC. Under the legislation, FERC is named the lead agency for all federal agency regulatory reviews, with the ability to set schedules, coordinate environmental reviews, and take other steps to streamline and reduce the cost of the hydropower licensing process, including the process of amending an existing license. The legislation also directs the various organized wholesale electricity markets (such as PJM) to review and make findings on the adequacy of market structures to promote fuel diversity and investment recovery. This requirement causes concern that mandatory capacity markets will be extended and expanded, raising costs to consumer-owned utilities and potentially their ability to self-supply. NAESIA also includes provisions streamlining permitting for natural gas pipelines. The companion measure to NAESIA in the Senate is entitled the Energy Policy Modernization Act of 2015 (“*EPMA 2015*”). The Senate passed EPMA 2015 on April 20, 2016. The Senate legislation includes similar provisions on hydroelectric licensing reform and natural gas pipeline permitting, but does not include objectionable language on capacity markets. It is uncertain whether energy legislation will be enacted in 2016 and, if so, which of the provisions detailed above it will include.

## **OPEN ACCESS TRANSMISSION AND RTOS**

In 1996, FERC in Order No. 888 required utilities under its jurisdiction to provide access to their transmission systems for interstate wholesale transactions on terms and at rates comparable to those available to the owning utility for its own use. In 2007, FERC issued another rulemaking order that was meant to fine-tune the Open Access Transmission Tariff setting minimum standards for transmission owners.

In 1999, FERC in Order No. 2000 adopted regulations aimed at promoting the formation of regional transmission organizations (“*RTOs*”), which would be established as the sole providers of electric transmission services in large regions of the country, each of which would encompass the service territory of several (or more) electric utilities. These RTOs would operate and control, but would not own, the transmission facilities, pursuant to contracts with the transmission owners.

The investor-owned electric utilities whose respective transmission systems serve the vast majority of AMP’s Members are participants in the PJM RTO, which coordinates the movement of wholesale electricity in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia. FirstEnergy (Cleveland Electric Illuminating, Toledo Edison, Ohio Edison and American Transmission Systems, Inc.) and Duke Energy-Ohio, Inc. initially participated in Midcontinent

Independent System Operator, Inc. (“MISO”) but left that organization and joined PJM in 2011 and 2012 respectively.

Although AMP and the Participants are not for most purposes subject to the jurisdiction of FERC, they have been and will continue to be significantly affected by the establishment of RTOs in Ohio and the region.

## **RTO-OPERATED MARKETS**

In addition to coordinating wholesale transmission operations and services, RTOs operate centralized markets for wholesale electricity products such as capacity, energy and ancillary services. By virtue of having members and generating resources located in MISO and PJM, AMP is subject to the tariff provisions and business practices governing the operation of wholesale electricity markets in each of those RTOs. As a result, AMP’s costs of securing power to meet its Members’ needs are affected by the market and administrative mechanisms approved by FERC for use in setting prices for energy, capacity and ancillary services (as well as transmission service) in MISO and PJM.

The nature and operations of RTOs and RTO markets continue to evolve, and AMP cannot predict whether their existence will meet FERC’s goal of reducing transmission congestion and costs and creating a competitive power market.

## **CLIMATE CHANGE AND REGULATION OF GREENHOUSE GASES**

This section provides a brief summary of certain actions taken or under consideration regarding the regulation and control of greenhouse gases (“GHGs”) that have the potential to impact the Greenup Facility.

Limitations on emissions of GHGs, including CO<sub>2</sub>, create significant exposure for electric fossil-fuel-fired generation facilities. The United States Environmental Protection Agency (“EPA”) has recently issued final rules regulating CO<sub>2</sub> emissions from various classes of electric generating units (“EGUs”). The rules for existing generation, known as the Clean Power Plan (the “CPP”), would not directly regulate GHG emissions by specific EGUs, but instead would impose state-by-state caps on aggregate GHG emissions, allowing respective states to develop their own method to comply with their emissions cap. Despite these regulations facing considerable legal challenges, the current Administration continues to promote limits on GHG emissions as part of its domestic agenda, as well as through continuing international treaty discussions. The limitations outlined in the Clean Power Plan, or alternative GHG regulations, should provide opportunities for hydropower assets. However, until final federal and/or state plans implementing these regulations are in place, the extent and implications of these opportunities cannot be quantified.

EPA issued its final rules for the CPP on October 23, 2015. These rules are aimed at reducing CO<sub>2</sub> emissions from existing power plants under the Clean Air Act (“CAA”) Section 111(d). The CPP would reduce emissions by 32 percent from 2005 levels by 2030. Under the rule, states are required to design and implement compliance plans that could include increases in efficiency and clean energy. In addition to recognizing hydropower as a renewable, the final rule allows for new hydropower projects and incremental uprates to existing facilities to be eligible to create Emission Rate Credits under rate-based compliance scenarios.

Consistent with other types of renewable energy, new hydropower generating capacity installed after 2012 is eligible to states to help meet their goal. For a handful of states, EPA adjusted the Best System of Emission Reduction Calculation for their 2012 baseline carbon emissions level to better reflect

the amount of emissions in an average hydropower year (from 1990-2012), recognizing that increased hydropower generation in 2012 allowed several states to utilize less fossil generation.

States are required to submit compliance plans similar to traditional state implementation plans (“SIP”) to demonstrate they will meet state-specific emission rate targets by June 30, 2016, although the final rule allows states to request a two-year extension if multi-state SIPs are under consideration.

The statutory interpretation and other legal grounds on which EPA has relied in proposing GHG limitations affecting existing, reconstructed and new power plants is controversial, and legal challenges and legislative proposals to EPA’s final GHG rules already have been initiated. EPA’s rules limiting GHG emissions are expected to have very significant implications for the electric utility industry and for electricity consumers, in terms of both direct and indirect cost impacts and on the reliability of electricity supplies, while providing increased opportunities for renewable energy. AMP is unable to predict the outcome of the final rule until states have submitted their SIPs and they have been approved by EPA. Motivated in part by a belief that the Clean Air Act is an ill-suited framework for controlling GHG emissions, there have been Congressional efforts to stop the CPP. For example, in December 2015, the House passed two joint resolutions to halt the implementation of the CPP, which passed 242-180 and 235-188.

In terms of legal challenges, 29 states, along with coal companies and coal-dependent utilities, have sued to block the CPP, arguing that it exceeds EPA’s authority under the CAA. But 18 other states, plus seven municipalities, more than a dozen environmental organizations, and an assortment of utilities and industry groups, have intervened to support EPA. In late January, the U.S. Court of Appeals for the D.C. Circuit (the “*D.C. Circuit*”) denied motions to stay the CPP. However, on February 9, 2016 the Supreme Court of the United States voted 5-4 to intervene and overrule the D.C. Circuit to place a stay on the final Agency action not only for the period of consideration of the rule at the D.C. Circuit level but also through the final judgement by the Supreme Court. Oral arguments are currently scheduled for June 2, 2016, in the U.S. Court of Appeals for the District of Columbia Circuit.

On February 13, 2016, Supreme Court Justice Scalia passed away. Justice Scalia had voted for the stay and was expected to rule in favor of the petitioners; that USEPA had exceed their authority when developing the Clean Power Plan. Most states continue to interact with stakeholders and fellow states, however broad planning efforts have largely been put on hold pending the current legal challenges. a few states have expressed a commitment to developing an implementation plan, some of which are already in a multi-state carbon trading program.

AMP is unable to predict at this time whether mandatory GHG emissions limitations will be imposed, the impact on, or opportunities presented by the Greenup Facility or, more broadly, the impacts of any such limitations on the costs and reliability of wholesale electricity supplies. Impacts specific to the Greenup Facility would be determined by the specific state plans adopted by Ohio and the Participants’ other states, either on their own or in conjunction with other states in the region, to implement any mandated limitations and trading platforms. Although AMP is unable to predict the outcome of these matters, the potential impacts of mandatory GHG emissions limitations on the Greenup Facility, AMP and/or the Participants could be material.

## **IMPACTS OF OTHER ENVIRONMENTAL REGULATIONS**

*Cross-State Air Pollution Rule (“CSAPR”)* EPA finalized its CSAPR rule (formerly known as the Clean Air Transport Rule) on July 7, 2011. CSAPR was intended to replace the 2008 Clean Air Interstate Rule (“*CAIR*”) to control cross-state transport of primarily SO<sub>2</sub> and NO<sub>x</sub> emissions from coal-fired power plants and other industrial sources. Under CSAPR, areas that have historically been subject to nonattainment restrictions would have been most likely to see those continue, but these areas were also expected to expand.

Implementation of the rule was stayed in December 2011, and on August 21, 2012, a three-judge panel of the U.S. Court of Appeals for the District of Columbia Circuit vacated CSAPR, returning the rule to EPA to be rewritten. The court found that EPA exceeded its authority under the CAA in both its determination of upwind states' reduction obligations and its premature imposition of federal implementation plans ("*FIPs*"); the court directed EPA to continue administering the previously vacated CAIR rule until a new rule could be issued. The court's decision called into question the agency's redesignation of certain areas from nonattainment to attainment, based on use of CSAPR's emission-trading program, as well as ongoing agency efforts to tighten the fine PM and ozone National Ambient Air Quality Standards ("*NAAQS*").

On April 29, 2014, the Supreme Court reversed the appeals court decision that overturned CSAPR. While upholding EPA's methodology for allocating emissions among contributing "upwind" states in certain respects, the Supreme Court also remanded the CSAPR rule back to the appeals court "for further proceedings consistent with this opinion," including whether the specific application of CSAPR in certain states would violate the Clean Air Act. On October 23, 2014, the U.S. Court of Appeals for the D.C. Circuit lifted the stay on CSAPR, but the timing on implementation remains in question, pending additional clarification from the court and EPA. In requesting the lifting of the stay, EPA noted that CSAPR phase I implementation should start at the beginning of 2015.

On December 3, 2015, EPA proposed updates to the CSAPR rule to address the impact of emissions on the ability of downwind states to attain NAAQS. The rule is proposing to update the CSAPR NO<sub>x</sub> ozone-season budgets for 23 states that affect downwind states' ability to comply with the 2008 ozone standard. Implementation would start with the 2017 ozone season. As it relates to PSGC, technical errors and deficiencies in the models used for the development of this proposed rule were outlined in comments to EPA and explained in subsequent meetings. As an example, EPA overestimated the number of coal plant retirements in the state of Illinois resulting in substantially different modeling and subsequent proposed allocations. If EPA does not make appropriate and equitable adjustments to the proposed rule, PSGC would need to purchase allowances from the market.

*Ozone NAAQS.* In 2011, the current Administration in September 2011 withdrew its previously proposed rule to tighten the current (from 2008) 0.075 ppm ozone NAAQS. In withdrawing the rule, the President announced that the ozone standard would be reconsidered in 2013 (which was later revised to 2015). Opposed to the Administration's delay, in May 2013, several "downwind" states (Connecticut, Delaware, and Maryland) sued EPA over its approval of state implementation plans for Kentucky and Tennessee to implement the 2008 8-hour ozone standard, which remains in place until a new standard is issued. The U.S. Court of Appeals for the D.C. Circuit upheld the 2008 primary standard on July 23, 2013, while remanding the secondary standard to EPA for more work.

The American Lung Association filed suit on January 21, 2014 in the U.S. District Court for the District of Columbia asking the court to direct the EPA to complete a review of the ozone NAAQS as required by the CAA. EPA announced in February 2014 that it planned to propose a new ozone standard by January 15, 2015, with a final rule by November 15, 2015. On April 29, 2014, a federal district judge announced that these dates would be moved up – with a proposed rule due by December 1, 2014, and a final rule by October 1, 2015. EPA staff and the Clean Air Scientific Advisory Committee recommended a 0.060 – 0.070 ppm ozone standard. Impacts from a lowering of the ozone NAAQS were predicted to impact development in areas newly designated as nonattainment for ozone.

On October 1, 2015 the EPA revised the NAAQS for ground level ozone from 0.075 ppm to 70 ppm. This final revised level was within the range that the Clean Air Scientific Advisory Committee had recommended to EPA. As a result of mild summers in 2013-2015, the projected non-attainment areas for the new 0.070 ppm standard will likely be less severe than initial projections.

## **ELECTRIC SYSTEM RELIABILITY**

In response to the August 14, 2003 blackout that affected much of northeastern United States, Congress enacted a new Section 215 of the Federal Power Act as part of the EPACT 2005. Section 215 provides for mandatory compliance by electric utilities with reliability standards promulgated by an “electric reliability organization” (currently, the North American Electricity Reliability Corporation (“NERC”). Pursuant to FERC authorization, NERC delegates authority for enforcing the mandatory reliability standards to eight regional entities. One of these regional entities, ReliabilityFirst Corporation (“RFC”), is charged with enforcing the mandatory reliability standards in much of the Midwest, including Ohio. NERC has the authority to impose (subject to FERC review) substantial financial penalties on entities that fail to comply with applicable reliability standards.

AMP and some of its Members are subject to NERC registration requirements and compliance obligations with respect to specific reliability standards. AMP is registered with NERC as, and is responsible for compliance with reliability standards applicable to, a Generation Owner, Generation Operator, and Resource Planner. Entities registered with NERC are subject to periodic audit for their compliance with applicable reliability standards. AMP is audited for compliance on a six-year cycle with the most recent audited performed by RFC in 2010 for the period of June 18, 2007 to October 1, 2010. The audit evaluated AMP for compliance with fifty (50) requirements. Ten (10) requirements were determined to be inapplicable; AMP was found to be compliant with thirty-seven (37) applicable requirements; and three (3) Possible Violation(s) were identified. The Possible Violations were resolved through the payment of \$25,000 by AMP and the agreement to implement certain remedial measures. AMP is scheduled to be audited by RFC in the second half of 2016.

## **DEREGULATION LEGISLATION**

Because of the number and diversity of prior and possible future proposed bills on this issue, AMP is not able to predict the final forms and possible effects of all such legislation which ultimately may be introduced in the current or future sessions of Congress. AMP is also not able to predict whether any such legislation, after introduction, will be enacted into law, with or without amendment. Further, AMP is unable to predict the extent to which any such electric utility restructuring legislation may have a material, adverse effect on the financial operations of the Participants.

## **KENTUCKY LEGISLATION**

*General.* Kentucky has a historical patchwork of statutory schemes that generally permit municipalities to furnish utility services. Today, in most cases, those statutory schemes are historical relics and have been superseded by Sections 96.550 to 96.900 of the Kentucky Revised Statutes (the “TVA Act”). Enacted in 1942, the TVA Act is intended to be the “complete law” of Kentucky with respect to municipalities acquiring electric plants after June 1, 1942, and with respect to the operation of electric plants acquired by any municipality after June 1, 1942. All laws that conflict with the TVA Act have been expressly repealed.

The TVA Act vests all Kentucky municipalities, regardless of class, with the power and authority to establish, acquire, own and operate “electric plants.” The TVA Act broadly defines “electric plant” as “any plant, works, systems, facilities, and properties (including poles, wires, stations, transformers, and any and all equipment and machinery), together with all parts thereof and appurtenances thereto, used or useful in the generation, production, transmission, or distribution of energy.”



Kentucky municipalities that operate an electric plant under the TVA Act are managed by a board consisting of four (4) residents of the municipality appointed by the mayor or chief executive. The board has the power and capacity to perform any act not repugnant to law and has the express power and capacity to do any act or thing necessary or convenient for carrying out its statutory purpose.

A municipality providing electric service is generally (with limited exceptions) not subject to direct competition and has the right to determine how electricity will be sold within its borders. A municipality operating an electric plant under the TVA Act is forbidden from entering into competition with rural electric cooperative corporations or electric plants operated by another municipality, but may enter into cooperative agreements and/or seek franchises to provide electric service in other municipalities under certain circumstances.

The Kentucky Public Service Commission (the “*Kentucky Commission*”) regulates the intrastate rates and services of investor-owned electric utilities and customer-owned electric cooperatives. The Kentucky Commission has regulatory responsibility for rate increases or reductions, expansion or reduction of utility service boundaries, construction and operation of utility facilities and compliance with service and safety regulations, amongst other things. Generally, retail electric suppliers have the exclusive right to furnish retail electric service to all electric-consuming facilities located within its certified territory and are forbidden from furnishing its retail electric service to a consumer located within the certified territory of another retail electric supplier. Municipally owned or operated electric utilities are generally not subject to the authority or regulation of the Kentucky Commission except in limited circumstances.

#### *Recent Legislation.*

*Renewable Portfolio Standards (“RPS”)* RPS regulations require or incentivize renewable energy products in order to increase a state’s overall share of energy created by renewable sources. In 2009, Kentucky legislators introduced a bill, HB 3, which would have enacted RPS, but it did not become law. Since 2009, the Kentucky legislature has held informational hearings on RPS in 2012, 2013, 2014, and 2015.

*Section 111(d) of the Clean Air Act-* In 2015, the EPA finalized § 111(d) of the Clean Air Act, otherwise known as the Clean Power Plan, which requires each state to curb carbon dioxide emissions. In 2014, Kentucky filed comments with EPA criticizing, among other things, the plan’s effect on Kentucky’s energy and energy-related industries. In January 2016, Kentucky announced that it would seek an extension to comply with the Clean Power Plan.

In February 2016, HB 339 was introduced. HB 339 would require retail electric suppliers to use increasing amounts of renewable energy as well as other energy-efficiency measures and programs. HB 339 was never given a hearing by a committee during the last legislative session, which adjourned April 15, 2016, and did not become law. If and when Kentucky enacts energy legislation in the future, the particular effect on electric utilities, including municipally owned electric utilities, is not clear.

#### **MICHIGAN LEGISLATION**

*General.* In 2000, the Michigan legislature enacted a package of bills intended to provide the framework for re-structuring and partially de-regulating a portion of the electricity market in Michigan. This legislation introduced customer choice programs and froze rates for investor owned utilities for a period of time. Except as described below, however, this legislation did not directly impact municipal-owned utilities.

Under Michigan law, Michigan municipalities are authorized to establish electric systems to provide service within the boundaries of the municipality and in a limited amount of territory outside those boundaries. Michigan municipal utility electric rates are not subject to approval by the Michigan Public Service Commission or any other entity, except for the governing bodies of the utility and the municipality.

With respect to service within the borders of a municipality providing electric service, the municipality is generally (with limited exceptions) not subject to direct competition, since under the Michigan constitution, utilities may not operate within any city, village or township without the consent of and receiving a franchise from, that municipality.

Utilities may compete with a municipality for new (not presently being served) customers located outside of the borders of a municipality if the utility has or can acquire a necessary franchise and any required certificate of convenience and necessity from the Michigan Public Service Commission. With respect to services provided by alternative electric suppliers, no person shall provide delivery service or customer account service to a customer of a municipal electric utility without the written consent of the municipal utility, so long as the municipal utility allows all customers living outside its boundaries the option of choosing an alternative electric supplier.

*Other Legislation.* In March 2008, Michigan enacted into law amendments to the act under which joint power agencies in Michigan are organized. These amendments provided for, among other things, the power of municipalities which are members of a joint agency, and the joint agencies themselves, to enter into power acquisition contracts with “take or pay” and “step up” provisions, as are provided in the Power Sales Contracts.

Effective October 6, 2008, Michigan enacted Renewable Energy Portfolio Standards and Energy Optimization requirements, which apply to, among other entities, municipally-owned utilities. Pursuant to the statute and Michigan Public Service Commission orders, municipally-owned utilities file Energy Optimization plans and Renewable Energy Plans every two years. Regarding Renewable Energy Portfolio requirements, the 2008 legislation requires, subject to certain conditions, limitations and rate caps, municipally-owned electric utilities to serve by 2015 10% of their energy requirements with qualified renewable energy resources. Regarding Energy Optimization, the new statute requires utilities to either: (a) file and implement a plan which produces incremental energy savings each year up to a maximum requirement of 1% of retail sales in a prior year; or alternatively (b) pay up to 2.0% of revenues for the 2 years preceding to a independent energy optimization program administer selected by the Michigan Public Service Commission.

In 2009, Michigan enacted legislation which applied certain limitations on shut-off remedies to municipally owned utilities, with civil penalties for failure to comply. These limitations are similar to those imposed on investor owned utilities.

In 2013, Michigan created a new low-income energy assistance fund. The Michigan Public Service Commission has jurisdiction to annually approve a low-income energy assistance funding factor, and funds collected from customers are remitted to the state treasurer. A municipally owned electric utility may elect, but is not required, to collect a low-income energy assistance funding factor. A municipally owned electric utility that opts out is prohibited from shutting off service to any residential customer from November 1 to April 15 for nonpayment of a delinquent account. A municipally owned electric utility that does not opt out must annually provide to the Michigan Public Service Commission by July 1 the number of retail billing meters it serves that are subject to the funding factor.

Pursuant to Act 408, Public Acts of Michigan, 2014, a city, village, or township, all or some of whose residents are served by a municipal electric utility, may adopt a residential clean energy program to promote the use of renewable energy systems and energy efficiency improvements by owners of certain real property in certain districts. The legislation provides for the financing of those programs through commercial lending, loans by a nonprofit corporation, utility bill charges, and other means, and it authorizes municipalities to issue bonds, notes, and other evidences of indebtedness and to pay the cost of renewable energy systems and energy efficiency improvements.

Effective October 1, 2015, Michigan increased the annual air quality fees imposed on municipal electric generating facilities and delayed the sunset of these fees until October 1, 2019 (Act 60, Public Acts of Michigan, 2015).

## **OHIO LEGISLATION**

*General.* Article XVIII, Section 4, of the Ohio Constitution provides in part that “any municipality may acquire, construct, own, lease and operate within or without its corporate limits any public utility the product or service of which is or is to be supplied to the municipality or its inhabitants, and may contract with others for any such product or service”.

Ohio’s current energy policy is based largely on several landmark restructuring bills signed into law in recent years. In these cases, the bills primarily impact the state’s for-profit, investor-owned electric utilities (IOUs), which serve approximately 88% of customers and are subject to oversight from the Public Utilities Commission of Ohio. Non-profit municipal electric and rural cooperative electric utilities, which serve the remaining approximately 12% of customers in the state, are governed and regulated at the local level, were not directly impacted by the changes in the Ohio Revised Code, and maintain local decision making authority.

Senate Bill 3, enacted in 1999, opened Ohio’s retail electric utility industry to competition, allowing customers of the state’s IOUs to shop for competitive electric supply. This “customer choice” was effective in January 2001. However, customer choice for municipal electric systems is not mandated under the bill. Unless federal regulations are adopted requiring municipalities to implement customer choice, the decision of whether an Ohio municipality remains the only authorized supplier of electricity within its corporate limits remains a decision of the local legislature.

In 2008, the Governor signed into law Senate Bill 221, comprehensive legislation to update the laws governing the electric industry and implement an alternative energy portfolio standard and energy efficiency standard. The major provisions of the legislation apply directly to the state’s four IOUs. Ohio’s municipal electric systems and rural electric cooperatives maintain local decision-making authority. Staff and counsel to the OMEA (legislative liaison to 80 Ohio municipal electric systems and to AMP) were successful in including favorable language regarding customer switches and treatment of hydroelectric facilities in the legislation.

In 2014, lawmakers adopted Senate Bill 310, legislation to modify the alternative energy portfolio standard. Among other things, the legislation imposes a two-year freeze (at 2014 levels) on annual renewable and energy efficiency increases applicable to Ohio’s investor-owned utilities, creates the Energy Mandates Study Committee to review possible future changes to the law, and eliminates the in-state requirement that half of renewables need to come from resources located in Ohio. Staff and counsel to the OMEA were successful in securing favorable language for the Greenup hydroelectric generating facility – it was included by definition as a renewable energy resource and is now eligible to generate Renewable Energy Certificates. The legislation otherwise had no direct impact on Ohio municipal electric

systems. Ohio municipal electric systems and rural electric cooperatives maintain local decision making authority.

In 2015, the Energy Mandates Study Committee issued their final report. The report makes several recommendations, none of which have a direct impact on AMP or municipal electric members. The recommendations from the report have yet to be introduced as legislation in the Ohio legislature.

## **VIRGINIA LEGISLATION**

*General.* Virginia municipal corporations are authorized by statute, and in some instances by charter, to acquire, establish, and operate public utilities for the generation and distribution of electricity. The operation of such public utilities by cities and towns (with a minor exception relating to service areas) and the rates charged to customers are not generally regulated by Virginia's State Corporation Commission ("SCC").

In 1999, the Virginia General Assembly adopted the Virginia Electric Utility Restructuring Act (the "*Restructuring Act*"), which was comprehensive legislation that provided for the deregulation of the generation component of electric service while retaining transmission and distribution as regulated services. *The Restructuring Act specifically exempted municipal power systems from retail competition and other Restructuring Act provisions unless a municipality (a) elected to become subject to such provisions or (b) competed for certain electric customers outside the geographic area served by its system as of 1999, subject to certain exceptions (Va. Code §56-580 F).*

In 2007 and 2008, the Virginia General Assembly adopted legislation that amended the Restructuring Act and renamed it the Virginia Electric Utility Regulation Act (the "*Re-Regulation Act*"). To a large degree, the Re-Regulation Act ended Virginia's experiment with deregulation. It restored full cost-of-service regulation by the SCC and provided incentives for utilities to build new generation to meet growing demand and to add environmental equipment at their power stations. It also provided incentives for utilities to invest in renewable forms of energy and demand-side management and conservation programs. *The Re-Regulation Act maintained the Restructuring Act's exemption for municipal power systems.*

*Customer Choice.* Retail choice of generation providers generally was eliminated under the Re-Regulation Act for all retail customers except those with an individual demand of more than 5 megawatts and non-residential customers who obtain SCC approval to aggregate their load to reach the 5 megawatt threshold, subject to a cap of 1% of the peak load of the customers' electric utility (Va. Code §§ 56-577A3 and 56-577A4). In addition, individual retail customers are permitted to purchase renewable energy from competitive suppliers if the incumbent electric utility does not offer a tariff approved by the SCC for the sale of electric energy provided entirely from renewable energy (Va. Code § 56-577A5). *These provisions have no direct impact on Virginia municipal power systems.*

*Renewable Energy.* The Re-Regulation Act in Virginia also established a voluntary RPS program with the goal of meeting 12% of base year electric energy sales from renewable sources by 2022 and 15% from renewable sources by 2025. "Renewable energy" generally means energy derived from sunlight, wind, falling water, biomass, waste, landfill gas, municipal solid waste, wave motion, tides, and geothermal power, and does not include energy derived from coal, oil, natural gas, or nuclear power. The Re-Regulation Act provided for an enhanced rate of return for utility investments in certain generating facilities using renewable energy (Va. Code §§ 56-585.1 and 56-585.2). *These provisions have no direct impact on Virginia municipal power systems.*

*Energy Conservation.* The Re-Regulation Act provided that Virginia shall have a stated goal of reducing the consumption of electric energy by retail customers through the implementation of demand side management, conservation, energy efficiency, and load management programs, including consumer education, by the year 2022, by an amount equal to ten percent of the amount of electric energy consumed by retail customers in 2006. *These provisions have no direct impact on Virginia municipal power systems.*

*Authority for Purchase of Electric Power.* In 2007, the Virginia General Assembly also adopted a bill that expanded the authority for municipalities to enter into long-term contracts for the purchase of electric power. Specifically, the legislation authorized cities and towns to enter into power purchase contracts with any other entity, including among others any investor-owned utility or not-for-profit corporation organized under the laws of Virginia or another state. The contract could include a “take-or-pay” requirement by which the municipality is obligated to make payments whether or not a project is completed, operable, or operating, and by which such payments shall not be subject to reduction or conditioned upon the performance or nonperformance by any party (Va. Code § 15.2-1133). A municipality is also required to set rates and charges sufficient to provide revenues adequate to meet its obligations under any such contract.

*2016 Legislation.* The following are summaries of certain energy-related bills that were adopted at the 2016 session of the Virginia General Assembly and signed by the Governor. *These proposals will have no direct impact on Virginia municipal power systems.*

*House Bill 283/Senate Bill 136.* These bills require the SCC to hold at least one hearing in the area that would be affected by construction of an electrical transmission line of 138 kV or more, upon the request of the governing body of any county or municipality through which the line is proposed to be built. The governing body may also request such a hearing in the event the SCC determines that consideration of a significantly different route is desirable.

*House Bill 444/ Senate Bill 745.* These bills require the SCC to post information on its website regarding suppliers offering to sell electric power to retail customers that is supplied from renewable energy if the suppliers request that they be identified on the SCC's website as making such offers.

*House Bill 1053/Senate Bill 395.* These bills direct the SCC to evaluate the establishment of uniform protocols for measuring, verifying, validating, and reporting the impacts of energy efficiency measures implemented by investor-owned electric utilities and the establishment of a methodology for estimating annual kilowatt savings and a formula to calculate the levelized cost of saved energy for such energy efficiency measures. The SCC shall submit a report of its findings and recommendations to the Governor and the General Assembly by December 1, 2016.

*House Bill 1220.* This bill amends a 2015 provision authorizing an investor-owned electric utility to recover the costs of purchasing certain solar generation facilities through a rate adjustment clause. It clarifies that such provision did not alter existing authority for such a utility to recover the costs of constructing certain other types of generation facilities.

*House Bill 1305.* This bill provides a sales and use tax exemption through June 30, 2027 for machinery, tools, and equipment of a public service corporation used to generate energy derived from sunlight or wind. The bill also alters the types of solar photovoltaic systems that qualify for local real and personal property tax exemptions.

*Senate Bill 743.* This bill makes the Virginia Department of Mines, Minerals and Energy the certifying authority for solar energy projects.

*Senate Bill 748.* This bill authorizes an electric public utility to establish a program to acquire rights-of-way for the extension of its facilities to a qualified economic development site. If such an economic development program is approved by the SCC, the utility may acquire rights-of-way for that purpose and may recover its transmission-related costs through a rate adjustment clause in accordance with existing law governing electric utility ratemaking and cost recovery. This bill shall not become effective unless it is reenacted at the 2017 Session of the General Assembly.

## **TAX LEGISLATION**

Bills have been and in the future may be introduced that could impact the issuance of tax-exempt bonds for transmission and generation facilities. AMP is unable to predict whether any of these bills or any similar federal bills proposed in the future will become law or, if they become law, what their final form or effect would be. Such effect, however, could be material to the Participants.

## **FEDERAL SUBSIDIES**

Pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985, as amended, certain federal expenditures are subject to automatic reductions, including the interest subsidies payable on bonds issued as “Build America Bonds” under the Recovery Act. The exact amount of such reduction is determined on or about the beginning of the federal government’s fiscal year, or October 1, and is subject to adjustment thereafter. It is impossible to predict the precise amount of the reduction in any given year, but if the automatic reductions become substantially larger than the current 6.8%, the effect could be material to the Participants that are participants in other AMP projects. To date, AMP has timely paid debt service on all of its bonds issued as Build America Bonds, notwithstanding the automatic reductions.

## **LITIGATION**

AMP reports that there is no litigation pending or, to the knowledge of AMP, threatened against or affecting AMP, in any way questioning or in any manner affecting the validity or enforceability of the Series 2016A Bonds, the Power Sales Contract or the Indenture.

AMP is a party from time to time to litigation typical for electric utilities of its size and type. In the opinion of AMP’s General Counsel, no such litigation is pending or, to his knowledge threatened, against AMP is material to the AMP Interest or the Greenup Facility. Further, General Counsel is of the opinion that, except as described in this Official Statement, no such litigation is pending or, to its knowledge threatened, that would be material to the financial condition of AMP taken as a whole.

## **CONTINUING DISCLOSURE UNDERTAKING**

Pursuant to a Continuing Disclosure Agreement to be entered into by AMP simultaneously with the delivery of the Series 2016A Bonds (the “*Continuing Disclosure Agreement*”), AMP will covenant for the benefit of the Bondowners and the “Beneficial Owners” (as defined in the Continuing Disclosure Agreement) of the Series 2016A Bonds to provide, on an annual basis, by November 30 of each year, commencing with the report for AMP fiscal year ending December 31, 2016, certain financial information and operating data relating to the Large Participants (the “*Annual Disclosure Report*”), and to provide notices of the occurrence of certain enumerated events with respect to the Series 2016A Bonds. Pursuant to Securities and Exchange Commission Rule 15c2-12 (as the same may be amended from time to time, “*Rule 15c2-12*”), the Annual Disclosure Report will be filed by or on behalf of AMP with the Municipal Securities Rulemaking Board (“MSRB”), through its Electronic Municipal Market Access (“EMMA”) system, in the electronic format prescribed by the MSRB. The notices of such material events will be filed by or on behalf of AMP with the MSRB. The specific nature of the information to be contained in

the Annual Disclosure Report or the notices of material events is set forth in the form of the Continuing Disclosure Agreement attached hereto as Appendix H. These covenants have been made in order to assist the Underwriters in complying with Securities and Exchange Commission Rule 15c2-12(b)(5). In connection with two redemptions undertaken in 2014, AMP delivered a timely notice of redemption to the related trustee but failed to file a copy of such notice on EMMA on a timely basis. Other than as set forth in the immediately preceding sentence, in the five years preceding the date of this Official Statement, AMP has materially complied with its other continuing disclosure undertakings under Rule 15c2-12.

As will be provided in the Continuing Disclosure Agreement, if AMP fails to comply with any provision of the Continuing Disclosure Agreement, any Bondowner or “Beneficial Owner” of the Series 2016A Bonds may take such actions as may be necessary and appropriate, including seeking mandamus or specific performance by court order, to cause AMP to comply with its obligations under the Continuing Disclosure Agreement. “Beneficial Owner” will be defined in the Continuing Disclosure Agreement to mean any person holding a beneficial ownership interest in Series 2016A Bonds through nominees or depositories (including any person holding such interest through the book-entry only system of DTC). IF ANY PERSON SEEKS TO CAUSE AMP TO COMPLY WITH ITS OBLIGATIONS UNDER THE CONTINUING DISCLOSURE AGREEMENT, IT IS THE RESPONSIBILITY OF SUCH PERSON TO DEMONSTRATE THAT IT IS A “BENEFICIAL OWNER” WITHIN THE MEANING OF THE CONTINUING DISCLOSURE AGREEMENT.

#### UNDERWRITING

The Series 2016A Bonds are being purchased by Merrill Lynch, Pierce, Fenner & Smith Incorporated, The Huntington Investment Company, J.P. Morgan Securities LLC, KeyBanc Capital Markets Inc., Morgan Stanley & Co. LLC, RBC Capital Markets, LLC, U.S. Bancorp Investments, Inc. and Wells Fargo Bank, National Association, (the “*Underwriters*”) pursuant to a Purchase Contract (the “*Purchase Contract*”) between AMP and Merrill Lynch, Pierce, Fenner & Smith Incorporated, as representative of the Underwriters. The Purchase Contract sets forth the Underwriters’ obligation to purchase the Series 2016A Bonds at a purchase price reflecting an aggregate underwriters’ discount of \$837,540.59 from the initial public offering prices derived from the yields on the inside cover of this Official Statement, subject to certain terms and conditions, including the approval of certain matters by counsel. The Purchase Contract provides that the Underwriters will purchase all of the Series 2016A Bonds if any are purchased.

US Bancorp is the marketing name of U.S. Bancorp and its subsidiaries, including U.S. Bancorp Investments, Inc., which is one of the Underwriters of the Series 2016A Bonds.

J.P. Morgan Securities LLC (“*JPMS*”), one of the Underwriters of the Series 2016A Bonds, has entered into negotiated dealer agreements (each, a “*Dealer Agreement*”) with each of Charles Schwab & Co., Inc. (“*CS&Co.*”) and LPL Financial LLC (“*LPL*”) for the retail distribution of certain securities offerings at the original issue prices. Pursuant to each Dealer Agreement, each of CS&Co. and LPL may purchase Series 2016A Bonds from JPMS at the original issue price less a negotiated portion of the selling concession applicable to any Series 2016A Bonds that such firm sells.

Morgan Stanley, parent company of Morgan Stanley & Co. LLC, an Underwriter of the Series 2016A Bonds, has entered into a retail distribution arrangement with its affiliate Morgan Stanley Smith Barney LLC. As part of the distribution arrangement, Morgan Stanley & Co. LLC may distribute municipal securities to retail investors through the financial advisor network of Morgan Stanley Smith Barney LLC. As part of this arrangement, Morgan Stanley & Co. LLC may compensate Morgan Stanley Smith Barney LLC for its selling efforts with respect to the Series 2016A Bonds.

Wells Fargo Securities is the trade name for certain securities-related capital markets and investment banking services of Wells Fargo & Company and its subsidiaries, including Wells Fargo Bank, National Association, acting through its Municipal Products Group. Wells Fargo Bank, National Association, acting through its Municipal Products Group (“WFBNA MPG”), one of the Underwriters of the Series 2016A Bonds, has entered into an agreement (the “*Distribution Agreement*”) with its affiliate, Wells Fargo Advisors, LLC (“WFA”), for the distribution of certain municipal securities offerings, including the Series 2016A Bonds. Pursuant to the Distribution Agreement, WFBNA MPG will share a portion of its underwriting or remarketing agent compensation, as applicable, with respect to the Series 2016A Bonds with WFA. WFBNA MPG also utilizes the distribution capabilities of its affiliate Wells Fargo Securities, LLC (“WFSLLC”), for the distribution of municipal securities offerings, including the Series 2016A Bonds. In connection with utilizing the distribution capabilities of WFSLLC, WFBNA MPG pays a portion of WFSLLC’s expenses based on its municipal securities transactions. WFBNA MPG, WFSLLC, and WFA are each wholly-owned subsidiaries of Wells Fargo & Company.

The Underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include sales and trading, commercial and investment banking, advisory, investment management, investment research, principal investment, hedging, market making, brokerage and other financial and non-financial activities and services.

JPMorgan Chase Bank, N.A., Bank of America, N.A., Wells Fargo Bank, National Association, KeyBank National Association, U.S. Bank National Association and The Huntington National Bank are each members of the syndicate of commercial banks that are parties to the Line of Credit. A portion of the proceeds of the Series 2016A Bonds will be used to pay a portion of the obligations outstanding under the Line of Credit. As a result, certain of the Underwriters or their affiliates will receive a portion of the proceeds of the Series 2016A Bonds. See “PLAN OF FINANCE –Estimated Sources and Uses of Proceeds of the Series 2016A Bonds” herein.

Under certain circumstances, the Underwriters and their affiliates may have certain creditor and/or other rights against AMP in connection with such activities.

In the course of their various business activities, the Underwriters and their respective affiliates, officers, directors and employees may purchase, sell or hold a broad array of investments and actively trade securities, derivatives, loans, commodities, currencies, credit default swaps and other financial instruments for their own account and for the accounts of their customers, and such investment and trading activities may involve or relate to assets, securities and/or instruments of AMP (directly, as collateral securing other obligations or otherwise) and/or persons and entities with relationships with AMP.

The Underwriters and their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such assets, securities or instruments and may at any time hold, or recommend to clients that they should acquire, long and/or short positions in such assets, securities and instruments.

## **RATINGS**

The Series 2016A Bonds have been rated “A-” by Fitch Inc., “A1” by Moody’s Investors Service, Inc. and “A” by Standard & Poor’s, a division of The McGraw Hill Companies, Inc.

Certain information and materials not included in this Official Statement were furnished to the rating agencies. A securities rating is not a recommendation to buy, sell or hold securities. There is no assurance that a rating, once obtained, will continue for any given period of time or that it will not be



revised downward or withdrawn entirely if, in the opinion of the rating agency, circumstances so warrant. Any such downward revision or withdrawal could have an adverse effect on the marketability or market price of the Series 2016A Bonds. AMP has not undertaken any responsibility after issuance of the Series 2016A Bonds to assure the maintenance of the ratings applicable thereto or to oppose any revision or withdrawal of such ratings.

## **TAX MATTERS**

### **GENERAL**

The Code includes requirements regarding the use, expenditure and investment of bond proceeds and the timely payment of certain investment earnings to the Treasury of the United States, which must continue to be satisfied by AMP and the Participants after the issuance of the Series 2016A Bonds in order that interest on the Series 2016A Bonds not be included in gross income for federal income tax purposes. The failure to meet these requirements by AMP or the Participants may cause interest on the Series 2016A Bonds to be included in gross income for federal income tax purposes retroactive to their date of issuance. AMP has covenanted to comply, and each Participant has covenanted to comply, with the requirements of the Code in order to maintain the exclusion from gross income of interest on the Series 2016A Bonds for federal income tax purposes.

In the opinion of Sidley Austin LLP, Federal Tax Counsel (“*Federal Tax Counsel*”), subject to continuing compliance by AMP and the Participants with the tax covenant referred to above, based on existing law, interest on the Series 2016A Bonds will not be includable in gross income for federal income tax purposes. Interest on the Series 2016A Bonds will not be an item of tax preference for purposes of the federal individual or corporate alternative minimum tax. Interest on the Series 2016A Bonds owned by a corporation will be included in the computation of the alternative minimum tax on corporations imposed by the Code. The Code contains other provisions that could result in tax consequences, upon which Federal Tax Counsel renders no opinion, as a result of ownership of such Series 2016A Bonds or the inclusion in certain computations (including, without limitation, those related to the corporate alternative minimum tax) of interest that is excluded from gross income. No opinion is expressed as to the effect of any change to any document pertaining to the Series 2016A Bonds or of any action taken or not taken where such change is made or action is taken or not taken without the approval of Federal Tax Counsel or in reliance upon the advice of counsel other than Federal Tax Counsel with respect to the exclusion from gross income of the interest on the Series 2016A Bonds for federal income tax purposes.

### **DISCOUNT BONDS**

The excess, if any, of the amount payable at maturity of any maturity of the Series 2016A Bonds over the issue price thereof constitutes original issue discount. The amount of original issue discount that has accrued and is properly allocable to an owner of any maturity of the Series 2016A Bonds with original issue discount (a “*Discount Bond*”) will be excluded from gross income for federal income tax purposes to the same extent as interest on the Series 2016A Bonds. In general, the issue price of a maturity of the Series 2016A Bonds is the first price at which a substantial amount of Series 2016A Bonds of that maturity was sold (excluding sales to bond houses, brokers or similar persons or organizations acting in the capacity of underwriters, placement agents, or wholesalers) and the amount of original issue discount accrues in accordance with a constant yield method based on the compounding of interest. A purchaser’s adjusted basis in a Discount Bond will be increased by the amount of such accruing discount for purposes of determining taxable gain or loss on the sale, redemption or other disposition of such Discount Bond for federal income tax purposes.

Original issue discount that accrues in each year to an owner of a Discount Bond is included in the calculation of the distribution requirements of certain regulated investment companies and may result in some of the collateral federal income tax consequences discussed herein. Consequently, an owner of a Discount Bond should be aware that the accrual of original issue discount in each year may result in an alternative minimum tax liability, additional distribution requirements or other collateral federal income tax consequences although the owner of such Discount Bond has not received cash attributable to such original issue discount in such year.

The accrual of original issue discount and its effect on the redemption, sale or other disposition of any maturity of a Discount Bond that is not purchased in the initial offering at the first price at which a substantial amount of Discount Bond of that maturity is sold to the public may be determined according to rules that differ from those described above. An owner of a Discount Bond should consult his tax advisor with respect to the determination for federal income tax purposes of the amount of original issue discount with respect to such Discount Bond and with respect to state and local tax consequences of owning and disposing of such Discount Bond.

## **PREMIUM BONDS**

The excess of the tax basis of a Series 2016A Bond to a purchaser (other than a purchaser who holds such Bond as inventory, stock in trade, or for sale to customers in the ordinary course of business) who purchases such Bond as part of the initial offering and at the initial offering price as set forth on the inside cover page hereof over the amount payable at maturity of such Bond is “Bond Premium.” Bond Premium is amortized over the term of such Bond for federal income tax purposes (or, in the case of a bond with bond premium callable prior to its stated maturity, the amortization period and yield may be required to be determined on the basis of an earlier call date that results in the lowest yield on such bond). No deduction is allowed for such amortization of Bond Premium; however, United States Treasury regulations provide that Bond Premium is treated as an offset to qualified stated interest received on the Bond. An owner of such Bond is required to decrease his adjusted basis in such Bond by the amount of amortizable Bond Premium attributable to each taxable year such Bond is held. An owner of such Bond should consult his tax advisor with respect to the precise determination for federal income tax purposes of the treatment of Bond Premium upon sale, redemption or other disposition of such Bond.

## **OTHER**

Ownership of tax-exempt obligations such as the Series 2016A Bonds may result in collateral federal income tax consequences to certain taxpayers, including, without limitation, financial institutions, property and casualty insurance companies, certain foreign corporations, certain S Corporations with excess passive income, individual recipients of Social Security or Railroad Retirement benefits, taxpayers who may be deemed to have incurred or continued indebtedness to purchase or carry tax-exempt obligations and taxpayers who may be eligible for the earned income tax credit.

Prospective purchasers of the Series 2016A Bonds should consult their tax advisors as to the applicability and impact of any collateral consequences.

## **INFORMATION REPORTING AND BACKUP WITHHOLDING**

Interest paid on tax-exempt obligations is subject to information reporting in a manner similar to interest paid on taxable obligations. While this reporting requirement does not, by itself, affect the excludability of interest from gross income for federal income tax purposes, the reporting requirement causes the payment of interest on the Series 2016A Bonds to be subject to backup withholding if such interest is paid to beneficial owners that (a) are not “exempt recipients,” and (b) either fail to provide

certain identifying information (such as the beneficial owner's taxpayer identification number) in the required manner or have been identified by the IRS as having failed to report all interest and dividends required to be shown on their income tax returns. Generally, individuals are not exempt recipients, whereas corporations and certain other entities are exempt recipients. Amounts withheld under the backup withholding rules from a payment to a beneficial owner are allowed as a refund or credit against such beneficial owner's federal income tax liability so long as the required information is furnished to the IRS.

## **FUTURE DEVELOPMENTS**

Future or pending legislative proposals, if enacted, regulations, rulings or court decisions may cause interest on the Series 2016A Bonds to be subject, directly or indirectly, to federal income taxation or to State of Ohio or local income taxation, or may otherwise prevent beneficial owners from realizing the full current benefit of the tax status of such interest. Legislation or regulatory actions and future or pending proposals may also affect the economic value of the federal or State of Ohio tax exemption or the market value of the Series 2016A Bonds. Prospective purchasers of the Series 2016A Bonds should consult their tax advisors regarding any future, pending or proposed federal or State of Ohio tax legislation, regulations, rulings or litigation as to which Federal Tax Counsel and Bond Counsel express no opinion.

For example, various proposals have been made in Congress and by the President that would subject interest on bonds that is otherwise excludable from gross income for federal income tax purposes, including interest on the Series 2016A Bonds, to federal income tax payable by certain bondholders with adjusted gross income in excess of specified thresholds. Prospective purchasers should consult their tax advisors as to the effect of such proposals on their individual situations.

## **OHIO TAX CONSIDERATIONS**

In the opinion of Peck, Shaffer & Williams, a division of Dinsmore & Shohl LLP, Bond Counsel, interest on all the Series 2016A Bonds will be exempt from taxes levied by the State of Ohio and its subdivisions, including the Ohio personal income tax, and will also be excludable from the net income base used in calculating the Ohio corporate franchise tax.

## **ADVISORS**

AMP has retained Ramirez & Co., Inc. as financial advisor (the "*Financial Advisor*") and Kensington Capital Advisors, LLC as Financial Products Advisor (the "*Financial Products Advisor*") in connection with the issuance of the Series 2016A Bonds. Neither the Financial Advisor nor the Financial Products Advisor is obligated to undertake, and neither has undertaken to make, an independent verification or to assume responsibility for the accuracy, completeness, or fairness of the information contained in this Official Statement.

## **APPROVAL OF LEGAL MATTERS**

### **GENERAL**

Certain legal matters incident to the authorization, issuance and delivery of the Series 2016A Bonds by AMP are subject to the approving opinion of Peck, Shaffer & Williams, a division of Dinsmore & Shohl LLP, Bond Counsel. The approving opinion of Bond Counsel, in substantially the form set forth as APPENDIX E-1 to this Official Statement, will be delivered with the Series 2016A Bonds.

Certain federal tax matters regarding the Series 2016A Bonds will be passed upon for AMP by Sidley Austin LLP, Federal Tax Counsel. The form of its opinion regarding the Series 2016A Bonds is set forth as APPENDIX E-2 to this Official Statement.

Certain legal matters will be passed upon for AMP by its General Counsel and its counsel, Taft Stettinius & Hollister LLP. Certain legal matters will be passed upon for the Underwriters by Nixon Peabody LLP.

## **POWER SALES CONTRACT**

Counsel for each of the Participants (“*Local Counsel*”) will deliver to AMP, on or before delivery of the Series 2016A Bonds, their opinions to the effect that such Participant has duly authorized and executed the Power Sales Contract. In reliance on the opinions of Local Counsel for the Participants located in their states, Kentucky, Ohio, Michigan and Virginia counsel for AMP (“*State Counsel*”) will deliver in connection with the issuance of the Series 2016A Bonds their opinions as to the validity and enforceability of the Power Sales Contract as to the Participants located therein.

In 2007, the legislature of Virginia enacted a statute expressly authorizing municipalities therein to enter into long-term take-or-pay contracts, including step up provisions, with out-of-state corporations, including non-profit corporations. In early March 2008, the legislature of Michigan enacted amendments to existing statutes expressly authorizing municipalities therein to enter into long-term take-or-pay contracts, including step-up provisions, with out-of-state persons.

As noted earlier, the Franklin County, Ohio, Court of Common Pleas, issued an order validating the master trust indenture and the power sales contract relating to the Combined Hydroelectric Projects. In particular, the order specifically found that the take-or-pay and step-up provisions of such power sales contract, which are in all material respects identical to the related provisions in the Power Sales Contract related to the AMP Interest, are valid and binding obligations of the Ohio localities executing the contract. Based in part on the findings made in such order, as well as the broad home rule powers of Ohio localities sourced in the Ohio Constitution, Ohio State Counsel will give its opinion as to the validity and enforceability of the Power Sales Contract as to the Ohio Participants.

Kentucky State Counsel advises that although there is no Kentucky statute that specifically authorizes cities such as Paducah and Princeton or their electric plant boards to enter into long-term take-or-pay contracts with private, out-of-state corporations or with step up provisions with out-of-state municipalities, such counsel is of the opinion that Kentucky statutes generally and, in particular the provisions of Chapter 96 of the Kentucky Revised Statutes grant electric plant boards such as the City of Paducah Electric Plant Board and the City of Princeton Electric Light Board sufficient power and authority to enter into and comply with the material provisions of the Power Sales Contract.

## MISCELLANEOUS

Any statements in this Official Statement involving matters of opinion, estimates or forecasts, whether or not expressly so stated, are intended as such and not as representations of fact. The Appendices attached hereto are an integral part of this Official Statement and must be read in conjunction with the foregoing material. This Official Statement is not to be construed as a contract or agreement between AMP and the purchasers or owners of the Series 2016A Bonds.

The delivery of this Official Statement has been duly authorized by the Board of Trustees of AMP.

AMERICAN MUNICIPAL POWER, INC.

By /s/ Marc S. Gerken, P.E.  
President and Chief Executive Officer

By /s/ Robert W. Trippe  
Senior Vice President of Finance and  
Chief Financial Officer

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## APPENDIX A

### THE PARTICIPANTS<sup>(1)</sup>

<u>Participant</u>	<u>Allocation</u> <u>(kW)</u>	<u>Allocation</u> <u>(%)</u>	<u>Participant</u>	<u>Allocation</u> <u>(kW)</u>	<u>Allocation</u> <u>(%)</u>
Cleveland	6,000	17.60	Niles	480	1.41
Danville, Virginia	3,299	9.67	Carey	272	0.80
Paducah, Kentucky	3,020	8.86	Versailles	251	0.74
Wadsworth	2,623	7.69	Hubbard	231	0.68
Orrville	2,308	6.77	Seville	323	0.95
Bowling Green	1,993	5.84	Newton Falls	152	0.45
Coldwater, Michigan	1,175	3.45	Greenwich	135	0.40
Wyandotte, Michigan	1,155	3.39	Arcanum	89	0.26
Yellow Springs	1,075	3.15	Clinton	72	0.21
Wapakoneta	1,074	3.15	Plymouth	53	0.16
Front Royal, Virginia	1,045	3.06	Columbiana	50	0.15
Dover	917	2.69	Haskins	46	0.13
Bryan	923	2.71	New Knoxville	39	0.11
Piqua	785	2.30	Waynesfield	39	0.11
Princeton, Kentucky	580	1.70	Wellington	39	0.11
Jackson	541	1.59	Prospect	30	0.09
Amherst	495	1.45	Mendon	20	0.06
Hillsdale, Michigan	479	1.40	Sycamore	20	0.06
Tipp City	469	1.38	Eldorado	16	0.05
Marshall, Michigan	389	1.14	New Bremen	16	0.05
Shelby	366	1.07	Jackson Center	13	0.04
Hudson	330	0.97	Lucas	10	0.03
Napoleon	330	0.97	Lakeview	3	0.01
Oberlin	330	0.97			
			<u>Total<sup>(2)</sup></u>	<u>34,100</u>	<u>100.00%</u>

<sup>(1)</sup> Located in Ohio unless otherwise noted.

<sup>(2)</sup> Percentages may not add to totals due to rounding.

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**GREENUP HYDROELECTRIC PROJECT REVENUE BONDS**  
**INFORMATION ON THE LARGE PARTICIPANTS**

Presented in Appendix B is selected financial information concerning the six largest Participants (the “*Large Participants*”) in terms of their Project Shares.

Each of the Ohio Large Participants – Bowling Green, Cleveland, Wadsworth, and Orrville – are required by law to file their annual audited financial statements with the Ohio Auditor of State and reference is made to their annual audits on line at [www.auditor.state.oh.us](http://www.auditor.state.oh.us). Furthermore, Cleveland has had a separate annual audit prepared of the results of the operations of its Electric System, and such audit is also available on line with the Ohio Auditor of State ([www.ohioauditor.gov](http://www.ohioauditor.gov)). Danville, Virginia has posted its recent annual audits online at [www.danville-va.gov](http://www.danville-va.gov). None of the Large Participants is contractually obligated to AMP to continue to make available audits of its Electric System on its website or otherwise. The information contained on such websites, and on other websites in this Appendix B, is not incorporated into, and is not part of, this Official Statement.

The fiscal years of Virginia local governments as well as Paducah, Kentucky Electric Plant Board end on June 30, and Danville and Paducah Electric Plant Board’s data are for the most part presented as of such date June 30, 2015.

A difference in the presentation of assessed valuation for the Large Participants should be noted. Pursuant to Virginia law, the assessed valuation information for Danville is based on 100 percent of appraised value of real property. For the Ohio Large Participants, the assessed value of real property (including public utility real property) is 35 percent of estimated true value. Personal property tax is assessed on all tangible personal property used in business in Ohio. The assessed value of public utility personal property ranges from 25 percent of true value for railroad property to 88 percent for electric transmission and distribution property. General business tangible personal property is assessed at 25 percent for everything except inventories, which are assessed at 23 percent. Tangible personal property taxes on (i) manufacturing equipment, (ii) furniture and fixtures and (iii) inventory was phased-out over a four-year period, ending in 2009. In Kentucky, all property not exempted from taxation must be assessed at its “fair cash value,” being the price it would bring at a fair voluntary sale, as determined by a property valuation administrator elected in each county.

The Large Participants are participants in several other AMP-sponsored projects for which selected data and related information are presented in the body of this Official Statement.

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## SECTION I

### LARGE PARTICIPANTS' PEAK DEMAND AND PROJECT SHARES

PARTICIPANT	2015 PEAK DEMAND ( <u>Kilowatts</u> )	GREENUP PROJECT SHARES ( <u>Kilowatts</u> )	( <u>Percent</u> )	CUMULATIVE OWNERSHIP ( <u>Percent</u> )
1. Cleveland, Ohio	297,550	6,000	17.60%	17.60%
2. Danville, Virginia	230,297	3,299	9.67	27.27
3. Paducah, Kentucky	139,509	3,020	8.86	36.13
4. Wadsworth, Ohio	61,557	2,623	7.69	43.82
5. Orrville, Ohio	58,295	2,308	6.77	50.59
6. Bowling Green, Ohio	<u>97,973</u>	<u>1,993</u>	<u>5.84</u>	56.43*
<b>TOTAL</b>	<u>885,181</u>	<u>19,243</u>	<u>56.43*</u>	

\*Percentages may not add to totals due to rounding.

## SECTION II

### CLEVELAND, OHIO

Project Share Rank	1
Project Share Percentage	17.60%
Municipality Established	1796
Electric System Established	1906
County	Cuyahoga
Basis of Accounting	Accrual
2015 Peak Demand (kW)	297,550

**Location, Population and Government:** The City of Cleveland, Ohio (“*Cleveland*”) is located in the northeast quadrant of Ohio on Lake Erie. Cleveland operates under and is governed by the Charter, which was first adopted by the voters in 1913 and has been and may be further amended by the voters from time to time. Cleveland is also subject to certain general State laws that are applicable to all cities in the State. In addition, under Article XVIII, Section 3, of the Ohio Constitution, Cleveland may exercise all powers of local self-government and may exercise police powers to the extent not in conflict with applicable general State laws. The Charter provides for a mayor-council form of government.

Legislative authority is vested in a 17-member Council. The terms of Council members and the Mayor are four years. All Council members are elected from wards. The present terms of the Mayor and Council members expire in January 2018. The table below set forth historical population figures for Cleveland since 1990.

<u>YEAR</u>	<u>POPULATION</u>
1990	505,616
2000	478,403
2010	396,815

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Source: U.S. Bureau of Census 1990-2010

**Economic Base:** Cleveland's economy is based on a mix of industrial and commercial development. Cleveland's major industries include health care, retail sales, hospitality, dairy products and light industrials. The following table provides a summary of certain economic indicators for Cleveland.

#### **BUILDING PERMITS**

<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>
\$209,166,070	\$75,265,865	\$181,110,000	\$166,310,000

Source: Cuyahoga County Budget Commission

#### **ASSESSED VALUATION (\$000)**

<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>
\$5,626,045	\$4,868,774	\$4,899,952	\$4,913,145

Source: Ohio Municipal Advisory Council website

#### **UNEMPLOYMENT**

<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>
10.0%	9.5%	9.8%	6.4%

Source: Ohio Labor Market Information, <http://lmi.state.oh.us/>

#### **MEDIAN FAMILY INCOME**

<b><u>1990</u></b>	<b><u>2000</u></b>	<b><u>2010</u></b>
\$22,448	\$30,286	\$34,495

Source: U.S. Bureau of Census

**Electric System.** Cleveland's Department of Public Utilities operates the Division of Cleveland Public Power ("*Cleveland Public Power*") for the purpose of supplying electric energy to customers located primarily in Cleveland. Under the Constitution of the State and the Charter of Cleveland, Cleveland has authority to own, operate and regulate Cleveland Public Power, and in connection therewith, to acquire property, construct facilities, provide electric energy throughout the service area and perform other necessary functions to operate and maintain Cleveland Public Power. Cleveland Public Power's electric rates are fixed by the Board of Control subject to the approval of City Council. The Board of Control consists of the Mayor and 12 directors of Cleveland's departments.

The Cleveland Public Power system is located within the service area of the Cleveland Electric Illuminating Company ("*CEI*"), an operating company of First Energy Corp. In 2014, Cleveland Public Power purchased approximately 94% of its power from AMP based on kWh. Cleveland utility owns and maintains 50 miles of transmission and 900 miles of distribution lines and has 33 distribution substations. Cleveland owns three 16.2 MW combustion turbine units and leases six 1.825 MW diesel generators, all

of which are used for peak load and emergency purposes. City of Cleveland municipal customers accounted for 18.3% of Cleveland Public Power's revenue in 2014.

In the early 1990s Cleveland Public Power initiated a system expansion program that included the construction of over 30 miles of 138-kV transmission lines, six new distribution substations, and a new 138-kV interconnection with CEI. This program increased Cleveland Public Power's geographical coverage of Cleveland from about 35% to approximately 60% and added over 26,000 new customers.

In addition to the power it purchased from AMP in 2014, Cleveland Public Power obtained its remaining power and energy requirements (approximately 6%) through short- and long-term agreements with various regional utilities and other power suppliers for power delivered through CEI interconnections, from Cleveland Public Power's three combustion turbine generating units and various arrangements for the exchange of short-term power and energy.

Unlike other Participants, Cleveland Public Power competes head-to-head for customers with CEI. Because of the overlapping service areas of Cleveland Public Power and CEI, Cleveland Public Power's potential customers are either new customers for electric service or existing customers of CEI. Accordingly, Cleveland Public Power's ability to attract new customers is heavily dependent on its ability to compete directly with CEI based on rates, system reliability, power restoration times, and customer service. Head-to-head competition with CEI for existing large commercial and industrial customers services by CEI or Cleveland Public Power generally occurs at the time those customers' contractual arrangements expire.

Recent additions to Cleveland Public Power's large commercial and industrial customer base include the Cuyahoga County Administration Building, the Geis East 9th Street Tower, the Upper Chester housing development, Case Western Reserve University's Maltz Performing Arts Center, Hofbrauhaus Restaurant and, most recently, an additional Expedient Data Center. Cleveland Public Power believes that it has been successful in competing head-to-head with CEI for large commercial and industrial customer accounts within Cleveland Public Power's service area because of better customer service and increased reliability of its service.

Cleveland Public Power's rates have historically been lower than CEI's rates. Cleveland Public Power places great emphasis on reliability and customer service. In terms of service restoration after storms, Cleveland Public Power's customer service program and response time to customer inquiries are superior to those of CEI. Based on comparative information developed by Cleveland Public Power, Cleveland Public Power's average time to reconnect customers following power outages is substantially below that of CEI.

In 2014, Cleveland electric system served 72,492 residential, commercial and industrial customers. In addition to Cleveland municipal customers accounting for 18.3% of Cleveland Public Power's revenue, the following table lists Cleveland's five largest customers by energy purchased in 2014 and as a percentage of total system revenues during that year.

<u>Customer</u>	<u>Type of Business</u>	kWh Purchased (2014)	% of Total System Revenues
1. The Medical Center Co.	Consortium of Various Facilities	235,013,000	7.21%
2. Cargill, Inc	Salt Mining	34,721,000	2.07
3. Cleveland Browns Stadium	Professional Football	20,185,000	1.29
3. NEORSD – Easterly	Sewage Facility	24,105,000	1.28
5. Cleveland Thermal – Lakeside Ave.	Commercial Heating and Air Conditioning	15,557,000	1.03

**Participation in Other Projects.** Cleveland Public Power is the largest Participant in the Greenup Project, obligated under the Power Sales Contract to purchase from AMP a 17.60% Project Share (approximately 6.00 MW). In addition to the Greenup Project, Cleveland Public Power is a participant in the following other projects described in the body of the Official Statement under the heading “AMERICAN MUNICIPAL POWER, INC. – OTHER PROJECTS” (see the descriptions thereof for detail relating the indebtedness relating to such projects and the obligations of the participants under the related power sales contract):

<u>Project</u>	<u>Cleveland Public Power Share<sup>(1)</sup></u>
Prairie State Energy Campus	6.76% (approximately 24.88 MW)
Combined Hydroelectric Projects	16.83% (approximately 35.00 MW)
Meldahl Hydroelectric Project	8.47% (approximately 9.00 MW)
AMP Fremont Energy Center Project	12.92% (approximately 60.00 MW)

<sup>(1)</sup> In each case, the share relates to the AMP’s entitlement to project output.



The following table presents certain financial data respecting Cleveland's Electric System for the calendar years shown, on an accrual basis.

<b>Cleveland (\$000)</b>			
	Restated <u>2012*</u>	<u>2013</u>	<u>2014</u>
<b><u>Revenue</u></b>			
Power Sales	\$165,227	\$170,342	\$181,843
Other Income	-	-	-
Total Revenue	<u>165,227</u>	<u>170,342</u>	<u>181,843</u>
<b><u>Operating Expense**</u></b>			
Power Costs	95,788	100,929	115,923
O&M Expense	<u>41,199</u>	<u>40,187</u>	<u>38,192</u>
Total Operating Expense	<u>136,987</u>	<u>141,116</u>	<u>154,115</u>
Net Revenue Available for Debt Service	<u>28,240</u>	<u>29,226</u>	<u>27,728</u>
Revenue Debt Service	19,796	22,477	18,844
Depreciation	16,971	18,171	18,354
Net Non-Operating Revenue (Excl. Interest Exp.)	322	(1,561)	3,899
Net Transfers	-	-	-
Net Assets 1/1	205,650	208,545	208,402
Net Assets 12/31	208,545	208,402	212,390
<b><u>Year End Balance</u></b>			
Revenue Bonds	247,101	234,322	231,072

\* The Governmental Accounting Standards Board (GASB) issued Statement No. 65 effective for periods beginning after December 15, 2012. The Statement changed the treatment of bond issuance costs. Previously, the costs were recorded as assets and amortized over the life of the related debt issue. The GASB evaluated these costs and concluded that with the exception of prepaid insurance, the costs relate to services provided in the current period and thus they should be expensed in the current period.

\*\* Excluding depreciation.

On February 24, 2012, Cleveland issued \$15,325,000 Public Power System Revenue Refunding Bonds, Series 2012, to refund all of the outstanding \$15,980,000 Public Power System Refunding Revenue Bonds, Series 2001. On October 30, 2014, Cleveland issued \$76,885,000 Public Power System Taxable Revenue Refunding Bonds, Series 2014, to refund \$68,745,000 of outstanding Public Power System Bonds.

## DANVILLE, VIRGINIA

Project Share Rank	2
Project Share Percentage	9.67%
Municipality Established	1793
Electric System Established	1886
County	N/A
Basis of Accounting	Accrual
2015 Peak Demand (kW)	230,297

**Location, Population and Government:** The City of Danville, Virginia (“*Danville*”) is located in the south central region of Virginia near the North Carolina state line, surrounded by Pittsylvania County (Virginia cities and counties are mutually exclusive and do not overlap). Danville has a Council-Manager form of government. The Council is comprised of nine persons, elected at-large for four-year staggered terms. The City Council elects a Mayor and a Vice-Mayor from its membership and these officials serve two year terms. The table below sets forth historical population figures for Danville since 1990.

<u>YEAR</u>	<u>POPULATION</u>
1990	53,056
2000	48,411
2010	43,055

---

Source: U.S. Bureau of Census 1990-2010

**Economic Base:** Danville's economy is based on a mix of industrial and commercial development. Danville's major industries include retail sales, auto aftermarket supply, wood products and by-products and light industrials.

The following table provides a summary of certain economic indicators for Danville:

**BUILDING PERMITS**

<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>
\$44,237,813	\$31,258,380	\$45,793,991	\$36,033,950

Source: City of Danville

**ASSESSED VALUATION (\$000)**

<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>
\$2,660,962	\$2,702,338	\$2,675,917	\$2,689,712

Source: City of Danville

**UNEMPLOYMENT**

<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>
11.9%	10.6%	9.5%	8.7%

Source: Virginia Workforce Connection;  
<https://www.vawc.virginia.gov/>

**MEDIAN FAMILY INCOME**

<b><u>1990</u></b>	<b><u>2000</u></b>	<b><u>2010</u></b>
\$27,752	\$36,024	\$39,198

Source: U.S. Bureau of Census

**Electric System:** Authority over the Danville Electric System is vested in Danville. The Power & Light Director, who reports to the Utilities Director, manages the Electric System. The Electric System serves a community covering approximately 500 square miles, which includes Danville, and portions of Pittsylvania County, Henry County, and Halifax County. Danville exercises its right to serve exclusively within its service territory. There are a few commercial and industrial customers within the service territory that are served by American Electric Power (“AEP”). AEP has served these customers since 1970.

Since 2007, Danville has purchased the majority of its power from AMP. Danville utility owns and maintains 118 miles of transmission and distribution lines and has 17 substations. Danville owns and operates a three-unit hydroelectric generating plant with a maximum capacity of 10.5 MW and a 750 kW unit at the Talbott Dam site. Danville utility also has two generators, a 200 kW back-up diesel generator at its water treatment plant and a 150 kW mobile generator for the pump stations. In fiscal year 2014, the Danville Electric System employed 99 people.

In 2014, the Danville Electric System served 42,171 residential, commercial and industrial customers. (As of February 2008, Danville changed its definition of customer count to reflect the consolidation of meters under one payor and such change is reflected in Section IV of the Appendix B). The following table lists Danville’s five largest customers by energy purchased in 2014 and as a percentage of total system revenues during that year.

<u>Customer</u>	<u>Type of Business</u>	<u>kWh Purchased (2014)</u>	<u>% of Total System Revenues</u>
1. Intertape	Tape Manufacturing	52,415,800	3.51%
2. Nestle	Food Manufacturing	26,485,520	1.82
3. Swedwood	Furniture Manufacturing	24,935,232	1.72
4. Danville Regional	Health Care	22,953,242	1.62
5. Columbia Flooring	Floor Manufacturing	17,737,098	1.19

**Participation in Other Projects.** Danville is the second largest Participant in the Greenup Project, obligated under the Power Sales Contract to purchase from AMP a 9.67% Project Share (approximately 3.30 MW). In addition to the Greenup Project, Danville is a participant in the following other projects described in the body of the Official Statement under the heading “AMERICAN MUNICIPAL POWER, INC. – OTHER PROJECTS” (see the descriptions thereof for detail relating the indebtedness relating to such projects and the obligations of the participants under the related power sales contract):

<u>Project</u>	<u>Danville Share<sup>(1)</sup></u>
Prairie State Energy Campus	13.52% (approximately 49.76 MW)
Combined Hydroelectric Projects	10.62% (approximately 22.08 MW)
Meldahl Hydroelectric Project	4.80% (approximately 5.04 MW)
AMP Fremont Energy Center Project	8.03% (approximately 37.30 MW)

<sup>(1)</sup> In each case, the share relates to the AMP’s entitlement to project output.

The following table presents certain financial data respecting Danville's Electric System for the fiscal years shown on an accrual basis. The presentation is generally consistent with the flow of revenues of the Electric System.

	<b>Danville</b>		
	<b>(\$000)</b>		
	<u>2013</u>	<u>2014</u>	<u>2015</u>
<b><u>Revenue</u></b>			
Power Sales	\$100,176	\$125,670	\$116,039
Other Income	-	-	-
Total Revenue	<u>100,176</u>	<u>125,670</u>	<u>116,039</u>
<b><u>Operating Expense</u></b> *			
Purchased Power Costs	70,416	92,407	84,079
O&M Expense	11,256	12,920	11,891
Total Operating Expense	<u>81,672</u>	<u>105,327</u>	<u>95,970</u>
Net Revenue Available for Debt Service	<u>18,504</u>	<u>20,343</u>	<u>20,070</u>
General Obligation Debt Service	3,508	3,554	2,981
Depreciation	6,400	7,354	7,867
Net Non-Operating Revenue (Excl. Interest Exp.)	1,562	2,592	485
Net Transfers	(12,520)	(9,897)	(9,897)
<b>Net Assets 7/1</b>	168,486	168,171	185,030 <sup>(3)</sup>
<b>Net Assets 6/30</b>	168,171	180,052	188,483
<b><u>Year End Balance</u></b>			
General Obligation Bonds	38,361 <sup>(1)</sup>	38,608 <sup>(2)</sup>	42,385 <sup>(4)</sup>

\* Excluding Depreciation.

(1) Danville issued \$5.52 million of GO Bonds to fund capital improvements to its Electric System in fiscal year 2012-2013.

(2) Danville issued \$2.275 million in GO Bonds to fund capital expenditures to its Electric System in fiscal year 2013-2014.

(3) In fiscal year 2015, Danville adopted GASB 68 which resulted in a restatement of the prior year's ending balance.

(4) Danville issued \$5.679 million in GO Bonds on September 11, 2014 to advance refund the 2005 GO Bonds.

## ELECTRIC PLANT BOARD OF THE CITY OF PADUCAH, KENTUCKY

Project Share Rank	3
Project Share Percentage	8.86%
Municipality Established	1798
Electric System Established	1945
County	McCracken
Basis of Accounting	Accrual
2015 Peak Demand (kW)	139,509

**Location, Population and Government:** The City of Paducah, Kentucky (“*Paducah*”) is situated in the western portion of Kentucky some 225 miles southwest of Louisville. Paducah, which covers an area of seven square miles, is the seat of the McCracken County government. Paducah is governed by a five-member City Commission consisting of the Mayor and four other Commissioners. The City Manager, who is responsible for the administration and supervision of all City of Paducah services and facilities, is appointed by the City Commission.

The table below sets forth historical population figures for Paducah since 1990.

<u>YEAR</u>	<u>POPULATION</u>
1990	27,256
2000	26,307
2010	25,024

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Source: U.S. Bureau of Census

**Economic Base:** Paducah's economy is based on a mix of industrial and commercial development. Paducah's major industries include river transportation, two regional hospitals and regional retail sales center.

The following table provides a summary of certain economic indicators for Paducah.

**BUILDING PERMITS**

<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>
\$57,007,459	\$59,229,074	\$54,237,757	\$46,713,430

Source: Paducah Electric Plant Board

**ASSESSED VALUATION**

<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>
\$1,467,670,195	\$1,519,604,966	\$1,570,054,226	\$1,603,493,457

Source: McCracken County Property Valuation Administrator for 2010-2014.

**UNEMPLOYMENT**

<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>
8.5%	7.8%	8.0%	7.1%

Source: [www.workforcekentucky.ky.gov](http://www.workforcekentucky.ky.gov)

**MEDIAN FAMILY INCOME**

<b><u>1990</u></b>	<b><u>2000</u></b>	<b><u>2010</u></b>
\$23,665	\$34,092	\$41,019

Source: U.S. Bureau of Census

**Electric System:** The Paducah Electric Plant Board (the “*Board*”) was created by an ordinance enacted on January 30, 1945 by the governing body of Paducah, which ordinance was amended on March 7, 1959. The Board functions on behalf of Paducah and has duties, powers and authority as specifically defined by Kentucky statutes. The Board is a separate political subdivision of the Commonwealth of Kentucky.

An ordinance was adopted by the City Commission on August 23, 1960, declaring that it was desirable to purchase and operate a municipal electric system, subject to approval of the voters. Said election was held on November 8, 1960 and the purchase and operation of a municipal utility was approved by over 76% of voters.

In July 1961, the Board issued bonds for the purpose of purchasing from Kentucky Utilities Company, that segment of the system which was inside Paducah limits.

The Board’s service area now includes most of the area within Paducah limits and a portion of surrounding McCracken County.

The total power requirements for the system were previously purchased from the Tennessee Valley Authority (“*TVA*”) pursuant to a contract between the Board and TVA. This contract was terminated as of December 21, 2009. The Board then began purchasing through multiple counterparty arrangements, with power scheduled through Fellon-McCord. Power is received at two delivery points at 161,000 volts. One delivery point is located near the northwestern boundary of the system. The second delivery point is located near the southern boundary.

A 69,000 volt transmission system connects the system’s nine distribution substations to the delivery points. The 69 KV system is “looped” from distribution substation to substation to provide flexibility in switching and increase reliability.

The distribution substations reduce the voltage from 69,000 volts to 12,470 volts, which is the System’s nominal distribution voltage. Distribution transformers, both pole-mounted and pad-mounted, reduce the voltage to the utilization level required by the system’s customers.

The total transformer nameplate capacity of the distribution substations is 356,000 kilo-volt amps. The nameplate capacity of the delivery point transformers (total system capacity) is 316,000 kilo-volt amperes. An all-time maximum system peak for the system is 161,724 kilowatts. This peak was set in 2011.

The Board participates in the Prairie State Energy Campus as a member of the Kentucky Municipal Power Agency (“*KMPA*”). As of March 31, 2016, KMPA had outstanding \$481.8 million in revenue bonds, secured by a take-or-pay power sales agreement between KMPA, the Board and the Electric Plant Board of Princeton, Kentucky, to finance KMPA’s 7.82% undivided ownership interest in the PSEC. Pursuant to such power sales agreement, the Board is entitled to purchase 83.9% of KMPA’s share of the PSEC (approximately 104 MW) and is responsible for a commensurate amount of KMPA’s expenses relating to the PSEC.

On January 29, 2009 the Board issued \$161,730,000 of tax-exempt special revenue bonds and \$8,525,000 of taxable special revenue bonds to finance construction of a 120 MW (summer) natural gas peaking plant to provide electric service to the customers of the Board during times of peak energy consumption. The construction of these peaking units was completed in May 2010. As of February 15, 2016, approximately \$152.635 million of the bonds issued to finance the peaking plant are outstanding.



As of January 1, 2015, the Board and KMPA terminated agreements with Fellon-McCord and retained AMP to provide portfolio management services for the Board and KMPA. Under the agreement, AMP and The Energy Authority provide optimization of KMPA's capacity and energy resources, including the KMPA share of Prairie State and the Board natural gas peaking plant. These services include daily forecasting, power scheduling, energy and congestion hedging strategies, sale of excess energy and capacity, transmission arrangements and fuel management. To date, AMP's services have resulted in the following revenues for the Board KMPA:

- Sale of Excess Prairie State Capacity
  - 2015/2016 Sold in MISO Auction - \$4.8 million
  - 2017/2018 Sold Bilaterally - \$2.8 million
  - 2018/2019 Sold Bilaterally – 3.2 million
- Auction Revenue Rights
  - 2015/2016 Auction - \$2.3 million
- Dispatching Paducah Peaking Plant
  - 2015 - \$65,000 net revenue

As of June 30, 2015, the Board had 488 miles of line with 46 customers per mile and an average residential usage of 1,141 kWh per month. In fiscal year 2015, the Board served 22,397 residential, commercial and industrial customers.

The following table lists the Board's five largest customers by energy purchased in 2014 and as a percentage of total system revenues during the year.

		kWh Purchased (2014)	% of Total System Revenues
<u>Customer</u>	<u>Type of Business</u>		
1. Western Baptist Hospital	Health Care	32,465,194	4.68%
2. Lourdes Hospital	Health Care	22,948,726	3.25
3. H.B. Fuller	Manufacturing	11,032,800	1.44
4. City of Paducah	Government	6,485,789	1.35
5. West Kentucky Community & Technical College	Education	7,897,778	1.34

**Participation in Other Projects.** The Board is the third largest Participant in the Greenup Project, obligated under the Power Sales Contract to purchase from AMP a 8.86% Project Share (approximately 3.02 MW). In addition to the Greenup Project, the Board is a participant in the following other projects described in the body of the Official Statement under the heading "AMERICAN MUNICIPAL POWER, INC. – OTHER PROJECTS" (see the descriptions thereof for detail relating the indebtedness relating to such projects and the obligations of the participants under the related power sales contract):

<u>Project</u>	<u>Board Share<sup>(1)</sup></u>
Combined Hydroelectric Projects	3.63% (approximately 7.55 MW)
Meldahl Hydroelectric Project	4.31% (approximately 4.53 MW)

<sup>(1)</sup> In each case, the share relates to the AMP's entitlement to project output.

The following table presents certain financial data respecting the Board's Electric System for the calendar years shown, on an accrual basis.

**Electric Plant Board of the City of Paducah, Kentucky**  
**(\$000)**

	<u>2013</u>	<u>2014</u>	<u>2015</u>
<b><u>Revenue</u></b>			
Power Sales	\$65,404	\$78,127	\$80,108
Other Income	2,225	6,551	(17)
Total Revenue	<u>67,629</u>	<u>84,678</u>	<u>80,091</u>
<b><u>Operating Expense</u></b> <sup>(1)</sup>			
Power Costs	41,247	56,630	50,457
O&M Expense	11,758	11,722	11,922
Total Operating Expense	<u>53,005</u>	<u>68,352</u>	<u>62,379</u>
Net Revenue Available for Debt Service	<u>14,624</u>	<u>16,326</u>	<u>17,712</u>
Revenue Debt Service	12,249	13,098	12,284
Depreciation	8,713	9,023	9,102
Net Non-Operating Revenue (Excl. Interest Exp.)	41	129	(60)
Net Transfers	-	-	-
<b>Net Assets 7/1</b>	32,814	31,107	24,355 <sup>(2)</sup>
<b>Net Assets 6/30</b>	31,107	31,077	25,557
<b><u>Year End Balance</u></b>			
Revenue Bonds	161,445	155,945	151,133
Line of Credit	-	3,000	-
Total Debt	<u>161,445</u>	<u>158,945</u>	<u>151,133</u>

<sup>(1)</sup> Excluding depreciation.

<sup>(2)</sup> Beginning July 1, 2014, Paducah Power System adopted GASB 68. Net position at July 1, 2014 has been adjusted to account for the change in accounting principle.

## WADSWORTH, OHIO

Project Share Rank	4
Project Share Percentage	7.69%
Municipality Established	1814
Electric System Established	1916
County	Medina
Basis of Accounting	Accrual
2015 Peak Demand (kW)	61,557

**Location, Population and Government:** The City of Wadsworth, Ohio (“*Wadsworth*”) is a statutory city located in Medina County, in northeastern Ohio, approximately 30 miles south of Cleveland and 15 miles west of Akron. The Mayor is elected to a four-year term with duties that include appointing the Director of Public Service, The Director of Human Resources and the Director of Public Safety in order to effectively administer services for the citizens of Wadsworth. In addition, the governing body of Wadsworth is the City Council which consists of eight Council members, including the Council President. City Council members are elected to their positions as part-time public servants. Each serves for two years, with the current terms beginning January 1, 2014 and continuing through December 31, 2015. The table below sets forth historical population figures for Wadsworth since 1990.

<u>YEAR</u>	<u>POPULATION</u>
1990	15,718
2000	18,437
2010	21,567

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Source: U.S. Bureau of Census

**Economic Base:** Wadsworth's economy is based largely on small manufacturing. The Wadsworth area's major industries include the manufacturing of plastic products, building products and foundry works.

The following table provides a summary of certain economic indicators for Wadsworth.

**BUILDING PERMITS**

<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>
\$46,993,066	\$19,871,902	\$19,233,420	\$20,675,040

Source: City of Wadsworth

**ASSESSED VALUATION**

<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>
\$468,818,020	\$470,878,455	\$442,011,205	\$450,001,045

Source: Ohio Municipal Advisory Council website

**UNEMPLOYMENT**

<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>
6.9%	6.0%	6.5%	5.2%

Source: Ohio Labor Market Information, <http://lmi.state.oh.us/>

**MEDIAN FAMILY INCOME**

<b><u>1990</u></b>	<b><u>2000</u></b>	<b><u>2010</u></b>
\$38,067	\$58,850	\$75,053

Source: U.S. Bureau of Census

**Electric System:** Authority over the Wadsworth Electric System is vested in the City Council. A Director of Public Service, who is appointed by the Mayor, manages the Electric System. The Electric System serves a community covering 32 square miles. Included within Wadsworth's retail service area and served by the electric system are Wadsworth, parts of Wadsworth Township, Guilford Township, Sharon Township, and part of Norton. Wadsworth does not exercise its right to serve exclusively within the city limits.

Wadsworth is in the First Energy Transmission Service Area. In 2013, Wadsworth purchased 100% of its power from AMP or through the AMP sponsored OMEGA JV5 (the Belleville project) and OMEGA JV2 (the distributed generation project). Wadsworth is one of the 21 municipalities that formed OMEGA JV1 in October 1992, for the purposes of jointly owning and operating 9 megawatts of generation, known as Engle Units, which are sited in Cuyahoga Falls, Ohio. Wadsworth has an 11.23% ownership in the Engle Units. Wadsworth is also a participant in OMEGA JV6 and AMP's Combustion

Turbine Project. Wadsworth utility owns and maintains 148 miles of transmission and distribution lines and has six substations. Wadsworth does not directly own any generating facilities. In 2014, the Wadsworth electric utility employed 49.0 FTE.

In 2014, the Wadsworth electric system served 12,826 residential, commercial and industrial customers. The following table lists Wadsworth's five largest customers by energy purchased in 2014 and as a percentage of total system revenues during that year.

<u>Customer</u>	<u>Type of Business</u>	<u>kWh Purchased (2014)</u>	<u>% of Total System Revenues</u>
1. Graftech Intl Holdings	Cellular Metal	13,113,600	4.34%
2. Radici Plastics	Plastic Manufacturing	11,966,400	3.63
3. Flambeau	Plastic Manufacturing	11,338,800	3.43
4. Myers Industries	Plastics	9,960,300	2.8
5. Wadsworth City School District	Public Education	7,990,778	2.72

In 2014 the electric system also provided Wadsworth with 9,116,028 kWh for general municipal purposes.

**Participation in Other Projects.** Wadsworth is the fourth largest Participant in the Greenup Project, obligated under the Power Sales Contract to purchase from AMP a 7.69% Project Share (approximately 2.62 MW). In addition to the Greenup Project, Wadsworth is a participant in the following other projects described in the body of the Official Statement under the heading "AMERICAN MUNICIPAL POWER, INC. – OTHER PROJECTS" (see the descriptions thereof for detail relating the indebtedness relating to such projects and the obligations of the participants under the related power sales contract):

<u>Project</u>	<u>Wadsworth Share<sup>(1)</sup></u>
Belleville Hydroelectric Project (OMEGA JV5)	5.62% (approximately 2.36 MW)
OMEGA JV2	5.81% <sup>(2)</sup> (approximately 7.78 MW)
OMEGA JV6	3.52% (approximately 0.25 MW)
Combustion Turbine Project	1.81% (approximately 17.9 MW)
Combined Hydroelectric Projects	0.87% (approximately 1.8 MW)
Meldahl Hydroelectric Project	3.76% (approximately 3.95 MW)
AMP Fremont Energy Center Project	2.75% (approximately 12.77 MW)

<sup>(1)</sup> In each case, the share relates to the AMP's entitlement to project output, except in the case of the OMEGA joint ventures, in which case the share reflects Wadsworth's undivided ownership interest.

<sup>(2)</sup> As a financing participant, Wadsworth is responsible for 7.41% of debt service.

In 2009, Wadsworth formally adopted by ordinance a cash reserve policy which incorporates guidelines detailing minimum cash reserve balances to be maintained by the Electric System. The following table presents certain financial data respecting Wadsworth's Electric System for the calendar years shown, on an accrual basis. The presentation is generally consistent with the flow of revenues of the Electric System.

<b>Wadsworth</b>			
<b>(\$000)</b>			
	<u>2012</u>	<u>2013</u>	<u>2014</u>
<b><u>Revenue</u></b>			
Power Sales	\$28,735	\$30,665	\$31,213
Other Income	117	45	176
Total Revenue	<u>28,853</u>	<u>30,709</u>	<u>31,389</u>
<b><u>Operating Expense</u></b> *			
Power Costs	19,761	18,871	21,470
O&M Expense	4,666	7,045	5,968
Total Operating Expense	<u>24,428</u>	<u>25,916</u>	<u>27,438</u>
Net Revenue Available for Debt Service	<u>4,425</u>	<u>4,794</u>	<u>3,951</u>
OMEGA JV5 Debt Service <sup>(1)</sup>	592	591	592
OMEGA JV2 Debt Service <sup>(1)</sup>	296	296	296
OMEGA JV6 Debt Service <sup>(1)</sup>	35	35	35
Revenue Debt Service	1,887	1,347	865
Depreciation	1,731	1,815	2,061
Net Non-Operating Revenue (Excl. Interest Exp.)	28	(321)	(797)
Net Transfers	-	40	42
<b>Net Assets 1/1<sup>(3)</sup></b>	27,405	26,392 <sup>(3)</sup>	31,477
<b>Net Assets 12/31</b>	26,514	31,477	32,613
<b><u>Year End Balance</u></b>			
General Obligation Bonds	254	218	183
Revenue Bonds-AMP Bonds	5,586 <sup>(2)</sup>	4,962	4,343

\* Excluding depreciation.

(1) OMEGA JV debt service is included in Power Costs, recovered through Wadsworth's PCA

(2) To take advantage of lower interest rates, the City of Wadsworth Series 2002 Bonds were redeemed in 2012 with the proceeds of a draw on AMP's Line of Credit. Wadsworth paid down principal from the associated debt service reserve of approximately \$927,000 as well as an additional principal payment of \$185,000.

(3) Wadsworth adopted GASB accounting standard 65, which required an adjustment to the beginning balance for 2013 in order to comply with this accounting standard

## ORRVILLE, OHIO

Project Share Rank	5
Project Share Percentage	6.77%
Municipality Established	1864
Electric System Established	1917
County	Wayne
Basis of Accounting	Accrual
2015 Peak Demand (kW)	58,295

**Location, Population and Government:** The City of Orrville, Ohio (“*Orrville*”) is a charter city located in Wayne County. Orrville is located approximately 11 miles northeast of Wooster, Ohio. City Council conducts the legislative or law-making business of Orrville. The City Council consists of a President of Council and seven members, each elected for staggered four-year terms. One member is selected in each of the four wards and three are elected at large. Orrville has a mayoral form of government, with the Mayor elected by a city wide election for a four-year term. Mayoral duties are to exercise supervision and control of all departments and divisions of Orrville and to see that all laws, ordinances and resolutions are faithfully obeyed and enforced. The Mayor is the recognized official and ceremonial head of city government. The Mayor is required to attend Council meetings, but has no vote. The Mayor does, however, have veto power over every ordinance and resolution passed by the City Council. The President of Council is designated by Charter to be acting mayor during such a period when the Mayor is absent from Orrville or otherwise not accessible or temporarily unable to perform the duties.

The Public Utilities Board consists of five (5) members who are appointed by the Mayor with the approval of Council. The term of office for members of the Public Utilities Board is five (5) years and no member shall serve for more than three (3) successive terms. The Public Utilities Board president presides over the meetings which are held twice monthly. The Public Utilities Board is responsible for the operation and maintenance of, and any improvements or expansions to, the electric, water and sanitary sewer utilities of Orrville and may adopt such rules and regulations that are not inconsistent with Orrville’s Charter. The Public Utilities Board recommends rates to be charged for the use and consumption of the products and services of the Utilities and for payment of debt service charges on notes or bonds of Orrville issued for the improvement or expansion of any such Utilities. Recommended rate adjustments are referred to City Council for its review and approval or disapproval at a regular meeting, which shall be by administrative action taken not sooner than at the next regular meeting, and upon approval, such adjustment in rates shall become effective immediately. If the Council fails to approve or disapprove such recommended rates not later than the fifth regular meeting of the Council following the receipt of such recommendation from the Public Utilities Board, such recommended rates shall become effective immediately following such fifth meeting. The Public Utilities Board appoints a Director of Utilities, who is the managing head of the Department of Public Utilities, and is responsible to the Public Utilities Board for the proper operation and maintenance of the utilities which are under the control of the Public Utilities Board, and, with the approval of the Public Utilities Board, for the selection, promotion, demotion, discipline and removal of the other officers and employees of the Department of Public Utilities.

The table below sets forth historical population figures for Orrville since 1990.

<u>YEAR</u>	<u>POPULATION</u>
1990	7,712
2000	8,551
2010	8,380

Source: U.S. Bureau of Census 1990-2010

**Economic Base:** Orrville's economy is based on a mix of industrial, commercial and residential development. Orrville's major industries include various manufacturing facilities including jam and jelly processing, dairy products, pipe organ, and production of grey iron and ductile iron castings.

The following table provides a summary of certain economic indicators for Orrville.

**BUILDING PERMITS**

<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
\$19,536,492	\$11,460,110	\$13,280,308	\$46,838,201

Source: City of Orrville

**ASSESSED VALUATION**

<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
\$166,196,237	\$172,574,577	\$176,987,327	\$179,137,967

Source: Ohio Municipal Advisory Council website

**UNEMPLOYMENT**

<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
7.9%	6.1%	6.3%	4.6%

Source: Ohio Labor Market Information, <http://lmi.state.oh.us/>

**MEDIAN FAMILY INCOME**

<u>1990</u>	<u>2000</u>	<u>2010</u>
\$32,472	\$46,728	\$55,284

Source: U.S. Bureau of Census



**Electric System:** The Public Utilities Board appoints a Director of Utilities, who is the managing head of the Department of Public Utilities, and is responsible to the Public Utilities Board for the proper operation and maintenance of the utilities which are under the control of the Public Utilities Board, and, with the approval of the Public Utilities Board, for the selection, promotion, demotion, discipline and removal of the other officers and employees of the Department of Public Utilities.

In 2014, Orrville's electric system served approximately 7,271 residential, commercial and industrial customers. The following table lists Orrville's five largest customers by energy purchased in 2014 and as a percentage of total system revenues during that year.

<u>Customer</u>	<u>Type of Business</u>	<u>kWh Purchased (2014)</u>	<u>% of Total System Revenues</u>
1. Quality Castings	Casting Manufacturing	62,344,547	18.35%
2. JM Smucker	Food Processing	37,308,862	11.17
3. Smith Dairy	Food Processing	18,962,488	5.88
4. Bekaert	Shape Wire Production	14,842,154	4.49
5. JLG	Lift Form Production	8,002,961	2.45

**Participation in Other Projects.** Orrville is the fifth largest Participant in the Greenup Project, obligated under the Power Sales Contract to purchase from AMP a 6.77% Project Share (approximately 2.31 MW). In addition to the Greenup Project, Orrville is a participant in the following other projects described in the body of the Official Statement under the heading "AMERICAN MUNICIPAL POWER, INC. – OTHER PROJECTS" (see the descriptions thereof for detail relating the indebtedness relating to such projects and the obligations of the participants under the related power sales contract):

<u>Project</u>	<u>Orrville Share<sup>(1)</sup></u>
Prairie State Energy Campus	1.35% (approximately 4.98 MW)
Combined Hydroelectric Projects	2.83% (approximately 5.90 MW)
Meldahl Hydroelectric Project	3.36% (approximately 3.53 MW)
AMP Fremont Energy Center Project	3.79% (approximately 17.62 MW)

<sup>(1)</sup> In each case, the share relates to the AMP's entitlement to project output.

The following table presents certain financial data respecting Orrville's Electric System for the calendar years shown, on an accrual basis.

	<b>Orrville (\$000)</b>		
	<u>2012</u>	<u>2013</u>	<u>2014</u>
<b><u>Revenue</u></b>			
Power Sales	\$32,257	\$32,232	\$35,802
Other Income	825	566	613
Total Revenue	<u>33,082</u>	<u>32,798</u>	<u>36,415</u>
<b><u>Operating Expense</u></b> *			
Power Costs	12,436	12,286	10,415
O&M Expense	18,331 <sup>(1)</sup>	17,700	19,314
Total Operating Expense	<u>30,767</u>	<u>29,986</u>	<u>29,729</u>
Net Revenue Available for Debt Service	<u>2,315</u>	<u>2,812</u>	<u>6,686</u>
Depreciation	1,994	2,047	2,013
Net Non-Operating Revenue (Excl. Interest Exp.)	45	241	97
Net Transfers	916	915	917
Net Assets 1/1	43,184	44,466	46,388
Net Assets 12/31	44,466	46,388	52,075
<b><u>Year End Balance</u></b>			
Electric Improvement Note	-	-	-

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\* Excluding depreciation

<sup>(1)</sup> Restated per Orrville

## BOWLING GREEN, OHIO

Project Share Rank	6
Project Share Percentage	5.84%
Municipality Established	1833
Electric System Established	1942
County	Wood
Basis of Accounting	Accrual
2015 Peak Demand (kW)	97,973

**Location, Population and Government:** The City of Bowling Green, Ohio (“*Bowling Green*”) is a charter city located in Wood County, approximately 15 miles south of Toledo, in the northwest quadrant of the state. The Mayor, who is elected to a four-year term, and a City Council of seven members, including a Council President, governs Bowling Green. The table below sets forth historical population figures for Bowling Green since 1990.

<u>YEAR</u>	<u>POPULATION</u>
1990	28,176
2000	29,652
2010	30,028

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Source: U.S. Bureau of Census

**Economic Base:** Bowling Green's economy is based on a mix of industrial and commercial development. Bowling Green's major industries include higher education, health care, hospitality, and light industrials.

The following table provides a summary of certain economic indicators for Bowling Green.

#### **BUILDING PERMITS**

<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>
\$52,717,908	\$11,166,938	\$16,521,582	\$20,455,012

Source: Wood County Building Inspection

#### **ASSESSED VALUATION**

<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>
\$454,121,520	\$452,950,840	\$453,620,260	\$454,700,098

Source: Wood County Auditor

#### **UNEMPLOYMENT**

<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>
7.9%	6.1%	6.2%	5.2%

Source: Ohio Labor Market Information, <http://lmi.state.oh.us/>

#### **MEDIAN FAMILY INCOME**

<b><u>1990</u></b>	<b><u>2000</u></b>	<b><u>2010</u></b>
\$36,799	\$51,804	\$71,446

Source: U.S. Bureau of Census

**Electric System:** Authority over the Bowling Green Electric System is vested in the Board of Public Utilities. A Superintendent, who reports in turn to the Director of Utilities, manages the Electric System. The Electric System serves a community covering 10.2 square miles, and also serves the adjoining Village of Portage with retail power and the Village of Tontogany at wholesale. In 2014, sales to Tontogany totaled \$524,994, or approximately 1 percent of total system revenues. Bowling Green provides exclusive service to all electric consumers within its city limits.

Bowling Green is in the First Energy Transmission Service Area. In 2014, Bowling Green purchased 100% of its power from AMP or through the AMP sponsored OMEGA JV5 and OMEGA JV2. Bowling Green is also a participant in OMEGA JV6 and AMP's Combustion Turbine Project. Bowling Green utility owns and maintains 228 miles of transmission and distribution lines and has six substations. Bowling Green does not own directly any generating facilities. In 2014, the Bowling Green utility employed 36 people.

In 2014, the Bowling Green electric system served 14,591 residential, commercial and industrial customers. The following table lists Bowling Green's five largest customers by energy purchased in 2014 and as a percentage of total system revenues during that year.

<u>Customer</u>	<u>Type of Business</u>	<u>kWh Purchased (2014)</u>	<u>% of Total System Revenues</u>
1. Bowling Green State University	Higher Education	71,731,500	12.37%
2. Southeastern Container	Manufacturing	68,108,000	10.66
3. Vehtek Systems	Manufacturing	48,268,800	8.09
4. Toledo Molding & Die	Manufacturing	24,420,000	3.96
5. Phoenix Technologies	Manufacturing	12,074,124	2.03

**Participation in Other Projects.** Bowling Green is the fourth largest Participant in the Greenup Project, obligated under the Power Sales Contract to purchase from AMP a 5.84% Project Share (approximately 1.99 MW). In addition to the Greenup Project, Bowling Green is a participant in the following other projects described in the body of the Official Statement under the heading "AMERICAN MUNICIPAL POWER, INC. – OTHER PROJECTS" (see the descriptions thereof for detail relating the indebtedness relating to such projects and the obligations of the participants under the related power sales contract):

<u>Project</u>	<u>Bowling Green Share<sup>(1)</sup></u>
Belleville Hydroelectric Project (OMEGA JV5)	15.73% (approximately 6.61 MW)
OMEGA JV2	14.32% <sup>(2)</sup> (approximately 19.2 MW)
OMEGA JV6	56.94% (approximately 4.1 MW)
Combustion Turbine Project	7.75% (approximately 11.0 MW)
Prairie State Energy Campus Project	9.51% (approximately 35.00 MW)
Combined Hydroelectric Projects	9.61% (approximately 19.99 MW)
Meldahl Hydroelectric Project	2.90% (approximately 3.04 MW)

<sup>(1)</sup> In each case, the share relates to the AMP's entitlement to project output, except in the case of the OMEGA joint ventures, in which case the share reflects Bowling Green's undivided ownership interest.

<sup>(2)</sup> As a financing participant, Bowling Green is responsible for 18.27% of debt service.

The following table presents certain financial data respecting Bowling Green's Electric System for the calendar years shown, on an accrual basis. The presentation is generally consistent with the flow of revenues of the Electric System.

<b>Bowling Green</b>			
<b>(\$000)</b>			
	<u>2012</u>	<u>2013</u>	<u>2014</u>
<b><u>Revenue</u></b>			
Power Sales	\$40,050	\$45,848	\$49,962
Other Income	577	557	436
Total Revenue	40,627	46,405	50,398
<b><u>Operating Expense</u></b> *			
Power Costs	30,993	35,175	42,428
O&M Expense	5,023	7,462	3,409
Total Operating Expense	36,016	42,637	45,837
Net Revenue Available for Debt Service	4,611	3,768	4,561
General Obligation Debt Service	79	80	78
OMEGA JV5 Debt Service <sup>(1)</sup>	1,657	1,656	1,656
OMEGA JV2 Debt Service <sup>(1)</sup>	730	730	730
OMEGA JV6 Debt Service <sup>(1)</sup>	579	579	579
Revenue Debt Service	874	480	225
Depreciation	1,211	1,225	1,297
Net Non-Operating Revenue (Excl. Interest Exp.)	(290)	(648)	(1,670)
Net Transfers			
<b>Net Assets 1/1</b>	42,216	43,590	45,438
<b>Net Assets 12/31</b>	43,590	45,438	46,999
<b><u>Year End Balance</u></b>			
General Obligation Bonds	290	210	140
OMEGA JV2	3,660	2,881	2,181
OMEGA JV6	1,709	1,136	563
Bond Anticipation Notes	158	2,635	2,435 <sup>(2)</sup>

\* Excluding depreciation.

(1) OMEGA JV debt service is included in Power Costs, recovered through Bowling Green's PCA.

(2) Bowling Green issued \$2,435,000 of Bond Anticipation Notes in 2014

On November 18, 2015, AMP issued, on behalf of Bowling Green a Bond Anticipation Note (AMP BAN) in the principal amount of \$2,235,000. The AMP BAN bears interest at the rate of 0.46% per annum and is stated to mature on November 17, 2016.

### SECTION III

#### SUMMARY OF LARGE PARTICIPANTS' AREA, POPULATION, ASSESSED VALUATION AND UNEMPLOYMENT RATES

<u>Participant</u>	<u>County</u>	<u>Area (Sq. Miles)<sup>(1)</sup></u>	<u>Population<sup>(2)</sup></u>			<u>Property Tax Base Assessed Valuation (\$000)<sup>(3)</sup></u>				<u>Unemployment Averages<sup>(4)</sup></u>			
			<u>1990</u>	<u>2000</u>	<u>2010</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	
Cleveland, Ohio	Cuyahoga	82.4	505,616	478,403	396,815	4,868,774	4,899,952	4,913,145	10.0	9.5	9.8	6.4	
Danville, Virginia	N/A	44	53,056	48,411	43,055	2,702,338	2,675,917	2,689,712	11.9	10.6	9.5	8.7	
Paducah, Kentucky	McCracken	20	27,256	26,307	25,024	1,519,604	1,570,054	1,603,493	8.5	7.8	8.0	7.1	
Wadsworth, Ohio	Medina	10.6	15,718	18,437	21,567	470,878	442,011	450,001	6.9	6.0	6.5	5.2	
Orrville, Ohio	Wayne	5.8	7,712	8,551	8,380	172,574	176,987	179,138	7.9	6.1	6.3	4.6	
Bowling Green	Wood	12.6	28,176	29,652	30,028	452,951	453,620	454,700	7.9	6.1	6.2	5.2	

<sup>(1)</sup> Source: Wikipedia website for Participant.

<sup>(2)</sup> Source: U.S. Census Bureau

<sup>(3)</sup> Source: Ohio Municipal Advisory Council; Danville, Virginia - City audits; Paducah, Kentucky -McCracken County Property Valuation Administrator.

<sup>(4)</sup> Source: Participant for Ohio Participants - Ohio Labor Market website; Danville, Virginia - Virginia Workforce Connection website; Paducah, Kentucky - Workforce Kentucky website. For Orrville, Wadsworth and Paducah, Kentucky, unemployment averages reflect those for the county.

**SECTION IV**  
**LARGE PARTICIPANTS' RESIDENTIAL, INDUSTRIAL AND COMMERCIAL INFORMATION**

**Large Participants' Information**  
**Residential, Industrial, and Commercial <sup>(1)</sup>**

	2012			2013			2014		
	Customers	kWh Sales (x 1,000)	Revenue (x \$1,000)	Customers	kWh Sales (x 1,000)	Revenue (x \$1,000)	Customers	kWh Sales (x 1,000)	Revenue (x \$1,000)
<b><u>Danville, Virginia</u></b>									
Residential	37,217	457,708	49,538	37,130	469,905	51,504	37,636	482,533	55,638
Commercial	11,106	320,415	32,895	11,192	313,896	33,049	11,179	185,620	34,504
Industrial	42	86,734	16,237	42	185,443	16,021	40	315,705	16,657
<b>Total:</b>	<b>48,365</b>	<b>864,857</b>	<b>98,670</b>	<b>48,364</b>	<b>969,244</b>	<b>100,574</b>	<b>48,855</b>	<b>983,858</b>	<b>106,799</b>
<b><u>Bowling Green</u></b>									
Residential	12,682	100,872	10,859	12,684	98,789	11,330	12,684	100,498	12,416
Commercial	1,843	62,201	6,017	1,844	61,800	6,372	1,816	60,027	6,507
Industrial	90	329,596	25,192	91	348,644	27,944	91	355,435	30,840
<b>Total:</b>	<b>14,615</b>	<b>492,669</b>	<b>42,068</b>	<b>14,619</b>	<b>509,233</b>	<b>45,646</b>	<b>14,591</b>	<b>515,960</b>	<b>49,763</b>
<b><u>Cleveland</u></b>									
Residential	65,078	415,340	47,281	64,922	407,585	48,653	64,336	399,023	50,557
Commercial	6,838	523,685	57,348	6,909	526,858	59,576	6,962	535,883	65,196
Industrial	21	599,645	46,382	23	607,926	45,655	24	604,415	49,937
Other	1,173	78,900	14,205	1,179	78,627	14,476	1,170	78,760	15,353
<b>Total:</b>	<b>73,110</b>	<b>1,617,570</b>	<b>165,216</b>	<b>73,033</b>	<b>1,542,448</b>	<b>168,360</b>	<b>72,492</b>	<b>1,618,081</b>	<b>181,043</b>
<b><u>Paducah, Kentucky</u></b>									
Residential	18,677	234,213	23,520	18,612	235,600	25,942	18,603	229,931	31,612
Commercial	3,191	70,059	8,154	3,213	69,094	8,614	3,222	70,032	10,437
Industrial	539	295,641	29,648	549	290,878	30,848	526	281,032	36,078
<b>Total:</b>	<b>22,407</b>	<b>599,913</b>	<b>61,322</b>	<b>22,374</b>	<b>595,572</b>	<b>65,404</b>	<b>22,351</b>	<b>580,995</b>	<b>78,127</b>
<b><u>Wadsworth</u></b>									
Residential	11,091	98,755	12,760	11,178	101,370	11,802	11,122	102,171	12,302
Commercial	1,282	84,794	8,005	1,301	91,805	8,219	1,566	90,030	8,739
Industrial	137	80,709	6,709	136	82,713	7,979	138	93,376	8,148
<b>Total:</b>	<b>12,510</b>	<b>264,258</b>	<b>27,474</b>	<b>12,615</b>	<b>275,888</b>	<b>28,000</b>	<b>12,826</b>	<b>285,577</b>	<b>29,189</b>
<b><u>Orrville, Ohio</u></b>									
Residential	6,339	78,213	7,441	6,351	75,402	7,606	6,379	77,530	7,802
Commercial	846	75,766	7,299	862	81,117	11,378	879	83,012	8,396
Industrial	13	140,834	11,413	13	137,209	11,702	13	138,149	11,766
<b>Total:</b>	<b>7,198</b>	<b>294,813</b>	<b>26,153</b>	<b>7,226</b>	<b>293,728</b>	<b>30,686</b>	<b>7,271</b>	<b>298,691</b>	<b>27,964</b>

<sup>(1)</sup> Source: Participants



**SUMMARY OF CERTAIN PROVISIONS  
OF THE POWER SALES CONTRACT**

The following is a summary of certain provisions of the Power Sales Contract. The following summary is not to be considered a full statement of the terms of the Power Sales Contract and, accordingly, is qualified by reference thereto and is subject to the full text thereof. Summaries of certain provisions of the Power Sales Contract also appear in the body of the Official Statement. Capitalized terms not otherwise previously defined in this Official Statement or defined below have the meaning set forth in the Power Sales Contract. Copies of the Power Sales Contract are available from AMP and the Trustee.

**Definitions and Explanations of Terms.**

AMP Entitlement shall mean AMP's Ownership Interest in the Greenup Hydroelectric Facility in, and contractual rights to, the available Capacity of, and Energy from, the Greenup Project in percentage or nominal kW or MW.

AMP's Ownership Interest shall mean AMP's forty-eight and six-tenths (48.6%) undivided Ownership Interest in the Greenup Hydroelectric Facility.

Bonds shall mean revenue bonds, notes, bank loans, commercial paper or any other evidences of indebtedness, without regard to the term thereof, whether or not any issue thereof shall be subordinated as to payment to any other issue thereof, from time to time issued by AMP to finance or refinance any Project Cost or other cost, expense or liability paid or incurred or to be paid or incurred by AMP in connection with the planning, investigating, permitting, licensing, financing and acquiring any and all real or personal property, facilities, rights, licenses, permits that constitute the Greenup Project, and the refurbishing, operating, maintaining, improving, repairing, replacing, retiring, decommissioning or disposing of the Greenup Project or otherwise paid or incurred or to be paid or incurred by AMP in connection with the performance of its obligations under the Power Sales Contract or any Related Agreement, and shall include revenue bonds, notes, bank loans, commercial paper, or any other evidences of indebtedness issued by AMP to refund any outstanding revenue bonds, notes, bank loans, commercial paper, or any other evidences of indebtedness issued by AMP for any of the foregoing purposes. Bonds shall also include any interest rate hedge, swap instrument and the effect thereof, where the context is appropriate.

Capacity shall mean the Energy per unit of time which an electric generator or system can potentially produce or carry under specified conditions, generally expressed in kW or MW.

Capacity Charge shall mean the rate or charge to the Participants principally designed to recover fixed costs of the Project including those items that comprise Revenue Requirements as set forth in the Power Sales Contract and the Rate Schedule not otherwise recovered.

Commercial Operation Date of the Meldahl Project shall mean the earliest date, confirmed by a certificate by an independent engineer, selected by AMP, that the Meldahl Project is determined to be in service after physical completion, completion of all specified testing and release by its equipment suppliers and contractors for all commercial operating purposes without material restrictions.

Contract or Power Sales Contract shall mean the Power Sales Contract dated as of November 1, 2009, between AMP and the 47 Participants, together with all appendices, amendments, and supplements permitted under the terms of the Power Sales Contract.

Developmental Costs shall mean costs, including legal, engineering, accounting and advisory costs, incurred by AMP in its evaluation and development of the Greenup Project prior to the Greenup Closing Date.

Energy shall mean the net energy generated over a specified period of time by the Greenup Project in kWh or MWh.

Energy Charge shall mean the rate or charge to the Participants, principally designed to recover variable costs of the output of the Greenup Project.

Environmental Attributes shall mean any and all fuel, emissions, air quality or other environmental characteristics, green tags, renewable Energy or like credits, benefits, reductions, offsets and allowances commencing on the Greenup Closing Date and continuing for the term of the Power Sales Contract, including without limitation any of the same arising out of legislation or regulation concerned with oxides of nitrogen, sulfur or carbon, with particulate matter, soot or mercury, or implementing the United Nations Framework Convention on Climate Change (UNFCCC) or the Kyoto Protocol to the UNFCCC or crediting "early action" emissions reduction, or laws or regulations involving or administered by the Clean Air Markets Division of the Environmental Protection Agency, or any successor agency that is given jurisdiction over a program involving transferability of Environmental Attributes, or any state or federal entity given jurisdiction over a program involving transferability of Environmental Attributes, and any green tag reporting rights to such Environmental Attributes. One unit of Environmental Attributes (a) arises from the generation of one kWh of renewable Energy, one kW of Capacity, the purchase or use of one kWh of net Energy or one kW of Capacity, or the avoidance of the emission of any gas, chemical or other substance into the air, soil or water attributable to such generation, purchase or use, or (b) arising out of any law, rule or regulation.

Environmental Fund shall mean the subfund of the Reserve and Contingency Subfund that may be used from time to time to mitigate Greenup Project environmental impacts or to moderate volatility in the costs of environmental compliance, including, but not limited to, the funding of reserves for, or the purchase of, allowances or offsets from Participants, AMP or others.

Force Majeure shall mean any cause beyond the control of AMP or a Participant, including, but not limited to, failure of facilities, flood, earthquake, storm, lightning, fire, epidemic, pestilence, war, riot, civil disturbance, labor disturbance, sabotage, and restraint by court or public authority, which by due diligence and foresight AMP or such Participant, as the case may be, could not reasonably have been expected to avoid.

Greenup Agreements shall mean the Related Agreements between Hamilton and AMP relating to the Greenup Project as summarized in the Official Statement.

Greenup Closing Date shall mean the date on which AMP's Ownership Interest in the Greenup Hydroelectric Facility is obtained in accordance with the terms of the Greenup Agreements.

Greenup Hydroelectric Facility shall mean the Greenup Hydroelectric Facility (FERC Project 12667) and all facilities and related equipment used in the production and transformation of electric Power and Energy and related interconnection and transmission facilities as authorized by the Greenup License as such License may from time to time be amended, having a licensed electric generating Capacity of approximately seventy and two-tenths megawatts (70.2 MW), including the sites and all related permits, licenses, easements and other real and personal property rights and interests, together with all additions, improvements, renewals and replacements to said electric generating facilities necessary to keep said facilities in good operating condition or to prevent a loss of revenues therefrom or as required by the Greenup License, the FERC, or any other governmental agency having jurisdiction.

Greenup License shall mean the Greenup Hydroelectric Facility license, FERC Project No. 2614, issued by the FERC and any modifications or amendments thereto.

Greenup Participation Payment shall mean one hundred thirty-nine million dollars (\$139,000,000).

Greenup Project or Project shall mean AMP's Ownership Interest in the Greenup Hydroelectric Facility.

Hamilton shall mean the City of Hamilton, Ohio.

Load Factor shall mean the Participant's Energy scheduled from the Greenup Project over a time period in MWh, divided by Participant's Project Share in MW multiplied by the hours in the same time period.

Meldahl – Greenup Participation Agreement shall mean one of the Greenup Agreements of that name.

Meldahl Project shall mean FERC Project No. 12667, the project that AMP and Hamilton are jointly developing at the Captain Anthony Meldahl Locks and Dam. AMP and Hamilton have agreed in the Meldahl-Greenup Participation Agreement that AMP shall own and develop the Meldahl Project and sell 51.4% of the output thereof to Hamilton under the power sales contract between AMP and Hamilton and AMP's other Members which shall determine to participate in the Meldahl Project and subscribe for the remaining 48.6% of such output.

MISO RTO shall mean the Midwest Independent System Operator RTO or its successor organization.

O&M Expenses of a Participant shall mean (i) the ordinary and usual operating expenses, of its Electric System including purchased power expense and all amounts payable by the Participant to or for the account of AMP under the Power Sales Contract, including its obligations for Step Up Power; and (ii) to the extent not included in (i), all other items included in operating expenses under generally accepted accounting principles as adopted by the Governmental Accounting Standards Board or other applicable authority; provided, however, that if any amount payable by the Participant under the Power Sales Contract is prohibited by applicable law or by an existing contract from being paid as an O&M Expense of the Participant's Electric System, such amount shall be payable from any available funds of the Participant's Electric System and shall constitute an O&M Expense of the Participant's Electric System at such time as such law or contract shall permit or terminate.

Participants Committee shall mean a committee of AMP's Board of Trustees consisting of Participants, the members of which, in the aggregate, have not less than a Super Majority of the Project Shares, organized and operating in accordance with the terms of the Power Sales Contract.

PJM RTO shall mean the PJM RTO or its successor organization.

Point of Delivery shall mean the interconnection point between the Project's facilities and the transmission grid at which AMP shall be required to deliver or make available Capacity and Energy to or for the benefit of each of the respective Participants from the Greenup Project pursuant to the Power Sales Contract at the PSR.

Postage Stamp Rates or PSR means the total delivered cost to Participants for Capacity Charges, Energy Charges and any power cost adjustments at the Points of Delivery, as specified in the Rate Schedule.

Project Costs shall mean all costs AMP incurs in connection with purchasing the Greenup Project, including, without limitation, the Greenup Participation Payment, all costs AMP must pay Hamilton relating to the purchase of the Greenup Project and the operation of the Greenup Project, all Developmental Costs, FERC license costs, related environmental compliance costs, legal, engineering, accounting, advisory and other financing costs relating to the acquisition and ongoing operation of the Greenup Project, improving, repairing, replacement, retiring, decommissioning or disposing of the Greenup Project, or otherwise paid or incurred or to be paid or incurred by or on behalf of the Participants or AMP in connection with its performance of its obligations under the Power Sales Contract, any Trust Indenture or any Related Agreement.

Project Operator shall mean Hamilton as authorized under the Greenup Operating Agreement or any successor operator.

Project Share for any Participant expressed in kilowatts (kW) shall mean such Participant's nominal entitlement to Capacity and associated Energy from the Greenup Project, such that the sum of all Project Shares (in kW) equals the expected nominal Capacity (in kW) of the Greenup Project. Project Share for any Participant expressed as a percentage (%), rounded to the nearest one-hundredth of one percent, shall mean the result derived by dividing such Participant's Project Share in kW, by the total of all of the Participants' Project Shares (including such Participant's Project Share) in kW, such that the sum of all such Project Shares (in %) is one hundred percent (100%) of the AMP Entitlement in kW. For avoidance of doubt, the Project Share of a Participant, expressed as a percentage (%), rounded to the nearest one-hundredth of one percent, shall control as to what Project Share of Capacity and Energy a Participant is entitled in the event of any conflict between the Project Share expressed in kW and the Project Share expressed in percentage.

Prudent Utility Practice shall mean any of the practices, methods and acts which, in the exercise of reasonable judgment, in the light of the facts, including but not limited to the practices, methods and acts engaged in or approved by a significant portion of the United States electrical utility industry prior thereto, known at the time the decision was made, would have been expected to accomplish the desired result at the lowest reasonable cost consistent with reliability, safety and expedition. It includes a spectrum of possible practices, methods or acts which could have been expected to accomplish the desired result at the lowest reasonable cost consistent with reliability, safety and expedition.

Rate Schedule shall mean the schedule of rates and charges attached to the Power Sales Contract, as the same may be revised from time to time in accordance with the provisions of said Contract.

Rate Stabilization Fund shall mean the subfund of the Reserve and Contingency Fund that may be used from time to time to moderate volatility of the PSR.

Regulations shall mean the bylaws for Participants and Participants Committee meetings and actions, as the same may be amended from time to time.

Related Agreements shall mean the Greenup Agreements, any agreements for interconnection of the facilities comprising the Greenup Project to the transmission grid, including any agreements for Supplemental Transmission Service and the interconnection agreement for the interconnection of the facilities comprising the Greenup Hydroelectric Facility to the PJM RTO or MISO RTO transmission systems, any agreements with the U.S. Army Corps of Engineers relating to the Greenup Hydroelectric Facility, other agreements for Transmission Service to enable AMP to meet its obligations to deliver electric Capacity and Energy for the Participants at their respective Secondary Points of Delivery pursuant to the Power Sales Contract, and any agreements for coordination of operations with other hydroelectric projects, all as the same may be amended from time to time.

Reserve and Contingency Fund shall have the meaning set forth in a Trust Indenture and refers to a special fund, including subfunds, established by AMP to accumulate funds sufficient to provide an immediately available source of funds for the extraordinary maintenance, repair, overhaul and replacement of the Greenup Hydroelectric Facility and equipment, to mitigate environmental impacts, achieve environmental compliance or purchase and sell allowances or other environmental attributes (Environmental Fund) to stabilize or mitigate rate increases to the Participants (Rate Stabilization Fund), to pay amounts equal to AMP's share of the deductibles on insurance policies held for the benefit of the Greenup Hydroelectric Facility, to provide self-issuance or to provide assurance to surety providers (Self-Insurance Fund) and to meet other requirements of a Trust Indenture for which other funds are not, by the terms of a Trust Indenture, immediately available.

RTO shall mean any one of the regional transmission organizations approved by the Federal Energy Regulatory Commission or its successors or assigns, the territory of which includes the transmission systems to which the Greenup Project or a Point of Delivery is connected.

Secondary Points of Delivery shall mean the receipt point for each Participant which is either (i) a metered point of interconnection with the transmission or distribution system of the Participant or (ii) any other metered point of interconnection designated by a Participant for ultimate delivery of Capacity and Energy from the Points of Delivery to such Secondary Delivery Point under the Power Sales Contract; provided; however, that the Secondary Point of Delivery with respect to any Participant may, with AMP's written approval (which approval shall not be unreasonably withheld), be changed by such Participant.

Self Insurance Fund shall mean the subfund of the Reserve and Contingency Fund that may be to hold reserves against deductibles, to provide assurance to surety providers or other amounts in connection with any program of self-insurance.

Service Fee shall mean AMP's Service Fee B charge of up to one mill (\$0.001) per kWh measured by that amount of all Energy delivered pursuant to the Power Sales Contract to the respective Participants at their respective Points of Delivery under the Power Sales Contract. Said charge may be prospectively

increased or decreased at the sole option of AMP's Board of Trustees at any time provided, however, that except as provided below, such fee shall not exceed one mill (\$0.001) per kWh. Service Fee B may be increased above \$0.001 per kWh with the approval of both the AMP Board of Trustees and the Participants Committee.

Step Up Power Costs shall mean that portion of Revenue Requirements that is allocable to a defaulting Participant's payment obligations under the Power Sales Contract.

Super Majority shall mean not less than a seventy-five percent (75%) majority of the weighted vote, based upon Project Shares, of all the Participants.

Supplemental Transmission Service shall mean the power delivery service under any agreements, tariffs and rate schedules necessary or convenient to transmit or make available Capacity and Energy made available to or for the benefit of any Participant for delivery from the Point of Delivery to a Secondary Point of Delivery.

Transmission Service shall mean all transmission arrangements, together with all related or ancillary services rights and facilities, to the extent the same are necessary or prudent to provide for delivery of Capacity and Energy to the Points of Delivery.

Trust Indenture shall mean any one or more trust indentures, trust agreements, loan agreements, resolutions or other similar instruments providing for the issuance and securing of Bonds.

**Sale and Purchase.** (A) AMP agrees to sell to each Participant, and each Participant agrees to buy from AMP, such Participant's Project Share (in %) of the Project as set forth in the Power Sales Contract, subject to increase in an event of default of a Participant.

(B) Subject to the absolute payment obligations of the Participants, AMP (i) shall borrow, and capitalize from the proceeds of such borrowing, in addition to the Greenup Participation Payment, all or a portion of the amounts otherwise payable by the Participants in respect of AMP's Ownership Interest as well as any other components of Revenue Requirements incurred prior to the Greenup Closing Date and (ii) may borrow, and capitalize from the proceeds of such borrowing, all or a portion of the amounts otherwise payable by the Participants in respect of AMP's Revenue Requirements incurred prior to the Greenup Closing Date and for a reasonable time thereafter, or (iii) to the extent that AMP, upon the request and subject to the approval of the Participants Committee, does not borrow and capitalize from the proceeds of such borrowing all of AMP's Revenue Requirements incurred prior to the Greenup Closing Date and for a reasonable period thereafter, AMP shall, to such extent and only upon not less than sixty (60) days prior written notice, bill the Participants for their Project Shares of up to twenty-five percent (25%) of AMP's Revenue Requirements for such period or, with the approval of a Super Majority of the Participants, up to one hundred percent (100%) of AMP's Revenue Requirements for such period.

(C) If at any time any Participant has Capacity and Energy in excess of its needs, it may request that AMP sell and deliver any or all of said Participant's Project Share of Capacity and Energy available under the Power Sales Contract, and AMP shall use commercially reasonable efforts in consultation with such Participant to attempt to sell such surplus for such Participant at not less than a minimum price approved by the Participant.

**AMP Undertakings.** (A) AMP, in good faith and in accordance with the provisions of the Power Sales Contract, the Greenup Agreements and Prudent Utility Practice:

(i) shall undertake, or cause to be undertaken, the purchase of the AMP Ownership Interest in the Greenup Hydroelectric Facility, subject to the conditions in the Meldahl-Greenup Participation Agreement; the financing of costs of the same, including financing costs, legal, engineering, accounting and financial advisory fees and expenses and the operating, maintaining, refurbishing, replacing, retiring, decommissioning and disposing of the Project; and to obtain, or cause to be obtained, all Federal, state and local permits, licenses and other rights and regulatory approvals necessary or convenient to accomplish the same;

(ii) shall utilize the Project to fulfill its obligations to deliver or make available Capacity and Energy to the Participants at the Point of Delivery and respective Secondary Points of Delivery, such obligation shall be subject to the Project's availability; and

(iii) shall inform the Participants Committee on a regular basis, not less often than in conjunction with the regular meetings of the AMP Board of Trustees, of its actions, plans and efforts undertaken in furtherance of the provisions of the Power Sales Contract including review of the Project's proposed annual operating and capital budgets prior to their adoption and to receive and give due consideration to any recommendations of the Participants Committee regarding the same; and

(iv) shall submit to the Participants Committee for approval, the general plan of financing for the Project along with any proposed material changes to such general plan as the same may be proposed from time to time.

(B) In the event that, notwithstanding its efforts undertaken in accordance with the Power Sales Contract, AMP is unable to supply all of the Capacity and Energy contracted for by the Participants, it shall allocate the Capacity and Energy available from the AMP Entitlement among the Participants *pro rata*, on the basis of their respective Project Share percentages.

(C) In the event that at any time the Project produces or is capable of producing surplus Capacity, surplus Energy, surplus Transmission Service or Supplemental Transmission Service Capacity, or other surplus rights, products or services that AMP believes may be salable to another entity in light of prevailing market conditions and the characteristics of any such surplus, or which due to prevailing market conditions make it desirable and in the best interests of AMP, the holders of the Bonds or the Participants to sell all or any portion of the Capacity and Energy associated with the AMP Entitlement, AMP shall use commercially reasonable efforts to attempt to sell such surplus Capacity, surplus Energy, surplus transmission Capacity, or other surplus product or service or such Capacity and Energy for such Participant at not less than a minimum price approved by the Participant, on such terms and for such period as AMP deems appropriate and as AMP deems not adverse to the tax or regulatory status or other interests of AMP, the Participants or any Bonds. All net revenues received by AMP from such surplus sales shall be utilized by AMP to reduce the Revenue Requirements that otherwise must be paid by the Participants and thereby offset rates and charges to the Participants under the Power Sales Contract. Any such sales for periods of one year or greater shall be subject to approval by the Participants Committee.

(D) In addition to such sales of Capacity and Energy to any entity permitted by the Power Sales Contract, AMP may to the extent not inconsistent with the Greenup Agreements (i) sell, on a temporary or permanent basis, or otherwise dispose of Environmental Attributes or other inventory or spare parts for or byproducts from the Project or sell, lease or rent any excess land or land rights, including mineral or other subsurface rights and facilities associated with any by-product not required for operation of the Project or any other Power Sales Contract Resource or (ii) sell, lease or otherwise dispose of on a temporary or permanent basis any other rights or interests associated with the Project; provided, however, that prior to entering into any such agreement on a permanent basis, or for any term of five (5) years or longer, AMP shall have determined that such disposition will not adversely affect the tax or regulatory status of AMP or any Bonds and, for such sales if the rights or interests are valued in excess of \$500,000 in 2009 dollars, shall have obtained the approval of the Participants Committee and a report or certificate of an independent engineer or engineering firm or corporation having a national reputation for experience in such work to the effect that such permanent sale, lease or other disposition should not, in the ordinary course of operation of the Project, materially adversely affect the operation of the Project or AMP's ability to perform its obligations under the Power Sales Contract or the Greenup License.

(E) All Capacity sold or made available under the Power Sales Contract shall include the Capacity, in kW, and AMP, upon written request of a Participant, shall provide such Participant with any appropriate certifications reasonably necessary for the Participant to confirm its rights to such Capacity for any purpose, including any requirements of any applicable RTO or its respective successors.

(F) AMP covenants that it shall, prior to entering into any such agreements and in consultation with the Participants Committee, adopt, maintain and revise from time to time a written policy respecting any variable rate indebtedness and hedge or swap agreements entered into under the Power Sales Contract, including the circumstances and terms under which any such agreements may be terminated.

(G) Other than for sales of two (2) months or less, AMP shall be obligated to provide the Participants a right of first refusal with respect to the AMP Entitlement, it is understood by the Participants that it may be in the best interests of the Participants for AMP to resell such Project Capacity or Energy immediately and that it may be impracticable for AMP to effectively communicate a *bona fide* offer to all the Participants of such Project Capacity or Energy under the circumstances.

(H) AMP and the Participants recognize that there may be certain Environmental Attributes associated with the Project. Each Participant shall be entitled to a share of the benefits associated with all such environmental attributes in proportion to its Project Share: AMP shall adopt, from time to time, with the approval of the Participants Committee, protocols for utilizing or distributing such Environmental Attributes to, or for the benefit of, the Participants; provided, however, that each Participant may retain its right to its Project Share of Environmental Attributes to utilize, manage, sell or transfer such rights independently.

(I) AMP's rights and obligations under the Power Sales Contract are, to the extent applicable, dependent upon, and must be construed to reflect, the rights and obligations of both AMP and Hamilton under the Greenup Agreements and as co-licensees under the Greenup License.

**Rates and Charges; Method of Payment.** (A) After consultation with the Participants Committee, the Board of Trustees of AMP shall establish, maintain and adjust rates or charges, or any combination thereof, as set forth in the Rate Schedule, for Capacity and Energy sold to the Participants



under the Power Sales Contract, including any Capacity and Energy delivered prior to the Greenup Closing Date for the purchase of AMP's Ownership Interest, that result in Postage Stamp Rates and other rates and charges, adjusted as set forth in the Power Sales Contract, at levels that will provide revenues to or for the account of AMP sufficient, but only sufficient, to meet the Revenue Requirements of AMP, which Revenue Requirements shall consist of the sum of the following without duplication:

- (i) all costs incurred by AMP under the Greenup Agreements;
- (ii) all costs incurred by AMP under other Related Agreements, including, without limitation, all costs to AMP of Transmission Service to make available or for delivery of electric Capacity and Energy under the Power Sales Contract to the Point of Delivery as well as any costs incurred in the event AMP defaults on its obligations and a third party is brought in to perform whatever duties or obligations are not being performed by AMP;
- (iii) all costs incurred by AMP for the operation and maintenance of the Project, including but not limited to, Project Costs not otherwise recovered, the costs of equipment and other leases, an appropriate allocation of AMP's energy control center, metering and other common costs of AMP reasonably allocable to the Project and not otherwise recovered by the Service Fee or other fees or charges, such as AMP's Energy Control Center charges, that AMP charges the Participants pursuant to other agreements, the cost to AMP of taxes, payments in lieu of taxes, all permits, licenses and related fees, related to the Project, the cost of insurance and damage claims to the extent associated with the Project, any fuel and fuel related costs, pollution control or emissions costs, fees and allowances, cost of any refunds to any Participant pursuant to the provisions of the Power Sales Contract and (to the extent not paid out of the proceeds of Bonds or related investment income) legal, engineering, accounting and financial advisory fees and expenses;
- (iv) costs of decommissioning and disposal of the Project, including reserves therefor;
- (v) the cost to establish and maintain, or to obtain the agreement of third parties to provide to the extent not included in Project Costs, an allowance for working capital, inventories and spares, including reasonable reserves for repairs, refurbishments, renewals, replacements and other contingencies deemed necessary by the Board of Trustees of AMP in order to carry out its obligations under the Power Sales Contract;
- (vi) the cost of power supply engineering, planning and forecasting incurred by AMP in connection with the performance of its obligations under the Power Sales Contract or in attempting to comply with laws or regulations requiring the same to the extent such laws or regulations are applicable to the Project;
- (vii) the Service Fees not otherwise charged by AMP pursuant to other agreements;
- (viii) the costs of Supplemental Transmission Services furnished or procured and paid by AMP for the respective Participants as set forth in the Rate Schedule, such costs to be reimbursed to AMP by the respective Participants receiving such services and not through the PSR;
- (ix) payments of principal of and premium, if any, and interest on all Bonds, payments which AMP is required to make into any fund or account during any period to be set aside for the

payment of such principal, premium or interest when due from time to time under the terms of any Trust Indenture (whether, in the case of principal of any Bond, upon the stated maturity or upon prior redemption, including any mandatory sinking fund redemption, under such Trust Indenture), and payments which AMP is required to make into any fund or account to establish or maintain a reserve for the payment of such principal, premium or interest under the terms of any Trust Indenture, provided, however, that the amounts required to be included in Revenue Requirements pursuant to this clause (ix) shall not include payments in respect of the principal of any Bonds payable solely as a result of acceleration of maturity of such Bonds and not otherwise scheduled to mature or to be redeemed by application of mandatory sinking fund payments; provided further, however, that the amounts required to be included in Revenue Requirements pursuant to this clause (ix) may include payments in respect of a termination of a hedge or swap agreement;

(x) amounts required under any Trust Indenture to be paid or deposited into any fund or account established by such Trust Indenture, including any amounts required to be paid or deposited by reason of the transfer of moneys from such funds or accounts to the funds or accounts referred to in clause (ix) above;

(xi) the cost to establish and maintain additional reserves, or to obtain the agreement of third parties to provide, for contingencies including (a) a Self-Insurance Subfund containing reserves against deductibles, to provide assurance to surety providers, losses or otherwise established in connection with any program of self-insurance, (b) the making up of any deficiencies in any funds or accounts as may be required by the terms of any Trust Indenture, (c) contributions to any Rate Stabilization Fund or Environmental Fund, subject, to the extent not otherwise required to be paid as a part of Revenue Requirements or required by any Trust Indenture, to approval by the Participants Committee;

(xii) amounts required to be paid by AMP to procure, or to perform its obligations under, any liquidity or credit support obligation, interest rate swap or hedging instrument (including, in each case, any amounts due in connection with the termination thereof) associated with any Bonds or amounts payable with respect thereto;

(xiii) additional amounts, if any, which must be realized by AMP in order to meet the requirements of any rate covenant with respect to coverage of debt service on Bonds under the terms of any Trust Indenture, and such additional amounts as may be deemed by AMP desirable to facilitate marketing Bonds on favorable terms;

(xiv) unless otherwise funded by Bonds, the repayment to AMP of the Greenup Participation Payment made by AMP to Hamilton with respect to AMP's Ownership Interest; provided, however, that the Revenue Requirements associated with such repayment shall be allocated among the Participants, in accordance with their relative Project Shares;

(xv) any cost or expenditure associated with the Project's compliance with any applicable reliability standards or other standards or requirements of the Greenup Project License or otherwise approved or required by the FERC, the U.S. Army Corps of Engineers or other governmental entity having jurisdiction; and

(xvi) any costs associated with payments to Hamilton for the operations of the Greenup Hydroelectric Facility not otherwise set forth above and owing under the Greenup Operating Agreement;

less amounts available as a result of any appropriate refunds, rebates, miscellaneous revenues or other distributions relating to the Project and any sales of surplus power or any Environmental Attributes, inventory, spare parts, excess land or land rights or any other rights or interest associated with the Project (after payment of all associated costs and expenses incurred by AMP in connection therewith) and less any Bond proceeds or related investment income applied by AMP in the exercise of its discretion to pay any costs referred to in clauses (i) through (xiv) above, provided, however that in the event that any Trust Indenture requires another application of such funds or AMP determines that any of such amounts of proceeds or income must be applied in accordance with the provisions of clause (i) of (J) below, then and to such extent such other application shall be required, such funds shall be so applied.

(B) The Revenue Requirements of AMP in respect of any month shall be computed as provided above and shall be paid by the respective Participants through rates and charges as set forth in the Rate Schedule. In determining the rates and charges under the Power Sales Contract, estimated amounts may be utilized until actual data becomes available, at which time any necessary adjustments necessary to true-up the estimates to actual shall be made.

(C) The rates and charges to each of the Participants under the Power Sales Contract, as set forth on the Rate Schedule, shall be a uniform PSR to the Points of Delivery, *provided* that (i) each Participant which receives or has made available to it Capacity and Energy at a Secondary Point of Delivery shall be responsible for the cost of Supplemental Transmission Service or other services related to such delivery and, if not paid to a third party transmission entity by the Participant, shall be charged an additional amount equal to the additional cost to AMP, if any, of delivery to such Secondary Point of Delivery, including any state and local taxes incurred as a result of such delivery or sale, as set forth on the Rate Schedule and (ii) amounts, if any, respecting reactive power requirements or power factor standards as set forth in the Power Sales Contract shall be charged an additional amount equal to such cost; and (iii) *provided further* that the Revenue Requirements related to the repayment to AMP of the \$139 million Participation Payment made by AMP to Hamilton with respect to the rights to the Greenup Project shall be allocated among the Participants, other than Hamilton, in accordance with their relative Project Shares.

(D) After consultation with the Participants Committee, the Board of Trustees of AMP will determine and establish the initial Rate Schedule to be effective on or about the Commercial Operation Date of the Meldahl Project, to meet AMP's Revenue Requirements. At such intervals as the Board of Trustees of AMP shall determine appropriate, but in any event not less frequently than at the end of each quarter during each Contract Year, the Participants Committee and the Board of Trustees of AMP shall review and, if necessary, the Board of Trustees shall revise prospectively the Rate Schedule to ensure that the rates and charges under the Power Sales Contract continue to cover AMP's estimate of all of the Revenue Requirements and to recognize, to the extent not inconsistent with the Power Sales Contract, other factors and changes in service conditions as it determines appropriate. AMP shall transmit to each Participant a copy of each revised Rate Schedule, setting forth the effective date thereof, for delivery not less than thirty (30) days prior to such effective date. Each Participant agrees that the revised Rate Schedule, as determined from time to time by the Board of Trustees of AMP, shall be deemed to be

substituted for the Rate Schedule previously in effect and agrees to pay for electric Capacity and Energy and related Transmission Service made available by AMP to it under the Power Sales Contract after the effective date of any revision of the Rate Schedule in accordance with such revised Rate Schedule. Unless otherwise determined by the AMP Board of Trustees, the Rate Schedule shall be structured so as to consist of: (i) a Capacity Charge, principally designed to recover fixed costs, including the fixed costs of Transmission Service; (ii) an Energy Charge, principally designed to recover the variable costs of providing the output of the Project and the variable costs of Transmission Service; (iii) a Power Cost Adjustment Factor designed to adjust either or both the Capacity Charge or Energy Charge upward or downward to reflect monthly changes in variable costs, any electric sales to third parties and any changes in the cost of Transmission Service; (iv) the Service Fee; and (v) a Participant specific rate for Supplemental Transmission Service for each Secondary Delivery Point to the extent AMP incurs costs related thereto. The determination of the Power Cost Adjustment Factor each month shall be made by appropriate officials designated by the Board of Trustees of AMP according to methodology determined by the Participants Committee and approved by the Board of Trustees, no specific action by the Participants Committee or Board of Trustees to approve the Power Cost Adjustment Factor so determined each month shall be required.

(E) Unless some other time period is otherwise approved by the AMP Board of Trustees and the Participants Committee, in each month after the establishment of the initial Rate Schedule, AMP shall render to each Participant a monthly invoice showing the amount payable by such Participant under the Power Sales Contract with respect to Capacity and Energy, Transmission Service, including any Supplemental Transmission Service or other charges, credits, adjustments or true-ups, applicable to such Participant with respect to the immediately preceding month. Prior to the Greenup Closing Date, such invoice may include payments with respect to any Bonds issued. Such Participant shall pay such amounts to AMP, at such time and in such manner as shall provide to AMP (or such other person so designated by AMP) funds available for use by AMP (or its designee, including a trustee under any Trust Indenture) on the first banking day not more than the fifteenth (15<sup>th</sup>) day after the date of the issuance of the monthly invoice.

(F) If any Participant does not make a required payment in full in funds available for use by AMP (or its designee) on or before the close of business on the due date thereof, a delayed-payment charge on the unpaid amount due for each day over-due will be imposed at a rate per annum equal to the lesser of (i) the maximum rate permitted by law, and (ii) two percent (2%) per annum above the rate available to AMP through its short-term credit facilities as the same may be adjusted from time to time, together with any damages or losses incurred by AMP, or through AMP, or any other Participant, as a result of such failure to make timely payment which is not compensated by such delayed-payment charge.

(G) In the event of any dispute by any Participant as to any portion of any invoice, such Participant shall nevertheless pay the full amount of the disputed charges when due and shall give written notice of the dispute to AMP not later than one hundred eighty (180) days from the date such payment is due; provided, however, that AMP shall not be required to refund any disputed amounts relating to third-party charges if such notice, although timely, does not afford AMP a reasonable opportunity to pursue a claim against such third-party due to the requirements of a Related Agreement, Supplemental Transmission Agreement, RTO or other Transmission Service provider dispute resolution procedures. Such notice shall identify the disputed invoice, state the amount in dispute and set forth a full statement of the grounds on which such dispute is based. Billing disputes and any subsequent adjustments shall be limited to the two (2) year period prior to the date timely notice was given; provided, however, that to the

extent AMP may reasonably pursue a third-party on account of such dispute for a period longer than such two (2) year period, AMP shall do so and adjustments may, to such extent, relate to such longer period.

(H) In the event that at any time AMP shall determine that it has rendered an invoice containing a billing error, AMP shall furnish promptly to each Participant whose invoice was in error a revised invoice, clearly marked as such, with the error corrected. If the revised invoice indicates that the Participant has been undercharged, the difference between the amount paid by the Participant and the correct amount, together with interest (from the date of payment by the Participant of the incorrect amount to the due date of the invoice next submitted to the Participant after AMP has furnished the revised invoice) at the rate which would apply under the Power Sales Contract to overdue payments by such Participant, less two percent (2%), shall be paid by the Participant to AMP (or such other person designated by AMP) at such time and in such manner as shall provide to AMP (or such other person so designated) funds available for use by AMP (or its designee) on the due date of such next invoice. If the revised invoice indicates that the Participant has been overcharged, the difference between the correct amount and the amount paid by the Participant, together with interest (from the date of payment by the Participant of the incorrect amount to the due date of the invoice next submitted to the Participant after AMP has furnished the revised invoice) at the rate which would apply under the Power Sales Contract to overdue payments by such Participant, less two percent (2%), shall be subtracted by AMP from the invoice next submitted to such Participant (and paid by AMP to the Participant in funds available for use by the Participant on the due date of such next invoice if, but only to the extent by which, the amount so due to the Participant exceeds the amount of the next invoice). The date of payment by the Participant shall mean the date on which funds in the amount so paid first become available for use by AMP (or its designee).

(I) The obligations of each Participant to make its payments shall constitute obligations of such Participant payable as an O&M Expense of its Electric System. No Participant shall be required to make payments under the Power Sales Contract except from the revenues of its Electric System and from other funds of such system legally available therefor. In no event shall any Participant be required to make payments under the Power Sales Contract from tax revenues, or any other source of funds other than its Electric System's funds, but it may elect, in its sole discretion, to do so. The obligations of each Participant to make payments described under this heading in respect of any month or other billing period shall be on a "take-or-pay" basis and, therefore, shall not be subject to any reduction, whether by offset, counterclaim, or otherwise, such payment obligations of such Participant shall not be conditioned upon the performance by AMP or any other Participant of its obligations under the Power Sales Contract, or any other agreement, and such payments shall be made whether or not any generating unit or any other component of the Greenup Hydroelectric Facility is, operable, operating or there is any default or failure of Hamilton to act under the Greenup Agreements and, as long as Bonds remain outstanding, notwithstanding the suspension, interruption, interference, reduction or curtailment, in whole or in part, for any reason whatsoever, of the Greenup Project's generating capability or the Participant's Project Share, including Step Up Power, if any; provided, however, that nothing contained in the Power Sales Contract shall be construed to prevent or restrict such Participant from asserting any rights which it may have against AMP under the Power Sales Contract or in any provision of law, including institution of legal proceedings.

For purposes of paragraph (I) above, it should be noted that the Cities of Coldwater, Marshall and Wyandotte, Michigan (the "Michigan Participants") have bond issues outstanding that limit the payments under the Power Sales Contract from being considered an O&M Expense of their respective Electric

Systems. Therefore, as long as the Michigan Participants' current bond issues remain outstanding, the obligations of such Michigan Participants to make payments under the Power Sales Contract (i) shall constitute obligations of such Michigan Participant payable as an O&M Expense of its Electric System so long as such obligations are "take and pay" obligations and (ii) shall constitute obligations payable from any revenues or other moneys of each Michigan Participant's Electric System legally available for the purpose if and to the extent such obligations are payable on a "take-or-pay" basis. However, once the currently outstanding bonds of the respective Michigan Participants are no longer outstanding under the terms of their applicable ordinance, the Michigan Participants' obligations to make payments under the Power Sales Contract shall constitute obligations of such Michigan Participant payable as an O&M Expense of its Electric System on a "take-or-pay" basis.

(J) Proceeds from the sale of Bonds in excess of the amount required for the purposes for which such Bonds were issued and investment income earned on any investments held under the Trust Indenture shall be applied, subject to the provisions of any Trust Indenture, by AMP, as approved by the Participants Committee (i)(a) to pay principal or interest on the Bonds, (b) to the purchase or redemption of Bonds prior to their stated maturity, (c) to the payment of costs of renewals and replacements of any property constituting a part of the Project, or as a reserve therefor and (ii) as a credit against the Revenue Requirements. Insurance proceeds, condemnation awards and damages received by AMP in connection with the Project and not required to be applied to the restoration, renewal or replacement of facilities, and proceeds from the sale or disposition of surplus property constituting a part of the Project, shall be applied by AMP, subject to approval by the Participants Committee, (a) to the purchase or redemption of Bonds prior to their stated maturity, (b) to the payment of costs of renewals and replacements of any property constituting a part of the Project, or as a reserve therefor by deposit to the Reserve and Contingency Fund, or (c) as a credit against Revenue Requirements. If any Trust Indenture, any instrument of a similar nature relating to borrowings by AMP to finance the Project or any Related Agreement shall require the application of any amount referred to in the foregoing provisions to any specific purpose, AMP shall apply such amount to such purpose as so required.

**Force Majeure.** Neither AMP nor any Participant shall be considered to be in default in respect to any obligation under the Power Sales Contract (other than the obligation of each Participant to make payments) if prevented from fulfilling such obligation by reason of *Force Majeure*. A party rendered unable to fulfill any such obligation by reason of *Force Majeure* shall exercise due diligence to remove such inability with all reasonable dispatch and such party shall promptly communicate with the other regarding such *Force Majeure*, its expected length and the actions being taken to remove the same.

**Insurance.** AMP shall maintain, or cause to be maintained, in force, and is authorized to procure insurance with responsible insurers with policies payable to the parties as their interests shall appear, against risk of direct physical loss, damage or destruction, at least to the extent that similar insurance is mandated by law or usually carried by utilities constructing and operating facilities of the nature of the facilities of the Project, including liability insurance, workers' compensation and employers' liability, all to the extent available at reasonable cost and subject to reasonable deductible provisions, but in no case less than will satisfy all applicable regulatory requirements, including FERC license requirements and requirements of the U.S. Army Corps of Engineers and conform to Prudent Utility Practice. AMP may procure additional insurance subject to the approval of the Participants Committee. Notwithstanding the foregoing, AMP may, to the extent permitted by the Related Agreements, the Trust Indentures and the similar instruments relating to borrowings by AMP to finance the Project and, subject to the approval of the Participants Committee, self-insure or participate in a program of owner-controlled insurance, self-

insurance or group insurance to the extent it receives a written opinion of a qualified insurance consultant that such self-insurance, after consideration of any existing or required reserve deposits, is reasonable in light of existing programs of comparable utilities constructing and operating facilities of the nature of the facilities of the Project.

**Bonds; Trust Indenture; Power Sales Contract.** (A) AMP shall issue Bonds for the purpose of paying Project Costs as well as all or any part of the costs of permitting, acquiring, improving, repairing, restoring, renewing or refurbishing the Project, including, without limitation, reimbursement to refund any outstanding Bonds, all upon such terms and pursuant to one or more Trust Indentures having such terms as AMP, in its sole discretion and exclusive judgment, deems necessary or desirable to enable AMP to fulfill satisfactorily its obligations under the Power Sales Contract; provided, however, that AMP shall not issue Bonds having a final maturity date extending beyond the later of March 28, 2056 or the initial estimated useful life of the Project, as estimated, in a report or certificate of an independent engineer or engineering firm or corporation having a national reputation for experience in electric utility matters. All Bonds, any Trust Indenture, and all revenues and other funds of AMP allocable to the Participants and to the Power Sales Contract, other than the Service Fee, shall be separate and apart from all other borrowings, indentures, revenues, and funds of AMP. AMP shall not pledge or assign any of its right, title or interest in, to or under any of the foregoing, the Power Sales Contract or the Project, or otherwise make available any thereof, to secure or pay any indebtedness or obligation of AMP or as otherwise expressly permitted by the Power Sales Contract.

(B) (i) Each Participant acknowledges that it is the intention of AMP and the Participants to (a) utilize, to the maximum extent possible, the proceeds of Bonds the interest on which is excluded from gross income for Federal income tax purposes under Section 103 of the Internal Revenue Code of 1986, as amended (the "Code") or that benefit from Federal subsidies or credits ("Tax-advantaged Bonds"), to finance the costs of the Project and related costs and (b) enable AMP to issue Bonds that are Tax-advantaged Bonds. Each Participant acknowledges that at any time that AMP issues Tax-advantaged Bonds, each Participant must expect to own and not expect to sell or otherwise dispose of or change the use of its rights to output of the Project prior to the final maturity date of the respective Tax-advantaged Bonds;

(ii) Each Participant acknowledges that output contracts with nongovernmental persons for the purchase of electricity produced by a generating facility financed with Tax-advantaged Bonds may result in private business use of such generating facilities, that contracts with nongovernmental persons for transmission and distribution services financed with Tax-advantaged Bonds may result in private business use of such transmission and distribution facilities and that only a limited amount of private business use is permitted under the Federal income tax laws addressing Tax-advantaged Bonds;

(iii) Each Participant represents, warrants and covenants that, notwithstanding any other provisions of the Power Sales Contract, it will take all actions necessary to enable AMP to issue Bonds as Tax-advantaged Bonds to finance the Project and related costs and facilities;

(iv) Each Participant represents, warrants and covenants that it will not take any action (including but not limited to entering into output contracts), or fail to take any action, that would adversely affect applicable Federal subsidies or credits or the exclusion from gross income for Federal income tax purposes of interest on any Tax-advantaged Bonds. Each Participant represents, warrants and covenants that its interest in the Project will be used for the governmental purpose of such Participant

while such Participant owns rights to output of the Project. In addition, each Participant represents, warrants and covenants that it will take no action (including but not limited to entering into output contracts) or fail to take any action which action or failure would cause the Tax-advantaged Bonds issued by AMP to become private activity bonds, including qualified 501(c)(3) Bonds, and will not dispose of or change the use of its Electric System unless an opinion of nationally recognized bond counsel acceptable to AMP is received stating that such action will not have an adverse effect on applicable Federal subsidies or credits or the exclusion from gross income for Federal income tax purposes of interest on the Bonds issued as Tax-advantaged Bonds;

(v) Each Participant represents, warrants and covenants that it will establish reasonable procedures to ensure that no action is taken by it that would cause any Bonds issued as Tax-advantaged Bonds to meet the private business use test or the private loan test of Section 141 of the Code and to ensure continued qualification of the Bonds issued as Tax-advantaged Bonds; and

(vi) Each Participant acknowledges that AMP annually files Form 990 with the Internal Revenue Service and that information required to complete such form includes the percentage of tax-exempt financed property used in a private business use. Each Participant covenants that, if requested, it will provide AMP a report or data by March 31, of each year setting forth such information as is required for AMP to complete IRS Form 990.

(C) Each Participant with a Project Share in excess of 5% will be deemed by AMP to be an "obligated person" within the meaning of Rule 15c2-12 under the Securities Exchange Act of 1934, as amended, and agrees to furnish to AMP annually, no later than October 1 of each year and to the extent required for AMP to comply with its undertakings made pursuant to such Rule, (i) information updating the financial and operating data respecting the Participant and its Electric System, which data was presented or included by specific reference in an official statement or other comparable document of AMP prepared in connection with the offering of its Bonds, and (ii) the Participant's financial statements relating to its Electric System, when they become publicly available, and prepared in accordance with generally accepted governmental accounting standards or otherwise as required by law.

#### **Disposition or Termination of the Greenup Project.**

Unless otherwise required by the Greenup Agreements, for so long as any Bonds are outstanding, except as otherwise permitted in the Power Sales Contract, AMP shall not sell or otherwise dispose of, in whole or in part, AMP's Ownership Interest in the Greenup Hydroelectric Facility without the consent of a Super Majority of the Participants. The Power Sales Contract does not prohibit (i) a merger or consolidation or sale of all or substantially all of the property of AMP, (ii) any sale, lease or other disposition or arrangements permitted by the Power Sales Contract or (iii) the mortgaging, pledging or encumbering of all or any portion of AMP's Ownership Interest in the Greenup Project pursuant to any Trust Indenture to secure any Bonds. Subject to the provisions of the Greenup Agreements or other Related Agreements, any facilities of the Greenup Project shall be terminated and AMP, in coordination with Hamilton, shall cause such facilities to be salvaged, discontinued, decommissioned, and disposed of or sold in whole or in part on such terms as both the AMP Board of Trustees, Hamilton as co-licensee and the Participants Committee determine to be reasonable and appropriate when:

(a) so required pursuant to any Related Agreement; or



(b) AMP Board of Trustees, Hamilton as co-licensee and the Participants Committee determine that the facilities are not capable of operating due to licensing or operating conditions or other similar causes; or

(c) AMP Board of Trustees, Hamilton as co-licensee and the Participants Committee determine that such facilities are not capable of producing or delivering Energy consistent with Prudent Utility Practice; or

(d) Should any party disagree with a decision to cause any Project facilities to be salvaged, discontinued, decommissioned and disposed of, or sold, such party shall have a right of first refusal, under such reasonable terms and conditions as approved by AMP, Hamilton as co-licensee and the Participants Committee, such approval not to be unreasonably withheld, to purchase any such facilities at their then fair market value or such lesser value as may be approved by a Super Majority of the Participants. In such case the parties shall cooperate to close such transaction in a commercially reasonable time and to make such filings, including amendment of the Greenup Project License as required to consummate such transaction.

**Additional Covenants of the Participants.** (A) Each Participant covenants and agrees to establish and maintain rates for electric power and energy to its consumers which shall provide to such Participant revenues at least sufficient, together with other available funds, to meet its obligations to AMP under the Power Sales Contract; to pay all other O&M Expenses; to pay all obligations, whether now outstanding or incurred in the future, payable from, or constituting a charge or lien on, the revenues of its Electric System; and to make any other payments required by law.

(B) Each Participant covenants and agrees that, unless the Power Sales Contract has been assigned, it shall not sell, lease or otherwise dispose of all or substantially all of its Electric System except on 180 days' prior written notice to AMP and, in any event, shall not so sell, lease or otherwise dispose of the same unless AMP shall reasonably determine that all of the following conditions are met: (i) such Participant shall assign the Power Sales Contract and its rights thereunder (except as otherwise provided in the last sentence of this paragraph) in writing to the purchaser or lessee of the Electric System and such purchaser or lessee, as assignee of rights and obligations of such Participant under the Power Sales Contract, shall assume in writing all obligations (except to the extent theretofore accrued) of such Participant under the Power Sales Contract or such Participant shall post a bond or other security, in either case reasonably acceptable to AMP, to assure its obligations under the Power Sales Contract are fulfilled and clauses (iv) (a), (b) and (c) below are satisfied; (ii) if and to the extent necessary to reflect such assignment and assumption, AMP and such assignee shall enter into an agreement supplemental to the Power Sales Contract to clarify the terms on which Capacity and Energy are to be sold by AMP to such assignee; (iii) the senior debt of such assignee shall be rated in one of the four highest whole rating categories, without regard to sub-categories represented by + or – or similar designations, by at least one nationally recognized bond rating agency or if such entity is not rated, AMP and any trustee under any Trust Indenture shall receive an opinion from a nationally recognized financial expert that the assignment does not materially adversely affect the security for any Bonds; and (iv) AMP shall have received an opinion or opinions of counsel of recognized standing selected by AMP stating that such assignment (a) will not adversely affect any pledge and assignment by AMP of the Power Sales Contract or the revenues derived by AMP thereunder (other than the Service Fee) as security for the payment of Bonds and the interest thereon, (b) is lawfully permitted under applicable law, and (c) will not affect the regulatory or tax status of AMP or any Bonds. Notwithstanding the foregoing, if AMP reasonably determines that the

assignment of the Power Sales Contract, pursuant to the immediately preceding sentence in connection with the sale, lease or other disposition of a Participant's Electric System, could reasonably be expected to result in any increase in the rates and charges to any of the remaining Participants for Capacity and Energy and associated Transmission Service made available under the Power Sales Contract, AMP may, by delivery of written notice thereof sent no later than 120 days following receipt by AMP of notice sent pursuant to the immediately preceding sentence, refuse to approve such sale, lease or other disposition and, should the Participant nonetheless and in contravention of the provisions of the Power Sales Contract proceed with such sale, lease or other disposition, terminate, effective upon such sale, lease or other disposition, all of such Participant's rights under the Power Sales Contract (except to the extent of any rights theretofore accrued); provided, however, that prior to the effective date of any such termination AMP shall have arranged for the assignment by such Participant of its rights (except as otherwise in the last sentence of this paragraph) and obligations (except to the extent theretofore accrued) under the Power Sales Contract to another entity which assumes in writing all obligations of such Participant (except to the extent theretofore accrued) and which satisfies each of the conditions set forth in clauses (ii) through (iv) of the immediately preceding sentence; provided, further, that nothing contained in this paragraph shall be construed to prevent or restrict any Participant from issuing mortgage revenue bonds (subject to the provisions of (E) below of this heading) secured by a mortgage of the property and revenues of such Participant's Electric System, including a franchise. Each Participant agrees to cooperate in effecting any assignment pursuant to the immediately preceding sentence.

(C) Each Participant covenants and agrees that it shall take no action the effect of which would be to prevent, hinder or delay AMP from the timely fulfillment of its obligations under the Power Sales Contract, any Related Agreement, any then outstanding Bonds or any Trust Indenture; provided, however, that nothing contained in the Power Sales Contract shall be construed to prevent or restrict such Participant from asserting any rights which it may have against AMP or under any provision of law, including institution of legal proceedings for specific performance or recovery of damages.

(D) Each Participant covenants and agrees that it shall, in accordance with Prudent Utility Practice, (i) operate the properties of its Electric System and the business in connection therewith in an efficient manner, (ii) maintain its Electric System in good repair, working order and condition, and (iii) make all necessary and proper repairs, renewals, replacements, additions, betterments and improvements with respect to its Electric System; provided, however, that this covenant shall not be construed as requiring such Participant to expend any funds which are derived from sources other than the operation of its Electric System, although nothing herein shall be construed as preventing such Participant from doing so.

(E) Each Participant covenants and agrees that it shall not issue bonds, notes or other evidences of indebtedness or incur lease or contractual obligations which are payable from the revenues derived from its Electric System superior to the payment of the O&M Expenses of its Electric System; provided, however, that nothing shall limit such Participant's present or future rights (i) to incur lease or contractual obligations that, under generally accepted accounting principles, are operating expenses of its Electric System and that are payable on a parity with O&M Expenses or (ii) to issue bonds, notes or other evidences of indebtedness payable from revenues of its Electric System subject to the prior payment or provision for the payment of the O&M Expenses, including amounts payable under the Power Sales Contract, of its Electric System.

(F) Each Participant covenants and agrees that not later than the date on which it issues bonds, notes or other evidences of indebtedness or incurs capital lease or take-or-pay contractual obligations which are payable from the revenues of its Electric System on a parity with O&M Expenses it will provide to AMP, with a copy to the Participants Committee, of an independent engineer's estimation that such issuance or incurrence will not result in total O&M Expenses and debt service in excess of the revenues of the Participant's Electric System adjusted for any rate increases enacted by the governing body of the Participant prior to such issuance or incurrence in the fiscal year immediately preceding the issuance of such obligations.

(G) Each Participant agrees to use all commercially reasonable efforts to take all actions necessary or convenient to fulfill all of its obligations under the Power Sales Contract.

(H) Each Participant agrees that, prior to any assignment of its rights under the Power Sales Contract it shall grant to AMP, for the benefit of the remaining Participants, a right of first refusal for a period of not less than one hundred twenty (120) days to match any *bona fide* offer for such assignment.

(I) Each Participant that has some contractual or other legal impediment to its payment obligations to AMP under the Power Sales Contract being classified under applicable law or any trust indenture securing bonds payable from the revenues of its Electric System as O&M Expenses, covenants and agrees that it will in good faith endeavor to remove any such contractual or other legal impediments at the earliest possible time.

**Default.** (A) In the event any payment due from any Participant under the Power Sales Contract remains unpaid subsequent to the due date thereof, such event shall constitute a default under the Power Sales Contract and AMP may, upon fifteen (15) days prior written notice to and at the cost and expense of such defaulting Participant (i) withhold any payments otherwise due such Participant and suspend deliveries or availability of such defaulting Participant's Project Share to or on behalf of the defaulting Participant, (ii) bring any suit, action or proceeding at law or in equity as may be necessary or appropriate to enforce any covenant, agreement or obligation against the defaulting Participant, and (iii) take any other action permitted by law to enforce the Power Sales Contract. Upon suspension of the rights of the defaulting Participant as provided in the immediately preceding sentence, AMP shall be entitled to and may, sell or make available, from time to time, to any other person or persons any Capacity or Energy associated with the defaulting Participant's Project Share, and any such sale may be on such terms and for such periods deemed necessary or convenient in AMP's judgment, which shall not be exercised unreasonably, to make such sale under then existing market conditions; provided, however, that no such sale shall be made for a period exceeding two (2) months. Any such sale of such Project Share contracted for by AMP shall not relieve the defaulting Participant from any liability under the Power Sales Contract, except that the net proceeds of such sale shall be applied in reduction of the liability (but not below zero) of such defaulting Participant. When any default giving rise to the suspension of the rights, including the rights to Capacity and Energy of the defaulting Participant, has been cured in less than sixty (60) days subsequent to such default and payment has been made by the defaulting Participant to AMP of all costs and expenses incurred as a result of such default, the Participant which had been in default shall be entitled to the restoration of its rights, including a resumption of delivery of its Project Share or other service, subject to any sale to others of its Project Share made by AMP. AMP shall promptly notify all Participants in writing of any default by any other Participant, which remains uncured for thirty (30) days or more.

(B) (i) If any Participant shall fail to pay any amounts due under the Power Sales Contract, or to perform any other obligation thereunder, which failure constitutes a default under the Power Sales Contract and such default continues for sixty (60) days or more, AMP may, in addition to any other remedy available at law or equity, terminate the provisions of the Power Sales Contract insofar as the same entitle the Participant to a Project Share and during such default, the defaulting Participant shall not be entitled to any vote on the Participants Committee or any matter which requires a vote of the Participants; but, the obligations of the Participant under the Power Sales Contract shall continue in full force and effect. AMP shall forthwith notify such Participant of such termination.

(ii) Upon the termination of entitlement to a Project Share as provided in the preceding paragraph, AMP shall attempt to sell the defaulting Participant's Project Share, first to other Participants, then to Members who are not Participants and then to other persons, and, to the extent such defaulting Participant's obligations are not thereby fulfilled, each non-defaulting Participant shall purchase, for so long as such default remains uncured, a *pro rata* share of the defaulting Participant's entitlement to its Project Share which, together with the shares of the other non-defaulting Participants, is equal to the defaulting Participant's Project Share in kilowatts ("Step Up Power"); provided; however, that no such termination shall reduce the defaulting Participant's obligations under the succeeding paragraph; and, provided further, however, that the sum of all such increases for each non-defaulting Participant pursuant to this paragraph shall not exceed, without consent of the non-defaulting Participant, an accumulated maximum kilowatts equal to twenty-five percent (25%), or such lesser percentage as set forth in any Trust Indenture, of such non-defaulting Participant's initial Project Share in kilowatts prior to any such increases. AMP shall mail written notice and may, at its option, also transmit the same by electronic means, to each non-defaulting Participant of the amount of any Step Up Power as soon as practicable. All Step Up Power Costs shall be determined consistent with and be treated as a part of Revenue Requirements and shall be paid by the non-defaulting Participant in accordance with the Power Sales Contract. Within twenty (20) days after the notice of default by any other Participant, a Participant may notify AMP in writing of its election to purchase voluntarily Step Up Power under the terms and conditions described under this heading in any amount more than that which would otherwise be its *pro rata* share and up to the amount of the defaulting Participant's Project Share. Such purchase shall continue for so long as the default is not cured. To the extent the sum of such voluntary elections is greater than the amount of Step Up Power to be distributed, the same shall be distributed among the Participants so electing in proportion to the amounts requested. To the extent the sum of such voluntary elections is less than the defaulting Participant's Project Share, the remainder shall be distributed *pro rata* among the remaining Participants as Step Up Power. Non-defaulting Participants assuming Step-Up Power shall be entitled to exercise all voting rights associated with all amounts of Step Up Power taken or assigned.

(iii) The fact that other Participants have assumed their obligations for Step Up Power Costs shall not relieve the defaulting Participant of its liability for such payments and all Participants assuming such obligation (voluntarily or otherwise), either individually or as a member of a group, shall have a right of recovery from the defaulting Participant of all damages occasioned thereby. AMP in consultation with the Participants Committee may commence such suits, actions or proceedings, at law or in equity, including suits for specific performance, as may be necessary or appropriate to enforce the obligations of the Power Sales Contract against the defaulting Participant.

(C) In the event of default by a Participant in the payment of any of the sum or sums now or hereafter secured, or in the performance of any of the covenants and conditions of the Power Sales

Contract; or in the event Participant shall for any reason be rendered incapable of fulfilling its obligations thereunder; or final judgment for payment of money shall be rendered against Participant which adversely affects its ability to fulfill its obligations, and any such judgment shall not be discharged within 60 days from the entry thereof or an appeal shall not be taken therefrom or from the order, decree or process upon which, or pursuant to which, such judgment shall have been granted, or entered, in such manner as to stay the execution of, or levy under, such judgment, order, decree, or process or the enforcement thereof, or any proceeding shall be instituted with the consent or acquiescence of Participant for the purpose of effecting a compromise between Participant and its creditors, or for the purpose of adjusting the claims of such creditors pursuant to any Federal or State statute now or hereafter enacted, if the claims of such creditors are under any circumstances payable from the Participant's Electric System revenue or its rights under the Power Sales Contract; or if (a) Participant is adjudged insolvent by a court of competent jurisdiction which assumes jurisdiction of Participant's Electric System, or (b) an order, judgment or decree be entered by any court of competent jurisdiction appointing, without the consent of Participant, a receiver or trustee of Participant or of the whole or any part of Participant's Electric System and any of the aforesaid adjudications, orders, judgments or decrees shall not be vacated or set aside or stayed within sixty (60) days from the date of entry thereof; or if Participant shall file a petition or answer seeking reorganization or any arrangement under the Federal bankruptcy laws or any other applicable law or statute of the United States of America or any state thereof, which would place jurisdiction of Participant's Electric System in other than Participant; then, in addition to all other remedies, including the remedy of specific performance, AMP shall have the right and power to, and may, at its sole option, by notice in writing to the Participant, apply for the appointment of a receiver of rents, income and profits of the Participant's Electric System received or receivable by Participant as a matter of right and as security for the amounts due AMP without consideration of the value of Participant's Electric System, or the solvency of any person or persons liable for the payment of such amounts, the rents, income and profits of the Participant's Electric System received or receivable by Participant being hereby assigned by Participant to AMP as security for payment of the sum or sums now or hereafter secured by the Power Sales Contract.

(D) If any Participant has defaulted and all or any portion of such Participant's Project Share has become Step Up Power, such Participant may cure such default and restore its rights under the Power Sales Contract by paying all arrearages and all liabilities otherwise owing due to such default, net of the proceeds of any sales pursuant to the Power Sales Contract and of the recovery of Step Up Power Costs. Such defaulting Participant shall also pay, as liquidated damages and not as a penalty in recognition of the difficulty in precisely measuring damages to the non-defaulting Participants caused by reason of such written notice of the defaulting Participant, an amount equal to the product of one hundred twenty-five percent (125%) of the defaulting Participant's Project Share of the Capacity Charges paid by the non-defaulting Participants as Step Up Power Costs, multiplied by the "Prime Rate" as published in "Money Rates" in the *Wall Street Journal*, or, if in determination of AMP, the Prime Rate is no longer publicly available, then the prime rate values published in the Federal Reserve Bulletin plus, in any case, two percent (2%), and such amount shall be paid to the non-defaulting Participants in proportion to their respective payments of Step Up Power Costs. If at any time before the entry of final judgment or decree in any suit, action or proceeding instituted by AMP on account of default, or before the completion of the enforcement of any other remedy under the Power Sales Contract or law, a defaulting Participant shall pay all sums then payable by their stated terms, and all arrears of interest, if any, upon said sums then outstanding and the charges, compensation, expenses, disbursements, advances and liabilities of AMP, and all other amounts then payable by Participant under the Power Sales Contract, and every other default of which AMP has notice shall have been remedied to the satisfaction of AMP, then and in every such

case AMP shall, and if such default continued for a period greater than one (1) year, AMP may, with the approval of its Board of Trustees and the Participants Committee, and to the extent another Participant has voluntarily "stepped up" for all or a portion of such defaulting Participant's entitlement to its Project Share, with the approval of such other Participant, rescind and annul the declaration of default and its consequences, provided, however, that no such rescission or annulment shall extend to or affect any subsequent default or impair any right consequent thereon.

(E) AMP shall provide timely reports to the Participants Committee of any Participant defaults and actions taken by AMP.

(F) Should AMP default on any of its obligations under the Power Sales Contract and such default continues for a period of thirty (30) days, any Participant or the Participants Committee may give AMP written notice of such default. Subject to the provisions of any Trust Indenture, should AMP not cure such default, or provide the Participants Committee with a satisfactory plan to cure such default within sixty (60) days of such written notice, then by the affirmative vote of a Super Majority of the Participants, AMP may be directed to contract with a third party to perform whatever duties or obligations which are in default. The costs of such contract shall be included in Revenue Requirements.

**Modification or Amendment.** The Power Sales Contract shall not be amended, modified or otherwise changed except by written instrument executed and delivered by AMP and each of the Participants; provided, however that the Power Sales Contract shall not in any event be amended, modified or otherwise changed in any manner that will materially adversely affect the security afforded by the provisions of the Power Sales Contract for the payment of the principal, interest, and premium, if any, on the Bonds, except as, and to the extent, permitted by any Trust Indenture.

**Dispute Resolution.** The Parties agree to negotiate in good faith to settle any and all disputes arising under the Power Sales Contract. Representatives of the Participants Committee and AMP Board of Trustees shall participate in any such negotiations. Good faith mediation shall be a condition precedent to the filing of any litigation in law or equity by any party against any other party, except injunctive litigation necessary to solely restrain or cure an imminent threat to the public or employee safety.

The parties may mutually agree to waive mediation or subsequent to mediation waive their right to litigate in court and, in either case, submit any dispute to binding arbitration, if permitted by law, before one or more arbitrators pursuant to the Commercial Arbitration Rules of the American Arbitration Association or such other arbitration procedures to which they may agree. Such agreement shall be in writing and may otherwise modify the procedures set forth in this section for resolving any particular dispute.

**Term of Contract.** The Power Sales Contract shall remain in effect until the expiration of the Project License and the first renewal thereof, estimated, as of October 1, 2009, to be March 28, 2056, unless otherwise required by law, until (i) the date the principal of, premium, if any, and interest on all Bonds have been paid or deemed paid in accordance with any applicable Trust Indenture; and (ii) a Super Majority of the Participants recommends the Power Sales Contract be terminated; provided, however, that each Participant shall remain obligated to pay to AMP its respective share of the costs of terminating, discontinuing, disposing of, and decommissioning the Project unless AMP, in its sole discretion, elects not to terminate, discontinue, dispose of or decommission in connection with or prior to the termination of the Power Sales Contract. In the event that a Super Majority of the Participants does not elect to

terminate the Power Sales Contract, each Participant that so elects may continue to receive its Project Share of the Capacity and Energy available to AMP from the Project at rates which reflect the absence of payments with respect to Bonds and any Participant that does not so elect may discontinue taking any Capacity and Energy under the Power Sales Contract and shall have no other liability except as otherwise specified in the Power Sales Contract. Neither termination, cessation of taking Capacity and Energy under the Power Sales Contract, nor expiration of the Power Sales Contract shall affect any accrued right, liability or obligation thereunder.

**AMP's Rights.** Notwithstanding any other provision of the Power Sales Contract, AMP as the owner of its Ownership Interest in the Greenup Hydroelectric Project retains the ultimate rights (i) to the output of the Project and, (ii) to sell the output to the Participants to receive all payments respecting Revenue Requirements; and retains the obligations respecting ownership and operation of the Project under the Power Sales Contract and under the Greenup Agreements.

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**SUMMARY OF CERTAIN PROVISIONS  
OF THE MASTER TRUST INDENTURE**

The following is a summary of certain provisions of the Master Trust Indenture (the “Master Indenture”), as the same may be amended and supplemented by Supplemental Indentures from time to time (as so amended and supplemented, the “Indenture”). The following summary is not to be considered a full statement of the terms of the Master Indenture and, accordingly is qualified by reference thereto and is subject to the full text thereof. Capitalized terms not otherwise previously defined in this Official Statement or defined below have the meaning set forth in the Master Indenture. Copies of the Master Indenture may be obtained from AMP or the Trustee.

**Definitions**

“AMP Operating Expenses” means for any period AMP’s Service Fee (as defined in the Power Sales Contract) and AMP’s reasonable and necessary current expenses for the operation, repair and maintenance of the Project (including AMP’s allocated share of such expenses of the Greenup Facility), as determined in accordance with generally accepted accounting principles except as modified by this definition, and shall include, without limiting the generality of the foregoing, all ordinary and usual expenses of maintenance, repair and operation, which may include expenses not annually recurring, administrative expenses, any reasonable payments to pension or retirement funds properly chargeable to the Greenup Project Fund, payments due and owing Hamilton under the terms of the Greenup Operating Agreement, amounts owing to FERC under the Greenup License, insurance premiums, engineering expenses relating to maintenance, repair and operation, fees and expenses of the Trustee, Depositories, Paying Agents and the Bond Registrar, legal expenses, fees of consultants, any taxes which may be lawfully imposed on or are fairly allocable to AMP with respect to the Project, or payments in lieu of such taxes, or the income therefrom, operating lease payments, the Operating Component of the Cost of Contracted Services and all other payments, not chargeable to the capital account of the Project, to be made by AMP under the Power Sales Contract and any other expenses required or permitted to be paid by AMP under the provisions of the Master Indenture including, but not limited to, subject to the terms of any related agreement or Supplemental Indenture, costs, fees and expenses (but not early termination obligations) associated with the investment of the proceeds of Parity Obligations or with Derivative Agreements (excluding Derivative Agreements related to Subordinate Obligations), but shall not include any reserves or expenses for extraordinary maintenance or repair or any allowance for depreciation, but AMP Operating Expenses shall not include (i) depreciation or amortization, (ii) any deposit to any fund, subfund, account and subaccount established under the Master Indenture or any Supplemental Indenture or any payment of principal, redemption premium, if any, and interest on any Bonds from any such fund, subfund, account and subaccount, (iii) any debt service payment in respect of Parity Debt or Subordinate Obligations, or (iv) early termination obligations associated with the investment of the proceeds of Indebtedness, Gross Receipts or Net Receipts or other moneys held under this Indenture or with Derivative Agreements.

“AMP Ownership Interest” means AMP’s forty-eight and six-tenths percent (48.6%) undivided ownership interest in the Greenup Hydroelectric Facility.

“AMP Representative” means each person who is authorized by resolution of the Board of AMP to perform the duties imposed on an AMP Representative by the Master Indenture and whose name and signature is filed with the Trustee for such purpose.

“Annual Budget” means the budget, adopted by the Board of AMP, of Gross Receipts and AMP Operating Expenses including, as separate line items, extraordinary expenses for repairs, renewals, rehabilitation and improvement of the Project and capital expenditures for the Project for a Fiscal Year, as the same may be amended from time to time, all in accordance with the provisions of the Master Indenture.

“Bond” or “Bonds” means the bonds or notes issued under the provisions of the Master Indenture and secured on parity with each other and any Parity Debt by the Master Indenture.

“Closing Agreement” means the Closing Agreement between AMP and Hamilton, to be dated on or about the Effective Date, relating to Hamilton’s offer to sell and AMP’s agreement to purchase the AMP Ownership Interest contained in the Participation Agreement.

“Credit Facility” means a line of credit, letter of credit, standby bond purchase agreement, bond insurance policy or similar liquidity or credit facility established or obtained in connection with the issuance of any Bonds, incurrence of any other Parity Debt or incurrence of any Subordinate Obligations.

“Credit Provider” means the Person providing a Credit Facility, as designated in the Supplemental Indenture authorizing the issuance of a Series of Bonds or in the Parity Debt Indenture authorizing the incurrence of Parity Debt or in the Subordinate Obligations Indenture authorizing the incurrence of Subordinate Obligations.

“Debt Service Coverage Ratio” means, for any period of time, the ratio determined by dividing the Net Revenues by the Maximum Annual Debt Service Requirement for such period.

“Debt Service Requirement” means, for any period for which such determination is made, the sum, on an accrual basis, of the Principal Requirement and the Interest Requirement for such period (whether or not separately stated) on Outstanding Indebtedness during such period, taking into account:

(i) with respect to Balloon Indebtedness, the amount of principal which would be payable in such period if such principal were amortized from the date of incurrence thereof over a period of thirty (30) years on a level debt service basis, at an interest rate equal to the current market rate for a fixed rate, 30-year obligation, set forth in an opinion, delivered to the Trustee, of a banking institution or an investment banking institution, selected by AMP and knowledgeable in municipal finance, as the interest rate at which the Person that incurred such Indebtedness could reasonably expect to borrow the same by incurring Indebtedness with the same term as assumed above; provided, however, that if the date of calculation is within twelve (12) calendar months of the actual final maturity of such Indebtedness, the full amount of principal payable at maturity shall be included in such calculation;

(ii) with respect to Indebtedness which is Variable Rate Indebtedness, the interest on such Indebtedness shall be calculated at the rate which is equal to the average of the actual interest rates which were in effect (weighted according to the length of the period during which each such interest rate was in effect) for the most recent twelve-month period immediately preceding the date of calculation for which such information is available (or shorter period if such information is not available for a twelve-month period), except that with respect to new Variable Rate Indebtedness, the interest rate on such Indebtedness on the date of its incurrence shall be calculated at the lesser of (a) the initial rate at which such Indebtedness is incurred and (b) the rate certified by a banking institution or an investment banking institution, selected by AMP and knowledgeable in municipal finance, as being the average rate such Indebtedness would have borne for the most recent twelve-month period immediately preceding the date of calculation if such Indebtedness had been outstanding for such period, and thereafter shall be calculated as set forth above; provided, however, that if AMP enters into a Derivative Agreement with

respect to such Indebtedness, the interest on such Indebtedness shall be calculated as set forth in clause (iv) below;

(iii) with respect to any Credit Facility, (a) to the extent that such Credit Facility has not been used or drawn upon, the principal and interest relating to the reimbursement obligation for such Credit Facility shall not be included in the Debt Service Requirement and (b) to the extent that such Credit Facility shall have been drawn upon, the payment provisions of such Credit Facility with respect to repayment of principal and interest thereon shall be included in the Debt Service Requirement;

(iv) with respect to Derivative Obligations, the interest on such Indebtedness during any Derivative Period thereunder shall be calculated by adding (a) the amount of interest payable by AMP pursuant to its terms and (b) the amount payable by AMP under the Derivative Agreement and subtracting (c) the amount payable by the Derivative Agreement Counterparty at the rate specified in the Derivative Agreement, except that to the extent that the Derivative Agreement Counterparty has defaulted on its payment obligations under the Derivative Agreement, the amount of interest payable by AMP from the date of default shall be the interest calculated as if such Derivative Agreement had not been executed;

(v) subject to the provisions of clause (iv) above, to the extent that any Indebtedness incurred pursuant to the Master Indenture requires that AMP pay the principal of or interest on such Indebtedness in any currency or currencies other than United States dollars, in calculating the amount of the Debt Service Requirement, the currency or currencies in which AMP is required to pay shall be converted to United States dollars using a conversion rate equal to the applicable conversion rate in effect on a date that is not more than thirty (30) days prior to the date on which such Indebtedness is incurred;

(vi) in the case of Optional Tender Indebtedness, the options of such Owners or Holders shall be ignored, provided that such Optional Tender Indebtedness shall have the benefit of a Credit Facility and the Credit Provider or a guarantor of its obligations shall have ratings from at least two of the Rating Agencies in not less than one of the two highest short-term rating categories (without gradations such as plus or minus); and

(vii) in the case of Indebtedness, having the benefit of a Credit Facility that provides for a term loan facility that requires the payment of the Principal of such Indebtedness in one (1) year or more, such Indebtedness shall be considered Balloon Indebtedness and shall be assumed to have the maturity schedule provided clause (i) of this definition;

provided, however, that (A) interest shall be excluded from the determination of Debt Service Requirement to the extent that provision for payment of the same is made from the proceeds of the Indebtedness or otherwise provided so as to be available for deposit into the Capitalized Interest Account or similar account not later than the date of delivery of and payment for such Indebtedness, (B) all or a portion of interest in respect of one or more Series of Tax-Advantaged Bonds shall be excluded from the determination of Debt Service Requirement if, and to the extent, that Bonds, or the interest thereon, of such Series is payable from Federal Subsidies or credits, and (C) notwithstanding the foregoing, the aggregate of the payments to be made with respect to principal of and interest on Outstanding Indebtedness shall not include principal and/or interest payable from Qualified Escrow Funds.

“Defeasance Obligations” means, unless modified by the terms of a Supplemental Indenture or a Parity Debt Indenture, (i) noncallable, nonprepayable Government Obligations, (ii) evidences of ownership of a proportionate interest in specified noncallable, nonprepayable Government Obligations, which Government Obligations are held by a bank or trust company organized and existing under the laws of the United States of America or any state or territory thereof in the capacity of custodian, (iii) Defeased Municipal Obligations and (iv) evidences of ownership of a proportionate interest in specified

Defeased Municipal Obligations, which Defeased Municipal Obligations are held by a bank or trust company organized and existing under the laws of the United States of America or any state or territory thereof in the capacity of custodian.

“Effective Date” means the date on which AMP shall have acquired the AMP Ownership Interest in accordance with the terms of the Participation Agreement and the Closing Agreement.

“Federal Subsidy” means a payment made by the Secretary of the Department of Treasury to or for the account of AMP pursuant to the Code in connection with the issuance of a Series of Tax-Advantaged Bonds. Any Federal Subsidy to be received by AMP in connection with the issuance of a Series of Tax-Advantaged Bonds shall be identified as such in the Supplemental Indenture authorizing the issuance of such Series.

“FERC” means the Federal Energy Regulatory Commission and any successor to the functions of FERC created by law.

“FERC Relicensing Reserve Account” means the account in the Reserve and Contingency Subfund created and so designated by the Master Indenture.

“Greenup Agreements” means (i) the Participation Agreement, (ii) the Operating Agreement, and (iii) the Closing Agreement, all as the same may be amended from time to time.

“Greenup Facility” means the Greenup Hydroelectric Facility (FERC Project 2614) and all facilities and related equipment used in the production and transformation of electric power and energy and related facilities as authorized by the Greenup License as such License may from time to time be amended, having a licensed net electric generating capacity of approximately seventy and two-tenths megawatts (70.2 MW), including the sites and all related permits, licenses, easements and other real and personal property rights and interests, together with all additions, improvements, renewals and replacements to said electric generating facilities necessary to keep said facilities in good operating condition or to prevent a loss of revenues therefrom or as required by the Greenup License, FERC, or any other governmental agency having jurisdiction.

“Greenup License” means the Greenup Facility license, FERC Project No. 2614, issued by FERC and any modifications, amendments and extensions thereto.

“Greenup Project Fund” means the special fund, with subfunds, accounts and subaccounts, created on the books of account of AMP to account for all of the assets, liabilities, revenues and expenditures to be accounted for in accordance with the requirements of the Master Indenture.

“Gross Receipts” means all revenues, income, receipts and money (other than proceeds of borrowing) received in any period by or on behalf of AMP for the use of and for the output, services and facilities furnished by or from the AMP Ownership Interest, including, without limitation, (a) payments made by the Participants to or for the account of AMP pursuant to the Power Sales Contract, (b) proceeds derived from contract rights and other rights and assets now or hereafter owned, held or possessed by AMP or the Project and (c) interest or investment income on all investments excluding investments of proceeds of Indebtedness (unless credited and transferred to the Revenue Subfund) incurred by AMP and on deposits to Qualified Escrow Funds.

“Gross Revenues” means revenues, as determined in accordance with generally accepted accounting principles, from (i)(a) all payments, proceeds, rates, fees, charges, rents all other income derived by or for AMP for the use of and for the output, services and facilities furnished by or from the

AMP Ownership Interest, and all rights to receive the same, whether in the form of accounts receivable, contract rights, credits or other rights, and the proceeds of such rights whether now owned or held or hereafter coming into existence, including payments received pursuant to the Power Sales Contract and for capacity, energy and other products of the AMP's Ownership Interest and any portion thereof, (b) any proceeds of use and occupancy or business interruption insurance, and (c) the income from the investment under the provisions of the Master Indenture of the moneys held for the credit of the various funds, subfunds, accounts and subaccounts created under the Master Indenture excluding (i) investments of proceeds of Indebtedness (unless credited and transferred to the Revenue Subfund) incurred by AMP and on deposits to Qualified Escrow Funds, (ii) the proceeds of any insurance, other than as mentioned above, (iii) any gifts, grants, donations or contributions or borrowed funds and (iv) Federal Subsidies (to the extent not credited against the Debt Service Requirement).

"Hamilton" means the City of Hamilton, Ohio.

"Incurrence Test" means the test for the incurrence for Parity Obligations established by the Master Trust Indenture and described herein.

"Indebtedness" means (a) Parity Obligations, (b) Subordinate Obligations, (c) the Debt Service Components of the Cost of Contracted Services, (d) all other indebtedness of AMP relating to the Project and payable from Gross Revenues and (e) all installment sales and capital lease obligations relating to the Project, payable from Gross Revenues and incurred or assumed by AMP. Obligations to reimburse Credit Providers for amounts drawn under Credit Facilities to pay the Purchase Price of Optional Tender Indebtedness shall not constitute Indebtedness, except to the extent such obligations exceed the Debt Service Requirements on Bonds or Parity Debt held by or pledged to or for the account of a Credit Provider that shall have paid the Purchase Price of Optional Tender Indebtedness.

"Interest Requirement" for any Fiscal Year or any Interest Period, as the context may require, as applied to Bonds of any Series then Outstanding, means the total of the sums that would be deemed to accrue on such Bonds during such Fiscal Year or Interest Period if the interest on the Current Interest Bonds of such Series were deemed to accrue daily in equal amounts during such Year or Interest Period, employing the applicable methods of calculation set forth in the definition of Debt Service Requirement; provided, however, that interest expense shall be excluded from the determination of Interest Requirement to the extent that any interest is to be paid from the proceeds of Bonds or other available moneys or from investment (but not reinvestment) earnings thereon if such proceeds or other moneys shall have been invested in Defeasance Obligations and to the extent such earnings may be determined precisely. Interest expense on Credit Facilities drawn upon to purchase but not to retire Bonds, to the extent such interest exceeds the interest otherwise payable on such Bonds (herein called "excess interest"), shall not be included in the determination of Interest Requirement. AMP may in a Supplemental Indenture provide that such excess interest be included in the calculation of Interest Requirement for all provisions of the Master Indenture except those relating to the Rate Covenant.

"Investment Obligations" means Government Obligations and, to the extent from time to time permitted by the laws of the State of Ohio,

(A) the obligations of (i) Export Import Bank, (ii) Government National Mortgage Association, (iii) Federal Housing Administration, (iv) U. S. Department of Agriculture – Rural Development, (v) United States Postal Service and (vi) any other agency or instrumentality of the United States of America now or hereafter created, which obligations are backed by the full faith and credit of the United States of America,

(B) the obligations of (i) Federal National Mortgage Association, (ii) Federal Intermediate Credit Banks, (iii) Federal Banks for Cooperatives, (iv) Federal Home Loan Mortgage Corporation; (v) Federal Land Banks, and (vi) Federal Home Loan Banks,

(C) Defeased Municipal Obligations,

(D) negotiable certificates of deposit and negotiable bank deposit notes of domestic banks and domestic offices of foreign banks with a rating of least A-1 by S&P and P-1 by Moody's for maturities of one year or less, and a rating of at least AA by S&P and Aa by Moody's for maturities over one year and not exceeding five years,

(E) any overnight, term or open repurchase agreement for Government Obligations or obligations described in clauses (A) and (B) above that is with (i) a bank or trust company (including the Trustee, any Depository and their affiliates) that has a combined capital, surplus and undivided profits not less than \$100,000,000, or (ii) a subsidiary trust company whose combined capital, surplus and undivided profits, together with that of its parent state bank or bank, holding company, as the case may be, is not less than \$100,000,000, or (iii) a financial institution (including, but not limited to, banks, insurance companies, investment banks, broker dealers, bank holding companies, insurance holding companies, affiliates of any of the foregoing, and other similar entities) or government bond dealer reporting to, trading with, and recognized as a primary dealer by the Federal Reserve Bank of New York and a member of the Security Investors Protection Corporation ("SIPC") or with a dealer or parent holding company that is rated in one of the three highest rating categories by Moody's and S&P (without regard to gradations such as "plus" or "minus") and as to which the fair market value of such agreements, together with the fair market value of the repurchase agreement securities, exclusive of accrued interest, shall be valued daily and maintained at an amount at least equal to the amount invested in the repurchase agreements, provided, however, that (1) such obligations purchased must be transferred to the Trustee or Depository (who shall not be the provider of the collateral) or a third party agent by physical delivery or by an entry made on the records of the issuer of such obligations, (2) as to which failure to maintain the requisite collateral levels will require the Trustee or Depository, as the case may be, or its agent to liquidate the securities immediately, (3) as to which the Trustee or Depository, as the case may be, has a perfected, first priority security interest in the securities, and (4) as to which the securities are free and clear of third-party liens, and in the case of an SIPC broker, were not acquired pursuant to a repurchase or reverse repurchase agreement,

(F) any investment agreement that is with or is unconditionally guaranteed as to payment by (i) a bank or trust company (including the Trustee, any Depository and their affiliates) that has a combined capital, surplus and undivided profits not less than \$100,000,000, or (ii) a subsidiary trust company whose combined capital, surplus and undivided profits, together with that of its parent state bank or bank, holding company, as the case may be, is not less than \$100,000,000, or (iii) a financial institution (including, but not limited to, banks, insurance companies, investment banks, broker dealers, bank holding companies, insurance holding companies, affiliates of any of the foregoing, and other similar entities) that, in the case of (i), (ii) or (iii), is rated in one of the two highest rating categories by Moody's and S&P (without regard to gradations such as "plus" or "minus"),

(G) commercial paper rated at the time of acquisition by the Trustee or a Depository in the highest rating category by Moody's and S&P (without regard to any gradations or refinements such as "plus" or "minus"),

(H) obligations of state or local government municipal bond issuers, the principal of and interest on which, when due and payable, have been insured to their maturities by an insurer the bonds insured by which are rated at the time of acquisition by the Trustee or a Depository by Moody's and S&P in one of

the two highest rating categories (without regard to any numerical or other gradations or refinements such as “plus” or “minus”),

(I) obligations of state or local government municipal bond issuers that are rated by Moody’s and S&P in one of the two highest rating categories (without regard to any numerical or other gradations or refinements such as “plus” or “minus”),

(J) open-end investment funds registered under the Investment Companies Act of 1940, as amended, the authorized investments by which are permitted by the terms of the Master Indenture. Any investment in a repurchase agreement shall be considered to mature on the date the party providing the repurchase agreement is obligated to repurchase the Investment Obligations. Any investment in obligations described above may be made in the form of an entry made on the records of the issuer of or the securities depository with respect to the particular obligation, and

(K) bankers’ acceptances drawn on and accepted by commercial banks (which may include the Trustee, any Co-Trustee, any Depository, any Bond Registrar and their affiliates).

“Lien” means any mortgage, deed of trust or pledge of, security interest in or encumbrance on any Property of AMP, including the AMP Ownership Interest, that secures any indebtedness secured by AMP.

“Major Maintenance Account” means the account in the Reserve and Contingency Subfund created by the Master Indenture.

“Maximum Annual Debt Service Requirement” means at the date of calculation the greatest Debt Service Requirement for the current or any succeeding Fiscal Year.

“Officer’s Certificate” means a certificate signed by the President or any Vice President, or the Chair or the Vice Chair of the Board, of AMP, or an AMP Representative.

“Operating Agreement” means the Greenup Operating Agreement, dated as of March 1, 2009, between AMP and Hamilton, as the same may be amended from time to time.

“Optional Tender Indebtedness” means any portion of Indebtedness incurred under the Master Indenture a feature of which is an option on the part of the holders of such Indebtedness to tender to AMP or the Trustee or a Depository, Paying Agent or other fiduciary for such holders, or an agent of any of the foregoing, all or a portion of such Indebtedness for payment or purchase; provided, however, any such Bonds subject to such a tender option that is contingent on circumstances not within the control of the holders of such Indebtedness shall not be “Optional Tender Bonds” for purposes of the Master Indenture.

“Parity Common Reserve Account Requirement” means, with respect to all Parity Obligations secured by the Parity Common Reserve Account, the amount provided in a Supplemental Indenture. The Parity Common Reserve Account Requirement may be satisfied with cash, Investment Obligations or Reserve Alternative Instruments, or any combination of the foregoing, as AMP may determine from time to time.

“Parity Debt” means all Parity Obligations incurred or assumed by AMP, including Parity Debt Service Components, and not evidenced by Bonds which (a) are designated as Parity Debt in the documents pursuant to which it was incurred, (b) are incurred in compliance with the provisions of the Master Indenture or are a reimbursement obligation for a Credit Facility supporting Parity Obligations

incurred in compliance with the provisions of the Master Indenture, and (c) may be accelerated only in compliance with the procedures set forth in the Master Indenture.

“Parity Obligations” means Bonds and Parity Debt.

“Participation Agreement” means the Meldahl-Greenup Participation Agreement, dated as of March 1, 2009, between AMP and Hamilton, as the same may be amended and supplemented from time to time.

“Principal Requirement” for any Fiscal Year or any other period, as the context may require, as applied to Bonds of any Series then Outstanding, means the total of the sums that would be deemed to accrue on such Bonds during such Fiscal Year or other period if the principal of the Current Interest Bonds of such Series were deemed to accrue daily in equal amounts during such Year or period, employing the applicable methods of calculation set forth in the definition of Debt Service Requirement; provided, however, that principal shall be excluded from the determination of Principal Requirement to the extent that any principal is to be paid from the proceeds of Bonds or other available moneys or from investment (but not reinvestment) earnings thereon if such proceeds or other moneys shall have been invested in Defeasance Obligations and to the extent such earnings may be determined precisely.

“Project” means, as the context indicates, the acquisition of, and improvements to, the AMP Ownership Interest in the Greenup Facility.

“Related Agreement” means any agreements for interconnection of any of the facilities comprising the Greenup Facility to the transmission grid, including any agreements for transmission service, including supplemental transmission service, and the interconnection agreement for the interconnection of any of the facilities comprising the Greenup Facility to the PJM RTO transmission systems, any agreements with the U.S. Army Corps of Engineers relating to the Greenup Facility, other agreements for transmission service to enable AMP to meet its obligations to deliver or make available electric capacity and energy for the Participants pursuant to the Power Sales Contract, any agreement entered into pursuant to Section 35 of the Power Sales Contract and any agreements for coordination of operations with other hydroelectric projects, all as the same may be amended from time to time.

“Reserve Alternative Instrument” means an irrevocable insurance policy or surety bond or an irrevocable letter of credit, guaranty or other facility deposited in the Parity Common Reserve Account or a Special Reserve Account in lieu of or in partial substitution for the deposit of cash and Investment Obligations in satisfaction of the Parity Common Reserve Account Requirement or a Special Reserve Account Requirement.

“Revenue Available For Debt Service” means the pro forma amount, indicated in an Officer’s Certificate delivered to the Trustee, that is certified by such Officer to be a good faith estimate of the excess, of the Gross Revenues in any 12 consecutive months of the last 18 calendar months preceding the date of such Certificate over the AMP Operating Expenses for the same 12 months, taking into consideration and adjusted for any rate increases adopted by the Board of AMP that will take effect subsequent to the applicable 12-month period and in the current or following Fiscal Year, as shall be set forth in such Officer’s Certificate.

“Short-Term Indebtedness” means all Indebtedness incurred for borrowed money, other than the current portion of Indebtedness and other than Short-Term Indebtedness excluded from this definition as provided in the definition of Indebtedness, for any of the following:



(i) money borrowed for an original term, or renewable at the option of the borrower for a period from the date originally incurred, of one year or less;

(ii) leases which are capitalized in accordance with generally accepted accounting principles having an original term, or renewable at the option of the lessee for a period from the date originally incurred, of one year or less; and

(iii) installment sale or conditional sale contracts having an original term of one year or less.

“Special Reserve Account” means a special debt service reserve account created by a Supplemental Indenture or a Parity Debt Indenture as a debt service reserve account only for the particular Parity Obligations authorized by such Supplemental Indenture or Parity Debt Indenture.

“Special Reserve Account Requirement” means the amount to be deposited or maintained in a Special Reserve Account pursuant to a Supplemental Indenture or a Parity Debt Indenture creating such Special Reserve Account. The Special Reserve Account Requirement may be satisfied with cash, Investment Obligations, a Reserve Alternative Instrument or any combination of the foregoing, as AMP may determine from time to time.

“Subordinate Obligations” means Indebtedness and other payment obligations the terms of which shall provide that they shall be subordinate and junior in right of payment, or provision for payment, to the prior payment in full of Parity Obligations to the extent and in the manner set forth in the Master Indenture.

“Subordinate Obligations Indenture” means the resolution and any other documents, instruments or agreements adopted or executed by AMP providing for the incurrence of Subordinate Obligations. If the Subordinate Obligations shall have the benefit of a Credit Facility, the reimbursement obligation for such Credit Facility shall provide for repayments on a subordinated basis (as compared to Parity Obligations) and the term Subordinate Obligations Indenture shall include any reimbursement agreement or similar repayment agreement executed and delivered by AMP in connection with the provision of such Credit Facility for such Subordinate Obligations. AMP may also create contingent Subordinate Obligations under Supplemental Indentures which, to such extent, shall be construed to be Subordinate Obligations Indentures.

“Subordinate Obligations Subfund” means the Subordinate Obligations Subfund created and so designated by the Master Indenture.

“Tax-Advantaged Bonds” means all Bonds so identified in the Supplemental Indenture authorizing the issuance of such Bonds.

“Tax-Advantaged Parity Debt” means all Parity Debt so identified in the Parity Debt Indenture authorizing the incurrence of such Parity Debt.

“Tax-Advantaged Parity Obligations” means collectively all Tax-Advantaged Bonds and all Tax-Advantaged Parity Debt.

“Variable Rate Indebtedness” means any portion of Indebtedness the interest rate on which is not established at the time of incurrence at a fixed or constant rate until maturity.

## **Construction Subfund**

Any money received by AMP from any source for the Project shall be deposited in the Construction Subfund, a special subfund of the Greenup Project Fund. Moneys in the Construction Subfund shall be held by a Depository or Depositories in trust and applied to the payment of the Costs of the Project or to the retirement of Bonds issued under the provisions of the Master Indenture or Parity Debt. Pending such application, such moneys shall be subject to a lien and charge in favor of the Holders.

The Depository or Depositories may only disburse moneys from the Construction Subfund upon the receipt of a requisition signed by an AMP Representative, stating to whom the payment is to be made, the general purpose for which the obligation was incurred and that each charge is a proper charge against the Cost of the Project and, if the payment is not made to someone other than AMP, the obligation has not been the basis for a prior requisition.

As soon as practicable after the Effective Date or thereafter if and when AMP shall determine that the balance then to the credit of the Construction Subfund, or an account or subaccount therein, is no longer needed for the purposes for which the Subfund, account or subaccount was established, AMP shall deliver to the Depository or Depositories a certificate of an AMP Representative, approved by the Board of AMP by appropriate resolution, (A) stating that such balance is no longer required and the reason therefor in reasonable detail and (B) stating that requisitions have been made for the payment of all obligations which are payable from the Construction Subfund or such account or subaccount, to the appropriate Depository together with an Opinion of Counsel to the effect that there are no mechanics', workmen's, repairmen's, architects', engineers', surveyors', carriers', laborers', contractors' or materialmen's liens on any property constituting a part of the Project on file in any public office where the same should be filed in order to be perfected liens against the Project or any part thereof and that the time within which such liens can be filed has expired. As soon as practicable after such certification is delivered by AMP to the Depository or Depositories, the balance of the Construction Subfund or account or subaccount not reserved by AMP to payment of any remaining Costs of the Project, shall be transferred, as directed by AMP, (i) to the Renewal and Replacement Account of the Reserve and Contingency Subfund, or (ii) to the Bond Subfund for the payment, purchase or redemption of Bonds in accordance with the provisions of the Master Indenture. If the balance in such Subfund, account or subaccount is proceeds of a Series of Tax-Advantaged Bonds, or investment income allocable thereto, such direction of AMP shall be accompanied by an Opinion of Counsel nationally recognized as expert in tax matters relating to obligations of states and their political subdivisions to the effect that such proposed application of such balance will not adversely affect the exclusion from gross income for federal income tax purposes of interest or receipt of the Federal Subsidy, as applicable, on any or all of the outstanding Tax-Advantaged Bonds.

## **Establishment of Greenup Project Fund and Other Subfunds; Application of Gross Receipts and Net Revenues**

*Creation of Greenup Project Fund, Subfunds and Accounts.* AMP shall create on its books a special fund to be known as the "American Municipal Power, Inc. Greenup Project Fund" (the "Greenup Project Fund"). In addition to the Construction Subfund, the following subfunds and accounts are established in the Greenup Project Fund:

(i) with a Depository, the Costs of Issuance Subfund, in which there shall be established for each Series of Bonds a special account identified by such Series; and

(ii) with a Depository, the Revenue Subfund, in which there are established four special accounts to be known as the Operating Account, the Working Capital Account, the Derivative Receipts Account and the General Account; and

(iii) with the Trustee, the Bond Subfund, in which there are established seven or more special accounts to be known as the Capitalized Interest Account, the Interest Account, the Derivatives Payments Account, the Principal Account, the Sinking Account, the Redemption Account, the Parity Common Reserve Account and any Special Reserve Accounts identified by Series or otherwise; and

(iv) with a Depository, the Subordinate Obligations Subfund, in which AMP may create one or more accounts by one or more Subordinate Obligations Indentures; and

(v) with a Depository, a Reserve and Contingency Subfund, in which there are established seven special accounts to be known as the Renewal and Replacement Account, the Overhaul Account, the Major Maintenance Account, the FERC Relicensing Reserve Account, the Rate Stabilization Account, the Environmental Improvement Account and the Self-Insurance Account.

Money in the Bond Subfund and all of the accounts and subaccounts therein established shall be held in trust and applied as provided in the Master Indenture. Pending such application, such money shall be subject to a pledge, charge and lien in favor of the Owners of the respective Series of Bonds issued and Outstanding under the Master Indenture.

Each Supplemental Indenture providing for the issuance of a Series of Tax-Advantaged Bonds the issuance of which will entitle AMP to receive a Federal Subsidy shall identify the Federal Subsidy and may provide that such Series of Tax-Advantaged Bonds shall be additionally secured by the Federal Subsidy identified therein.

#### *Application of Moneys Received*

Except as provided in a Parity Debt Indenture, all Gross Receipts received by AMP or the Trustee for the account of AMP shall be deposited in the Revenue Subfund. Proceeds of any Derivative Agreement shall be deposited to the credit of the Derivative Receipts Account in the Revenue Subfund.

Not less than monthly, on or before the last Business Day of each month and on such other Deposit Day as may be required for all Bonds Outstanding, the Depository of the Revenue Subfund shall withdraw from the Revenue Subfund any legally available moneys then held to the credit of such Subfund and set aside or transfer any moneys so withdrawn to the Trustee or a Depository or otherwise dispose of such moneys for the following purposes in the following order in amounts sufficient in the aggregate to satisfy the following requirements, subject to credits as provided in the Master Indenture:

(i) transfer to the Depository for the Operating Account an amount that together with funds then held to the credit of such account will make the total amount then to the credit of such account equal to the sum of the AMP Operating Expenses budgeted for such month in the Annual Budget;

(ii) transfer to the Depository for the Working Capital Account an amount that together with funds then held to the credit of such account will make the total amount then to the credit of such account equal to the amount provided therefor during the current Fiscal Year in the Annual Budget;

(iii) pay to the Trustee for deposit into the Bond Subfund, the sum of

(1) to the credit of the Interest Account, after first taking into account any accrued interest deposited from the proceeds of any Bonds and the advice of AMP contained in an Officer's Certificate respecting any transfers from the Capitalized Interest Account and, subject to the requirements of the Master Indenture, from the Construction Subfund by deducting the sum of such amounts from the amount of interest otherwise payable, as is required to make the amount to the credit of the Interest Account equal to so much of the Interest Requirement that shall accrue to and including the next Deposit Day or the last day of the then current Interest Period if it shall occur before the next scheduled Deposit Day; provided, however, that except as specified above, the amount so deposited on account of the then current Interest Requirement on each Deposit Day after the delivery of the Bonds of any Series under the provisions of the Master Indenture up to and including the day immediately preceding the first Interest Payment Date thereafter of the Bonds of such Series shall be that amount which when multiplied by the number of such deposits will be equal to the amount of such current Interest Requirement respecting such Bonds during such first Interest Period; and provided, further, that in making such deposits, the Trustee shall take into account any excess moneys to the credit of the Parity Common Reserve Account and any Special Reserve Account that are to be transferred to the Interest Account or any subaccount thereof prior to any Interest Payment Date, should moneys held therein exceed the Parity Common Reserve Account Requirement and/or Special Reserve Account Requirement, as applicable,

(2) to the credit of the Derivatives Payments Account, the amount, if any, of any Derivative Obligations due under the terms of a Derivative Agreement to be paid to a Derivative Agreement Counterparty, on a parity with interest on Bonds, prior to the next Deposit Day,

(3) to credit of the Principal Account, beginning on the Deposit Day specified in the applicable Supplemental Indenture that is prior to the first month in which any Serial Bond matures, such amount as is required to make the amount to the credit of the Principal Account equal to so much of the Principal Requirement that shall have accrued during the then current period between the date specified in the Supplemental Indenture or the prior Principal Payment Date and such Deposit Day or the next Principal Payment Date if it shall occur before the next scheduled Deposit Day,

(4) to credit of the Sinking Fund Account, beginning on the Deposit Day specified in the applicable Supplemental Indenture that is prior to the first month in which any Term Bond matures, such amount as is required to make the amount to the credit of the Sinking Fund Account equal to so much of the Sinking Fund Requirement that shall have accrued during the then current period between the date specified in the Supplemental Indenture or the prior Principal Payment Date and such Deposit Day or the next mandatory Sinking Fund redemption date if it shall occur before the next scheduled Deposit Day, and

(5) at such time or times as provided in a Supplemental Indenture or a Parity Debt Indenture, (I) to the credit of the Parity Common Reserve Account, if the amount in the Parity Common Reserve Account is less than the Parity Common Reserve Account Requirement, the amounts required by the Master Indenture to make up such deficiency in the Parity Common Reserve Account plus any other amounts required to reinstate fully any Reserve Alternative Instrument then held to the credit of the Parity Common Reserve Account and (II) to the credit of any Special Reserve Account, if the amount in any Special Reserve Account is less than the applicable Special Reserve Account Requirement, and deposit, or deliver to the appropriate Depository for deposit, the amounts required by any Supplemental Indenture or Parity Debt Indenture to make up any deficiency in any Special Reserve Account, provided that if there shall not be sufficient Net Receipts to satisfy all such deposits, such deposits shall be made among the

Parity Common Reserve Account and each Special Reserve Account ratably according to the amounts so required to be deposited.

(iv) set aside with a Depository for deposit into the Subordinate Obligations Subfund, an amount which together with funds then held to the credit of the Subordinate Obligations Subfund will make the total amount then to the credit of the Subordinate Obligations Subfund equal to the entire aggregate amount of Subordinate Obligations; and

(v) pay to a Depository for deposit into the various accounts in the Reserve and Contingency Subfund, the amounts, if any, provided in the Annual Budget.

The balance, if any, remaining after making the transfers provided in clauses (i), (ii), (iii), (iv) and (v) above, shall be credited to the General Account in the Revenue Subfund.

If any Series of Bonds is secured by a Credit Facility, the Trustee shall establish a separate subaccount within the Interest Account, the Principal Account and the Sinking Fund Account corresponding to the source of moneys for each deposit made into either of such accounts so that the Trustee may at all times ascertain the source and date of deposit of the funds in each such account or subaccount.

If a Series of Tax-Advantaged Bonds, or the interest thereon, is payable from or secured by a Federal Subsidy, the Trustee shall, as directed by AMP Representative, credit such Federal Subsidy to the subaccount, established for such Series of Bonds, within the Interest or Principal Account as so directed.

#### *Use of Money Held in Certain Accounts in the Revenue Subfund*

Operating Account. AMP may withdraw to the credit of the Operating Account, in the event funds to the credit thereof are insufficient, first from the Working Capital Account and then from the Rate Stabilization Account to pay AMP Operating Expenses as the same come due and payable.

Working Capital Account. Amounts on deposit in the Working Capital Account shall be available to pay AMP Operating Expenses. To the extent moneys held in the Bond Subfund or Subordinate Obligations Subfund and the General Account and the Reserve and Contingency Subfund are insufficient to make required interest and principal payments, moneys in the Working Capital Account shall be used prior to any withdrawal from the Parity Common Reserve Account or Special Account Reserve, if any, to satisfy any deficiency.

General Account. Moneys credited to the General Account may be used by AMP for any lawful purpose related to the Project, including the transfer to any Subfund. To the extent moneys held in the Bond Subfund or Subordinate Obligations Subfund are insufficient to make required interest and principal payments, moneys in the General Account shall be used prior to any withdrawal from the Reserve and Contingency Subfund, Working Capital Account, Parity Common Reserve Account or Special Reserve Account, if any, to satisfy any deficiency.

#### *Deposit and Application of Money in the Parity Common Reserve Account and Any Special Reserve Account; Replenishment of Deficiencies*

(a) If a Supplemental Indenture or a Parity Debt Indenture provides that the Parity Obligations issued or incurred thereunder are to be additionally secured by the Parity Common Reserve Account, AMP shall deposit, from the proceeds of such Parity Obligations or from any other available sources, concurrently with the delivery of and payment for such Parity Obligations, to the Parity Common Reserve

Account such amount as is required to make the balance to the credit of such Account equal to the Parity Common Reserve Account Requirement. If a Supplemental Indenture or a Parity Debt Indenture provides that the Parity Obligations issued thereunder are to be secured by a Special Reserve Account, AMP shall fund, from the proceeds of such Parity Obligations or from any other available sources, at the time or times and in the manner specified in the applicable Supplemental Indenture or Parity Debt Indenture, such Special Reserve Account in an amount equal to the Special Reserve Account Requirement for such Parity Obligations.

(b) Unless the applicable Supplemental Indenture or a Parity Debt Indenture shall otherwise provide or modify the following, AMP may deposit with the Trustee a Reserve Alternative Instrument in satisfaction of all or any portion of the Parity Common Reserve Account Requirement or may substitute a Reserve Alternative Instrument for all or any portion of the cash or another Reserve Alternative Instrument credited to the Parity Common Reserve Account, provided that the following minimum provisions have been fulfilled:

(i) The Reserve Alternative Instrument shall be payable (upon the giving of notice as required thereunder) to remedy any deficiency in the appropriate subaccounts in the Interest Account, the Principal Account and the Sinking Account, or in an account for the payment of interest, or in an account or accounts for the payment of principal, in order to provide for the timely payment of the principal (whether at maturity or pursuant to a Sinking Fund Requirement or an amortization requirement therefor) of and interest on the Parity Obligations secured thereby.

(ii) The provider of a Reserve Alternative Instrument shall be (A) an insurance company or other financial institution that has been assigned, for obligations insured by the provider of the Reserve Alternative Instrument, a rating by at least one Rating Agency in one of the two highest rating categories (without regard to gradations by numerical modifier or otherwise) or (B) a commercial bank, insurance company or other financial institution the obligations payable or guaranteed by which have been assigned a rating by at least one Rating Agency in one of the two highest rating categories (without regard to gradations by numerical modifier or otherwise). Unless otherwise provided in a Supplemental Indenture, the subsequent withdrawal or reduction in the rating of such provider of a Reserve Alternative Instrument or its guarantor subsequent to the deposit or substitution for cash of a Reserve Alternative Instrument shall not ipso facto disqualify such Reserve Alternative Instrument as a qualifying Reserve Alternative Instrument.

(iii) If the Reserve Alternative Instrument is an unconditional irrevocable letter of credit issued to the Trustee, the letter of credit shall be payable in one or more draws upon presentation by the beneficiary of a sight draft accompanied by its certificate that it then holds insufficient funds to make a required payment of principal or interest on the Parity Obligations having the benefit of the Parity Common Reserve Account. The draws shall be payable within two days of presentation of the sight draft. The letter of credit shall be for a term of not less than three years. The issuer of the letter of credit shall be required to notify AMP and the Trustee, not later than 30 months prior to the stated expiration date of the letter of credit, as to whether such expiration date shall be extended, and if so, shall indicate the new expiration date. The Trustee is directed to draw upon the letter of credit prior to its expiration or termination unless an acceptable replacement is in place or the Parity Common Reserve Account is fully funded to the Parity Common Reserve Account Requirement.

(iv) The Trustee shall ascertain the necessity for a claim or draw upon the Reserve Alternative Instrument and shall provide notice to the issuer of the Reserve Alternative Instrument in accordance with its terms not later than three days (or such longer period as may be

necessary depending on the permitted time period for honoring a draw under the Reserve Alternative Instrument ) prior to each Interest Payment Date.

(v) Except as otherwise provided in a Supplemental Indenture or Parity Debt Indenture, cash on deposit in the Parity Common Reserve Account shall be used (or Investment Obligations purchased with such cash shall be liquidated and the proceeds applied as required) *pro rata* with any drawing on any Reserve Alternative Instrument. If and to the extent that more than one Reserve Alternative Instrument is deposited in the Parity Common Reserve Account, drawings thereunder and repayments of costs associated therewith shall be made on a *pro rata* basis, calculated by reference to the maximum amounts available thereunder and the total amount then required to be to the credit of the Parity Common Reserve Account.

(c) The Trustee shall use amounts in the Parity Common Reserve Account to make transfers, or use moneys provided under a Reserve Alternative Instrument to make deposits, in the following order, in respect of all Parity Obligations additionally secured by the Parity Common Reserve Account, to the appropriate subaccounts in the Interest Account, the Principal Account and the Sinking Account to remedy any deficiency therein as of any Interest Payment Date, principal payment date or sinking fund payment date (or any earlier date as set forth in a Parity Debt Indenture), or to pay the interest on or the principal of or amortization requirements in respect of any Parity Debt when due, whenever and to the extent the money on deposit for such purposes is insufficient.

(d) The Trustee shall use amounts in any Special Reserve Account held by it to make transfers, or use moneys provided under a Reserve Alternative Instrument to make deposits, in the following order, in respect of the particular Parity Obligations secured by such Special Reserve Account, to the appropriate subaccounts in the Interest Account, the Principal Account and the Sinking Account to remedy any deficiency therein as of any Interest Payment Date, principal payment date or sinking fund payment date (or any earlier date as set forth in a Supplemental Indenture or a Parity Debt Indenture) or to pay the interest on or the principal of or amortization requirement in respect thereof on Parity Debt when due, whenever and to the extent the money on deposit for such purposes is insufficient.

(e) Any deficiency in the Parity Common Reserve Account resulting from the withdrawal of moneys therein shall be made up by depositing to the credit of such Account the amount of such deficiency within one year following the date on which such withdrawal is made. Any deficiency in the Parity Common Reserve Account resulting from a draw on a Reserve Alternative Instrument shall be made up as provided in such Reserve Alternative Instrument or documentation relating thereto, but any such deficiency must be made up by not later than the final date when such deficiency would have been required to be made up if there had been a withdrawal of moneys from the Parity Common Reserve Account rather than a draw on a Reserve Alternative Instrument. Deficiencies, whether resulting from withdrawals or draws, may be satisfied through the deposit of additional cash, the delivery of an additional Reserve Alternative Instrument or an increase in the amount available to be drawn under a Reserve Alternative Instrument. Unless otherwise provided in a Supplemental Trust Indenture or a Parity Debt Indenture, cash or Investment Obligations on deposit to the credit of the Parity Common Reserve Account shall be used *pro rata* with draws on any Reserve Alternative Instrument to satisfy deficiencies, as provided above.

(f) Unless a Reserve Alternative Instrument shall be in effect, if on any date of valuation, the amount on deposit in the Parity Common Reserve Account is less than ninety percent (90%) of the Parity Common Reserve Account Requirement, AMP shall deposit into the Parity Common Reserve Account within one year following such date the amount required as of such date to cause the amount then on deposit in the Parity Common Reserve Account to be equal to the Parity Common Reserve Account Requirement. Any such deficiency may be satisfied through the deposit of additional cash, the delivery of

an additional Reserve Alternative Instrument or an increase in the amount available to be drawn under a Reserve Alternative Instrument.

(g) Any deficiency in a Special Reserve Account resulting from the withdrawal of moneys therein or a draw on a Reserve Alternative Instrument or resulting from a valuation of the Investment Obligations therein shall be made up as provided in the Supplemental Indenture or the Parity Debt Indenture establishing such Special Reserve Account. The Supplemental Indenture or Parity Debt Indenture providing for the deposit of or the substitution in lieu of cash of a Reserve Alternative Instrument may provide that AMP may be required to post collateral or deposit cash or obtain a substitute Reserve Alternative Instrument in the event that the provider of the Reserve Alternative Instrument is downgraded or its rating is withdrawn or suspended with the result that the Reserve Alternative Instrument no longer meets all of the rating criteria set forth in (b)(ii) above.

(h) If at any time, the amount of moneys held for the credit of the Parity Common Reserve Account or any Special Reserve Account shall exceed the amount then required to be on deposit to the credit of such Account, the excess may be withdrawn and transferred as directed by AMP in accordance with any Supplemental Indenture and any Parity Debt Indenture.

*Application of Money in the Redemption Account.* Subject to the terms and priorities established in the Master Indenture, the Trustee shall apply money in the Redemption Account to the purchase or redemption of Bonds.

*Application of Moneys in the Reserve and Contingency Subfund.* Moneys held in the various Accounts of the Reserve and Contingency Subfund may be disbursed by AMP as follows: (a) money held in the Overhaul Account may be used to pay the costs of unusual or extraordinary (as determined by AMP) repairs or maintenance, not occurring annually; (b) money held in the Renewal and Replacement Account may be used to pay the costs of renewals, replacements and repairs to the Project resulting from any emergency, engineering and architectural fees and premiums on insurance carried under the terms of the Master Indenture; (c) money in the Major Maintenance Account may be used for paying the costs of capital improvements to the AMP Interest associated with the major maintenance plan approved by the Greenup Management Committee; (d) money in the FERC Relicensing Reserve Account may be used to pay costs associated with the process of renewal of the Greenup License; (e) money held in the Rate Stabilization Account may be, at AMP's direction, transferred to any other account or subfund, including the payment of interest, principal or redemption of Indebtedness; (f) money held in the Environmental Improvements Account may be used for the mitigation of environmental impacts resulting from the operation of the Greenup Facility; and (g) moneys held in the Self-Insurance Account may be used to pay for losses, liabilities or other purposes for which insurance proceeds, net of the applicable deductible, have been received or for losses, liabilities including reimbursement obligations or other purposes for which AMP was self-insured or uninsured or obligated for reimbursement on letters of credit or performance or surety bonds or the like.

## **Depositories and Investment of Funds**

*Security for Deposits.* All money received by AMP pursuant to the provisions of the Master Indenture shall be deposited with the Trustee or one or more Depositories and, in the case of deposits with the Trustee, be trust funds under the Master Indenture, and shall not be subject to the lien of any creditor of AMP.

All money deposited with and held by the Trustee or any Depository in excess of the amount guaranteed by the Federal Deposit Insurance Corporation or other federal agency shall be continuously secured, for the benefit of AMP and the Owners, either (a) by lodging with a bank or trust company



chosen by the Trustee or Depository or, if then permitted by law, by setting aside under control of the trust department of the bank or trust company holding such deposit, as collateral security, Government Obligations or other marketable securities eligible as security for the deposit of trust funds under regulations of the Comptroller of the Currency of the United States or applicable state law or regulations, having a market value (exclusive of accrued interest) not less than the amount of such deposit, or (b) if the furnishing of security as provided in clause (a) above is not permitted by applicable law, then in such other manner as may then be required or permitted by applicable state or federal laws and regulations regarding the security for, or granting a preference in the case of, the deposit of trust funds; provided, however, that it shall not be necessary for the Trustee or any Depository to give security for the deposit of any money with it for the payment of the principal of or the redemption premium, if any, or the interest on any Parity Obligations or Subordinate Obligations, or for the Trustee or any Depository to give security for any money that shall be represented by Investment Obligations purchased under the provisions of the Master Indenture as an investment of such money.

*Investment of Money.* Money held for the credit of all funds, accounts and subaccounts established under the Master Indenture and held by the Trustee shall, in accordance with the written directions of AMP, be continuously invested and reinvested by the Trustee or the Depositaries, whichever is applicable, in Investment Obligations to the extent practicable.

No Investment Obligations pertaining to any Series of Bonds in any fund, account or subaccount held by the Trustee or any Depository shall mature on a date beyond the latest maturity date of the Bonds of such Series Outstanding at the time such Investment Obligations are deposited.

AMP shall either enter into agreements with the Trustee or any Depository for the investment of any money required or permitted to be invested under the Master Indenture or give the Trustee or any Depository written directions respecting the investment of such money, subject, however, to the provisions of the Master Indenture, and the Trustee or such Depository shall then invest such money in accordance with such agreements or directions.

Except as provided in the Master Indenture with respect to the Parity Common Reserve Account, Investment Obligations shall mature or be redeemable at the option of the holder thereof not later than the respective dates when the money held for the credit of such funds, accounts and subaccounts will be required for the purposes intended.

Investment Obligations in the Parity Common Reserve Account shall mature or be redeemable at the option of the Trustee not later than the final maturity date of the Parity Obligations to which such Parity Common Reserve Account is pledged.

Money held for the credit of all funds, accounts and subaccounts established under the Master Indenture and held by the Trustee shall, in accordance with the written directions of AMP, be continuously invested and reinvested by the Trustee or the Depositaries, whichever is applicable, in Investment Obligations to the extent practicable. Except as provided in the Master Indenture with respect to the disposition of investment income, the particular investments to be made and other related matters in respect of investments shall, as to each Series of Bonds, be provided in the Supplemental Indenture authorizing the issuance of such Series of Bonds.

*Valuation.* For the purpose of determining the amount on deposit in any fund, account or subaccount established under the Master Indenture, Investment Obligations in which money in such fund, account or subaccount is invested shall, so long as no Event of Default shall have occurred and continue, be valued at Amortized Cost. During the pendency of any Event of Default, Investment Obligations in

which money in such fund, account or subaccount is invested shall be valued at the lower of Amortized Cost or market.

All Investment Obligations in all of the subfunds, accounts and subaccounts established under the Master Indenture shall be valued as of the Business Day immediately preceding each Principal Payment Date and, at the written request of an AMP Representative, each or any Interest Payment Date.

### **Certain Covenants of AMP**

*Covenant to Maintain the Greenup Facility.* AMP will fulfill all of its obligations under the Greenup Agreements and, subject to the provisions of such Agreements (i) will at all times use its best efforts to maintain, preserve and keep or cause to be maintained, preserved or kept, the Greenup Facility and all additions or betterments thereto and extensions thereof in good repair and good working order and condition, and (ii) will use its best effort to make or cause to be made all necessary and proper repairs, renewals, capital additions, replacements, extensions and betterments thereto so that at all times the business carried on in connection therewith may be properly and advantageously conducted.

*Insurance.* To the extent not otherwise provided in accordance with the provisions of the Greenup Agreements, AMP covenants that it maintain, or cause to be maintained, a practical insurance program, with reasonable terms, conditions, provisions and costs, which AMP determines (i) will afford adequate protection against loss caused by damage to or destruction of the Greenup Facility or any part thereof and (ii) will include reasonable liability insurance on all of the Greenup Facility for bodily injury and property damage resulting from the construction or operation of the Greenup Facility.

*Incurrence Tests.* Subsequent to the Effective Date, additional Parity Obligations may be issued or incurred only in compliance with the Incurrence Tests set forth in (a) and (b), subject to the issuance of Parity Obligations issued pursuant to (c) below:

(a) AMP may issue or incur Parity Obligations at one time or from time to time in any form or combination of forms permitted by the Master Indenture for the purpose of providing funds, with any other available funds, to pay additional Costs of the Project if, prior to the issuance or incurrence of such Parity Obligations, AMP shall file or cause to be filed with the Trustee an Officer's Certificate (which may rely upon certificates or other documentation delivered by an Independent Consultant) certifying that, for each Fiscal Year thereafter for which sufficient proceeds of the Parity Obligations and other available funds have not been set aside with the Trustee to pay the interest due in such Fiscal Year, in the signer's good faith estimation, (i) the Debt Service Coverage Ratio will be not less than 1.10x Maximum Annual Debt Service Requirement for all of the Parity Obligations, including the proposed additional Parity Obligations, that will be Outstanding immediately following the issuance of such proposed Parity Obligations and (ii) the Debt Service Coverage Ratio is not less than 1.00x of the Maximum Annual Debt Service Requirement for all of the Indebtedness, including the proposed additional Parity Obligations, that will be Outstanding immediately following the issuance of such proposed Parity Obligations.

(b) In the event of damage or destruction to the Greenup Facility that materially adversely affects its generating capability and for which insurance proceeds are inadequate to pay the cost of repairs or for which AMP does not expect to receive adequate insurance proceeds in a timely manner to expedite the necessary repairs or reconstruction, AMP may issue or incur Parity Obligations for the sole purpose of paying the cost of repairs required for AMP to return the Greenup Facility to commercial operation ("Emergency Bonds"); provided that the issuance of any such Emergency Bonds shall be contingent on the receipt by the Trustee of a favorable report of the Consulting Engineer to the effect that the net proceeds of the Emergency Bonds then to be issued and any other available funds of AMP paid into the Construction Subfund for the purpose shall be sufficient for AMP to pay AMP's share of the balance of

the cost, as estimated by the Consulting Engineer, of the repairs required to return the Greenup Facility to commercial operation and (ii) Hamilton, as the co-owner of the Greenup Facility, shall have certified to AMP that it has its share of the funds required or has secured a binding commitment therefor, for Hamilton's share of the balance of the cost, as estimated by the Consulting Engineer, of the repairs required to return the Greenup Facility to commercial operation.

(c) AMP may incur Parity Obligations for the purpose of refunding or reissuing any Outstanding Indebtedness if, prior to the incurrence of such Parity Obligations, either (i) the Trustee receives from AMP an Officer's Certificate (which may rely upon certificates or other documentation delivered by an Independent Consultant) stating that, taking into account the Parity Obligations proposed to be incurred, the Parity Obligations to remain Outstanding after the refunding and the refunding of the Outstanding Indebtedness proposed to be refunded, the Maximum Debt Service Requirement will not be increased by more than five percent (5%), or (ii) AMP files or causes to be filed with the Trustee an Officer's Certificate (which may rely upon certificates or other documentation delivered by an Independent Consultant) certifying that, in the signer's good faith estimation, the Debt Service Coverage Ratio for each Fiscal Year thereafter for which sufficient proceeds of the Parity Obligations and other available funds have not been set aside with the Trustee to pay the interest due in such Fiscal Year, taking into account the Parity Obligations proposed to be incurred, the refunding of the Outstanding Indebtedness proposed to be refunded and the Parity Obligations to remain Outstanding after the refunding, will be not less than 1.10x, and (iii) the Trustee receives a report by an Independent Consultant verifying the computations supporting the determination in (i) or (ii) above.

(d) For purposes of demonstrating compliance with the Incurrence Tests set forth in paragraphs (a) or (c), AMP may (but is not required to) elect in the applicable Supplemental Indenture to treat all Parity Obligations authorized in a Credit Facility (including, for example and without limitation, a line of credit or a liquidity facility supporting a commercial paper program), but not immediately issued or incurred under such Credit Facility, as subject to such Incurrence Tests as of a single date, notwithstanding that none, or less than all, of the authorized principal amount of such Parity Obligations shall have been issued or incurred as of such date.

(e) Short-Term Indebtedness may be incurred under the Master Indenture as a Parity Obligation only in compliance with the Incurrence Tests. In addition, AMP may incur Short-Term Indebtedness as Subordinate Obligations under the Master Indenture.

(f) Notwithstanding the foregoing provisions, nothing contained in the Master Indenture shall preclude AMP from incurring any obligation under a Credit Facility.

(g) Notwithstanding the foregoing provisions, nothing contained in the Master Indenture shall preclude AMP from entering into a Derivative Agreement either in connection with Indebtedness or otherwise.

*Rate Covenant.* AMP covenants that it will at all times fix, charge and collect reasonable rates and charges for the use of, and for the services and facilities furnished by, the Project and that from time to time, and as often as it shall appear necessary, it will adjust such rates and charges so that the Net Revenues will be sufficient to provide an amount in each Fiscal Year at least equal to greater of (A) one hundred ten per centum (110%) of the Debt Service Requirements for such Fiscal Year on account of all the Bonds and Parity Debt then outstanding and (B) one hundred per centum (100%) of the sum of the Debt Service Requirements for such Fiscal Year on account of all Bonds and Parity Debt then outstanding and the amount required to make all other deposits required by the Master Indenture and to pay all other obligations of AMP related to the Project, including Subordinate Obligations, as the same become due.

AMP further covenants that if the moneys available for the payment of the sum of the amounts set forth in the preceding paragraph shall not equal or exceed the amount required above for any Fiscal Year, it will revise the rates and charges for the services and facilities furnished by the Project and, if necessary, it will revise its plan of operation in relation to the collection of bills for such services and facilities, so that such deficiency will be made up before the end of the Fiscal Year following that Fiscal Year in which such deficiency occurred. Should any deficiency not be made up in such following Fiscal Year, the requirement therefor shall be cumulative and AMP shall continue to revise such rates until such deficiency shall have been completely made up.

*Power Sales Contract; Other Contracts.* AMP covenants and agrees that it will not suffer, permit or take any action or do anything or fail to take any action or fail to do anything which may result in the termination of the Power Sales Contract so long as any Parity Obligations are outstanding; that it will fulfill its obligations and will require the Participants to perform punctually their duties and obligations under the Power Sales Contract and will otherwise administer the Power Sales Contract in accordance with its terms to assure the timely payment of all amounts payable by the Participants thereunder, all in accordance with the terms of the Power Sales Contract; that it will not execute or agree to any change, amendment or modification of or supplement to the Power Sales Contract except by supplemental contract, as the case may be, duly executed by the applicable Participants and AMP, and upon the further terms and conditions set forth the Master Indenture; and that, except as provided the Master Indenture, it will not agree to any abatement, reduction, abrogation, waiver, diminution or other modification in any manner or to any extent whatsoever of the obligation of any Participant under the Power Sales Contract to meet its obligations as provided in such Contract.

So long as any Parity Obligations are outstanding, AMP shall (i) perform, or cause to be performed, all of its obligations under the Greenup Agreements and any Related Agreement and take such actions and proceedings from time to time as shall be necessary to protect and safeguard the security for the payment of the Bonds afforded by the provisions of such Project Agreements and (ii) not voluntarily consent to or permit any rescission or consent to any amendment to or otherwise take any action under or in connection with any Project Agreement which will limit or reduce the obligation of the other parties thereto to make payments provided therein or which will have a material adverse effect on the security for the payment of Parity Obligations.

*Covenant Against Sale or Encumbrances; Exceptions.* AMP covenants that, except as provided below, it will not sell, exchange or otherwise dispose of or encumber the AMP Ownership Interest or any part thereof.

AMP may from time to time sell, exchange or otherwise dispose of any equipment, motor vehicles, machinery, fixtures, apparatus, tools, instruments or other movable property if it determines that such articles are no longer needed or are no longer useful in connection with the Project, and the proceeds thereof shall be applied to the replacement of the properties so sold, exchanged or disposed of or shall be transferred first to the Parity Common Reserve Account to the extent of any deficiency therein, then to the Reserve and Contingency Subfund to the extent of any deficiency therein, and then to the Construction Subfund or the Bond Subfund for the purchase or redemption of Parity Obligations in accordance with the provisions of the Master Indenture, all as directed in an Officer's Certificate.

Subject to the provisions of the Project Agreements, AMP may from time to time sell, exchange or otherwise dispose of (but not lease or contract for the use thereof except where AMP remains fully obligated under the Master Indenture and, if the rent in question exceeds 5% of the Gross Revenues of AMP for the preceding Fiscal Year, AMP shall expressly determine that such lease, contract or agreement will not materially impair the ability of AMP to meet the Rate Covenant) any other property of the Project if it determines by Board resolution:

1. that such property is no longer needed or is no longer useful in connection with the Greenup Facility, or

2. that the sale, exchange or other disposition thereof would not materially adversely affect the operating efficiency of the Greenup Facility,

and the proceeds, if any, thereof shall be transferred first to the Parity Common Reserve Account or any Special Reserve Account to the extent of any deficiency therein, then to the Reserve and Contingency Subfund to the extent of any deficiency therein, and then to the Acquisition and Construction Subfund or the Redemption Account in the Bond Subfund for the purchase or redemption of Bonds in accordance with the provisions of the Master Indenture, all as directed in an Officer's Certificate.

*Annual Budget.* Subject to the provision of the required information from the other parties to the Project Agreements, AMP covenants that, on or before the 45th day preceding the first day of each Fiscal Year, it will prepare with respect to the Project a preliminary budget of Gross Revenues and AMP Operating Expenses and a preliminary budget of capital expenditures for the ensuing Fiscal Year.

AMP further covenants that on or before the last day in such Fiscal Year it will finally adopt the budget of Gross Revenues and Operating Expenses and the budget of capital expenditures for the ensuing Fiscal Year (which budgets together with any amendments thereof or supplements thereto as hereinafter permitted being herein sometimes collectively called the "Annual Budget").

If for any reason AMP shall not have adopted the Annual Budget before the first day of any Fiscal Year, the preliminary budget for such Fiscal Year or, if there is none, the budget for the preceding Fiscal Year, shall, until the adoption of the Annual Budget, be deemed to be in force and shall be treated as the Annual Budget.

## **Defaults and Remedies**

*Events of Default.* Under the Master Indenture, the following events constitute an Event of Default: (a) failure to make any payment of the principal of and the redemption premium, if any, on any of the Bonds or any Parity Debt when and as the same shall be due and payable, either at maturity or by redemption or otherwise; (b) failure to make any payment of the interest on any of the Bonds or any Parity Debt when and as the same shall be due and payable; (c) an event of default shall have occurred under any Supplemental Indenture or the Trustee shall have received written notice from any Holder of an event of default under any Parity Debt Indenture; (d) AMP's failure to duly perform, observe or comply with any covenant or agreement on its part under the Master Indenture for a period of thirty (30) days after the date on which written notice of such failure, requiring the same to be remedied, shall have been given to AMP by the Trustee; provided, however, that if such failure be such that it cannot be corrected within thirty (30) days after the receipt of such notice, it shall not constitute an Event of Default if corrective action is instituted within such 30-day period and diligently pursued until the Event of Default is corrected; (e) AMP fails to make any required payment with respect to any Subordinate Obligations or other indebtedness (other than any Bond, Parity Debt or Subordinate Obligations), whether such Indebtedness now exists or shall hereafter be created, and any period of grace with respect thereto shall have expired, or an event of default as defined in any mortgage, indenture or instrument under which there may be issued, or by which there may be secured or evidenced, any Indebtedness, whether such Indebtedness now exists or shall hereafter be created, shall occur, which event of default shall not have been waived by the holder of such mortgage, indenture or instrument or a trustee acting on its behalf, and as a result of such failure to pay or other Event of Default such Indebtedness shall have been accelerated and such acceleration, in the opinion of the Trustee, does or could materially adversely affect the Owners

of Bonds and the Holders of Parity Debt; or (f) certain events relating to bankruptcy, insolvency, reorganization or other related proceedings.

Upon the occurrence of an Event of Default, the Trustee shall give prompt written notice to AMP specifying the nature of the Event of Default. AMP shall give the Trustee notice of all events of which it is aware that either constitute Events of Default under the Master Indenture or, upon notice by AMP or the Trustee or the passage of time, would constitute Events of Default.

*Acceleration.* Upon the occurrence of, and continuance for a period of not less than 90 days, the Events of Default detailed in (a) or (b) above, the Trustee may, and upon the written request of the Owners or Holders of not less than a majority in aggregate principal amount of Parity Obligations then outstanding shall, by notice to AMP, declare the principal of all Parity Obligations then Outstanding immediately due and payable. If, however, at any time after the principal of the Parity Obligations shall have been accelerated and before the entry of final judgment or decree in any suit instituted on account of such default, money sufficient to pay the principal of all matured Parity Obligations and all arrears of interest, if any, upon all Parity Obligations then Outstanding (including any sinking fund requirement, but excluding the principal on any Parity Obligation not due and payable in accordance with its terms) shall have been deposited with the Trustee and all other defaults known to the Trustee in the observance of the covenants contained in the Bonds, any Parity Debt, the Master Indenture or any Parity Debt Indenture shall have been remedied to the satisfaction of the Trustee, the Trustee shall rescind and annul such declaration.

*Remedies.* Upon the happening and continuance of any Event of Default, then and in every case the Trustee may, and upon the written request of the Owners or Holders of not less than a majority in aggregate principal amount of Parity Obligations then outstanding shall, proceed to enforce its rights and the rights of the Owners and Holders of the Parity Obligations then Outstanding under applicable laws and under the Master Indenture by such suits or other actions, in equity or at law.

Regardless of the happening of an Event of Default, the Trustee, if requested in writing by the Owners or Holders of not less than a majority of the aggregate principal amount of the Parity Obligations then Outstanding, shall, subject to appropriate indemnification, institute and maintain such suits and proceedings as it may be advised shall be necessary or expedient (i) to prevent any impairment of the security under the Master Indenture by any acts which may be unlawful or in violation of the Master Indenture, or (ii) to preserve or protect the interests of the Owners and Holders, provided that such request and the action to be taken by the Trustee are not in conflict with any applicable law or the provisions of the Master Indenture and, in the sole judgment of the Trustee, are not unduly prejudicial to the interest of the Owners and Holders not making such request..

*Control of Proceedings.* Anything in the Master Indenture to the contrary notwithstanding, the Owners or Holders of a majority in aggregate principal amount of Parity Obligations at any time Outstanding shall have the right, subject to the provisions of the Master Indenture relating to indemnification of the Trustee, by an instrument or concurrent instruments in writing executed and delivered to the Trustee, to direct the method and place of conducting all remedial proceedings to be taken by the Trustee under the Master Indenture, provided that such direction shall be in accordance with law and the provisions of the Master Indenture, and, in the sole judgment of the Trustee, is not unduly prejudicial to the interest of any Owners or Holders not joining in such direction, and provided further, that the Trustee shall have the right to decline to follow any such direction if the Trustee in good faith shall determine that the proceeding so directed would involve it in personal liability, and provided further that nothing shall impair the right of the Trustee in its discretion to take any other action under the Master Indenture which it may deem proper and which is not inconsistent with such direction by the Owners or Holders.

*Restriction on Individual Action.* Except in respect of an Owner's or Holder's right to enforce payment of a Parity Obligation, no Owner or Holder shall have any right to institute any suit, action or proceeding in equity or at law on any Bond or Parity Debt or for the execution of any trust under the Master Indenture or for any other remedy under the Master Indenture unless such Owner or Holder previously shall (a) have given to the Trustee written notice of the Event of Default on account of which suit, action or proceeding is to be instituted, (b) have requested the Trustee to take action after the right to exercise such powers or right of action, as the case may be, shall have accrued, (c) have afforded the Trustee a reasonable opportunity either to proceed to exercise the powers granted in the Master Indenture or to institute such action, suit or proceedings in its or their name, and (d) have offered to the Trustee reasonable security and satisfactory indemnity against the costs, expenses and liabilities to be incurred therein or thereby, and the Trustee shall have refused or neglected to comply with such request within a reasonable time.

## **Supplements and Amendments**

*Supplemental Indentures Without Consent.* AMP and the Trustee may execute and deliver Supplemental Indentures without the consent of or notice to any of the Owners or Holders to: (a) cure any ambiguity or formal defect or omission in the Master Indenture, or any conflict between the provisions of the Master Indenture and of the Power Sales Contract or of any Parity Debt Indenture delivered to the Trustee at the same time as AMP delivers the Master Indenture, to correct or supplement any provision the Master Indenture that may be inconsistent with any other provision therein, to make any other provisions with respect to matters or questions arising under the Master Indenture, or to modify, alter, amend, add to or rescind, in any particular, any of the terms or provisions contained in the Master Indenture; (b) grant or confer upon the Trustee, for the benefit of the Owners or Holders, any additional rights, remedies, powers, authority or security that may lawfully be granted to or conferred upon the Owners, the Holders or the Trustee, (c) add to the provisions of the Master Indenture other conditions, limitations and restrictions thereafter to be observed; (d) add to the covenants and agreements of AMP in the Master Indenture other covenants and agreements thereafter to be observed by AMP or to surrender any right or power in the Master Indenture reserved to or conferred upon AMP, (e) to permit the qualification of the Master Indenture under any federal statute now or hereafter in effect or under any state Blue Sky law, and, in connection therewith, if AMP so determines, to add to the Master Indenture or any Supplemental Indenture such other terms, conditions and provisions as may be permitted or required by such federal statute or Blue Sky law, or (f) to provide for the issuance of Bonds in bearer form, or (g) to provide for the issuance of Bonds under a book-entry system, or (h) obtain a Credit Facility, Reserve Alternative Instrument, a Derivative Agreement, or other credit enhancement; provided, however, that no Rating Agency shall reduce or withdraw its rating on any of the Parity Obligations then Outstanding as a consequence of any such provision of such Supplemental Indenture, (i) enable AMP to comply with its obligations, covenants and agreements made in the Master Indenture or in any Parity Debt Indenture for the purpose of maintaining the tax status of interest or ability of AMP to receive a Federal Subsidy on any Tax-Advantaged Parity Obligations, provided that such change shall not materially adversely affect the security for any Parity Obligations, (j) to extent that such action is inconsistent with the provisions of the Master Indenture or any Supplemental Indenture, to enable AMP to perform any and all acts required by the order of FERC, or its successor, affecting the Project, or (k) make any other change that, in the opinion of the Trustee, which may, but is not required to, rely upon one or more of affirmation of ratings by the Rating Agencies, certificates of Independent Consultants and Opinions of Counsel for such purpose, shall not materially adversely affect the security for the Parity Obligations.

*Supplemental Indentures With Consent.* The Owners and Holders of not less than a majority in aggregate principal amount of the Parity Obligations then Outstanding shall have the right, from time to time, anything contained in the Master Indenture to the contrary notwithstanding, to consent to and

approve the execution and delivery of such Supplemental Indentures as are deemed necessary or desirable by AMP for the purpose of modifying, altering, amending, adding to or rescinding, in any particular, any of the terms or provisions contained in the Master Indenture or in any Supplemental Indenture; provided, however, that nothing contained in the Master Indenture shall permit, or be construed as permitting (a) an extension of the maturity of the principal of or the interest on any Bond or Parity Debt without the consent of the Owner of such Bond or the Holder of such Parity Debt, (b) a reduction in the principal amount of any Bond or Parity Debt or the redemption premium or the rate of interest thereon without the consent of the Owner of such Bond or the Holder of such Parity Debt, (c) the creation of a security interest in or a pledge of Net Receipts other than the security interest and pledge created by the Master Indenture without the consent of the Owners of all Bonds Outstanding and the Holders of all Parity Debt Outstanding, (d) a preference or priority of any Bond or Parity Debt over any other Bond or Parity Debt without the consent of the Owners of all Bonds Outstanding and the Holders of all Parity Debt Outstanding or (e) a reduction in the aggregate principal amount of the Parity Obligations required for consent to such Supplemental Indenture without the consent of the Owners of all Bonds Outstanding and the Holders of all Parity Debt Outstanding.

*Supplemental Power Sales Contract Without Consent.* AMP and the Participants may, from time to time and at any time, consent to such contracts, supplemental or amendatory to the Power Sales Contract as shall not be inconsistent with the terms and provisions of the Master Indenture,

1. to cure any ambiguity or formal defect or omission or to correct any inconsistent provisions in the Power Sales Contract or in any supplemental or amendatory contract, or
2. to grant to AMP for the benefit of the Bondholders any additional rights, remedies, powers, authority or security that may lawfully be granted to or conferred upon the Holders or AMP, or
3. to make any other change in, or waive any provision of, the Power Sales Contract, provided only that the ability of AMP to comply with the provisions of the Rate Covenant shall not thereby be materially impaired.

*Supplemental Power Sales Contract with Consent.* Except for as provided above, AMP shall not agree to any supplemental or amendatory contract respecting the Power Sales Contract, unless notice of the proposed execution of such supplemental or amendatory contract shall have been given and the Owners and Holders of not less than a majority in aggregate principal amount of the Bonds and Parity Debt then outstanding shall have consented to and approved the execution thereof, such consent to be obtained in the same manner as Supplemental Indentures requiring the consent of Owners or Holders.

*Defeasance.* The lien of the Master Trust Indenture shall be released when:

- (a) the Bonds and any Parity Debt shall have become due and payable in accordance with their terms or otherwise as provided in the Master Indenture, and the whole amount of the principal and the interest and premium, if any, so due and payable upon all Parity Obligations shall be paid, or
- (b) if the Bonds and any Parity Debt shall not have become due and payable in accordance with their terms, the Trustee or the Bond Registrar shall hold sufficient money or Defeasance Obligations, or a combination of money and Defeasance Obligations, the principal of and the interest on which, when due and payable, will provide sufficient money to pay the principal of and the interest and redemption premium, if any, on all Parity Obligations then Outstanding to the maturity date or dates of such Parity Obligations or to the date or dates specified for the redemption thereof, as verified by a nationally recognized Independent Consultant, and, if Bonds or any Parity Debt are to be called for redemption,



irrevocable instructions to call the Bonds or Parity Debt for redemption shall have been given by AMP to the Trustee, and

(c) sufficient funds shall also have been provided or provision made for paying all other obligations payable under the Master Indenture by AMP.

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**PROPOSED FORM OF OPINION OF PECK, SHAFFER & WILLIAMS LLP**

May \_\_\_, 2016

American Municipal Power, Inc.  
Columbus, Ohio

Ladies and Gentlemen:

We have examined the transcript of proceedings relating to the issuance of \$125,630,000 Greenup Hydroelectric Project Revenue Bonds, Series 2016A (the “Bonds”), issued by American Municipal Power, Inc. (“AMP”) to finance the purchase price of a 48.6% undivided ownership interest in the Greenup Hydroelectric Facility (the “AMP Interest”), to make a deposit to a construction account to finance AMP’s share of certain capital expenditures, costs and expenses at the Greenup Hydroelectric Facility, to repay draws on a line of credit made to finance certain expenditures relating to the acquisition of the AMP Interest, to fund a portion of the interest on the Bonds payable in the first year after acquisition of the AMP Interest, to fund deposits to a debt service reserve fund, and to pay the costs of issuance of the Bonds. The transcript documents include executed counterparts of: (i) Resolution No. 16-02-3814 adopted by the Board of Trustees of AMP on February 18, 2016 (the “Resolution”); (ii) the Power Sales Contract dated as of November 1, 2009 (the “Power Sales Contract”) between AMP and 47 of its members, located in Ohio, Kentucky, Virginia and Michigan (the “Participants”); (iii) the Master Trust Indenture dated as of March 1, 2016 between AMP and U.S. Bank National Association, as trustee (the “Master Indenture”); (iv) the First Supplemental Indenture, dated as of March 1, 2016, between AMP and U.S. Bank National Association, as trustee (the “First Supplemental Indenture,” and, together with the Master Indenture, the “Indenture”); and (v) other documents executed and delivered in connection with the issuance of the Bonds. We have also examined the Constitution and laws of the State of Ohio and such other documents, certifications and records as we have deemed necessary for purposes of this opinion. We have also examined the form of the Bonds.

Based upon the examinations above referred to, we are of the opinion that, under the law in effect on the date of this opinion:

1. The Bonds have been duly authorized, executed, issued and delivered by AMP and constitute legal, valid and binding special obligations of AMP, enforceable in accordance with their terms. The principal of and interest on the Bonds are payable solely from and secured by: (a) the Gross Receipts, as defined in the Master Indenture, (b) all moneys and investments in certain funds established by the Indenture, and (c) all rights, interests and property pledged and assigned to the Trustee under the Indenture. The Bonds do not constitute a debt, or a pledge of the faith and credit of the Participants or of any political subdivision of the State of Ohio and the registered owners thereof will have no right to have excises or taxes levied by the General Assembly of the State, the Participants or any other political subdivision of the State for the payment of debt service on the Bonds. AMP has no taxing power.

2. The Indenture has been duly authorized executed and delivered by AMP and constitutes a valid and binding obligation of AMP, enforceable in accordance with its terms.

3. Interest on the Bonds is exempt from taxes levied by the State of Ohio and its subdivisions, including the Ohio personal income tax, and also excludible from the net income base used in calculating the Ohio corporate franchise tax. We express no other opinion as to the federal or state tax consequences of purchasing, holding or disposing of the Bonds.

In giving this opinion, we have relied upon covenants and certifications of facts made by officials of AMP and others contained in the transcript which we have not independently verified. We have also relied upon the opinions of General Counsel to AMP and of Taft Stettinius & Hollister LLP, as counsel to AMP, as to the matters contained therein. It is to be understood that the enforceability of the Bonds, the Indenture and all other documents relating to the issuance of the Bonds may be subject to bankruptcy, insolvency, reorganization, moratorium and other laws in effect from time to time affecting creditors' rights, and to the exercise of judicial discretion. Capitalized terms not defined herein have the meanings given them in the Official Statement dated May 4, 2016 relating to the offering of the Bonds.

We bring to your attention the fact that our legal opinions are an expression of professional judgment and are not a guaranty of a result.

We do not undertake to advise you of matters which may come to our attention subsequent to the date hereof which may affect our legal opinions expressed herein.

Very truly yours,

**PROPOSED FORM OF FEDERAL TAX OPINION  
OF SIDLEY AUSTIN LLP**

May \_\_, 2016

American Municipal Power, Inc.  
Columbus, Ohio

Re: \$125,630,000 American Municipal Power, Inc.  
Greenup Hydroelectric Project Revenue Bonds Series 2016A

We have acted as Federal Tax Counsel in connection with the issuance by American Municipal Power, Inc., an Ohio non-profit corporation ("AMP"), of its bonds described above (the "Bonds"). For purposes of rendering this opinion, we have examined, among other things, certified copies of:

- (i) Resolution No. 16-02-3814, adopted on February 18, 2016, by the Board of Trustees of AMP authorizing the Bonds (the "Authorizing Resolution");
- (ii) the Power Sales Contract, dated as of November 1, 2009, between AMP and 47 of its members, located in Kentucky, Ohio, Michigan and West Virginia (such members, the "Participants," and such contract, the "Power Sales Contract");
- (iii) the Master Trust Indenture, dated as of March 1, 2016, between AMP and U.S. Bank National Association, as trustee (the "Master Indenture");
- (iv) the First Supplemental Indenture to the Master Indenture, dated as of March 1, 2016, between AMP and U.S. Bank National Association, as trustee (the "Supplemental Indenture");
- (v) the Tax Certificate delivered on the date hereof by AMP (the "Tax Certificate") in which it has made certain representations and covenants concerning prior, current, and future compliance with the Internal Revenue Code of 1986, as amended (the "Code"); and
- (vi) the opinion of Peck, Shaffer & Williams, a division of Dinsmore and Shohl LLP, Columbus, Ohio, Bond Counsel, dated the date hereof, that the Bonds constitute valid and binding obligations of AMP (the "Peck Shaffer Opinion").

and such other documents, proceedings and matters relating to the federal tax status of the Bonds as we deemed relevant to this opinion.

We have assumed, without independent verification, (i) the genuineness of certificates, records and other documents submitted to us and the accuracy and completeness of the statements contained therein; (ii) that all documents and certificates submitted to us as originals are accurate and complete; (iii) that all documents and certificates submitted to us as copies are true and correct copies of the originals thereof; and (iv) that all information submitted to us, and all representations and warranties made, in the Tax Certificate and otherwise are accurate and

complete. We have also assumed, without independent investigation, the correctness of the Peck Shaffer Opinion that the Bonds constitute valid and binding obligations of AMP. We have also assumed that each of the Authorizing Resolution, the Power Sales Contract, the Master Indenture and the Supplemental Indenture has been duly authorized, executed and delivered by the parties thereto and is valid and binding in accordance its terms.

On the basis of the foregoing examination, and in reliance thereon, and our consideration of such questions of law as we have deemed relevant in the circumstances, we are of the opinion that, under existing law:

1. Except as provided in the following sentence, interest on the Bonds is not includable in gross income for federal income tax purposes. Interest on the Bonds will be includable in gross income for purposes of federal income taxation retroactive to the date of issuance of the Bonds in the event of either a failure by AMP to comply with the applicable requirements of the Code, and the covenants contained in the Tax Certificate regarding the use, expenditure and investment of proceeds of the Bonds and the timely payment of certain investment earnings to the United States, or a failure by the Participants to comply with the applicable requirements of the Code and the covenants contained in the Power Sales Contract, and we express no opinion as to the effect of any change to any document pertaining to the Bonds or of any action taken or not taken where such change is made or action is taken or not taken without our approval or in reliance upon the advice of counsel other than ourselves with respect to the exclusion from gross income of the interest on the Bonds for federal income tax purposes.

2. Interest on the Bonds is not an item of tax preference for purposes of the federal individual or corporate alternative minimum tax. The Code contains other provisions that could result in tax consequences, upon which we render no opinion, as a result of ownership of the Bonds or the inclusion in certain computations of interest that is excluded from gross income.

You have received the opinion of Peck, Shaffer & Williams, a division of Dinsmore and Shohl LLP, regarding the State of Ohio tax consequences of ownership of or receipt or accrual of interest on the Bonds, and we express no opinion as to such matters.

Our services did not include financial or other non-legal advice. Further, we undertake no responsibility for the accuracy, completeness or fairness of the Official Statement, dated May \_\_, 2016 relating to the offering of the Bonds, or other offering material relating to the Bonds and express no opinion with respect thereto.

We bring to your attention the fact that our legal opinions and conclusions are an expression of professional judgment and are not a guarantee of a result. The opinions expressed herein are based on an analysis of existing laws, regulations, rulings and court decisions. Such opinions may be adversely affected by actions taken or events occurring, including a change in law, regulation or ruling (or in the application or official interpretation of any law, regulation or ruling) after the date hereof.

Respectfully submitted,

**BOOK-ENTRY SYSTEM**

DTC will act as securities depository for the Series 2016A Bonds. The Series 2016A Bonds will be issued as fully-registered securities registered in the name of Cede & Co. (DTC's partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered Bond certificate will be issued for each maturity of the Series 2016A Bonds, in the aggregate principal amount of such issues, and will be deposited with DTC.

DTC, the world's largest securities depository, is a limited-purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provisions of Section 17 A of the Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 3.6 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments (from over 100 countries) that DTC's participants ("Direct Participants") deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between Direct Participants' accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly ("Indirect Participants"). The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at [www.dtcc.com](http://www.dtcc.com).

Purchases of Series 2016A Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Series 2016A Bonds on DTC's records. The ownership interest of each actual purchaser of each Series 2016A Bond ("Beneficial Owner") is in turn to be recorded on the Direct and Indirect Participants' records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Series 2016A Bonds are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in Series 2016A Bonds, except in the event that use of the book-entry system for the Series 2016A Bonds is discontinued.

To facilitate subsequent transfers, all Series 2016A Bonds deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of Series 2016A Bonds with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Series 2016A Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts such Series 2016A Bonds are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time. Beneficial Owners of Series 2016A Bonds may wish to take certain steps to augment the transmission to them of notices of significant events with respect to the Series 2016A Bonds, such as redemptions, tenders, defaults, and proposed amendments to the security documents. For example, Beneficial Owners of Series 2016A Bonds may wish to ascertain that the nominee holding the Series 2016A Bonds for their benefit has agreed to obtain and transmit notices to Beneficial Owners. In the alternative, Beneficial Owners may wish to provide their names and addresses to the registrar and request that copies of notices be provided directly to them.

Redemption notices shall be sent to DTC. If less than all of the Series 2016A Bonds of a Series or Subseries within a maturity are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such maturity to be redeemed.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to the Series 2016A Bonds unless authorized by a Direct Participant in accordance with DTC's MMI Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to AMP as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts the Series 2016A Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Redemption proceeds, principal and interest payments on the Series 2016A Bonds will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts, upon DTC's receipt of funds and corresponding detail information from AMP or the Trustee on payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, the Trustee or AMP, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of redemption proceeds, principal and interest to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of AMP or the Trustee, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

DTC may discontinue providing its services as securities depository with respect to the Series 2016A Bonds at any time by giving reasonable notice to AMP or the Trustee. Under such circumstances, in the event that a successor depository is not obtained, Bond certificates are required to be printed and delivered.

AMP may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository). In that event, Bond certificates will be printed and delivered to DTC.

The information in this Appendix F concerning DTC and DTC's book-entry system has been obtained from sources that AMP believes to be reliable, but neither AMP nor the Underwriters takes any responsibility for the accuracy thereof.



# AMP Greenup Feasibility Report

American Municipal Power



May 2016



This report has been prepared for the use of the client for the specific purposes identified in the report. The conclusions, observations and recommendations contained herein attributed to Leidos constitute the opinions of Leidos. To the extent that statements, information and opinions provided by the client or others have been used in the preparation of this report, Leidos has relied upon the same to be accurate, and for which no assurances are intended and no representations or warranties are made. Leidos makes no certification and gives no assurances except as explicitly set forth in this report.

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# AMP Greenup Feasibility Report

## American Municipal Power

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# Section 1

## OVERVIEW OF PROJECT

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### Introduction

The Greenup Hydroelectric Facility, which includes the 70.2 MW, three-unit, run-of-the-river hydroelectric generating plant located at the Greenup Locks and Dam on the Ohio River and associated facilities (the “Greenup Facility”), commenced operation in December 1982. Since 1988, the City of Hamilton, Ohio (“Hamilton” or the “City”) has owned, operated and held the Federal Energy Regulatory Commission (“FERC”) license relating to the Greenup Facility.

In June 2008, Hamilton received the FERC license necessary to construct and operate a run-of-the-river hydroelectric generation facility (the generation facility, together with the related equipment and associated transmission facilities, the “Meldahl Project”) to be constructed on the Captain Anthony Meldahl Locks and Dam, an existing dam, on the Ohio River, constructed by the United States Army Corps of Engineers (“USACE”). After receipt of the FERC license relating to the Meldahl Project, American Municipal Power, Inc. (“AMP”) and Hamilton, an AMP member, negotiated a series of agreements (the “AMP-Hamilton Agreements”), pursuant to which AMP and Hamilton agreed to jointly develop, construct and operate the Meldahl Project. The Meldahl Project entered commercial operation on April 12, 2016. For additional information concerning the AMP-Hamilton Agreements, see Appendix C to the Official Statement entitled “SUMMARY OF CERTAIN PROVISIONS OF THE AMP-HAMILTON AGREEMENTS”.

In addition, the AMP-Hamilton Agreements provided that, within 60 days of the date on which the Meldahl Project entered commercial operation, Hamilton would sell AMP a 48.6% undivided ownership interest in the Greenup Facility (such undivided ownership interest, the “AMP Interest” and the acquisition of, and improvements to, the AMP Interest, the “Project”). AMP will sell the available energy and capacity from the AMP Interest to 47 members of AMP located in Kentucky, Michigan, Ohio and Virginia (the “Participants”), pursuant to the terms of a Power Sales Contract dated November 1, 2009 (the “Power Sales Contract”).

After the date of acquisition of the AMP Interest (such date, the “Greenup Closing Date”), the AMP-Hamilton Agreements provide that Hamilton will continue to operate the Greenup Facility and will be entitled to a \$1 per megawatt-hour (“MWh”) adder, which adder shall be indexed to account for inflation, for each MWh of energy delivered to AMP from the Greenup Facility. AMP and Hamilton will be responsible for an aliquot share equal to their respective undivided ownership interest in the Greenup Facility (51.4% for Hamilton and 48.6% for AMP) of the operating and maintenance expenses of the Greenup Facility.

AMP has engaged Leidos Engineering, LLC (“Leidos”) to prepare a study of the feasibility of the Greenup Facility and the acquisition of the AMP Interest, and this Feasibility Report (“Report”) is the result of such study and summarizes our work up to the date hereof. Its purpose is to address the technical, operational, and financial implications and risks associated with the Greenup Facility over a 30-year period of continued operation, and to provide a high-level discussion of certain indirect (or non-financial) benefits of hydroelectric generation as a component of AMP’s power supply portfolio (as discussed in Section 3). Leidos has performed a review of Hamilton’s estimate of the cost of additional major maintenance that will be required for the Greenup Facility subsequent to the Greenup Closing Date, for which AMP and the Participants would share financial responsibility with Hamilton. The focus of this report is on the Project, and necessarily, the Greenup Facility. Appendix B of this Report, the Leidos Condition Assessment, summarizing Leidos’ findings related to our review of major maintenance for the Greenup Facility, provides further details regarding anticipated major maintenance costs and should be read in its entirety.

In preparation of this Report, Leidos has considered and relied upon (i) information on the Greenup Facility provided by AMP, including the operation and maintenance (“O&M”) budget for the Greenup Facility approved by AMP and Hamilton, (ii) information and data on the Greenup Facility provided by Hamilton, including operating reports, weekly reports, a maintenance schedule summary and a 10-year capital budget, (iii) studies conducted on behalf of Hamilton by external parties, most notably the analysis prepared by Sawvel and Associates, Inc. (“Sawvel”) in October 2015 of the Greenup Facility’s historical performance and projection thereof over the period 2016-2020, as well as a report prepared by Kleinschmidt, dated May 2014 and entitled Capital Project Review and Assessment for Greenup Hydroelectric Facility (the “Kleinschmidt Report”), (iv) prior analyses and reports prepared by Leidos (then Benham and SAIC) in 2009 and 2012, and (v) prior studies and documentation from various sources, including a Sawvel feasibility study on the Meldahl Project and the Greenup Facility, and the Official Statement, dated December 2, 2010 (the “Meldahl Official Statement”), relating to AMP’s Meldahl Hydroelectric Project Revenue Bonds, Series 2010 (the “Meldahl Bonds”). Additionally, certain information contained in the body of this Report reflects a summary of more detailed analyses contained in Appendix B. Information provided to Leidos by external parties is assumed to be accurate and representative of actual events to the best of the knowledge of the respective providers.

As used in this Report, the capitalization of any word not normally capitalized indicates that such word is defined in the particular agreement or other document discussed. References to and descriptions of such agreements or documents in this Report represent our understanding of certain general provisions thereof, but do not purport to be complete and are qualified in their entirety by reference to such agreements or documents.



## Section 2

# PLANS FOR OPERATING THE GREENUP FACILITY

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### Project Description

The Greenup Facility is located on the Ohio River between Grays Branch, Kentucky, and Franklin Furnace, Ohio. It is integral to the USACE Greenup Locks and Dam. The plant was constructed during 1981-1982 and commenced operations in December 1982. The builder and original licensee was the City of Vanceburg, Kentucky. The license and title to Greenup was transferred to Hamilton in May 1988. The plant is licensed by FERC to Hamilton as a run-of-river plant Licensed Project P-2614 and referenced in the national dam registry as NATDAM No. KY03031. Pursuant to the approving order of the FERC issued on June 11, 2015 (“Order”) in response to a Partial Transfer Application filed with FERC by AMP and Hamilton, AMP is approved as a co-licensee of the Greenup Facility with Hamilton, contingent upon the closing of the purchase of the AMP Interest, among other related requirements, in the Order. The figure below provides an overview of the location of the Greenup Facility<sup>1</sup>.

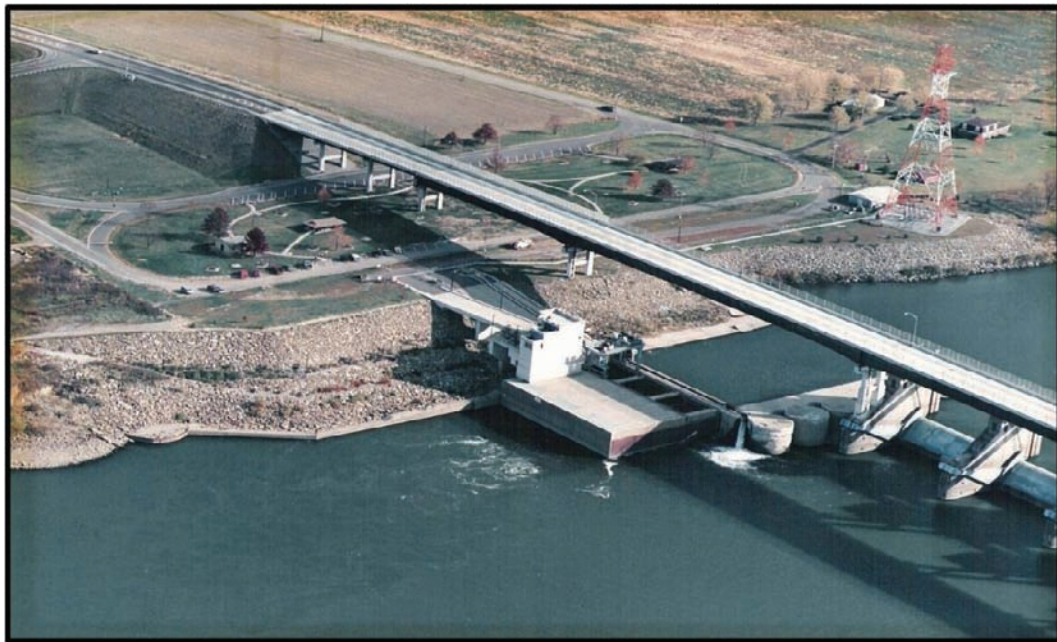


Figure 2-1 – Greenup Location

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<sup>1</sup> Photo sourced from: <http://www.hamilton-city.org/305/Greenup-Hydroelectric-Power-Plant>.

### Plant Mechanical Equipment and Design

The plant consists of three 24.3 MW Neyrpic bulb turbines mounted in a prefabricated modular powerhouse built in France by Chantiers de L'Atlantique, the ship-building division of Alsthom-Atlantique. Generator transformers, high voltage switchgear, controls and auxiliary systems are all located within the powerhouse modular structure. The total rated output of the plant is 70.2 MW.

The synchronous generators operate at 90 revolutions per minute ("RPM"). This speed is regulated by variable pitch turbine blades controlled by an electronic speed governor. Water flow through the turbines is controlled by hydraulic lift gates in the turbine tailrace. The turbines are not equipped with wicket gates or other alternative means of flow control.

Electrical power is generated at 4,160 Volts, three phase, and then stepped up to 138 kilovolts ("kV") by local transformers, one per generator. The outputs of the three generators are combined at a 138 kV substation located inside the powerhouse. The power is then transmitted to an American Electric Power ("AEP") utility connection by means of an approximately 14.4-mile overhead transmission line.

Auxiliary support systems are all contained within the powerhouse. The auxiliaries include heating, ventilation and air conditioning systems, air compressors, lubrication systems, hydraulic systems, sump pumps, and other support systems. Electrical power for the auxiliary systems is derived from one of five available sources: an auxiliary transformer off each generator (3), an on-site emergency diesel generator, or a local utility connection. Under normal conditions, the auxiliary power is derived from one of the generators.

A relay-based control system is used for operating the generators. A 125 volt direct current battery system is used to provide continuous control power. The batteries are of the nickel-cadmium type. The plant is operated locally with no provisions for remote operation. The plant is staffed 24 hours a day by four shifts of operators, two operators per shift with one backup operator on call. The plant runs all year but is derated or shut down for abnormal conditions such as periods of high and low water.

The civil works consist of a powerhouse approximately 190 feet long by 145 feet wide.

The powerhouse structure is prefabricated steel construction that was floated into place on a concrete substructure and then stabilized for long-term service with concrete. The powerhouse sits adjacent to the USACE Greenup Locks and Dam on the east side of the river and is connected by a cellular structure. The powerhouse and overhead bridge are partially protected from barge traffic by upstream cellular protection barriers. There are no floodgates or other water diversion structures associated with the plant. All water control operations with the dam are the responsibility of the USACE.

The units are fitted with one complete set of stop logs that are mounted in slots above the intakes. One log is stored in each unit, and the three combined make a unit capable of dewatering a single unit. They are used in combination with the

downstream hydraulic gate for dewatered access and maintenance. The unit intakes are fitted with trash racks, a trash sluicing system and a trash rake system. The trash sluice area acts as a high water overflow when high headwater elevations occur.

Adjacent to the plant is a warehouse structure for storage and maintenance. A recreational area for fishing is provided and maintained by the City at the downstream discharge area of the plant. The recreational area includes a fishing berm with paved walkway with railing and access stairs. The downstream discharge area banks are protected from erosion by riprap along the right bank.

## **Summary of AMP Due Diligence Process**

Prior to entering into the AMP-Hamilton Agreements, AMP engaged in a thorough due diligence process to determine if the acquisition of the AMP Interest would be beneficial for its Members. In addition to review by AMP staff, AMP engaged Benham and Associates to provide an analysis of AMP's potential acquisition of an undivided ownership interest in the Greenup Facility and to do an initial condition assessment. That report was completed in January 2009 (the "2009 Benham Report"). Based on the findings of the 2009 Benham Report, AMP concluded negotiations with Hamilton, and AMP and Hamilton entered into the AMP-Hamilton Agreements, which provided for the acquisition of the AMP Interest. In October 2009, after AMP and Hamilton entered into the AMP-Hamilton Agreements, AMP commissioned Sawvel to prepare an updated joint feasibility study, dated October 2009, covering both the Meldahl Project and the Greenup Facility, which included updated technical and cost information associated with the Meldahl and Greenup Projects.

Considering that the AMP-Hamilton Agreements required AMP to purchase the AMP Interest shortly after the commercial operation date of the Meldahl Project and the relative age of the Greenup Facility, in 2014, AMP, in consultation with Hamilton, initiated investigations of the long-term capital requirements for the Greenup Facility. Based on those investigations, AMP identified a long-term major maintenance and equipment replacement list, complete with estimated capital costs for such maintenance and equipment replacement items.

In early 2015, in accordance with the AMP-Hamilton Agreements, AMP retained Leidos to do a condition assessment (the "Leidos Condition Assessment") to assure the Participants that the Greenup Facility was in substantially the same condition as when the AMP-Hamilton Agreements were executed in 2009, taking into account reasonable wear and tear. This Leidos Condition Assessment, which is included as Appendix B of this Report, revealed that the plant was in good condition for its age, but would require capital investments in future years.

The Leidos Condition Assessment, which was based upon evidence gathered during inspections and from other reports, including the 2014 capital requirement investigations undertaken by AMP, indicated that specific dewatering piping had deteriorated and should be immediately replaced. Hamilton has agreed to cover all of the cost of replacing this piping, and AMP agreed that, with such replacement, the

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provisions of the AMP-Hamilton Agreement related to the Greenup Facility's condition were satisfied.

It should be noted that AMP, Leidos and Hamilton concurred on the future capital upgrades and anticipated production projections. As a result of the required capital project work identified by Leidos, AMP and Hamilton will be working closely through the Greenup Operations Committee established pursuant to the AMP-Hamilton Agreements in planning all future maintenance work to ensure that generation production is not materially or adversely impacted by scheduled maintenance outages. This planning will include scheduling maintenance outages in extreme low and high flow conditions that will reduce the amount of lost energy production during such maintenance outages. AMP and Hamilton will also use third-party engineering firms to schedule and pre-arrange, and in some cases pre-fabricate equipment, to minimize loss of generation.

It should also be noted that the reports and analyses referenced in this subsection are not exhaustive with respect to the due diligence conducted related to the Greenup Facility. Refer to Section 1 for a listing of other pertinent due diligence and studies that have been utilized to develop the projections of performance for the Greenup Facility as detailed in this Report.

### Historical and Projected Performance

Table 2-1 below summarizes the historical downtime and energy output of the Greenup Facility for the period from 2000 to 2015. Performance data shown has been provided by Hamilton and has been reviewed for reasonableness by both AMP and Leidos.

It should be noted that run-of-the-river hydroelectric facilities, such as the Greenup Facility, are designed to generate energy when water is available. As a result, the capacity factor of such facilities is reflective of both plant downtime hours due to planned or forced outages as well as derates due to hydrologic conditions. It should be noted that, for the year 2014, Unit 1 was out of service for the last 6 months of the year as a result of major maintenance, which impacted plant production statistics in that year, and that additional major maintenance was enacted during 2015, which likewise impacted plant statistics in 2015.

**Table 2-1**  
**Summary of Historical Greenup Performance**

Year	Unit 1 Downtime Hours	Unit 2 Downtime Hours	Unit 3 Downtime Hours	Average Plant Downtime (%)	Plant Historical Production (MWh)	Capacity Factor (%)
2000	35	72	548	2.5%	352,451	57%
2001	1,416	523	0	7.4%	299,836	49%
2002	246	242	1,444	7.4%	284,646	46%
2003	315	610	3	3.5%	234,975	38%

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## PLANS FOR OPERATING THE GREENUP FACILITY

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Year	Unit 1 Downtime Hours	Unit 2 Downtime Hours	Unit 3 Downtime Hours	Average Plant Downtime (%)	Plant Historical Production (MWh)	Capacity Factor (%)
2004	720	2	8	2.8%	214,334	35%
2005	197	98	69	1.4%	294,787	48%
2006	208	621	3	3.2%	335,283	55%
2007	269	2,678	1,609	17.3%	222,613	36%
2008	168	285	291	2.8%	247,304	40%
2009	1,683	407	65	8.2%	311,711	51%
2010	163	770	2,003	11.2%	276,415	45%
2011	2,368	14	640	11.5%	239,269	39%
2012	3,104	690	215	15.3%	263,602	43%
2013	284	611	797	6.4%	322,469	52%
2014	5,906	2,559	1,478	37.8%	205,792	33%
2015	2,128	1,699	2,286	23.3%	228,298	37%
Average	1,201	743	716	10.1%	270,862	44%

Over the sixteen-year period covered by Table 2-1, energy has exceeded 300,000 MWh in a year 4 times, with an average historical production of approximately 270,900 MWh per year. Based on the assumed total capacity of the Greenup Facility of 70.2 MW, the capacity factor for the Greenup Facility has ranged from approximately 33% to approximately 57% over the applicable sixteen-year period, with an average capacity factor of approximately 44%.

### **Projected Greenup Facility Performance**

In order to prepare a projection of performance over the five-year period commencing in 2016, which covers the period during which the majority of major maintenance activities are contemplated, Hamilton retained Sawvel to prepare a yearly projection of total unit outage hours as a function of specific months during which major maintenance activities are planned. This projection has been reviewed for reasonableness by both AMP and Leidos.

Historical energy produced during the period from January 2011 through May 2015 was evaluated by Hamilton's operating staff at the Greenup Facility in consultation with Sawvel to define estimated energy prior to any forced and scheduled outages. The forced outage rate was then estimated considering historical forced outage rates for each Greenup Facility unit and considering the North American Electric Reliability Corporation ("NERC") Generating Availability Data System ("GADS") forced outage rate for hydroelectric units during the period 2009 through 2013. Projected energy production was estimated by using the average historical monthly energy production for each unit (without outages), derived as described above. The outage duration for each maintenance activity over the five-year projection period was then estimated for

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each major maintenance project in the 10-year major maintenance program detailed later in this Report for each unit in each year.

The estimated maintenance outage energy was then subtracted from the monthly average energy production. Finally, forced outages were subtracted by applying a forced outage rate of 8% (derived as described above) to the energy forecast prior to forced and scheduled maintenance.

Table 2-2 below summarizes the projected energy production from the Greenup Facility for the period 2016-2020 based on the analysis performed by Sawvel as described above, which is generally in alignment with the range of energy production shown in Table 2-1 above.

**Table 2-2**  
**Projected Greenup Power Production (MWh) (2016-2020)**

	2016	2017	2018	2019	2020
Energy Before Forced and Scheduled Outages	310,194	310,194	310,194	310,194	310,194
Less Major Maintenance Outages	3,000	12,220	9,168	7,135	20,188
Less Forced Outage (8%)	24,482	23,334	23,828	23,828	22,774
Net After Maintenance and Forced Outage					
Unit 1	87,611	86,939	84,939	83,844	83,844
Unit 2	100,489	97,229	96,735	98,775	94,143
Unit 3	94,612	90,472	95,524	96,612	81,070
<b>Total Energy After Maintenance and Forced Outages</b>	<b>282,712</b>	<b>274,640</b>	<b>277,198</b>	<b>279,231</b>	<b>259,056</b>

Table 2-3 below provides a summary of the projected energy output from the Greenup Facility, on a full-year basis, which reflects the projection shown in Table 2-2, commensurate with the Sawvel projection, combined with the assumption of a long term average that is equivalent to the average estimated production over that same period (or approximately 274,500 MWh per year) over the remainder of the 30-year evaluation period. Based on the results of the analysis underpinning the projection of Greenup Facility energy, and given the potential variability in maintenance downtime, a 10% sensitivity in energy output on both the high and low side (“10% Increase Case” and “10% Reduction Case”) of the average was suggested by Leidos for purposes of this Report and has been reviewed and agreed to by AMP and Hamilton. The capacity factor under both a “base case” level of production as well as the 10% energy production sensitivities is shown in Table 2-3.

**Table 2-3**  
**Summary of Projected Greenup Energy**

Year	Base Case Energy Forecast (MWh)	10% Energy Reduction Sensitivity (MWh)	10% Energy Increase Sensitivity (MWh)	Capacity Factor – Base Case (%)	Capacity Factor – 10% Reduction Case (%)	Capacity Factor – 10% Increase Case (%)
2016	282,712	254,441	310,983	45.97%	41.38%	50.57%
2017	274,640	247,176	302,104	44.66%	40.19%	49.13%
2018	277,198	249,478	304,918	45.08%	40.57%	49.58%
2019	279,231	251,308	307,154	45.41%	40.87%	49.95%
2020	259,056	233,150	284,962	42.13%	37.91%	46.34%
2021	274,567	247,111	302,024	44.65%	40.18%	49.11%
2022	274,567	247,111	302,024	44.65%	40.18%	49.11%
2023	274,567	247,111	302,024	44.65%	40.18%	49.11%
2024	274,567	247,111	302,024	44.65%	40.18%	49.11%
2025	274,567	247,111	302,024	44.65%	40.18%	49.11%
2026	274,567	247,111	302,024	44.65%	40.18%	49.11%
2036	274,567	247,111	302,024	44.65%	40.18%	49.11%
2046	274,567	247,111	302,024	44.65%	40.18%	49.11%

As evidenced by Table 2-3, the range of estimated capacity factor for the Greenup Facility over the 30-year evaluation period is approximately 45% under the Base Case, 40% under the 10% Reduction Case, and 49% under the 10% Increase Case. Refer to Section 3 of this Report for projected operating results for the Project under each projected level of performance. Refer to Appendix B of this Report for a more detailed accounting of major maintenance activities and their anticipated impact on the energy production of the Greenup Facility.

## Purchase Price

Pursuant to the AMP-Hamilton Agreements, the purchase price of the AMP Interest is \$139 million.

Refer to Section 3 of this Report for an estimate of the total financing requirement for the AMP Interest, which includes, in addition to the purchase price, reimbursement of amounts for AMP administrative and general (“A&G”) costs (or “Owner’s Costs”), such as costs for project development (including development costs as of the writing of this Report) incurred prior to the date hereof, legal costs, meals, travel, and other administrative costs, working capital, a deposit to a capitalized interest account, an upfront premium payment on a surety policy with Build America Mutual, a deposit into a major maintenance reserve account, and issuance expenses.



## Plant Operation and Maintenance

The Greenup Facility is operated locally with no provisions for remote operation. Pursuant to Article 47 of the FERC license for the Greenup Facility, Hamilton and the USACE entered into a Memorandum of Agreement (“MOA”) specifying the details of an operating plan for the Greenup Facility. The MOA requires a minimum of one full time staff member capable of operating equipment in coordination with directed USACE operations. During the normal workweek, the powerhouse is manned by the superintendent, one maintenance supervisor, and an administrative assistant. Each shift includes 2 additional operators, and there are currently 9 operators on staff. Additional maintenance staff is brought on site as necessary during outages. This staff is expected to be augmented with one or two additional project management staff during major maintenance project work.

The Greenup Facility operates year-round but is derated or shut down for abnormal conditions, such as during periods of high and low water. The base case projected energy production summarized in Table 2-3 above accounts for high and low water conditions based on historical averages.

## Summary of Recent and Anticipated Major Maintenance Requirements

Due to the age of the Greenup Facility, major maintenance work is required to support continued long-term operation. Table 2-4 summarizes the total annual expenditure related to major maintenance, defined as the extent of activities detailed in Appendix B of this Report, for the Greenup Facility over the period 2008 through 2015.

**Table 2-4**  
**Summary of Historical Greenup Major Maintenance Expenditure**

Year	Major Maintenance Expenditure \$(000)
2008	578
2009	552
2010	324
2011	603
2012	376
2013	303
2014	1,709
2015	1,582

Table 2-4 reflects a ramp-up in major maintenance expenditures. This trend toward increased major maintenance expenditures is expected to continue over the next ten years. Hamilton and AMP have developed a detailed plan to repair and replace



various equipment items due to age, improve safety at the plant, improve plant performance and extend the life of the plant. The total estimated cost for the major maintenance work over the next 10 years is approximately \$23.9 million, approximately 60 percent of which will be spent during the next five years.

The table below provides an estimate of the yearly expenditures associated with the 10-year major maintenance program for Greenup, which was informed by the Kleinschmidt Report, and investigations by Hamilton and AMP. Note that AMP's share of the estimated major maintenance expenses for 2016 does not include the dewatering improvement costs, for which Hamilton has agreed to cover all of the costs, as noted above.

**Table 2-5  
Estimated Major Maintenance Costs over 10-Year Major Maintenance Program**

<b>Year</b>	<b>Total Estimated Major Maintenance (\$000)</b>	<b>AMP Share of Major Maintenance (\$000)</b>
2016	3,706	1,218
2017	3,203	1,557
2018	2,139	1,040
2019	2,498	1,214
2020	2,776	1,349
2021	3,121	1,517
2022	2,019	981
2023	1,383	672
2024	2,642	1,284
2025	455	221
Total	23,942	11,052

As set forth in the table above, AMP's financial obligation for the 10-year major maintenance program for the Greenup Facility is approximately \$11 million over the course of the program. Refer to Section 3 of this Report for details regarding the approach to funding the estimated major maintenance, which is an obligation over and above the ongoing O&M estimate for Greenup and has been accounted for separately.

The table below provides a summary of the projected first-year ongoing O&M expenses, based upon an estimate of such expenses for 2016, as provided by AMP and Hamilton. Note that the summary represents a full year of expenses in 2016 dollars and includes both the total and AMP's aliquot share.

O&M expenses consist of the Greenup Overhead Adder, Regional Transmission Organization ("RTO") fees (or ancillary service fees), labor and overhead expenses, scheduled plant maintenance (which is distinct from the major maintenance activities described above), and cost associated with dispatch, consulting fees, taxes, insurance, and other fees and licenses. Refer to Section 3 of this Report for details regarding the assumed cost of FERC relicensing and the associated impact on the projected operating results for the Project.

**Table 2-6**  
**Estimated O&M Expenses for 2016**

Category	Estimated Ongoing O&M Expenses (\$000)	AMP Share of Ongoing O&M Expenses (\$000)
Greenup Overhead Adder	284	138
RTO Ancillaries	2	1
Hamilton Labor & Overhead	1,374	668
AMP Labor & Overhead	626	304
Scheduled Maintenance	660	321
Other Plant O&M	17	8
Electric	139	68
Dispatch	244	119
Other Miscellaneous	49	24
Consultants	254	124
PILOT & PP Tax <sup>[1]</sup>	12	6
Insurance	100	49
Other Allocated & Direct	799	389
Fees & Licenses	418	203
Total	4,980	2,420

[1] Payment in Lieu of Taxes ("PILOT") and Personal Property Tax ("PP").

## Environmental Considerations and Requirements

### Status of Permits and Approvals

The Greenup Facility must be operated in accordance with applicable environmental laws, regulations, policies, guidelines, codes, and standards. Table 2-7 below identifies the summary status of environmental permits and approvals required for the operation of the Greenup Facility as provided by Hamilton.

**Table 2-7**  
**Summary Status of Permits and Approvals**

Permit or Approval	Responsible Agency	Status	Comments
<b>Federal</b>			
Hydropower License	FERC	FERC License No. P-2614 issued on March 28, 1976; License transferred to Hamilton on April 14, 1988 and Order approving partial transfer to AMP as co-licensee issued on June 11, 2015.	Required by the Federal Power Act for the construction and operation of a hydroelectric facility unless a facility qualifies for an exemption. Notice of intent for relicensing due at least five years prior to expiration.
Emergency Action Plan	FERC	EAP filed by December 31	Required by FERC's dam safety

## PLANS FOR OPERATING THE GREENUP FACILITY

Permit or Approval	Responsible Agency	Status	Comments
("EAP")		annually. Most recent EAP submitted to FERC on December 22, 2015.	regulations and guidelines.
Spill Prevention Control and Countermeasure ("SPCC") Plan	United States Environmental Protection Agency ("USEPA")	Hamilton indicates an SPCC Plan is being finalized.	Required as per 40 CFR 112, Oil Pollution Prevention regulations, if the Facility stores more than 1,320 gallons of oil at the site (including electrical transformer oil and turbine lube oil).
Hazardous Waste Generator Identification	USEPA	Conditionally Exempt Small Quantity Generator.	Required for the management/disposal of hazardous waste. Manifest system must be followed.
<b>State</b>			
Clean Water Act ("CWA") Section 401 Water Quality Certification ("WQC")	Kentucky Water Pollution Control Commission; FERC	Certification issued by Kentucky Water Pollution Control Commission on September 6, 1972 for life of project. See also License Articles 9, 12, and 54.	Section 401 of the CWA requires that applicants for a federal license or permit that may result in discharge to waters of the U.S. obtain to verify that the discharge will comply with applicable CWA and state water quality requirements. The FERC License incorporates the state certificate.
National Pollutant Discharge Elimination System ("NPDES") Permit	Ohio Environmental Protection Agency ("OEPA")	Hamilton indicates NPDES permit applicability is being evaluated.	Required to allow for discharges to surface waters during industrial activities. Traditionally older hydro facilities did not have an NPDES permit for operations.
Permit by Rule	OEPA	Notification Form for emergency generator submitted on November 13, 2014.	An optional permit provision that exempts certain types of air pollution sources from obtaining a Permit-to-Install and Operate and functions as both the installation and operating "permit" for the source. Includes emission limitations, conditions for operation, and recordkeeping and reporting requirements.

### **Environmental Compliance**

Hamilton notes the following circumstances relative to compliance with permits and approvals and other regulatory requirements that could have an impact on future operations:

- Hamilton reports that they are not aware of any existing or pending notice of violations, consent orders, or complaints from the general public. To the best of their knowledge, the Greenup Facility is in compliance with all applicable regulatory requirements. Further, they report there have been no reportable

spills or other environmental incidents at the Greenup Facility over the past few years.

- In addition to the required permits and approvals, there are various submittals and plans required for compliance with regulatory programs, which require periodic reviews and updates, such as a Recreation and Public Safety Plan, FERC Form 80s, and Security Plan.
- The FERC re-licensing process is generally a three- to five-year process including updates to various studies, as well as new environmental surveys, studies, consultations and plans. The Owners intend to start the process in approximately 2019.
- The MOA includes limitations on fluctuations of pools in the Greenup reservoir and the downstream Captain Anthony Meldahl reservoir. The MOA is subject to revision on the basis of operating experience.

## FERC Licensing

The FERC license for the Greenup Facility expires on February 28, 2026. The Greenup Facility was issued a FERC license with a term of 50 years from the effective date of the license.

As suggested above, AMP and Hamilton expect to file an application for a new FERC license for the Greenup Facility prior to the date on which the current license expires. Under the Federal Power Act, new licenses are issued for terms from 30 to 50 years. Under FERC's long-standing policy, a new license is typically issued for 30 years if the application indicates minimal increases in generating capacity or environmental protection measures, 40 years if the investment in new generation or environmental protection is moderate, and 50 years if the new investment is substantial. AMP and Hamilton expect that FERC will issue a new 30-year license for the Greenup Facility at the conclusion of the relicensing process.

To date, FERC has only once denied an application for a new license by the existing licensee. In that instance, the application for a new license was opposed on environmental grounds. The matter was ultimately resolved by a settlement agreement. If there is competition for a new license between an existing municipal licensee and another applicant, and FERC awards the new license to the other applicant, the new licensee is required to pay the existing municipal licensee the project's fair market value, plus severance damages. To date, FERC has not awarded a new license to any non-licensee applicant.

As a result of the Power Sales Contract among Participants extending beyond the term of the Greenup license, approval by FERC of a new FERC license for the Greenup Facility will be needed. It is anticipated that FERC will grant approval for the Greenup Facility FERC license.

## **Transmission Line Considerations**

The Greenup Facility transmission line is an overhead line of approximately 14.4 miles in length and is located in Greenup County, Kentucky. As noted above, the outputs of the three generators of the Greenup Facility are combined at a 138 kV substation located inside the powerhouse, and power is then transmitted along that line to an AEP utility connection.

The transmission line is inspected at least annually by Hamilton staff. This inspection is for the purpose of identifying poles and equipment that should be repaired or replaced. Hamilton has contracted to clear trees and brush in the transmission line right of way. This maintenance is conducted annually.

The Project includes a 48.6% undivided ownership interest in the Greenup Facility transmission line.

## **Capacity Auction and Renewable Energy Certificate Revenues**

The net cost of the Project to the Participants will be impacted by revenues obtained from two sources, specifically (i) offering of a portion of capacity associated with the AMP Interest into the PJM Reliability Pricing Model (“RPM”) auctions and (ii) the sale of renewable energy certificates (“RECs”). AMP intends to offer the available capacity of the AMP Interest (and has already bid capacity associated with the AMP Interest into the market through the 2018/2019 cycle, with the next auction set to occur in May 2016) in the amounts consistent with the offer strategy described below into the PJM capacity auctions, and apply any and all net capacity auction revenues to the cost of the Project. The capacity revenue obtained from the offering of the AMP Interest into the PJM capacity auctions is assumed to reflect an offset to the cost of the Project. Likewise, AMP intends to market any RECs associated with the AMP Interest and will apply all revenue from the sale of RECs as an offset to the cost of the Project. A summary of the approach to projecting each revenue source as well as an overview of each attribute is provided herein.

### **Capacity Auction Revenues**

The RPM capacity construct was implemented by PJM on June 1, 2007 with the goal of ensuring that available supply resources are adequate to reliably meet peak demands within the PJM market area. The RPM construct requires that PJM purchase capacity resources necessary to meet PJM’s forecasted peak demand for the region, plus a required reserve margin as governed by the Tariff and other agreements. PJM conducts auctions to procure capacity sufficient to cover forecasted load plus planning reserves for the load serving entities (“LSEs”) in the PJM footprint.

## Section 2

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The RPM auction establishes requirements on an annual basis for a Delivery Year (“DY”) that runs from June 1 through May 31 of the following year. Capacity is procured three years ahead of time to allow new units to participate in the market and allow PJM time to evaluate reliability alternatives if adequate supply resources are not made available. In order to recognize locational requirements, capacity is procured separately for various Locational Deliverability Areas (“LDAs”), where existing resources plus transmission imports may not be sufficient to maintain reliability in future years. In this way, the RPM construct is claimed to send the appropriate price signal to suppliers to attract new resources in areas where reliability is a concern and to fund existing resources that do not receive adequate revenue from the energy market and ancillary services.

RPM capacity is procured through multiple auctions for each DY. The first auction, the Base Residual Auction (“BRA”), is conducted three years prior to the start of the DY. There are also three additional incremental auctions (“IA”) held 20, 10 and 3 months prior to the start of each DY which allow participants to balance their supply obligations and allows PJM the opportunity to purchase additional capacity required or to meet incremental reliability requirements due to increases in the load forecast or other unforeseen events or to sell excess capacity that was procured in the earlier auctions.

Currently, multiple types of resources can offer supply in RPM, including existing or planned generation, existing or planned load management products (Demand Response (“DR”) and Energy Efficiency (“EE”)), and planned qualified transmission upgrades. Generating resources supply capacity on an unforced capacity (“UCAP”) basis. The quantity of UCAP available from a generation resource is defined as the installed capacity (“ICAP”) of the unit multiplied by one minus the equivalent forced outage rate (“EFORD”) for the resource.

On December 12, 2014 under Docket ER15-623, PJM filed a proposal that redefined the capacity product procured through the auctions as a new Capacity Performance (“CP”) product. PJM’s proposal is a result of a significant portion of generators paid under the RPM failing to operate during the Polar Vortex and subsequent winter storms in the early months of 2014. A CP resource must be capable of sustained predictable operation that allows the resource to be available to provide energy and reserves during any emergency conditions. Resources that over-perform in emergency conditions will be eligible for a performance bonus, while those that underperform will be subjected to penalties with a stop-loss provision.

Base Capacity Resources (“BC Resources”) may offer into RPM auctions for the 2018/2019 and 2019/2020 DYs, and are subject to the must-offer requirement of the PJM Tariff. BC Resources are expected to be available throughout the DY. However, unlike CP Resources, BC Resources will only face non-performance charges when they fail to perform under emergency conditions during June through September. FERC issued an order conditionally accepting PJM’s CP proposal on June 9, 2015.

The auction for the 2018/2019 DY, the first BRA to procure CP Resources, was held August 10-14, 2015 and results were posted on August 21, 2015. PJM held transition

IAs in the weeks immediately following the BRA to procure CP Resources for the 2016/2017 and 2017/2018 DYs. Participation in the transition auctions was voluntary. Any generation resource could offer regardless of whether said resource was already committed to provide capacity for the relevant DY. If a resource with prior commitments were committed through a transition auction, capacity payments would be based on the clearing price of the transition auction, replacing the previous commitment.

PJM acknowledged the challenges that the new CP definition may place on intermittent or storage resources. The CP product allows for coupled offers where resources that are co-located could offer as an aggregate CP resource. Based on PJM's auction report it appeared that a similar total number of renewable resources cleared in the 2018/2019 auction as in the 2017/2018 auction.

Capacity revenues for the Greenup Facility through the 2018/2019 DY are based on the Greenup Facility's actual cleared capacity obligations. The revenues are calculated as the applicable auction-clearing price times AMP's actual ICAP (66.0 MW) adjusted for assumed EFORD for each DY (ranging from 7.5% to 12.9%). For the 2019/2020 period, Leidos has assumed that AMP would apply the same offer strategy as the 2018/2019 auction.

The RPM auction rules require all capacity to be CP resources by the 2020/2021 DY. AMP has determined, and the PJM Independent Market Monitor ("IMM") has agreed to set, the CP resource eligible UCAP value of the Greenup Facility at 37.9 MW based on a calculation of historical summer and winter output during peak hours from the plant for the three years prior to the transition auctions. The value for future auctions would be adjusted based on the plant's rolling three-year average performance during summer and winter peak hours. The potential penalties or incentives for performance and changes in the potential UCAP CP value due to changes in performance during summer and winter peak hours notwithstanding, Leidos assumed the total eligible 37.9 MW UCAP to offer and clear as a CP resource beginning in the 2020/2021 DY auction through the remainder of the study period. The amount of capacity is paired with our projection of capacity prices for the PJMAEPD region over the period 2020-2039, with capacity revenue kept flat thereafter.

It should be noted that despite the determination of the Greenup Facility UCAP by AMP (as agreed to by the PJM IMM), which reflects approximately 57% of the Greenup Facility ICAP that was deployed as a Base Resource, the CP auction mechanism presents certain risks related to underperformance, as well as certain potential benefits related to performance bonuses for over-performance. The projection of Project capacity revenues in this Report assumes a conservative EFORD that is higher than the forced outage rate that is subsumed within the performance projections for the Greenup Facility.

### **REC Revenues**

A REC is an attribute which may be sold separately from the energy of a renewable asset and represents the "renewable" aspect of the electricity that was produced. The

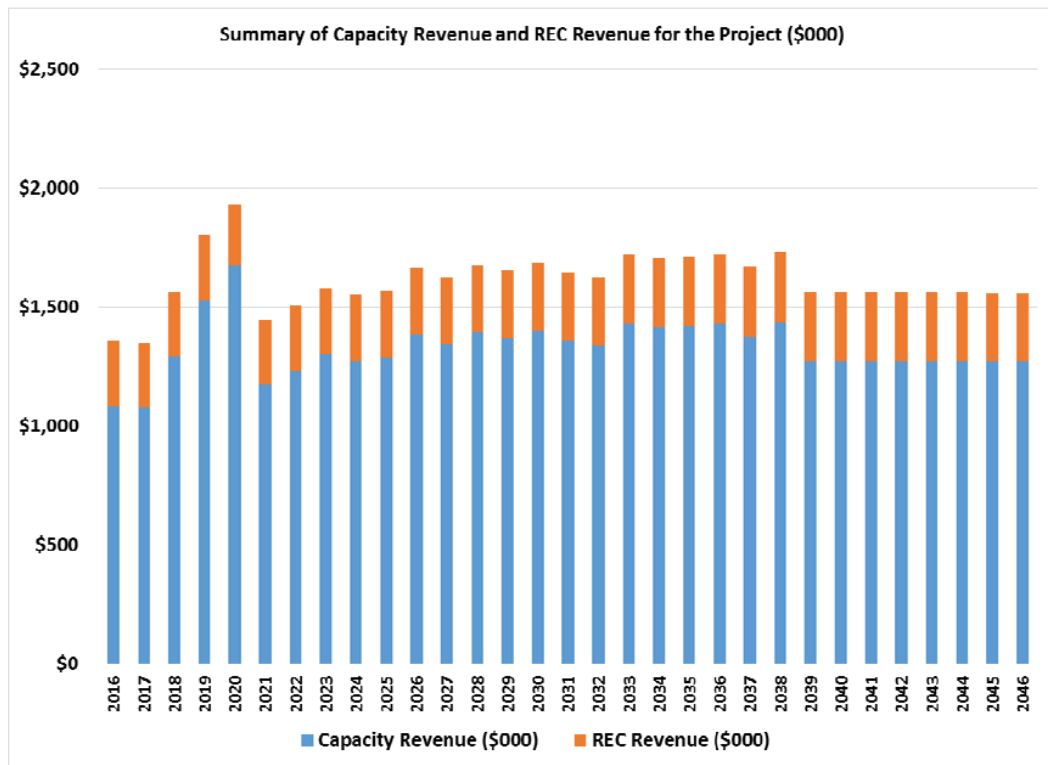
value of a REC is determined by the market, subject to supply and demand constraints, and, in theory, represents the amount by which an existing renewable project would need to be compensated per MWh of energy in order for the asset in question to be comparable in cost to other power supply alternatives in the broader market. RECs can be sold to electricity suppliers needing to meet their Renewable Portfolio Standards (“RPS”), subject to the constraints and specific terms of a given RPS. Any facility that intends to sell RECs in the market must be certified by a state in order to participate in the market. The Greenup Facility is registered to market RECs in both Ohio and Virginia. AMP is in the process of registering the Greenup Facility in Pennsylvania and the District of Columbia.

REC prices are difficult to project due to a set of countervailing factors. Improvements in the underlying capital cost of future renewable installations, regulatory uncertainty related to potential future incentives and policies associated with renewable generation, the potential for changing/revised RPS, and changes in market prices driven from fluctuations in the cost of thermal generation may have an impact on future REC pricing (in different directions). Based on a review of recent prices for Tier I RECs in the Ohio REC market compiled by Platts in November 2015, Ohio Tier I REC prices range from a low of \$1.75/MWh to a high of \$2.25/MWh, with a midpoint of \$2/MWh. For the period 2016 – 2020, AMP has assumed a REC price of \$2/MWh for purposes of the Project budget, which aligns with the midpoint of the current Tier I REC prices and has been adopted herein.

For the period beyond 2020, as a result of the research conducted, we have developed a range of REC prices that reflects that (i) the upper bound of future REC prices is estimated using inflationary escalation of the prior year price commensurate with the inflation rate consistent with the July 2015 AMP Market Report (or 2.3% per year), (ii) the lower bound of future REC prices is the conservative assumption of \$0/MWh for RECs throughout the study period, and (iii) the base case REC prices reflect an interpolation of the upper and lower bounds such that the REC price by the end of the study period is equal to the simple average of the upper and lower bounds. This approach implies convergence to there being an equal likelihood of no REC market and a conservatively priced REC market by the end of the study period.

The graphic below summarizes the total projected revenue associated with both the capacity market and the sale of RECs (assuming the Base Case energy output projected for the Greenup Facility as summarized above) for the Project, on a full-year basis.





**Figure 2-2 – Summary of Project Capacity and REC Revenue (\$000)**

Refer to Section 3 of this Report for details regarding the range of estimated costs for the Project both with and without RECs as well as projected operating results that are reflective of projected capacity market revenue.

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## Section 3

# PROJECTED FINANCING COSTS AND OPERATING RESULTS

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### Estimated Financing Requirements

AMP plans to finance the cost associated with the Project, including the acquisition of the AMP Interest, through the issuance of bonds in May 2016. Such costs include: (i) the purchase price of \$139 million; (ii) a deposit of \$0.96 million to pay a portion of the interest due on the Bonds on August 15, 2016; (iii) a deposit of \$3.8 million to the construction fund to pay a portion of AMP's share of the 10-year major maintenance plan; (iv) an upfront surety policy payment with Build America Mutual of \$0.15 million; (v) costs of issuance of \$1.8 million; and (vi) other Project costs of \$1.7 million.

The estimated bond financing requirements are shown below in Table 3-1.

**Table 3-1**  
**Total Estimated Bond Proceeds and Debt Service**  
**(Dollars in Thousands)**

Description	Estimate
<b>Estimated Uses of Bond Funds</b>	
Project Purchase Price <sup>[1]</sup>	\$139,000
Capitalized Interest <sup>[2]</sup>	956
Deposit to Construction Fund <sup>[3]</sup>	3,815
Surety Policy Upfront Premium <sup>[4]</sup>	151
Issuance Expenses <sup>[5]</sup>	1,840
Other Project Costs <sup>[6]</sup>	1,700
<b>Total Estimated Bond Proceeds <sup>[7]</sup></b>	<b>\$147,463</b>
<b>Estimated Annual Debt Service</b>	
Average Annual Debt Service <sup>[8]</sup>	\$8,359

[1] As provided by AMP.

[2] To pay a portion of interest due on the Bonds on August 15, 2016.

[3] Deposit into the construction fund to pay a portion of AMP's share of the 10-year major maintenance plan.

[4] Upfront payment on surety policy with Build America Mutual. Policy will be used to satisfy debt service reserve requirements.

[5] Bond underwriter's fees, legal fees, and other expenses incurred in connection with the bond financing.

[6] Reimbursement of certain expenses incurred by AMP prior to the date of issuance of the Bonds.

[7] Numbers may not add due to rounding.

[8] Average annual debt service over the term of the Bonds.

The deposit to the Construction Fund established under the Master Trust Indenture reflected above is anticipated to be sufficient to pay AMP's share of the major maintenance plan over 2016 to 2018. After 2018, AMP plans to pay for its share of the major maintenance plan from amounts received from the Participants under the Power Sales Contract and deposited into the Major Maintenance Account of the Reserve and Contingency Subfund established under the Master Trust Indenture.

### **Base Case Projected Operating Results**

Leidos prepared projections for the period of May 2016 through February 2046. The projections ("Projected Operating Results") are based on the assumptions and analyses summarized in Sections 2 and 4 of this Report and include projections of the net power costs that will be the basis of the charges to the Participants under the Power Sales Contract.

A summary of the Base Case Projected Operating Results, based on the considerations and assumptions set forth in Section 4 of this Report, is shown below in Table 3-2 for selected years.

Table 3-2 provides projections of revenues of the Project, including revenues derived from the sale of energy by AMP to the Participants under the Power Sales Contract, capacity market revenues, REC revenues, and other revenues. Under the Master Trust Indenture, the excess of such revenues over operations and maintenance costs must provide a debt service coverage ratio of at least 1.10 in each year. Years in which the projected debt service coverage ratio is above 1.10 are the result of deposits to the Major Maintenance Account and the FERC Relicensing Reserve Account of the Reserve and Contingency Subfund to moderate the rate impact of the FERC relicensing process described above, the process for which is assumed to begin in 2019.

Table 3-2 also provides Base Case projections of operating expenses based on estimated operating characteristics of the Project outlined in Section 2 and the amount of generation from the Project as estimated in Section 2, and estimates of debt service on the Bonds, including assumed Major Maintenance Account and FERC Relicensing Reserve Account contributions described above. Exhibits 1 through 4 in Appendix A provide projections for the Base Case and sensitivity cases (described below) for all years from May 2016 through February 2046.

Table 3-2 further shows the average project costs, including the overall cost of power to the Participants under the Power Sales Contract, both gross and net of estimated Capacity Revenues and REC revenues. The average Gross Participant Energy Cost is calculated including expected Capacity and REC Revenues and the average Net Participant Energy Cost without such expected Capacity and REC Revenues, in each case divided by the Net Generation.

## PROJECTED FINANCING COSTS AND OPERATING RESULTS

**Table 3-2**  
**Summary of Projected Operating Results**  
**Base Case**

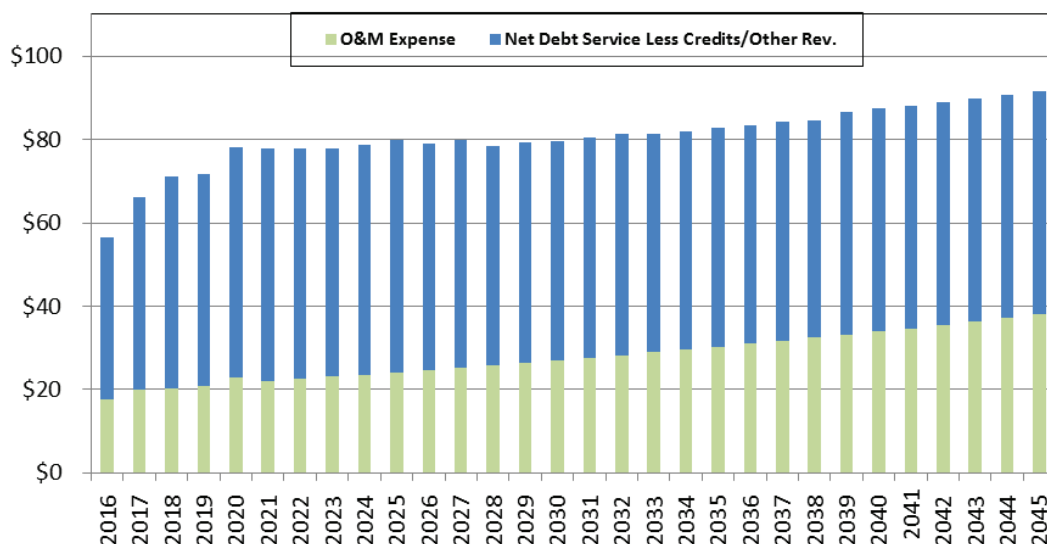
<u>Year Ending December 31,</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2020</u>	<u>2025</u>	<u>2030</u>	<u>2040</u>
<b>PERFORMANCE</b>							
Net Capacity (MW)(1)	34	34	34	34	34	34	34
Net Generation (MWh)(2)	87,019	133,475	134,718	125,901	133,440	133,440	133,440
Capacity Factor (%)	45.8%	44.7%	45.1%	42.0%	44.6%	44.6%	44.5%
Participant Energy Sales (MWh)	87,019	133,475	134,718	125,901	133,440	133,440	133,440
<b>COMMODITY PRICES</b>							
General Inflation %(3)	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Capacity Price (\$/kW-yr)	\$31.70	31.64	37.81	49.17	37.70	41.11	37.24
REC Price (\$/MWh)	\$2.00	2.00	2.00	2.00	2.10	2.15	2.19
<b>OPERATING REVENUES (\$000)</b>							
Participant Revenue (4)	\$4,924	8,839	9,571	9,831	10,653	10,619	11,663
Capacity Revenue (5)	\$685	1,079	1,290	1,678	1,286	1,402	1,270
REC Revenue (6)	\$174	267	269	252	280	286	292
Other Revenue (7)	\$0	171	412	539	543	870	870
Total Operating Revenues	\$5,783	10,357	11,542	12,300	12,762	13,177	14,096
<b>OPERATING EXPENSES (\$000)(8)</b>							
Greenup Overhead Adder	\$87	137	141	138	164	183	230
RTO Ancillaries	\$1	4	4	4	5	5	7
Hamilton Labor & Overhead	\$423	748	768	811	909	1,018	1,278
AMP Labor & Overhead	\$192	341	351	373	418	468	588
Maintenance	\$203	360	371	393	441	494	620
Other Plant O&M	\$5	9	9	9	10	11	14
Electric	\$43	70	72	76	85	95	120
Dispatch	\$75	121	124	128	143	160	201
Other/Miscellaneous Expenses	\$15	24	25	26	29	33	41
Consultants	\$78	129	130	132	148	166	208
PILOT and PP Tax	\$4	7	7	7	8	8	11
Insurance	\$31	50	51	53	60	67	84
Other Allocated and Direct Expenses	\$246	444	456	464	520	583	731
Fees & Licenses	\$128	228	235	249	279	312	392
Total Operating Expenses	\$1,531	2,672	2,744	2,863	3,219	3,603	4,525
<b>NET OPERATING REVENUES (\$000)</b>	<b>\$4,252</b>	<b>7,685</b>	<b>8,798</b>	<b>9,437</b>	<b>9,543</b>	<b>9,574</b>	<b>9,571</b>
<b>ANNUAL NET DEBT SERVICE (\$000)(9)</b>	<b>\$3,639</b>	<b>6,367</b>	<b>7,292</b>	<b>7,672</b>	<b>8,673</b>	<b>8,704</b>	<b>8,701</b>
<b>ANNUAL NET DEBT SERVICE COVERAGE (10)</b>	<b>1.10</b>	<b>1.21</b>	<b>1.21</b>	<b>1.23</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>
<b>DEPOSITS TO R&amp;C FUND (\$000)(11)</b>	<b>\$614</b>	<b>637</b>	<b>729</b>	<b>767</b>	<b>867</b>	<b>870</b>	<b>870</b>
<b>WORKING CAPITAL RESERVE FUND (\$000)(12)</b>							
B-O-Y Fund Balance - AMP Portion	\$250	250	250	250	250	250	250
B-O-Y Fund Balance - Hamilton Portion	\$250	250	250	250	250	250	250
<b>DEBT SERVICE RESERVE FUND (\$000)(13)</b>							
B-O-Y Fund Balance	\$0	0	0	0	0	0	0
Payments into Debt Reserve Fund	\$0	0	0	0	0	0	0
<b>CONSTRUCTION FUND (14)</b>							
B-O-Y Balance	\$3,815	2,597	1,040	0	0	0	0
Payments into Construction Fund	\$0	0	0	0	0	0	0
<b>MAJOR MAINTENANCE ACCOUNT (15)</b>							
B-O-Y Balance	\$0	0	681	2,253	1,503	0	0
Payments into Major Maintenance Account	\$0	681	777	999	4	0	0
<b>FERC RELICENSING ACCOUNT (16)</b>							
B-O-Y Balance	\$0	193	417	872	523	0	0
Payments into FERC Relicensing Account	\$193	224	227	212	224	0	0
<b>AVERAGE PROJECT COSTS</b>							
Gross Participant Energy Cost (\$/MWh)(17)	\$66.46	76.31	82.62	93.41	91.57	92.23	99.11
Net Participant Energy Cost (\$/MWh)(18)	\$56.59	66.22	71.04	78.09	79.83	79.58	87.40

## Section 3

### Footnotes:

- [1] Net Capacity associated with the AMP Interest.
- [2] Net generation as projected based on analysis conducted by Sawvel as described in Section 2.
- [3] General inflation rate assumed to equal 2.3% per year.
- [4] Sales of energy from the Project to the Participants under the Power Sales Contract less capacity market revenues, REC revenues, and other revenues required to cover all O&M costs, debt service, deposits to the working capital reserve fund, and deposits to the R&C fund.
- [5] Capacity market revenue based on capacity credit prices projected by Leidos.
- [6] REC revenue based on REC prices projected by Leidos.
- [7] Other revenue equal to available funds, if any, in the R&C Fund in the prior year after funding deposits into the FERC Relicensing Reserve Account. Other Revenue is reduced by the required deposit into the FERC Relicensing Reserve Account.
- [8] Operations and maintenance expenses reflect the O&M budget through 2020 as provided by Hamilton and agreed to by AMP, as well as AMP O&M costs and the Greenup Overhead Adder. The 2020 estimates were escalated at the general inflation rate in years thereafter.
- [9] Estimated debt service on Bonds, including surety policy premiums.
- [10] Equal to the Net Revenues Available for Debt Service divided by the annual debt service.
- [11] Deposit to R&C Fund sufficient to cover 10% of annual debt service, plus \$250,000 deposited to the Working Capital Reserve Account in 2016.
- [12] Balance of Working Capital Reserve Account.
- [13] Surety Policy with Build America Mutual used to satisfy debt service reserve requirements.
- [14] Deposits to Construction Fund from Bond Proceeds to pay AMP's share, over the period 2016 to 2018, of the 10-year major maintenance program.
- [15] Deposits to Major Maintenance Account to be funded through power costs that will be the basis of the charges to the Participants under the Power Sales Contract. Reflects the estimated funding required to initiate relicensing of the Greenup Facility.
- [16] FERC Relicensing Account deposits to be funded through the R&C Fund.
- [17] Equal to the sum of Participant Revenue, Capacity Revenue, and REC Revenue, divided by Participant Energy Sales.
- [18] Equal to Participant Revenue divided by Participant Energy Sales. The project rate that Participants will pay for Project power in 2016 is anticipated to be the budgeted value of \$58.94/MWh.

The major components of the average annual costs allocable to AMP are shown below in Figures 3-1 and 3-2. Net debt service less Capacity and REC Revenues and other revenues, represents approximately 62 percent of the total costs over the Project life. Operations and maintenance expenses represent approximately 38 percent of the total costs.



**Figure 3-1 – Projected Annual Power Costs by Category (\$/MWh)**

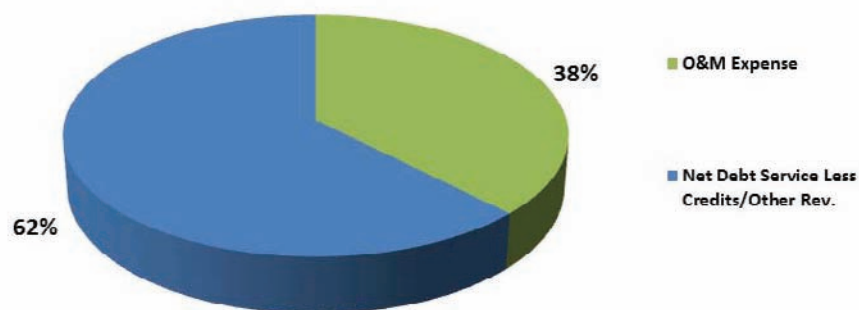


Figure 3-2 – Composition of Project Cost by Major Component (% of Total)

## Sensitivities

Due to uncertainties necessarily inherent in relying on assumptions and projections, it should be anticipated that certain circumstances and events may differ from those assumed and described herein and that such circumstances may affect the results of our Base Case Projected Operating Results. In order to demonstrate the impact of certain circumstances on the Base Case Projected Operating Results, a number of sensitivity analyses were developed.

Projected Operating Results are presented below for three sensitivity analyses, assuming, respectively, that: (a) energy sales are assumed to be equal to 90 percent of energy sales assumed in the Base Case (10% Reduction Case); (b) energy sales are assumed to be equal to 110 percent of energy sales assumed in the Base Case (10% Increase Case); and (c) REC prices are equal to zero (“Zero REC Price Case”). The results of these sensitivity analyses are presented as Tables 3-3 through 3-5 below and Exhibits 2 through 4 in Appendix A<sup>2</sup>.

It should be noted that other examples could have been considered, and those presented herein are not intended to reflect the full extent of possible impacts on the Project. In addition, no assurance can be given that all relevant sensitivities have been presented, that the level of each sensitivity is the appropriate level for testing purposes, or that only one (rather than a combination of more than one) of such variations or sensitivities could impact the Project in the future.

<sup>2</sup> Footnotes assigned to Tables 3-3 through 3-5 are shown below Table 3-2 above.

### Section 3

**Table 3-3**  
**Summary of Projected Operating Results**  
**10% Reduction Case**

<u>Year Ending December 31,</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2020</u>	<u>2025</u>	<u>2030</u>	<u>2040</u>
<b>PERFORMANCE</b>							
Net Capacity (MW)(1)	34	34	34	34	34	34	34
Net Generation (MWh)(2)	78,317	120,127	121,246	113,311	120,096	120,096	120,096
Capacity Factor (%)	41.3%	40.2%	40.6%	37.8%	40.2%	40.2%	40.1%
Participant Energy Sales (MWh)	78,317	120,127	121,246	113,311	120,096	120,096	120,096
<b>COMMODITY PRICES</b>							
General Inflation (%) (3)	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Capacity Price (\$/kW-yr)	\$31.70	31.64	37.81	49.17	37.70	41.11	37.24
REC Price (\$/MWh)	\$2.00	2.00	2.00	2.00	2.10	2.15	2.19
<b>OPERATING REVENUES (\$000)</b>							
Participant Revenue (4)	\$4,932	8,852	9,584	9,842	10,664	10,629	11,669
Capacity Revenue (5)	\$685	1,079	1,290	1,678	1,286	1,402	1,270
REC Revenue (6)	\$157	240	242	227	252	258	263
Other Revenue (7)	\$0	171	412	539	543	870	870
Total Operating Revenues	\$5,774	10,343	11,528	12,286	12,745	13,159	14,073
<b>OPERATING EXPENSES (\$000)(8)</b>							
Greenup Overhead Adder	\$78	123	127	124	147	165	207
RTO Ancillaries	\$1	4	4	4	5	5	7
Hamilton Labor & Overhead	\$423	748	768	811	909	1,018	1,278
AMP Labor & Overhead	\$192	341	351	373	418	468	588
Maintenance	\$203	360	371	393	441	494	620
Other Plant O&M	\$5	9	9	9	10	11	14
Electric	\$43	70	72	76	85	95	120
Dispatch	\$75	121	124	128	143	160	201
Other/Miscellaneous Expenses	\$15	24	25	26	29	33	41
Consultants	\$78	129	130	132	148	166	208
PILOT and PP Tax	\$4	7	7	7	8	8	11
Insurance	\$31	50	51	53	60	67	84
Other Allocated and Direct Expenses	\$246	444	456	464	520	583	731
Fees & Licenses	\$128	228	235	249	279	312	392
Total Operating Expenses	\$1,522	2,658	2,730	2,849	3,202	3,585	4,502
<b>NET OPERATING REVENUES (\$000)</b>	<b>\$4,252</b>	<b>7,685</b>	<b>8,798</b>	<b>9,437</b>	<b>9,543</b>	<b>9,574</b>	<b>9,571</b>
<b>ANNUAL NET DEBT SERVICE (\$000)(9)</b>	<b>\$3,639</b>	<b>6,367</b>	<b>7,292</b>	<b>7,672</b>	<b>8,673</b>	<b>8,704</b>	<b>8,701</b>
<b>ANNUAL NET DEBT SERVICE COVERAGE (10)</b>	<b>1.10</b>	<b>1.21</b>	<b>1.21</b>	<b>1.23</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>
<b>DEPOSITS TO R&amp;C FUND (\$000)(11)</b>	<b>\$614</b>	<b>637</b>	<b>729</b>	<b>767</b>	<b>867</b>	<b>870</b>	<b>870</b>
<b>WORKING CAPITAL RESERVE FUND (\$000)(12)</b>							
B-O-Y Fund Balance - AMP Portion	\$250	250	250	250	250	250	250
B-O-Y Fund Balance - Hamilton Portion	\$250	250	250	250	250	250	250
<b>DEBT SERVICE RESERVE FUND (\$000)(13)</b>							
B-O-Y Fund Balance	\$0	0	0	0	0	0	0
Payments into Debt Reserve Fund	\$0	0	0	0	0	0	0
<b>CONSTRUCTION FUND (14)</b>							
B-O-Y Balance	\$3,815	2,597	1,040	0	0	0	0
Payments into Construction Fund	\$0	0	0	0	0	0	0
<b>MAJOR MAINTENANCE ACCOUNT (15)</b>							
B-O-Y Balance	\$0	0	681	2,253	1,503	0	0
Payments into Major Maintenance Account	\$0	681	777	999	4	0	0
<b>FERC RELICENSING ACCOUNT (16)</b>							
B-O-Y Balance	\$0	193	417	872	523	0	0
Payments into FERC Relicensing Account	\$193	224	227	212	224	0	0
<b>AVERAGE PROJECT COSTS</b>							
Gross Participant Energy Cost (\$/MWh)(17)	\$73.73	84.67	91.68	103.67	101.60	102.33	109.93
Net Participant Energy Cost (\$/MWh)(18)	\$62.97	73.69	79.05	86.86	88.80	88.50	97.16



## PROJECTED FINANCING COSTS AND OPERATING RESULTS

**Table 3-4**  
**Summary of Projected Operating Results**  
**10% Increase Case**

<u>Year Ending December 31,</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2020</u>	<u>2025</u>	<u>2030</u>	<u>2040</u>
<b>PERFORMANCE</b>							
Net Capacity (MW)(1)	34	34	34	34	34	34	34
Net Generation (MWh)(2)	95,721	146,822	148,190	138,491	146,784	146,784	146,784
Capacity Factor (%)	50.4%	49.1%	49.6%	46.2%	49.1%	49.1%	49.0%
Participant Energy Sales (MWh)	95,721	146,822	148,190	138,491	146,784	146,784	146,784
<b>COMMODITY PRICES</b>							
General Inflation %(3)	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Capacity Price (\$/kW-yr)	\$31.70	31.64	37.81	49.17	37.70	41.11	37.24
REC Price (\$/MWh)	\$2.00	2.00	2.00	2.00	2.10	2.15	2.19
<b>OPERATING REVENUES (\$000)</b>							
Participant Revenue (4)	\$4,916	8,825	9,558	9,820	10,641	10,609	11,657
Capacity Revenue (5)	\$685	1,079	1,290	1,678	1,286	1,402	1,270
REC Revenue (6)	\$191	294	296	277	308	315	321
Other Revenue (7)	\$0	171	412	539	543	870	870
Total Operating Revenues	\$5,792	10,370	11,556	12,314	12,778	13,196	14,119
<b>OPERATING EXPENSES (\$000)(8)</b>							
Greenup Overhead Adder	\$96	150	155	152	180	202	253
RTO Ancillaries	\$1	4	4	4	5	5	7
Hamilton Labor & Overhead	\$423	748	768	811	909	1,018	1,278
AMP Labor & Overhead	\$192	341	351	373	418	468	588
Maintenance	\$203	360	371	393	441	494	620
Other Plant O&M	\$5	9	9	9	10	11	14
Electric	\$43	70	72	76	85	95	120
Dispatch	\$75	121	124	128	143	160	201
Other/Miscellaneous Expenses	\$15	24	25	26	29	33	41
Consultants	\$78	129	130	132	148	166	208
PILOT and PP Tax	\$4	7	7	7	8	8	11
Insurance	\$31	50	51	53	60	67	84
Other Allocated and Direct Expenses	\$246	444	456	464	520	583	731
Fees & Licenses	\$128	228	235	249	279	312	392
Total Operating Expenses	\$1,540	2,685	2,758	2,877	3,235	3,622	4,548
<b>NET OPERATING REVENUES (\$000)</b>	<b>\$4,252</b>	<b>7,685</b>	<b>8,798</b>	<b>9,437</b>	<b>9,543</b>	<b>9,574</b>	<b>9,571</b>
<b>ANNUAL NET DEBT SERVICE (\$000)(9)</b>	<b>\$3,639</b>	<b>6,367</b>	<b>7,292</b>	<b>7,672</b>	<b>8,673</b>	<b>8,704</b>	<b>8,701</b>
<b>ANNUAL NET DEBT SERVICE COVERAGE (10)</b>	<b>1.10</b>	<b>1.21</b>	<b>1.21</b>	<b>1.23</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>
<b>DEPOSITS TO R&amp;C FUND (\$000)(11)</b>	<b>\$614</b>	<b>637</b>	<b>729</b>	<b>767</b>	<b>867</b>	<b>870</b>	<b>870</b>
<b>WORKING CAPITAL RESERVE FUND (\$000)(12)</b>							
B-O-Y Fund Balance - AMP Portion	\$250	250	250	250	250	250	250
B-O-Y Fund Balance - Hamilton Portion	\$250	250	250	250	250	250	250
<b>DEBT SERVICE RESERVE FUND (\$000)(13)</b>							
B-O-Y Fund Balance	\$0	0	0	0	0	0	0
Payments into Debt Reserve Fund	\$0	0	0	0	0	0	0
<b>CONSTRUCTION FUND (14)</b>							
B-O-Y Balance	\$3,815	2,597	1,040	0	0	0	0
Payments into Construction Fund	\$0	0	0	0	0	0	0
<b>MAJOR MAINTENANCE ACCOUNT (15)</b>							
B-O-Y Balance	\$0	0	681	2,253	1,503	0	0
Payments into Major Maintenance Account	\$0	681	777	999	4	0	0
<b>FERC RELICENSING ACCOUNT (16)</b>							
B-O-Y Balance	\$0	193	417	872	523	0	0
Payments into FERC Relicensing Account	\$193	224	227	212	224	0	0
<b>AVERAGE PROJECT COSTS</b>							
Gross Participant Energy Cost (\$/MWh)(17)	\$60.51	69.46	75.20	85.02	83.36	83.98	90.26
Net Participant Energy Cost (\$/MWh)(18)	\$51.36	60.11	64.50	70.91	72.49	72.28	79.42

**Table 3-5**  
**Summary of Projected Operating Results**  
**Zero REC Price Case**

<u>Year Ending December 31,</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2020</u>	<u>2025</u>	<u>2030</u>	<u>2040</u>
<b>PERFORMANCE</b>							
Net Capacity (MW)(1)	34	34	34	34	34	34	34
Net Generation (MWh)(2)	87,019	133,475	134,718	125,901	133,440	133,440	133,440
Capacity Factor (%)	45.8%	44.7%	45.1%	42.0%	44.6%	44.6%	44.5%
Participant Energy Sales (MWh)	87,019	133,475	134,718	125,901	133,440	133,440	133,440
<b>COMMODITY PRICES</b>							
General Inflation (%) (3)	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Capacity Price (\$/kW-yr)	\$31.70	31.64	37.81	49.17	37.70	41.11	37.24
REC Price (\$/MWh)	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>OPERATING REVENUES (\$000)</b>							
Participant Revenue (4)	\$5,098	9,106	9,840	10,083	10,933	10,905	11,955
Capacity Revenue (5)	\$685	1,079	1,290	1,678	1,286	1,402	1,270
REC Revenue (6)	\$0	0	0	0	0	0	0
Other Revenue (7)	\$0	171	412	539	543	870	870
Total Operating Revenues	\$5,783	10,357	11,542	12,300	12,762	13,177	14,096
<b>OPERATING EXPENSES (\$000)(8)</b>							
Greenup Overhead Adder	\$87	137	141	138	164	183	230
RTO Ancillaries	\$1	4	4	4	5	5	7
Hamilton Labor & Overhead	\$423	748	768	811	909	1,018	1,278
AMP Labor & Overhead	\$192	341	351	373	418	468	588
Maintenance	\$203	360	371	393	441	494	620
Other Plant O&M	\$5	9	9	9	10	11	14
Electric	\$43	70	72	76	85	95	120
Dispatch	\$75	121	124	128	143	160	201
Other/Miscellaneous Expenses	\$15	24	25	26	29	33	41
Consultants	\$78	129	130	132	148	166	208
PILOT and PP Tax	\$4	7	7	7	8	8	11
Insurance	\$31	50	51	53	60	67	84
Other Allocated and Direct Expenses	\$246	444	456	464	520	583	731
Fees & Licenses	\$128	228	235	249	279	312	392
Total Operating Expenses	\$1,531	2,672	2,744	2,863	3,219	3,603	4,525
<b>NET OPERATING REVENUES (\$000)</b>	<b>\$4,252</b>	<b>7,685</b>	<b>8,798</b>	<b>9,437</b>	<b>9,543</b>	<b>9,574</b>	<b>9,571</b>
<b>ANNUAL NET DEBT SERVICE (\$000)(9)</b>	<b>\$3,639</b>	<b>6,367</b>	<b>7,292</b>	<b>7,672</b>	<b>8,673</b>	<b>8,704</b>	<b>8,701</b>
<b>ANNUAL NET DEBT SERVICE COVERAGE (10)</b>	<b>1.10</b>	<b>1.21</b>	<b>1.21</b>	<b>1.23</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>
<b>DEPOSITS TO R&amp;C FUND (\$000)(11)</b>	<b>\$614</b>	<b>637</b>	<b>729</b>	<b>767</b>	<b>867</b>	<b>870</b>	<b>870</b>
<b>WORKING CAPITAL RESERVE FUND (\$000)(12)</b>							
B-O-Y Fund Balance - AMP Portion	\$250	250	250	250	250	250	250
B-O-Y Fund Balance - Hamilton Portion	\$250	250	250	250	250	250	250
<b>DEBT SERVICE RESERVE FUND (\$000)(13)</b>							
B-O-Y Fund Balance	\$0	0	0	0	0	0	0
Payments into Debt Reserve Fund	\$0	0	0	0	0	0	0
<b>CONSTRUCTION FUND (14)</b>							
B-O-Y Balance	\$3,815	2,597	1,040	0	0	0	0
Payments into Construction Fund	\$0	0	0	0	0	0	0
<b>MAJOR MAINTENANCE ACCOUNT (15)</b>							
B-O-Y Balance	\$0	0	681	2,253	1,503	0	0
Payments into Major Maintenance Account	\$0	681	777	999	4	0	0
<b>FERC RELICENSING ACCOUNT (16)</b>							
B-O-Y Balance	\$0	193	417	872	523	0	0
Payments into FERC Relicensing Account	\$193	224	227	212	224	0	0
<b>AVERAGE PROJECT COSTS</b>							
Gross Participant Energy Cost (\$/MWh)(17)	\$66.46	76.31	82.62	93.41	91.57	92.23	99.11
Net Participant Energy Cost (\$/MWh)(18)	\$58.59	68.22	73.04	80.09	81.93	81.72	89.59

## Discussion of Indirect Project Benefits

The Greenup Facility can be viewed as having certain indirect benefits. Indirect benefits may or may not have a direct monetary value, but still serve as a valuable component of a holistic decision regarding a particular source of power supply. In certain instances, existing literature

has attempted to monetize certain indirect benefits. While there is currently no consensus or industry-standard approach to determination of indirect benefits, there are meta-analyses available that have attempted to catalogue direct and indirect costs and benefits.

Importantly, hydroelectric resources contribute towards compliance efforts associated with the United States Environmental Protection Agency (“EPA”) Clean Power Plan and are a beneficial portfolio resource. In the case of facilities like the Greenup Facility that came online prior to 2013, the resource provides value by lowering the baseline carbon footprint, which will be beneficial in a rate-based or mass-based compliance regime.

Additionally, a June 2015 macroeconomic study of hydropower in Europe by DNV GL<sup>3</sup>, as well as information made public by the Office of Energy Efficiency and Renewable Energy<sup>4</sup> and information provided by AMP, generally coincide with respect to other indirect benefits associated with hydroelectric resources, of which the following can be attributed to the Greenup Facility:

- Job creation (full-time and part-time)
- Reduction to market exposure and associated risks, such as counterparty risk and transportation risk
- Elimination of exposure to fuel price volatility associated with thermal generation resources that would otherwise serve load
- No waste stream resulting from operations
- Limited regulatory risk compared to fossil or nuclear resources
- Avoidance of key pollutants (i.e., carbon dioxide, NO<sub>x</sub>, and SO<sub>x</sub>) as compared to alternative resources that would otherwise serve that load
- Support of recreational activity

## **Expected Useful Life of the Greenup Facility**

Electromechanical equipment typically has a useful lifetime in excess of 30 years with normal maintenance, after which time such equipment would require additional improvements to extend its useful life. As noted above, the Greenup Facility operating license expires on February 28, 2026, but it is anticipated that AMP and Hamilton will apply for, and that FERC will approve, a 30-year license renewal. Our projected operating results include a provision to cover the cost of relicensing over the period 2022 – 2026. Based on the assessment of the condition of the Greenup Facility and the associated due diligence process described above, and provided that: (1) the Greenup Facility is maintained and operated commensurate with the Owners’ operating plan; (2) all equipment is operated in accordance with manufacturer recommendations; (3) all required renewals and replacements are made on a timely basis, and (4) the Owners successfully relicense the Greenup Facility, we are of the opinion that the Greenup Facility should have a useful life extending to the term of the Bonds assumed herein, or 30 years.

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<sup>3</sup> <https://www.hydropower.org/blog/macroeconomic-study-identifies-the-benefits-of-hydropower-to-europe>

<sup>4</sup> <http://energy.gov/eere/water/benefits-hydropower>

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## Section 4

# PRINCIPAL ASSUMPTIONS AND CONCLUSIONS

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### Principal Considerations and Assumptions

In the preparation of the studies and analyses set forth herein, we have made certain assumptions with respect to conditions that may occur in the future. While we believe these assumptions are reasonable for the purpose of this Report, they are dependent upon future events and actual conditions may differ from those assumed. In addition, we have used and relied upon certain information and assumptions provided to us by AMP and others. While we believe the sources to be reliable, we have not independently verified the information and offer no assurances with respect thereto. To the extent that actual future conditions differ from those assumed herein, the actual results will vary from those forecast. The principal considerations and assumptions made by Leidos in preparing the studies and analyses set forth in this Report and rendering the findings and conclusions set forth herein are summarized below.

1. General inflation was assumed to be 2.3 percent per year based on the July 2015 AMP Market Report.
2. Operating characteristics of the Greenup Facility were assumed to be as follows:
  - a. The total capacity of the Greenup Facility was assumed to be 70.2 MW. Per the terms and conditions of the AMP-Hamilton Agreements, we have assumed that AMP will purchase a 48.6% undivided ownership interest in the Greenup Facility from Hamilton.
  - b. We have assumed a Greenup Closing Date of May 11, 2016.
  - c. A capacity factor of approximately 45% in the Base Case, approximately 40% in the 10% Reduction Case, and approximately 49% in the 10% Increase Case was assumed for the Greenup Facility.
  - d. The projected energy output of the Greenup Facility was based on information and analysis conducted by Sawvel on behalf of Hamilton as described in Section 2 of this Report. This information has been reviewed for reasonableness by both AMP and Leidos. The 10% energy sensitivity analysis is intended to capture the potential variability in future major maintenance hours. Beyond 2020, we have assumed a level of energy output from the Greenup Facility commensurate with the average projected output over the period 2016-2020.
3. The purchase price of the AMP Interest is \$139 million per the terms of the AMP-Hamilton Agreements.
4. The total estimated financing requirement is approximately \$147 million (including issuance expenses, deposits to a capitalized interest account, the construction fund established under the Master Trust Indenture, the upfront surety

## Section 4

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policy premium, and reimbursement of AMP's A&G expenses incurred prior to the issuance of the Bonds).

5. The projections of various elements of the Projected Operating Results set forth herein were based on the following interest earnings and interest rate assumptions:
  - a. An All-In True interest cost of 3.68 percent on fixed rate bonds.
  - b. Interest earnings rates on monies held in the Capitalized Interest Fund at an average rate of 0.1 percent.
6. The projected principal installments and debt service schedule for the Bonds were based upon the assumptions that:
  - a. Approximately \$126 million of AMP's fixed rate bonds will be issued in May 2016, generating \$147 million in proceeds, to finance the purchase price of the AMP Interest, finance a portion of AMP's share of the major maintenance program costs, and fund a surety policy premium, capitalized interest, issuance expenses, and the reimbursement of AMP's A&G expenses incurred prior to the issuance of the Bonds.
  - b. Principal installments on AMP's fixed rate bonds would begin in 2018, with accrual of interest in 2016. A portion of the interest requirements accruing in during 2016 are assumed to be funded with bond proceeds.
7. Estimates of issuance expenses, property taxes for the AMP Interest, and contingency amounts for each element of the cost of the AMP Interest were derived based on information provided by AMP.
8. Operation and maintenance costs for the AMP Interest were estimated based on information provided by AMP reflective of the approved operation and maintenance budget for the Greenup Facility through the available budgeting period, with costs thereafter escalated at the rate of inflation through the remainder of the 30-year evaluation period.
9. It was assumed that all licenses, permits and approvals necessary to operate the Greenup Facility and the Greenup Transfer Application that names AMP as a co-licensee of the Greenup Facility have been maintained, and that AMP and Hamilton will work to relicense the Greenup Facility upon the expiration of the existing Greenup Facility license as of February 28, 2026.
10. In preparation of this Report, we have not undertaken to determine the validity and enforceability of any contract, agreement, rule, or regulation applicable to the Greenup Facility and its operations. However, for purposes of this Report, we have assumed that all contracts, agreements, rules, or regulations applicable to the Greenup Facility will be fully enforceable in accordance with their terms and that all parties will comply with the provisions of their respective agreements.

The power cost projections herein have been prepared based on the assumption that all contracts, agreements, statutes, rules and regulations (hereinafter described as "contractual and legal requirements") that have been relied upon by Leidos in preparing these projections will be fully enforceable in accordance with their terms and conditions. We make no representations or warranties, and provide no opinion

concerning the enforceability or legal interpretation of such contractual and legal requirements.

The power costs set forth in this Report have been projected assuming no significant changes in the electric utility industry through the year 2046 other than those assumed and set forth this Report. Due to uncertainties caused by variable factors, including factors that influence the cost of all energy sources, we can give no assurance as to the reasonableness of the rates of escalation with respect to operating costs. Additionally, changes in costs, technology, legislation and regulation could affect the considerations and assumptions. In summary, any changes in costs, technology, legislation and regulation could affect the considerations and assumptions, which could impact the results of the projected power costs.

## Findings and Conclusions

For purposes of this Report, we have conducted our reviews to consider the technical feasibility of the Greenup Facility, and we have prepared projected operating results for the Project over the study period 2016-2046 for three alternative scenarios as defined in Section 3 of this Report.

Based upon our review of the Greenup Facility information, our considerations and assumptions, and our analyses and studies as summarized in this Report, we are of the opinion that:

- Based on our review of the historical performance of the Greenup Facility, the condition of the Greenup Facility, and the planned major maintenance expenditures, a capacity factor in the range of approximately 45% under the Base Case should be achievable over the evaluation period of this Report.
- The operation and maintenance structure, staffing levels, and operation and maintenance budget for the Greenup Facility are generally in accordance with prudent utility practice and other hydroelectric facilities with which we are familiar.
- Provided that (i) the Greenup Facility is maintained and operated commensurate with the Owners' operating plan, (ii) all equipment is operated in accordance with manufacturer recommendations, (iii) all required renewals and replacements are made on a timely basis and (iv) the Owners successfully relicense the Greenup Facility, the Greenup Facility should have a useful life extending to the term of the Bonds assumed herein, or 30 years.

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## Appendix A

# PROJECTED OPERATING RESULTS PRO FORMA

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**Exhibit 1**  
**Projected Operating Results**

**Base Case**

<u>Year Ending December 31,</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
<b>PERFORMANCE</b>											
Net Capacity (MW)(1)	34	34	34	34	34	34	34	34	34	34	34
Net Generation (MWh)(2)	87,019	133,475	134,718	135,706	125,901	133,440	133,440	133,440	133,440	133,440	133,440
Capacity Factor (%)	45.8%	44.7%	45.1%	45.4%	42.0%	44.6%	44.6%	44.6%	44.5%	44.6%	44.6%
Participant Energy Sales (MWh)	87,019	133,475	134,718	135,706	125,901	133,440	133,440	133,440	133,440	133,440	133,440
<b>COMMODITY PRICES</b>											
General Inflation %(3)	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Capacity Price (\$/kW-yr)	\$31.70	31.64	37.81	44.82	49.17	34.41	36.12	38.26	37.37	37.70	40.60
REC Price (\$/MWh)	\$2.00	2.00	2.00	2.00	2.00	2.05	2.06	2.07	2.08	2.10	2.11
<b>OPERATING REVENUES (\$000)</b>											
Participant Revenue (4)	\$4,924	8,839	9,571	9,740	9,831	10,373	10,392	10,386	10,486	10,653	10,554
Capacity Revenue (5)	\$685	1,079	1,290	1,529	1,678	1,174	1,232	1,305	1,275	1,286	1,385
REC Revenue (6)	\$174	267	269	271	252	273	275	277	278	280	281
Other Revenue (7)	\$0	171	412	503	539	555	543	543	543	543	643
Total Operating Revenues	\$5,783	10,357	11,542	12,043	12,300	12,375	12,442	12,511	12,582	12,762	12,863
<b>OPERATING EXPENSES (\$000)(8)</b>											
Greenup Overhead Adder	\$87	137	141	145	138	150	153	156	160	164	168
RTO Ancillaries	\$1	4	4	4	4	4	4	4	5	5	5
Hamilton Labor & Overhead	\$423	748	768	789	811	830	849	868	888	909	930
AMP Labor & Overhead	\$192	341	351	362	373	381	390	399	408	418	427
Maintenance	\$203	360	371	382	393	402	412	421	431	441	451
Other Plant O&M	\$5	9	9	9	9	9	9	10	10	10	10
Electric	\$43	70	72	74	76	78	80	81	83	85	87
Dispatch	\$75	121	124	128	128	131	134	137	140	143	146
Other/Miscellaneous Expenses	\$15	24	25	25	26	27	27	28	29	29	30
Consultants	\$78	129	130	131	132	135	138	142	145	148	152
PILOT and PP Tax	\$4	7	7	7	7	7	7	7	7	8	8
Insurance	\$31	50	51	52	53	54	56	57	58	60	61
Other Allocated and Direct Expenses	\$246	444	456	457	464	475	486	497	508	520	532
Fees & Licenses	\$128	228	235	242	249	255	260	266	273	279	285
Total Operating Expenses	\$1,531	2,672	2,744	2,807	2,863	2,938	3,005	3,073	3,145	3,219	3,292
<b>NET OPERATING REVENUES (\$000)</b>	\$4,252	7,685	8,798	9,236	9,437	9,437	9,437	9,438	9,437	9,543	9,571
<b>ANNUAL NET DEBT SERVICE (\$000)(9)</b>	\$3,639	6,367	7,292	7,674	7,672	7,674	7,672	7,676	7,674	8,673	8,701
<b>ANNUAL NET DEBT SERVICE COVERAGE (10)</b>	1.10	1.21	1.21	1.20	1.23	1.23	1.23	1.23	1.23	1.10	1.10
<b>DEPOSITS TO R&amp;C FUND (\$000)(11)</b>	\$614	637	729	767	767	767	767	768	767	867	870
<b>WORKING CAPITAL RESERVE FUND (\$000)(12)</b>											
B-O-Y Fund Balance - AMP Portion	\$250	250	250	250	250	250	250	250	250	250	250
B-O-Y Fund Balance - Hamilton Portion	\$250	250	250	250	250	250	250	250	250	250	250
<b>DEBT SERVICE RESERVE FUND (\$000)(13)</b>											
B-O-Y Fund Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into Debt Reserve Fund	\$0	0	0	0	0	0	0	0	0	0	0
<b>CONSTRUCTION FUND (14)</b>											
B-O-Y Balance	\$3,815	2,597	1,040	0	0	0	0	0	0	0	0
Payments into Construction Fund	\$0	0	0	0	0	0	0	0	0	0	0
<b>MAJOR MAINTENANCE ACCOUNT (15)</b>											
B-O-Y Balance	\$0	0	681	1,458	2,253	2,037	1,684	1,165	1,179	1,503	221
Payments into Major Maintenance Account	\$0	681	777	794	999	996	998	995	996	4	0
<b>FERC RELICENSING ACCOUNT (16)</b>											
B-O-Y Balance	\$0	193	417	644	872	1,084	1,308	1,046	785	523	262
Payments into FERC Relicensing Account	\$193	224	227	228	212	224	224	224	224	224	224
<b>AVERAGE PROJECT COSTS</b>											
Gross Participant Energy Cost (\$/MWh)(17)	\$66.46	76.31	82.62	85.04	93.41	88.58	89.17	89.69	90.22	91.57	91.58
Net Participant Energy Cost (\$/MWh)(18)	\$56.59	66.22	71.04	71.77	78.09	77.74	77.88	77.83	78.58	79.83	79.09

**Exhibit 1**  
**Projected Operating Results**

**Base Case**

<u>Year Ending December 31,</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>	<u>2035</u>	<u>2036</u>	<u>2037</u>
<b>PERFORMANCE</b>											
Net Capacity (MW)(1)	34	34	34	34	34	34	34	34	34	34	34
Net Generation (MWh)(2)	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440
Capacity Factor (%)	44.6%	44.5%	44.6%	44.6%	44.6%	44.5%	44.6%	44.6%	44.6%	44.5%	44.6%
Participant Energy Sales (MWh)	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440
<b>COMMODITY PRICES</b>											
General Inflation (%) (3)	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Capacity Price (\$/kW-yr)	\$39.32	40.89	40.08	41.11	39.79	39.23	41.94	41.46	41.67	41.92	40.34
REC Price (\$/MWh)	\$2.12	2.13	2.14	2.15	2.15	2.16	2.17	2.17	\$2.18	2.18	2.18
<b>OPERATING REVENUES (\$000)</b>											
Participant Revenue (4)	\$10,667	10,469	10,570	10,619	10,745	10,849	10,844	10,944	11,030	11,113	11,261
Capacity Revenue (5)	\$1,341	1,395	1,367	1,402	1,357	1,338	1,431	1,415	1,422	1,430	1,376
REC Revenue (6)	\$283	284	285	286	287	288	289	290	291	291	291
Other Revenue (7)	\$646	870	870	870	870	870	870	870	870	870	870
Total Operating Revenues	\$12,937	13,018	13,093	13,177	13,260	13,346	13,434	13,519	13,613	13,705	13,799
<b>OPERATING EXPENSES (\$000)(8)</b>											
Greenup Overhead Adder	\$171	175	179	183	188	192	196	201	206	210	215
RTO Ancillaries	\$5	5	5	5	5	6	6	6	6	6	6
Hamilton Labor & Overhead	\$951	973	995	1,018	1,041	1,065	1,090	1,115	1,141	1,167	1,194
AMP Labor & Overhead	\$437	447	458	468	479	490	501	513	524	536	549
Maintenance	\$461	472	483	494	505	517	529	541	553	566	579
Other Plant O&M	\$10	11	11	11	11	12	12	12	12	13	13
Electric	\$89	91	93	95	98	100	102	105	107	109	112
Dispatch	\$150	153	157	160	164	168	172	176	180	184	188
Other/Miscellaneous Expenses	\$31	31	32	33	33	34	35	36	37	37	38
Consultants	\$155	159	162	166	170	174	178	182	186	190	195
PILOT and PP Tax	\$8	8	8	8	9	9	9	9	9	10	10
Insurance	\$62	64	65	67	68	70	72	73	75	77	78
Other Allocated and Direct Expenses	\$544	557	569	583	596	610	624	638	653	668	683
Fees & Licenses	\$292	299	305	312	320	327	334	342	350	358	366
Total Operating Expenses	\$3,366	3,445	3,522	3,603	3,687	3,774	3,860	3,949	4,039	4,131	4,226
<b>NET OPERATING REVENUES (\$000)</b>	<b>\$9,571</b>	<b>9,573</b>	<b>9,571</b>	<b>9,574</b>	<b>9,573</b>	<b>9,572</b>	<b>9,574</b>	<b>9,570</b>	<b>9,574</b>	<b>9,574</b>	<b>9,573</b>
<b>ANNUAL NET DEBT SERVICE (\$000)(9)</b>	<b>\$8,701</b>	<b>8,703</b>	<b>8,701</b>	<b>8,704</b>	<b>8,703</b>	<b>8,701</b>	<b>8,704</b>	<b>8,700</b>	<b>8,703</b>	<b>8,704</b>	<b>8,702</b>
<b>ANNUAL NET DEBT SERVICE COVERAGE (10)</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>
<b>DEPOSITS TO R&amp;C FUND (\$000)(11)</b>	<b>\$870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>
<b>WORKING CAPITAL RESERVE FUND (\$000)(12)</b>											
B-O-Y Fund Balance - AMP Portion	\$250	250	250	250	250	250	250	250	250	250	250
B-O-Y Fund Balance - Hamilton Portion	\$250	250	250	250	250	250	250	250	250	250	250
<b>DEBT SERVICE RESERVE FUND (\$000)(13)</b>											
B-O-Y Fund Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into Debt Reserve Fund	\$0	0	0	0	0	0	0	0	0	0	0
<b>CONSTRUCTION FUND (14)</b>											
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into Construction Fund	\$0	0	0	0	0	0	0	0	0	0	0
<b>MAJOR MAINTENANCE ACCOUNT (15)</b>											
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into Major Maintenance Account	\$0	0	0	0	0	0	0	0	0	0	0
<b>FERC RELICENSING ACCOUNT (16)</b>											
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into FERC Relicensing Account	\$0	0	0	0	0	0	0	0	0	0	0
<b>AVERAGE PROJECT COSTS</b>											
Gross Participant Energy Cost (\$/MWh)(17)	\$92.11	91.04	91.60	92.23	92.85	93.49	94.15	94.79	\$95.49	96.18	96.89
Net Participant Energy Cost (\$/MWh)(18)	\$79.94	78.45	79.21	79.58	80.52	81.30	81.27	82.01	82.66	83.28	84.39

# Exhibit 1 Projected Operating Results

## Base Case

<u>Year Ending December 31,</u>	<u>2038</u>	<u>2039</u>	<u>2040</u>	<u>2041</u>	<u>2042</u>	<u>2043</u>	<u>2044</u>	<u>2045</u>	<u>2046</u>
<b>PERFORMANCE</b>									
Net Capacity (MW)(1)	34	34	34	34	34	34	34	34	34
Net Generation (MWh)(2)	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440
Capacity Factor (%)	44.6%	44.6%	44.5%	44.6%	44.6%	44.6%	44.5%	44.6%	44.6%
Participant Energy Sales (MWh)	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440
<b>COMMODITY PRICES</b>									
General Inflation (%) (3)	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Capacity Price (\$/kW-yr)	\$42.17	37.24	37.24	37.24	37.24	37.24	37.24	37.24	37.24
REC Price (\$/MWh)	\$2	2.19	2.19	2.18	2.18	2.18	2.17	2.16	2.16
<b>OPERATING REVENUES (\$000)</b>									
Participant Revenue (4)	\$11,293	11,564	11,663	11,770	11,876	11,984	12,096	12,212	2,757
Capacity Revenue (5)	\$1,439	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270
REC Revenue (6)	\$292	292	292	291	291	290	290	289	288
Other Revenue (7)	\$870	870	870	870	870	870	870	870	870
Total Operating Revenues	\$13,894	13,997	14,096	14,201	14,308	14,415	14,526	14,642	5,186
<b>OPERATING EXPENSES (\$000)(8)</b>									
Greenup Overhead Adder	\$220	225	230	236	241	247	252	258	264
RTO Ancillaries	\$6	6	7	7	7	7	7	7	8
Hamilton Labor & Overhead	\$1,221	1,249	1,278	1,307	1,337	1,368	1,400	1,432	1,465
AMP Labor & Overhead	\$561	574	588	601	615	629	643	658	673
Maintenance	\$592	606	620	634	649	664	679	694	710
Other Plant O&M	\$13	14	14	14	15	15	15	16	16
Electric	\$114	117	120	123	125	128	131	134	137
Dispatch	\$192	197	201	206	211	215	220	225	231
Other/Miscellaneous Expenses	\$39	40	41	42	43	44	45	46	47
Consultants	\$199	204	208	213	218	223	228	234	239
PILOT and PP Tax	\$10	10	11	11	11	11	12	12	12
Insurance	\$80	82	84	86	88	90	92	94	96
Other Allocated and Direct Expenses	\$699	715	731	748	765	783	801	819	838
Fees & Licenses	\$375	383	392	401	410	420	430	439	450
Total Operating Expenses	\$4,321	4,422	4,525	4,629	4,735	4,844	4,955	5,068	5,186
<b>NET OPERATING REVENUES (\$000)</b>	\$9,573	9,575	9,571	9,572	9,573	9,571	9,571	9,574	(0)
<b>ANNUAL NET DEBT SERVICE (\$000)(9)</b>	\$8,703	8,704	8,701	8,703	8,703	8,701	8,702	8,703	0
<b>ANNUAL NET DEBT SERVICE COVERAGE (10)</b>	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	N/A
<b>DEPOSITS TO R&amp;C FUND (\$000)(11)</b>	\$870	870	870	870	870	870	870	870	0
<b>WORKING CAPITAL RESERVE FUND (\$000)(12)</b>									
B-O-Y Fund Balance - AMP Portion	\$250	250	250	250	250	250	250	250	250
B-O-Y Fund Balance - Hamilton Portion	\$250	250	250	250	250	250	250	250	250
<b>DEBT SERVICE RESERVE FUND (\$000)(13)</b>									
B-O-Y Fund Balance	\$0	0	0	0	0	0	0	0	0
Payments into Debt Reserve Fund	\$0	0	0	0	0	0	0	0	0
<b>CONSTRUCTION FUND (14)</b>									
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0
Payments into Construction Fund	\$0	0	0	0	0	0	0	0	0
<b>MAJOR MAINTENANCE ACCOUNT (15)</b>									
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0
Payments into Major Maintenance Account	\$0	0	0	0	0	0	0	0	0
<b>FERC RELICENSING ACCOUNT (16)</b>									
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0
Payments into FERC Relicensing Account	\$0	0	0	0	0	0	0	0	0
<b>AVERAGE PROJECT COSTS</b>									
Gross Participant Energy Cost (\$/MWh)(17)	97.60	98.37	99.11	99.91	100.70	101.50	102.34	103.20	32.34
Net Participant Energy Cost (\$/MWh)(18)	\$84.63	86.66	87.40	88.20	89.00	89.81	90.65	91.52	20.66

**Exhibit 2**  
**Projected Operating Results**  
**10 Percent Reduction Case**

<u>Year Ending December 31,</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
<b>PERFORMANCE</b>											
Net Capacity (MW)(1)	34	34	34	34	34	34	34	34	34	34	34
Net Generation (MWh)(2)	78,317	120,127	121,246	122,136	113,311	120,096	120,096	120,096	120,096	120,096	120,096
Capacity Factor (%)	41.3%	40.2%	40.6%	40.9%	37.8%	40.2%	40.2%	40.2%	40.1%	40.2%	40.2%
Participant Energy Sales (MWh)	78,317	120,127	121,246	122,136	113,311	120,096	120,096	120,096	120,096	120,096	120,096
<b>COMMODITY PRICES</b>											
General Inflation (%) (3)	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Capacity Price (\$/kW-yr)	\$31.70	31.64	37.81	44.82	49.17	34.41	36.12	38.26	37.37	37.70	40.60
REC Price (\$/MWh)	\$2.00	2.00	2.00	2.00	2.00	2.05	2.06	2.07	2.08	2.10	2.11
<b>OPERATING REVENUES (\$000)</b>											
Participant Revenue (4)	\$4,932	8,852	9,584	9,753	9,842	10,385	10,405	10,399	10,498	10,664	10,565
Capacity Revenue (5)	\$685	1,079	1,290	1,529	1,678	1,174	1,232	1,305	1,275	1,286	1,385
REC Revenue (6)	\$157	240	242	244	227	246	247	249	250	252	253
Other Revenue (7)	\$0	171	412	503	539	555	543	543	543	543	643
Total Operating Revenues	\$5,774	10,343	11,528	12,029	12,286	12,360	12,427	12,496	12,566	12,745	12,846
<b>OPERATING EXPENSES (\$000)(8)</b>											
Greenup Overhead Adder	\$78	123	127	131	124	135	138	141	144	147	151
RTO Ancillaries	\$1	4	4	4	4	4	4	4	5	5	5
Hamilton Labor & Overhead	\$423	748	768	789	811	830	849	868	888	909	930
AMP Labor & Overhead	\$192	341	351	362	373	381	390	399	408	418	427
Maintenance	\$203	360	371	382	393	402	412	421	431	441	451
Other Plant O&M	\$5	9	9	9	9	9	9	10	10	10	10
Electric	\$43	70	72	74	76	78	80	81	83	85	87
Dispatch	\$75	121	124	128	128	131	134	137	140	143	146
Other/Miscellaneous Expenses	\$15	24	25	25	26	27	27	28	29	29	30
Consultants	\$78	129	130	131	132	135	138	142	145	148	152
PILOT and PP Tax	\$4	7	7	7	7	7	7	7	7	8	8
Insurance	\$31	50	51	52	53	54	56	57	58	60	61
Other Allocated and Direct Expenses	\$246	444	456	457	464	475	486	497	508	520	532
Fees & Licenses	\$128	228	235	242	249	255	260	266	273	279	285
Total Operating Expenses	\$1,522	2,658	2,730	2,793	2,849	2,923	2,990	3,058	3,129	3,202	3,275
<b>NET OPERATING REVENUES (\$000)</b>	\$4,252	7,685	8,798	9,236	9,437	9,437	9,437	9,438	9,437	9,543	9,571
<b>ANNUAL NET DEBT SERVICE (\$000)(9)</b>	\$3,639	6,367	7,292	7,674	7,672	7,674	7,672	7,676	7,674	8,673	8,701
<b>ANNUAL NET DEBT SERVICE COVERAGE (10)</b>	1.10	1.21	1.21	1.20	1.23	1.23	1.23	1.23	1.23	1.10	1.10
<b>DEPOSITS TO R&amp;C FUND (\$000)(11)</b>	\$614	637	729	767	767	767	767	768	767	867	870
<b>WORKING CAPITAL RESERVE FUND (\$000)(12)</b>											
B-O-Y Fund Balance - AMP Portion	\$250	250	250	250	250	250	250	250	250	250	250
B-O-Y Fund Balance - Hamilton Portion	\$250	250	250	250	250	250	250	250	250	250	250
<b>DEBT SERVICE RESERVE FUND (\$000)(13)</b>											
B-O-Y Fund Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into Debt Reserve Fund	\$0	0	0	0	0	0	0	0	0	0	0
<b>CONSTRUCTION FUND (14)</b>											
B-O-Y Balance	\$3,815	2,597	1,040	0	0	0	0	0	0	0	0
Payments into Construction Fund	\$0	0	0	0	0	0	0	0	0	0	0
<b>MAJOR MAINTENANCE ACCOUNT (15)</b>											
B-O-Y Balance	\$0	0	681	1,458	2,253	2,037	1,684	1,165	1,179	1,503	221
Payments into Major Maintenance Account	\$0	681	777	794	999	996	998	995	996	4	0
<b>FERC RELICENSING ACCOUNT (16)</b>											
B-O-Y Balance	\$0	193	417	644	872	1,084	1,308	1,046	785	523	262
Payments into FERC Relicensing Account	\$193	224	227	228	212	224	224	224	224	224	224
<b>AVERAGE PROJECT COSTS</b>											
Gross Participant Energy Cost (\$/MWh)(17)	\$73.73	84.67	91.68	94.37	103.67	98.30	98.96	99.53	100.11	101.60	101.61
Net Participant Energy Cost (\$/MWh)(18)	\$62.97	73.69	79.05	79.85	86.86	86.47	86.64	86.59	87.41	88.80	87.97

**Exhibit 2**  
**Projected Operating Results**  
**10 Percent Reduction Case**

<u>Year Ending December 31,</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>	<u>2035</u>	<u>2036</u>	<u>2037</u>
<b>PERFORMANCE</b>											
Net Capacity (MW)(1)	34	34	34	34	34	34	34	34	34	34	34
Net Generation (MWh)(2)	120,096	120,096	120,096	120,096	120,096	120,096	120,096	120,096	120,096	120,096	120,096
Capacity Factor (%)	40.2%	40.1%	40.2%	40.2%	40.2%	40.1%	40.2%	40.2%	40.2%	40.1%	40.2%
Participant Energy Sales (MWh)	120,096	120,096	120,096	120,096	120,096	120,096	120,096	120,096	120,096	120,096	120,096
<b>COMMODITY PRICES</b>											
General Inflation (%) (3)	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Capacity Price (\$/kW-yr)	\$39.32	40.89	40.08	41.11	39.79	39.23	41.94	41.46	41.67	41.92	40.34
REC Price (\$/MWh)	\$2.12	2.13	2.14	2.15	2.15	2.16	2.17	2.17	\$2.18	2.18	2.18
<b>OPERATING REVENUES (\$000)</b>											
Participant Revenue (4)	\$10,679	10,480	10,580	10,629	10,754	10,858	10,854	10,953	11,038	11,121	11,269
Capacity Revenue (5)	\$1,341	1,395	1,367	1,402	1,357	1,338	1,431	1,415	1,422	1,430	1,376
REC Revenue (6)	\$254	256	257	258	259	260	260	261	262	262	262
Other Revenue (7)	\$646	870	870	870	870	870	870	870	870	870	870
Total Operating Revenues	\$12,920	13,001	13,075	13,159	13,241	13,327	13,415	13,499	13,592	13,684	13,778
<b>OPERATING EXPENSES (\$000)(8)</b>											
Greenup Overhead Adder	\$154	158	161	165	169	173	177	181	185	189	194
RTO Ancillaries	\$5	5	5	5	5	6	6	6	6	6	6
Hamilton Labor & Overhead	\$951	973	995	1,018	1,041	1,065	1,090	1,115	1,141	1,167	1,194
AMP Labor & Overhead	\$437	447	458	468	479	490	501	513	524	536	549
Maintenance	\$461	472	483	494	505	517	529	541	553	566	579
Other Plant O&M	\$10	11	11	11	11	12	12	12	12	13	13
Electric	\$89	91	93	95	98	100	102	105	107	109	112
Dispatch	\$150	153	157	160	164	168	172	176	180	184	188
Other/Miscellaneous Expenses	\$31	31	32	33	33	34	35	36	37	37	38
Consultants	\$155	159	162	166	170	174	178	182	186	190	195
PILOT and PP Tax	\$8	8	8	8	9	9	9	9	9	10	10
Insurance	\$62	64	65	67	68	70	72	73	75	77	78
Other Allocated and Direct Expenses	\$544	557	569	583	596	610	624	638	653	668	683
Fees & Licenses	\$292	299	305	312	320	327	334	342	350	358	366
Total Operating Expenses	\$3,349	3,428	3,504	3,585	3,668	3,755	3,841	3,929	4,018	4,110	4,205
<b>NET OPERATING REVENUES (\$000)</b>	<b>\$9,571</b>	<b>9,573</b>	<b>9,571</b>	<b>9,574</b>	<b>9,573</b>	<b>9,572</b>	<b>9,574</b>	<b>9,570</b>	<b>9,574</b>	<b>9,574</b>	<b>9,573</b>
<b>ANNUAL NET DEBT SERVICE (\$000)(9)</b>	<b>\$8,701</b>	<b>8,703</b>	<b>8,701</b>	<b>8,704</b>	<b>8,703</b>	<b>8,701</b>	<b>8,704</b>	<b>8,700</b>	<b>8,703</b>	<b>8,704</b>	<b>8,702</b>
<b>ANNUAL NET DEBT SERVICE COVERAGE (10)</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>
<b>DEPOSITS TO R&amp;C FUND (\$000)(11)</b>	<b>\$870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>
<b>WORKING CAPITAL RESERVE FUND (\$000)(12)</b>											
B-O-Y Fund Balance - AMP Portion	\$250	250	250	250	250	250	250	250	250	250	250
B-O-Y Fund Balance - Hamilton Portion	\$250	250	250	250	250	250	250	250	250	250	250
<b>DEBT SERVICE RESERVE FUND (\$000)(13)</b>											
B-O-Y Fund Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into Debt Reserve Fund	\$0	0	0	0	0	0	0	0	0	0	0
<b>CONSTRUCTION FUND (14)</b>											
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into Construction Fund	\$0	0	0	0	0	0	0	0	0	0	0
<b>MAJOR MAINTENANCE ACCOUNT (15)</b>											
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into Major Maintenance Account	\$0	0	0	0	0	0	0	0	0	0	0
<b>FERC RELICENSING ACCOUNT (16)</b>											
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into FERC Relicensing Account	\$0	0	0	0	0	0	0	0	0	0	0
<b>AVERAGE PROJECT COSTS</b>											
Gross Participant Energy Cost (\$/MWh)(17)	\$102.21	101.01	101.62	102.33	103.01	103.72	104.46	105.15	\$105.93	106.69	107.48
Net Participant Energy Cost (\$/MWh)(18)	\$88.92	87.26	88.10	88.50	89.55	90.41	90.38	91.20	91.91	92.60	93.83

**Exhibit 2**  
**Projected Operating Results**  
**10 Percent Reduction Case**

<u>Year Ending December 31,</u>	<u>2038</u>	<u>2039</u>	<u>2040</u>	<u>2041</u>	<u>2042</u>	<u>2043</u>	<u>2044</u>	<u>2045</u>	<u>2046</u>
<b>PERFORMANCE</b>									
Net Capacity (MW)(1)	34	34	34	34	34	34	34	34	34
Net Generation (MWh)(2)	120,096	120,096	120,096	120,096	120,096	120,096	120,096	120,096	120,096
Capacity Factor (%)	40.2%	40.2%	40.1%	40.2%	40.2%	40.2%	40.1%	40.2%	40.2%
Participant Energy Sales (MWh)	120,096	120,096	120,096	120,096	120,096	120,096	120,096	120,096	120,096
<b>COMMODITY PRICES</b>									
General Inflation %(3)	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Capacity Price (\$/kW-yr)	\$42.17	37.24	37.24	37.24	37.24	37.24	37.24	37.24	37.24
REC Price (\$/MWh)	\$2	2.19	2.19	2.18	2.18	2.18	2.17	2.16	2.16
<b>OPERATING REVENUES (\$000)</b>									
Participant Revenue (4)	\$11,300	11,571	11,669	11,775	11,881	11,988	12,100	12,215	2,760
Capacity Revenue (5)	\$1,439	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270
REC Revenue (6)	\$263	263	263	262	262	261	261	260	259
Other Revenue (7)	\$870	870	870	870	870	870	870	870	870
Total Operating Revenues	\$13,872	13,975	14,073	14,177	14,284	14,390	14,501	14,616	5,160
<b>OPERATING EXPENSES (\$000)(8)</b>									
Greenup Overhead Adder	\$198	203	207	212	217	222	227	232	238
RTO Ancillaries	\$6	6	7	7	7	7	7	7	8
Hamilton Labor & Overhead	\$1,221	1,249	1,278	1,307	1,337	1,368	1,400	1,432	1,465
AMP Labor & Overhead	\$561	574	588	601	615	629	643	658	673
Maintenance	\$592	606	620	634	649	664	679	694	710
Other Plant O&M	\$13	14	14	14	15	15	15	16	16
Electric	\$114	117	120	123	125	128	131	134	137
Dispatch	\$192	197	201	206	211	215	220	225	231
Other/Miscellaneous Expenses	\$39	40	41	42	43	44	45	46	47
Consultants	\$199	204	208	213	218	223	228	234	239
PILOT and PP Tax	\$10	10	11	11	11	11	12	12	12
Insurance	\$80	82	84	86	88	90	92	94	96
Other Allocated and Direct Expenses	\$699	715	731	748	765	783	801	819	838
Fees & Licenses	\$375	383	392	401	410	420	430	439	450
Total Operating Expenses	\$4,299	4,400	4,502	4,605	4,711	4,819	4,930	5,042	5,160
<b>NET OPERATING REVENUES (\$000)</b>	\$9,573	9,575	9,571	9,572	9,573	9,571	9,571	9,574	(0)
<b>ANNUAL NET DEBT SERVICE (\$000)(9)</b>	\$8,703	8,704	8,701	8,703	8,703	8,701	8,702	8,703	0
<b>ANNUAL NET DEBT SERVICE COVERAGE (10)</b>	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	N/A
<b>DEPOSITS TO R&amp;C FUND (\$000)(11)</b>	\$870	870	870	870	870	870	870	870	0
<b>WORKING CAPITAL RESERVE FUND (\$000)(12)</b>									
B-O-Y Fund Balance - AMP Portion	\$250	250	250	250	250	250	250	250	250
B-O-Y Fund Balance - Hamilton Portion	\$250	250	250	250	250	250	250	250	250
<b>DEBT SERVICE RESERVE FUND (\$000)(13)</b>									
B-O-Y Fund Balance	\$0	0	0	0	0	0	0	0	0
Payments into Debt Reserve Fund	\$0	0	0	0	0	0	0	0	0
<b>CONSTRUCTION FUND (14)</b>									
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0
Payments into Construction Fund	\$0	0	0	0	0	0	0	0	0
<b>MAJOR MAINTENANCE ACCOUNT (15)</b>									
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0
Payments into Major Maintenance Account	\$0	0	0	0	0	0	0	0	0
<b>FERC RELICENSING ACCOUNT (16)</b>									
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0
Payments into FERC Relicensing Account	\$0	0	0	0	0	0	0	0	0
<b>AVERAGE PROJECT COSTS</b>									
Gross Participant Energy Cost (\$/MWh)(17)	108.26	109.12	109.93	110.81	111.69	112.57	113.50	114.45	35.72
Net Participant Energy Cost (\$/MWh)(18)	\$94.09	96.35	97.16	98.05	98.93	99.82	100.75	101.71	22.98

**Exhibit 3**  
**Projected Operating Results**  
**10 Percent Increase Case**

<u>Year Ending December 31,</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
<b>PERFORMANCE</b>											
Net Capacity (MW)(1)	34	34	34	34	34	34	34	34	34	34	34
Net Generation (MWh)(2)	95,721	146,822	148,190	149,277	138,491	146,784	146,784	146,784	146,784	146,784	146,784
Capacity Factor (%)	50.4%	49.1%	49.6%	49.9%	46.2%	49.1%	49.1%	49.1%	49.0%	49.1%	49.1%
Participant Energy Sales (MWh)	95,721	146,822	148,190	149,277	138,491	146,784	146,784	146,784	146,784	146,784	146,784
<b>COMMODITY PRICES</b>											
General Inflation %(3)	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Capacity Price (\$/kW-yr)	\$31.70	31.64	37.81	44.82	49.17	34.41	36.12	38.26	37.37	37.70	40.60
REC Price (\$/MWh)	\$2.00	2.00	2.00	2.00	2.00	2.05	2.06	2.07	2.08	2.10	2.11
<b>OPERATING REVENUES (\$000)</b>											
Participant Revenue (4)	\$4,916	8,825	9,558	9,727	9,820	10,360	10,380	10,375	10,474	10,641	10,542
Capacity Revenue (5)	\$685	1,079	1,290	1,529	1,678	1,174	1,232	1,305	1,275	1,286	1,385
REC Revenue (6)	\$191	294	296	299	277	300	302	304	306	308	309
Other Revenue (7)	\$0	171	412	503	539	555	543	543	543	543	643
Total Operating Revenues	\$5,792	10,370	11,556	12,058	12,314	12,389	12,457	12,527	12,598	12,778	12,879
<b>OPERATING EXPENSES (\$000)(8)</b>											
Greenup Overhead Adder	\$96	150	155	160	152	164	168	172	176	180	184
RTO Ancillaries	\$1	4	4	4	4	4	4	4	5	5	5
Hamilton Labor & Overhead	\$423	748	768	789	811	830	849	868	888	909	930
AMP Labor & Overhead	\$192	341	351	362	373	381	390	399	408	418	427
Maintenance	\$203	360	371	382	393	402	412	421	431	441	451
Other Plant O&M	\$5	9	9	9	9	9	9	10	10	10	10
Electric	\$43	70	72	74	76	78	80	81	83	85	87
Dispatch	\$75	121	124	128	128	131	134	137	140	143	146
Other/Miscellaneous Expenses	\$15	24	25	25	26	27	27	28	29	29	30
Consultants	\$78	129	130	131	132	135	138	142	145	148	152
PILOT and PP Tax	\$4	7	7	7	7	7	7	7	7	8	8
Insurance	\$31	50	51	52	53	54	56	57	58	60	61
Other Allocated and Direct Expenses	\$246	444	456	457	464	475	486	497	508	520	532
Fees & Licenses	\$128	228	235	242	249	255	260	266	273	279	285
Total Operating Expenses	\$1,540	2,685	2,758	2,822	2,877	2,952	3,020	3,089	3,161	3,235	3,308
<b>NET OPERATING REVENUES (\$000)</b>	\$4,252	7,685	8,798	9,236	9,437	9,437	9,437	9,438	9,437	9,543	9,571
<b>ANNUAL NET DEBT SERVICE (\$000)(9)</b>	\$3,639	6,367	7,292	7,674	7,672	7,674	7,672	7,676	7,674	8,673	8,701
<b>ANNUAL NET DEBT SERVICE COVERAGE (10)</b>	1.10	1.21	1.21	1.20	1.23	1.23	1.23	1.23	1.23	1.10	1.10
<b>DEPOSITS TO R&amp;C FUND (\$000)(11)</b>	\$614	637	729	767	767	767	767	768	767	867	870
<b>WORKING CAPITAL RESERVE FUND (\$000)(12)</b>											
B-O-Y Fund Balance - AMP Portion	\$250	250	250	250	250	250	250	250	250	250	250
B-O-Y Fund Balance - Hamilton Portion	\$250	250	250	250	250	250	250	250	250	250	250
<b>DEBT SERVICE RESERVE FUND (\$000)(13)</b>											
B-O-Y Fund Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into Debt Reserve Fund	\$0	0	0	0	0	0	0	0	0	0	0
<b>CONSTRUCTION FUND (14)</b>											
B-O-Y Balance	\$3,815	2,597	1,040	0	0	0	0	0	0	0	0
Payments into Construction Fund	\$0	0	0	0	0	0	0	0	0	0	0
<b>MAJOR MAINTENANCE ACCOUNT (15)</b>											
B-O-Y Balance	\$0	0	681	1,458	2,253	2,037	1,684	1,165	1,179	1,503	221
Payments into Major Maintenance Account	\$0	681	777	794	999	996	998	995	996	4	0
<b>FERC RELICENSING ACCOUNT (16)</b>											
B-O-Y Balance	\$0	193	417	644	872	1,084	1,308	1,046	785	523	262
Payments into FERC Relicensing Account	\$193	224	227	228	212	224	224	224	224	224	224
<b>AVERAGE PROJECT COSTS</b>											
Gross Participant Energy Cost (\$/MWh)(17)	\$60.51	69.46	75.20	77.41	85.02	80.62	81.17	81.65	82.13	83.36	83.36
Net Participant Energy Cost (\$/MWh)(18)	\$51.36	60.11	64.50	65.16	70.91	70.58	70.72	70.68	71.36	72.49	71.82



**Exhibit 3**  
**Projected Operating Results**  
**10 Percent Increase Case**

<u>Year Ending December 31,</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>	<u>2035</u>	<u>2036</u>	<u>2037</u>
<b>PERFORMANCE</b>											
Net Capacity (MW)(1)	34	34	34	34	34	34	34	34	34	34	34
Net Generation (MWh)(2)	146,784	146,784	146,784	146,784	146,784	146,784	146,784	146,784	146,784	146,784	146,784
Capacity Factor (%)	49.1%	49.0%	49.1%	49.1%	49.1%	49.0%	49.1%	49.1%	49.1%	49.0%	49.1%
Participant Energy Sales (MWh)	146,784	146,784	146,784	146,784	146,784	146,784	146,784	146,784	146,784	146,784	146,784
<b>COMMODITY PRICES</b>											
General Inflation (%) (3)	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Capacity Price (\$/kW-yr)	\$39.32	40.89	40.08	41.11	39.79	39.23	41.94	41.46	41.67	41.92	40.34
REC Price (\$/MWh)	\$2.12	2.13	2.14	2.15	2.15	2.16	2.17	2.17	\$2.18	2.18	2.18
<b>OPERATING REVENUES (\$000)</b>											
Participant Revenue (4)	\$10,656	10,459	10,559	10,609	10,734	10,839	10,835	10,935	11,021	11,105	11,253
Capacity Revenue (5)	\$1,341	1,395	1,367	1,402	1,357	1,338	1,431	1,415	1,422	1,430	1,376
REC Revenue (6)	\$311	312	314	315	316	317	318	319	320	320	321
Other Revenue (7)	\$646	870	870	870	870	870	870	870	870	870	870
Total Operating Revenues	\$12,954	13,036	13,111	13,196	13,278	13,365	13,454	13,539	13,633	13,726	13,821
<b>OPERATING EXPENSES (\$000)(8)</b>											
Greenup Overhead Adder	\$188	193	197	202	206	211	216	221	226	231	237
RTO Ancillaries	\$5	5	5	5	5	6	6	6	6	6	6
Hamilton Labor & Overhead	\$951	973	995	1,018	1,041	1,065	1,090	1,115	1,141	1,167	1,194
AMP Labor & Overhead	\$437	447	458	468	479	490	501	513	524	536	549
Maintenance	\$461	472	483	494	505	517	529	541	553	566	579
Other Plant O&M	\$10	11	11	11	11	12	12	12	12	13	13
Electric	\$89	91	93	95	98	100	102	105	107	109	112
Dispatch	\$150	153	157	160	164	168	172	176	180	184	188
Other/Miscellaneous Expenses	\$31	31	32	33	33	34	35	36	37	37	38
Consultants	\$155	159	162	166	170	174	178	182	186	190	195
PILOT and PP Tax	\$8	8	8	8	9	9	9	9	9	10	10
Insurance	\$62	64	65	67	68	70	72	73	75	77	78
Other Allocated and Direct Expenses	\$544	557	569	583	596	610	624	638	653	668	683
Fees & Licenses	\$292	299	305	312	320	327	334	342	350	358	366
Total Operating Expenses	\$3,383	3,463	3,540	3,622	3,705	3,793	3,880	3,969	4,059	4,152	4,248
<b>NET OPERATING REVENUES (\$000)</b>	<b>\$9,571</b>	<b>9,573</b>	<b>9,571</b>	<b>9,574</b>	<b>9,573</b>	<b>9,572</b>	<b>9,574</b>	<b>9,570</b>	<b>9,574</b>	<b>9,574</b>	<b>9,573</b>
<b>ANNUAL NET DEBT SERVICE (\$000)(9)</b>	<b>\$8,701</b>	<b>8,703</b>	<b>8,701</b>	<b>8,704</b>	<b>8,703</b>	<b>8,701</b>	<b>8,704</b>	<b>8,700</b>	<b>8,703</b>	<b>8,704</b>	<b>8,702</b>
<b>ANNUAL NET DEBT SERVICE COVERAGE (10)</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>
<b>DEPOSITS TO R&amp;C FUND (\$000)(11)</b>	<b>\$870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>
<b>WORKING CAPITAL RESERVE FUND (\$000)(12)</b>											
B-O-Y Fund Balance - AMP Portion	\$250	250	250	250	250	250	250	250	250	250	250
B-O-Y Fund Balance - Hamilton Portion	\$250	250	250	250	250	250	250	250	250	250	250
<b>DEBT SERVICE RESERVE FUND (\$000)(13)</b>											
B-O-Y Fund Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into Debt Reserve Fund	\$0	0	0	0	0	0	0	0	0	0	0
<b>CONSTRUCTION FUND (14)</b>											
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into Construction Fund	\$0	0	0	0	0	0	0	0	0	0	0
<b>MAJOR MAINTENANCE ACCOUNT (15)</b>											
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into Major Maintenance Account	\$0	0	0	0	0	0	0	0	0	0	0
<b>FERC RELICENSING ACCOUNT (16)</b>											
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into FERC Relicensing Account	\$0	0	0	0	0	0	0	0	0	0	0
<b>AVERAGE PROJECT COSTS</b>											
Gross Participant Energy Cost (\$/MWh)(17)	\$83.85	82.88	83.39	83.98	84.53	85.12	85.73	86.31	\$86.95	87.58	88.23
Net Participant Energy Cost (\$/MWh)(18)	\$72.60	71.25	71.94	72.28	73.13	73.84	73.82	74.50	75.08	75.66	76.66

**Exhibit 3**  
**Projected Operating Results**  
**10 Percent Increase Case**

<u>Year Ending December 31,</u>	<u>2038</u>	<u>2039</u>	<u>2040</u>	<u>2041</u>	<u>2042</u>	<u>2043</u>	<u>2044</u>	<u>2045</u>	<u>2046</u>
<b>PERFORMANCE</b>									
Net Capacity (MW)(1)	34	34	34	34	34	34	34	34	34
Net Generation (MWh)(2)	146,784	146,784	146,784	146,784	146,784	146,784	146,784	146,784	146,784
Capacity Factor (%)	49.1%	49.1%	49.0%	49.1%	49.1%	49.1%	49.0%	49.1%	49.1%
Participant Energy Sales (MWh)	146,784	146,784	146,784	146,784	146,784	146,784	146,784	146,784	146,784
<b>COMMODITY PRICES</b>									
General Inflation %(3)	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Capacity Price (\$/kW-yr)	\$42.17	37.24	37.24	37.24	37.24	37.24	37.24	37.24	37.24
REC Price (\$/MWh)	\$2	2.19	2.19	2.18	2.18	2.18	2.17	2.16	2.16
<b>OPERATING REVENUES (\$000)</b>									
Participant Revenue (4)	\$11,286	11,558	11,657	11,763	11,871	11,978	12,092	12,209	2,755
Capacity Revenue (5)	\$1,439	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270
REC Revenue (6)	\$321	321	321	321	320	320	319	318	316
Other Revenue (7)	\$870	870	870	870	870	870	870	870	870
Total Operating Revenues	\$13,916	14,020	14,119	14,224	14,332	14,439	14,551	14,668	5,212
<b>OPERATING EXPENSES (\$000)(8)</b>									
Greenup Overhead Adder	\$242	248	253	259	265	271	277	284	290
RTO Ancillaries	\$6	6	7	7	7	7	7	7	8
Hamilton Labor & Overhead	\$1,221	1,249	1,278	1,307	1,337	1,368	1,400	1,432	1,465
AMP Labor & Overhead	\$561	574	588	601	615	629	643	658	673
Maintenance	\$592	606	620	634	649	664	679	694	710
Other Plant O&M	\$13	14	14	14	15	15	15	16	16
Electric	\$114	117	120	123	125	128	131	134	137
Dispatch	\$192	197	201	206	211	215	220	225	231
Other/Miscellaneous Expenses	\$39	40	41	42	43	44	45	46	47
Consultants	\$199	204	208	213	218	223	228	234	239
PILOT and PP Tax	\$10	10	11	11	11	11	12	12	12
Insurance	\$80	82	84	86	88	90	92	94	96
Other Allocated and Direct Expenses	\$699	715	731	748	765	783	801	819	838
Fees & Licenses	\$375	383	392	401	410	420	430	439	450
Total Operating Expenses	\$4,343	4,445	4,548	4,652	4,759	4,868	4,980	5,094	5,212
<b>NET OPERATING REVENUES (\$000)</b>	\$9,573	9,575	9,571	9,572	9,573	9,571	9,571	9,574	(0)
<b>ANNUAL NET DEBT SERVICE (\$000)(9)</b>	\$8,703	8,704	8,701	8,703	8,703	8,701	8,702	8,703	0
<b>ANNUAL NET DEBT SERVICE COVERAGE (10)</b>	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	N/A
<b>DEPOSITS TO R&amp;C FUND (\$000)(11)</b>	\$870	870	870	870	870	870	870	870	0
<b>WORKING CAPITAL RESERVE FUND (\$000)(12)</b>									
B-O-Y Fund Balance - AMP Portion	\$250	250	250	250	250	250	250	250	250
B-O-Y Fund Balance - Hamilton Portion	\$250	250	250	250	250	250	250	250	250
<b>DEBT SERVICE RESERVE FUND (\$000)(13)</b>									
B-O-Y Fund Balance	\$0	0	0	0	0	0	0	0	0
Payments into Debt Reserve Fund	\$0	0	0	0	0	0	0	0	0
<b>CONSTRUCTION FUND (14)</b>									
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0
Payments into Construction Fund	\$0	0	0	0	0	0	0	0	0
<b>MAJOR MAINTENANCE ACCOUNT (15)</b>									
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0
Payments into Major Maintenance Account	\$0	0	0	0	0	0	0	0	0
<b>FERC RELICENSING ACCOUNT (16)</b>									
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0
Payments into FERC Relicensing Account	\$0	0	0	0	0	0	0	0	0
<b>AVERAGE PROJECT COSTS</b>									
Gross Participant Energy Cost (\$/MWh)(17)	88.88	89.58	90.26	90.98	91.71	92.44	93.21	94.00	29.58
Net Participant Energy Cost (\$/MWh)(18)	\$76.89	78.74	79.42	80.14	80.87	81.60	82.38	83.18	18.77

**Exhibit 4**  
**Projected Operating Results**  
**Zero REC Price Case**

<u>Year Ending December 31,</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
<b>PERFORMANCE</b>											
Net Capacity (MW)(1)	34	34	34	34	34	34	34	34	34	34	34
Net Generation (MWh)(2)	87,019	133,475	134,718	135,706	125,901	133,440	133,440	133,440	133,440	133,440	133,440
Capacity Factor (%)	45.8%	44.7%	45.1%	45.4%	42.0%	44.6%	44.6%	44.6%	44.5%	44.6%	44.6%
Participant Energy Sales (MWh)	87,019	133,475	134,718	135,706	125,901	133,440	133,440	133,440	133,440	133,440	133,440
<b>COMMODITY PRICES</b>											
General Inflation %(3)	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Capacity Price (\$/kW-yr)	\$31.70	31.64	37.81	44.82	49.17	34.41	36.12	38.26	37.37	37.70	40.60
REC Price (\$/MWh)	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>OPERATING REVENUES (\$000)</b>											
Participant Revenue (4)	\$5,098	9,106	9,840	10,011	10,083	10,646	10,667	10,663	10,764	10,933	10,835
Capacity Revenue (5)	\$685	1,079	1,290	1,529	1,678	1,174	1,232	1,305	1,275	1,286	1,385
REC Revenue (6)	\$0	0	0	0	0	0	0	0	0	0	0
Other Revenue (7)	\$0	171	412	503	539	555	543	543	543	543	643
Total Operating Revenues	\$5,783	10,357	11,542	12,043	12,300	12,375	12,442	12,511	12,582	12,762	12,863
<b>OPERATING EXPENSES (\$000)(8)</b>											
Greenup Overhead Adder	\$87	137	141	145	138	150	153	156	160	164	168
RTO Ancillaries	\$1	4	4	4	4	4	4	4	5	5	5
Hamilton Labor & Overhead	\$423	748	768	789	811	830	849	868	888	909	930
AMP Labor & Overhead	\$192	341	351	362	373	381	390	399	408	418	427
Maintenance	\$203	360	371	382	393	402	412	421	431	441	451
Other Plant O&M	\$5	9	9	9	9	9	9	10	10	10	10
Electric	\$43	70	72	74	76	78	80	81	83	85	87
Dispatch	\$75	121	124	128	128	131	134	137	140	143	146
Other/Miscellaneous Expenses	\$15	24	25	25	26	27	27	28	29	29	30
Consultants	\$78	129	130	131	132	135	138	142	145	148	152
PILOT and PP Tax	\$4	7	7	7	7	7	7	7	7	8	8
Insurance	\$31	50	51	52	53	54	56	57	58	60	61
Other Allocated and Direct Expenses	\$246	444	456	457	464	475	486	497	508	520	532
Fees & Licenses	\$128	228	235	242	249	255	260	266	273	279	285
Total Operating Expenses	\$1,531	2,672	2,744	2,807	2,863	2,938	3,005	3,073	3,145	3,219	3,292
<b>NET OPERATING REVENUES (\$000)</b>	\$4,252	7,685	8,798	9,236	9,437	9,437	9,437	9,438	9,437	9,543	9,571
<b>ANNUAL NET DEBT SERVICE (\$000)(9)</b>	\$3,639	6,367	7,292	7,674	7,672	7,674	7,672	7,676	7,674	8,673	8,701
<b>ANNUAL NET DEBT SERVICE COVERAGE (10)</b>	1.10	1.21	1.21	1.20	1.23	1.23	1.23	1.23	1.23	1.10	1.10
<b>DEPOSITS TO R&amp;C FUND (\$000)(11)</b>	\$614	637	729	767	767	767	767	768	767	867	870
<b>WORKING CAPITAL RESERVE FUND (\$000)(12)</b>											
B-O-Y Fund Balance - AMP Portion	\$250	250	250	250	250	250	250	250	250	250	250
B-O-Y Fund Balance - Hamilton Portion	\$250	250	250	250	250	250	250	250	250	250	250
<b>DEBT SERVICE RESERVE FUND (\$000)(13)</b>											
B-O-Y Fund Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into Debt Reserve Fund	\$0	0	0	0	0	0	0	0	0	0	0
<b>CONSTRUCTION FUND (14)</b>											
B-O-Y Balance	\$3,815	2,597	1,040	0	0	0	0	0	0	0	0
Payments into Construction Fund	\$0	0	0	0	0	0	0	0	0	0	0
<b>MAJOR MAINTENANCE ACCOUNT (15)</b>											
B-O-Y Balance	\$0	0	681	1,458	2,253	2,037	1,684	1,165	1,179	1,503	221
Payments into Major Maintenance Account	\$0	681	777	794	999	996	998	995	996	4	0
<b>FERC RELICENSING ACCOUNT (16)</b>											
B-O-Y Balance	\$0	193	417	644	872	1,084	1,308	1,046	785	523	262
Payments into FERC Relicensing Account	\$193	224	227	228	212	224	224	224	224	224	224
<b>AVERAGE PROJECT COSTS</b>											
Gross Participant Energy Cost (\$/MWh)(17)	\$66.46	76.31	82.62	85.04	93.41	88.58	89.17	89.69	90.22	91.57	91.58
Net Participant Energy Cost (\$/MWh)(18)	\$58.59	68.22	73.04	73.77	80.09	79.78	79.94	79.91	80.67	81.93	81.20

**Exhibit 4**  
**Projected Operating Results**  
**Zero REC Price Case**

<u>Year Ending December 31,</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>	<u>2035</u>	<u>2036</u>	<u>2037</u>
<b>PERFORMANCE</b>											
Net Capacity (MW)(1)	34	34	34	34	34	34	34	34	34	34	34
Net Generation (MWh)(2)	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440
Capacity Factor (%)	44.6%	44.5%	44.6%	44.6%	44.6%	44.5%	44.6%	44.6%	44.6%	44.5%	44.6%
Participant Energy Sales (MWh)	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440
<b>COMMODITY PRICES</b>											
General Inflation (%) (3)	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Capacity Price (\$/kW-yr)	\$39.32	40.89	40.08	41.11	39.79	39.23	41.94	41.46	41.67	41.92	40.34
REC Price (\$/MWh)	\$0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$0.00	0.00	0.00
<b>OPERATING REVENUES (\$000)</b>											
Participant Revenue (4)	\$10,950	10,753	10,855	10,905	11,032	11,137	11,133	11,234	11,321	11,404	11,552
Capacity Revenue (5)	\$1,341	1,395	1,367	1,402	1,357	1,338	1,431	1,415	1,422	1,430	1,376
REC Revenue (6)	\$0	0	0	0	0	0	0	0	0	0	0
Other Revenue (7)	\$646	870	870	870	870	870	870	870	870	870	870
Total Operating Revenues	\$12,937	13,018	13,093	13,177	13,260	13,346	13,434	13,519	13,613	13,705	13,799
<b>OPERATING EXPENSES (\$000)(8)</b>											
Greenup Overhead Adder	\$171	175	179	183	188	192	196	201	206	210	215
RTO Ancillaries	\$5	5	5	5	5	6	6	6	6	6	6
Hamilton Labor & Overhead	\$951	973	995	1,018	1,041	1,065	1,090	1,115	1,141	1,167	1,194
AMP Labor & Overhead	\$437	447	458	468	479	490	501	513	524	536	549
Maintenance	\$461	472	483	494	505	517	529	541	553	566	579
Other Plant O&M	\$10	11	11	11	11	12	12	12	12	13	13
Electric	\$89	91	93	95	98	100	102	105	107	109	112
Dispatch	\$150	153	157	160	164	168	172	176	180	184	188
Other/Miscellaneous Expenses	\$31	31	32	33	33	34	35	36	37	37	38
Consultants	\$155	159	162	166	170	174	178	182	186	190	195
PILOT and PP Tax	\$8	8	8	8	9	9	9	9	9	10	10
Insurance	\$62	64	65	67	68	70	72	73	75	77	78
Other Allocated and Direct Expenses	\$544	557	569	583	596	610	624	638	653	668	683
Fees & Licenses	\$292	299	305	312	320	327	334	342	350	358	366
Total Operating Expenses	\$3,366	3,445	3,522	3,603	3,687	3,774	3,860	3,949	4,039	4,131	4,226
<b>NET OPERATING REVENUES (\$000)</b>	<b>\$9,571</b>	<b>9,573</b>	<b>9,571</b>	<b>9,574</b>	<b>9,573</b>	<b>9,572</b>	<b>9,574</b>	<b>9,570</b>	<b>9,574</b>	<b>9,574</b>	<b>9,573</b>
<b>ANNUAL NET DEBT SERVICE (\$000)(9)</b>	<b>\$8,701</b>	<b>8,703</b>	<b>8,701</b>	<b>8,704</b>	<b>8,703</b>	<b>8,701</b>	<b>8,704</b>	<b>8,700</b>	<b>8,703</b>	<b>8,704</b>	<b>8,702</b>
<b>ANNUAL NET DEBT SERVICE COVERAGE (10)</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>	<b>1.10</b>
<b>DEPOSITS TO R&amp;C FUND (\$000)(11)</b>	<b>\$870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>	<b>870</b>
<b>WORKING CAPITAL RESERVE FUND (\$000)(12)</b>											
B-O-Y Fund Balance - AMP Portion	\$250	250	250	250	250	250	250	250	250	250	250
B-O-Y Fund Balance - Hamilton Portion	\$250	250	250	250	250	250	250	250	250	250	250
<b>DEBT SERVICE RESERVE FUND (\$000)(13)</b>											
B-O-Y Fund Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into Debt Reserve Fund	\$0	0	0	0	0	0	0	0	0	0	0
<b>CONSTRUCTION FUND (14)</b>											
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into Construction Fund	\$0	0	0	0	0	0	0	0	0	0	0
<b>MAJOR MAINTENANCE ACCOUNT (15)</b>											
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into Major Maintenance Account	\$0	0	0	0	0	0	0	0	0	0	0
<b>FERC RELICENSING ACCOUNT (16)</b>											
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0	0	0
Payments into FERC Relicensing Account	\$0	0	0	0	0	0	0	0	0	0	0
<b>AVERAGE PROJECT COSTS</b>											
Gross Participant Energy Cost (\$/MWh)(17)	\$92.11	91.04	91.60	92.23	92.85	93.49	94.15	94.79	\$95.49	96.18	96.89
Net Participant Energy Cost (\$/MWh)(18)	\$82.06	80.58	81.35	81.72	82.67	83.46	83.43	84.19	84.84	85.46	86.57

**Exhibit 4**  
**Projected Operating Results**  
**Zero REC Price Case**

<u>Year Ending December 31,</u>	<u>2038</u>	<u>2039</u>	<u>2040</u>	<u>2041</u>	<u>2042</u>	<u>2043</u>	<u>2044</u>	<u>2045</u>	<u>2046</u>
<b>PERFORMANCE</b>									
Net Capacity (MW)(1)	34	34	34	34	34	34	34	34	34
Net Generation (MWh)(2)	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440
Capacity Factor (%)	44.6%	44.6%	44.5%	44.6%	44.6%	44.6%	44.5%	44.6%	44.6%
Participant Energy Sales (MWh)	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440	133,440
<b>COMMODITY PRICES</b>									
General Inflation (%) (3)	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Capacity Price (\$/kW-yr)	\$42.17	37.24	37.24	37.24	37.24	37.24	37.24	37.24	37.24
REC Price (\$/MWh)	\$0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>OPERATING REVENUES (\$000)</b>									
Participant Revenue (4)	\$11,585	11,856	11,955	12,061	12,167	12,274	12,386	12,501	3,045
Capacity Revenue (5)	\$1,439	1,270	1,270	1,270	1,270	1,270	1,270	1,270	1,270
REC Revenue (6)	\$0	0	0	0	0	0	0	0	0
Other Revenue (7)	\$870	870	870	870	870	870	870	870	870
Total Operating Revenues	\$13,894	13,997	14,096	14,201	14,308	14,415	14,526	14,642	5,186
<b>OPERATING EXPENSES (\$000)(8)</b>									
Greenup Overhead Adder	\$220	225	230	236	241	247	252	258	264
RTO Ancillaries	\$6	6	7	7	7	7	7	7	8
Hamilton Labor & Overhead	\$1,221	1,249	1,278	1,307	1,337	1,368	1,400	1,432	1,465
AMP Labor & Overhead	\$561	574	588	601	615	629	643	658	673
Maintenance	\$592	606	620	634	649	664	679	694	710
Other Plant O&M	\$13	14	14	14	15	15	15	16	16
Electric	\$114	117	120	123	125	128	131	134	137
Dispatch	\$192	197	201	206	211	215	220	225	231
Other/Miscellaneous Expenses	\$39	40	41	42	43	44	45	46	47
Consultants	\$199	204	208	213	218	223	228	234	239
PILOT and PP Tax	\$10	10	11	11	11	11	12	12	12
Insurance	\$80	82	84	86	88	90	92	94	96
Other Allocated and Direct Expenses	\$699	715	731	748	765	783	801	819	838
Fees & Licenses	\$375	383	392	401	410	420	430	439	450
Total Operating Expenses	\$4,321	4,422	4,525	4,629	4,735	4,844	4,955	5,068	5,186
<b>NET OPERATING REVENUES (\$000)</b>	\$9,573	9,575	9,571	9,572	9,573	9,571	9,571	9,574	(0)
<b>ANNUAL NET DEBT SERVICE (\$000)(9)</b>	\$8,703	8,704	8,701	8,703	8,703	8,701	8,702	8,703	0
<b>ANNUAL NET DEBT SERVICE COVERAGE (10)</b>	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	N/A
<b>DEPOSITS TO R&amp;C FUND (\$000)(11)</b>	\$870	870	870	870	870	870	870	870	0
<b>WORKING CAPITAL RESERVE FUND (\$000)(12)</b>									
B-O-Y Fund Balance - AMP Portion	\$250	250	250	250	250	250	250	250	250
B-O-Y Fund Balance - Hamilton Portion	\$250	250	250	250	250	250	250	250	250
<b>DEBT SERVICE RESERVE FUND (\$000)(13)</b>									
B-O-Y Fund Balance	\$0	0	0	0	0	0	0	0	0
Payments into Debt Reserve Fund	\$0	0	0	0	0	0	0	0	0
<b>CONSTRUCTION FUND (14)</b>									
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0
Payments into Construction Fund	\$0	0	0	0	0	0	0	0	0
<b>MAJOR MAINTENANCE ACCOUNT (15)</b>									
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0
Payments into Major Maintenance Account	\$0	0	0	0	0	0	0	0	0
<b>FERC RELICENSING ACCOUNT (16)</b>									
B-O-Y Balance	\$0	0	0	0	0	0	0	0	0
Payments into FERC Relicensing Account	\$0	0	0	0	0	0	0	0	0
<b>AVERAGE PROJECT COSTS</b>									
Gross Participant Energy Cost (\$/MWh)(17)	97.60	98.37	99.11	99.91	100.70	101.50	102.34	103.20	32.34
Net Participant Energy Cost (\$/MWh)(18)	\$86.82	88.85	89.59	90.39	91.18	91.98	92.82	93.68	22.82

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## Appendix B

# LEIDOS CONDITION ASSESSMENT

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Final Revised Report

# Greenup Hydroelectric Plant Condition Assessment and Major Maintenance Review

American Municipal Power, Inc.

February 2016





This report has been prepared for the use of the client for the specific purposes identified in the report. The conclusions, observations and recommendations contained herein attributed to Leidos constitute the opinions of Leidos. To the extent that statements, information and opinions provided by the client or others have been used in the preparation of this report, Leidos has relied upon the same to be accurate, and for which no assurances are intended and no representations or warranties are made. Leidos makes no certification and gives no assurances except as explicitly set forth in this report.

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# Greenup Hydroelectric Plant Condition Assessment and Major Maintenance Review American Municipal Power, Inc.

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## Section 1

# INTRODUCTION AND BACKGROUND

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## 1.1 Objectives and Scope of Work

American Municipal Power, Inc. (“AMP”) contracted with Leidos Engineering, LLC (“Leidos”) to conduct a condition assessment of the Greenup Hydroelectric Power Plant (“GHPP”), review the ongoing GHPP capital improvement program (“CIP”) that was documented in Leidos’ (previously Benham and SAIC) 2009 and 2012 reports, compare the CIP to the program described in a report prepared by Kleinschmidt (*Capital Project Review and Assessment for Greenup Hydroelectric Facility*, Kleinschmidt, May 2014), reconcile differences in recommended capital items and provide recommendations. It is expected that the recommendations will support AMP’s plans to finance the purchase of approximately 48 percent of the subject facility in 2016 after the new Meldahl Hydropower facility is commissioned. An initial report was prepared on April 15, 2015 based on information supplied by AMP and the City of Hamilton (“COH”). After the COH reviewed the report, a meeting was requested and held at the COH offices on August 14, 2015. Subsequent to that meeting, COH provided additional information and additional investigations were conducted relative to GHPP’s performance over the last few years and the planned 10-Year Capital Improvement Program.

The project evaluations included review of data and reports listed below for GHPP as supplied by AMP, including the Kleinschmidt report and other information provided by AMP and data collected during the site visit.

- Kleinschmidt Report
- GHPP Operating Reports
- GHPP Weekly Reports
- GHPP Maintenance Schedule Summary and Planned 10-year Capital Budget
- Electric Generation Availability Data System (“EGADS”) data for the period 2011 through 2015

## 1.2 General Plant Description

The Greenup Hydroelectric Plant is located on the Ohio River between Grays Branch, Kentucky, and Franklin Furnace, Ohio. It is integral to the U.S. Army Corps of Engineers’ Greenup Locks and Dam. The plant was constructed during 1981-1982 and commenced operations in December 1982. The builder and original licensee was the City of Vanceburg, Kentucky. The license was passed to the City of Hamilton, Ohio (Hamilton), in May 1988. The plant is licensed by the Federal Energy Regulatory Commission (“FERC”) to Hamilton as a run of the river plant Licensed

Project P-2614 and referenced in the national dam registry as NATDAM No. KY03031.

The plant consists of three 24.3 MW Neyrpic bulb turbines mounted in a prefabricated modular powerhouse built in France by Chantiers de L'Atlantique, the shipbuilding Division of Alsthom-Atlantique. Generator transformers, high voltage switchgear, controls and auxiliary systems are all located within the powerhouse modular structure. The total rated output of the plant is 70.2 MW.

The synchronous generators operate at 90 RPM. This speed is regulated by variable pitch turbine blades controlled by an electronic speed governor. Water flow through the turbine is controlled by hydraulic lift gates in the turbine tailrace. The turbines are not equipped with wicket gates or other alternative means of flow control.

Electrical power is generated at 4160 Volts, three phase, and then stepped up to 138 kV by local transformers, one per generator. The outputs of the three generators are combined at a 138 kV substation located inside the powerhouse. The power is then transmitted to an American Electric Power ("AEP") utility connection by means of a 15-mile overhead transmission line.

Auxiliary support systems are all contained within the powerhouse. The auxiliaries include HVAC systems, air compressors, lubrication systems, hydraulic systems, sump pumps, and other support systems. Electrical power for the auxiliary systems is derived from one of five available sources: an auxiliary transformer off each generator (3), an on-site emergency diesel generator, or a local utility connection. Under normal conditions, the auxiliary power is derived from one of the generators.

A relay-based control system is used for operating the generators. A 125 VDC battery system is used to provide continuous control power. The batteries are of the nickel-cadmium type. The plant is operated locally with no provisions for remote operation. The plant is staffed 24 hours a day by four shifts of operators, two operators per shift with one backup operator on call. The plant runs all year but is shut down for abnormal conditions such as during periods of high and low water.

The civil works consist of a powerhouse approximately 190 feet long by 145 feet wide.

The powerhouse structure is prefabricated steel construction that was floated into place on a concrete substructure and then stabilized for long-term service with concrete. The powerhouse sits adjacent the U.S. Army Greenup Dam on the right (east) side of the river and is connected by a cellular structure. The powerhouse and overhead bridge are partially protected from barge traffic by upstream cellular protection barriers. There are no floodgates or other works associated with the plant. All water control operations are the responsibility of the U.S Army Corps of Engineers ("USACE").

The units are fitted with one complete set of stop logs that are mounted in slots above the intakes. One log is stored in each unit and the three combined make a unit capable of dewatering a single unit. They are used in combination with the downstream hydraulic gate for dewatered access and maintenance. The unit intakes are fitted with

trash racks, a trash sluicing system and a trashrake system. The trash sluice area acts as a high water overflow when high headwater elevations occur.

Adjacent to the plant is a warehouse structure recently added for storage and maintenance. A recreational area for fishing is provided and maintained by the City and plant at the downstream discharge area of the plant. The recreational area includes a fishing berm with a paved walkway, railing and access stairs. The downstream discharge area banks are protected from erosion by riprap along the right bank.

The GHPP is operated locally with no provisions for remote operation. Pursuant to FERC license Article 47, Hamilton and the USACE entered into a Memorandum of Agreement (“MOA”) specifying the details of an operating plan for the GHPP. The MOA requires a minimum of one full time staff member capable of operating equipment in coordination with directed USACE operations. During the normal workweek, the powerhouse is manned by the superintendent, one maintenance supervisor, and an administrative assistant. Each shift includes 2 additional operators, and there are currently 9 operators on staff. Additional maintenance staff is brought on site as necessary during outages. This staff is expected to be augmented with one or two additional project management staff during major maintenance project work.

### **1.3 Recent Operating History**

Table 1-1 summarizes the GHPP annual power production and annual maintenance downtime per unit for the period 1997 through 2015. Maintenance downtime hours include both forced outage hours and scheduled maintenance hours for each unit. These maintenance downtime hours do not include downtime hours caused by high water or low water conditions on the Ohio River. As shown in Table 1-1, the average maintenance downtime for GHPP during the period 1997 through 2007 was 5.4%, while the average maintenance downtime during the period 2008 through 2015 was 14.6%.

Annual power production during the period 1997 through 2007 averaged 274,112 MWH, while average production during the period 2008 through 2015 was 261,858 MWH, reflecting a decline of approximately 4.7 %.

**Table 1-1**  
**Recent Operating History and Maintenance Downtime Hours for GHPP**

Year	Unit 1 Hours	Unit 2 Hours	Unit 3 Hours	Average Plant Maintenance Downtime %	Plant Historical Production (MWH)
1997	242.1	103.2	323.9	2.55%	296,331
1998	420.3	85.5	949.4	5.54%	235,010
1999	820.3	404.2	398.4	6.18%	244,963
2000	34.6	71.7	547.7	2.49%	352,451
2001	1,415.6	523.0	0.3	7.38%	299,836
2002	246.4	241.9	1,443.7	7.35%	284,646
2003	314.7	610.3	3.3	3.53%	234,975
2004	720.2	2.4	8.34	2.78%	214,334
2005	197.1	98.2	68.8	1.39%	294,787
2006	207.5	621.1	3.0	3.16%	335,283
2007	269.4	2,678.0	1,608.6	17.34%	222,613
<b>Average for 1997-2007</b>	<b>444</b>	<b>494</b>	<b>486</b>	<b>5.4%</b>	<b>274,112</b>
2008	168.3	285.3	290.9	2.83%	247,304
2009	1,682.7	406.7	64.8	8.20%	311,711
2010	163.3	769.5	2,002.9	11.17%	276,415
2011	2,367.8	14.4	640.3	11.50%	239,269
2012	3,104.3	689.6	214.9	15.21%	263,602
2013	284.0	611.4	796.5	6.44%	322,469
2014	5,906.0	2,559.0	1,478.0	37.83%	205,792 <sup>(1)</sup>
2015	2,128.0	1,699.0	2,386.0	23.64%	228,298 <sup>(1)</sup>
<b>Average for 2008-2015</b>	<b>1,975</b>	<b>879</b>	<b>984</b>	<b>14.6%</b>	<b>261,858</b>

(1) Major maintenance outages occurred during 2014 and 2015, which affected production during those years.

Figure 1.1 shows the relationship between plant energy production and unit downtime hours due to maintenance, for the period of 1997 to 2015. The trend for annual power production indicates a decline while annual maintenance downtime hours have increased over the same period. Figure 1.2 shows downtime hours for each unit due to maintenance for the period of 1997 to 2015. From 2007 to 2015, the data shows significant volatility of unit downtime hours associated with maintenance activities. Based on the review of the EGADS outage data included in Appendix A and the trends illustrated in Figure 1.1, forced outages and maintenance outages have significantly increased over the past seven years compared to the period from 1997-2007 and these outages are affecting the power production performance of GHPP.

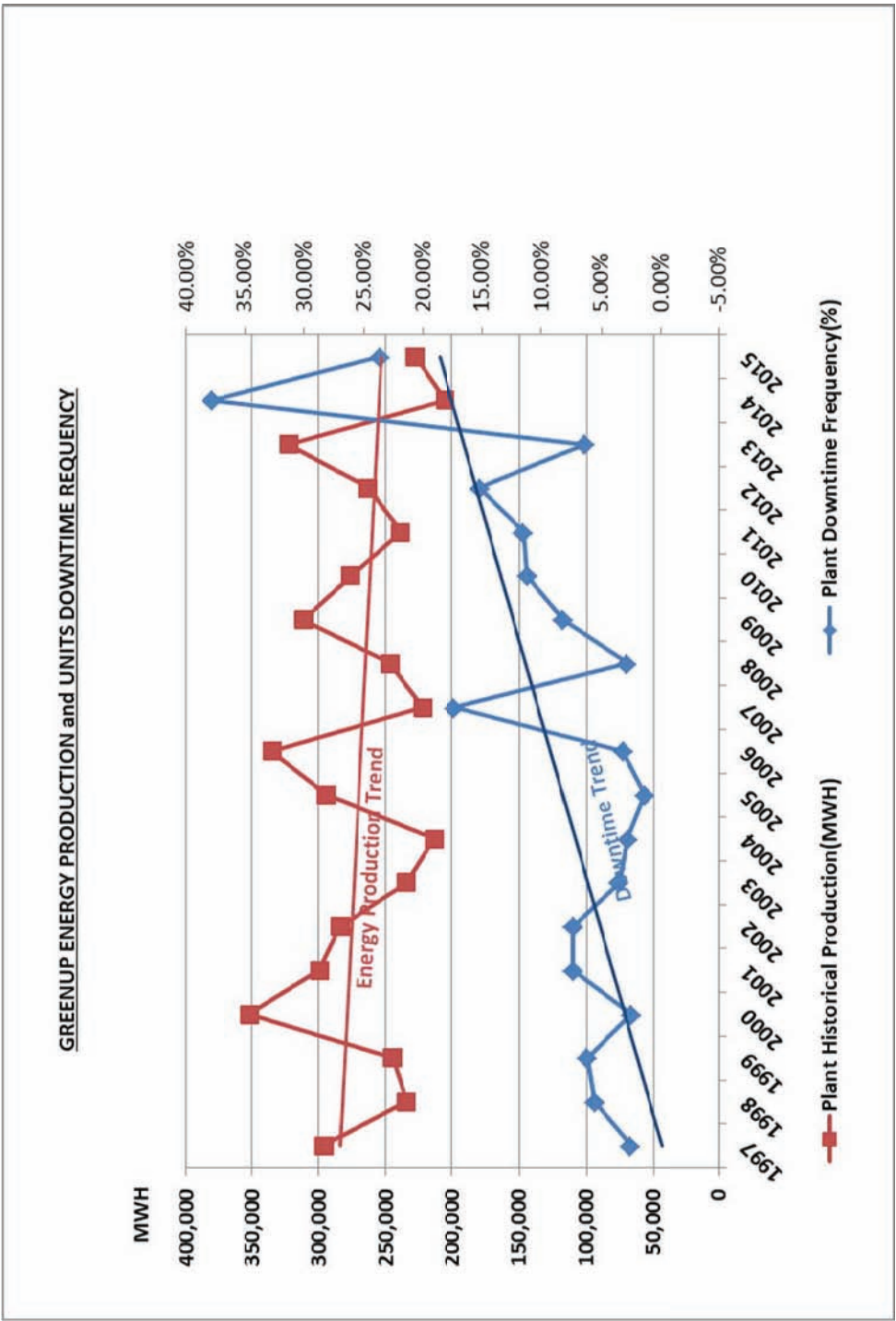


Figure 1.1: Greenup Historical Energy Production and Units Downtime Frequency



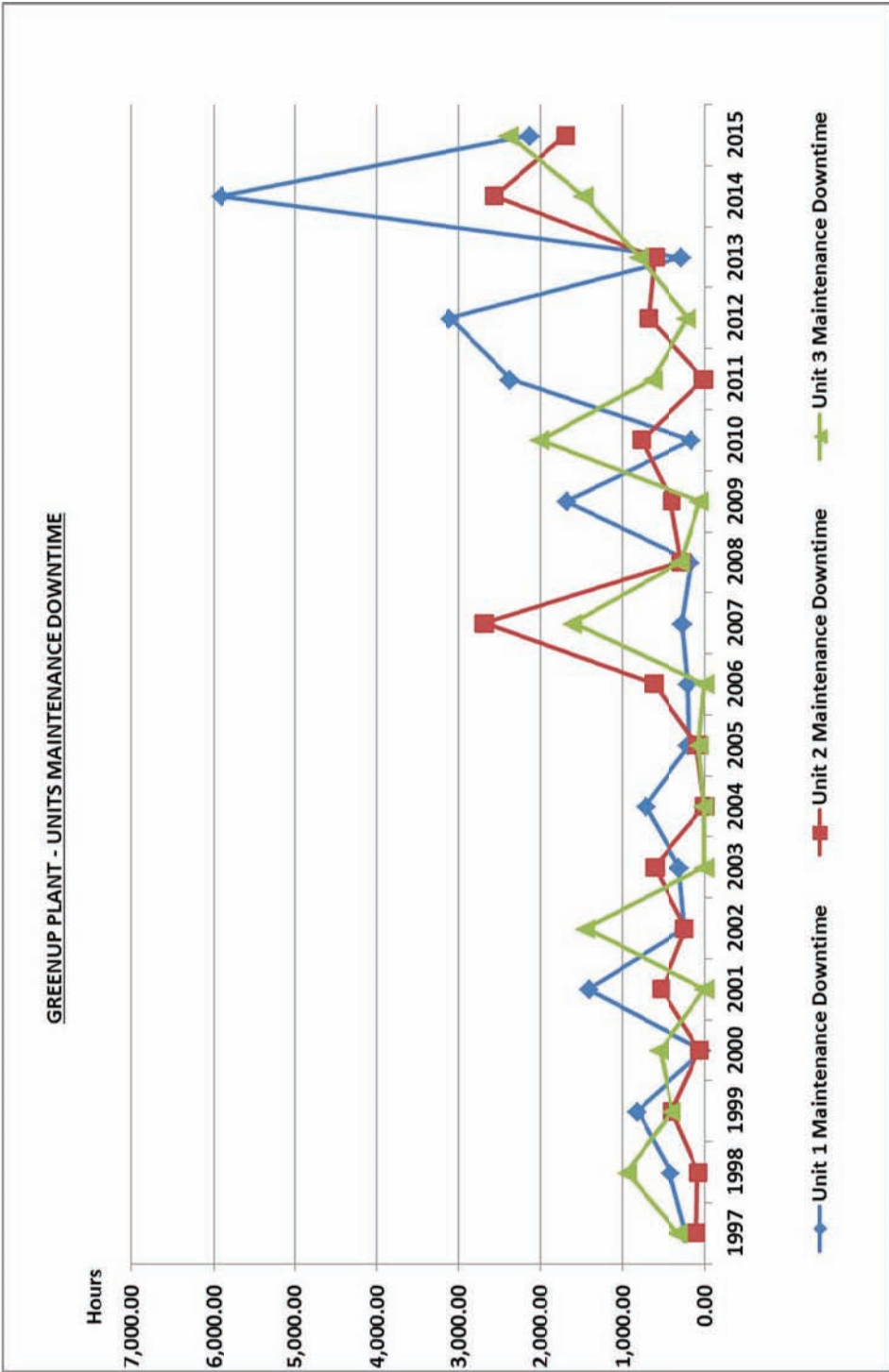


Figure 1.2: Greenup Plant Maintenance Downtime

## Section 2

# SITE INVESTIGATION AND OBSERVATION

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## 2.1 Plant Condition

Leidos met with AMP and COH personnel on February 20, 2015. Following the meeting, a site tour and inspection of the Unit #1 turbine runner area was performed since Unit #1 was down for maintenance and was dewatered allowing inspection of the turbine runner area. The GHPP is clean and organized but a number of components are near or exceed their expected service life and as a result require replacement or maintenance, which is not unexpected due to operations of over 32 years.

## 2.2 Site Visit Observations

The following are observations from the site tour:

- **Intake Openings** – The cables around the intake openings are sagging, posing operational and safety concerns. In accordance with the COHs 10-year capital budget allocation, cover hatches are planned for installation in 2016.
- **Discharge Ring and Runner** – The discharge ring and turbine blade steel components were in good condition. In one of the blades, there was an oil leak through the trunnion seal. This and the remaining seals should be replaced to avoid oil leaking into the river. Due to the aging of the units, replacement of the seals for the other two turbines is included in the GHPP 10-year capital budget for implementation in 2017 (Unit 3) and 2020 (Unit 2). The remaining parts of the bulb steel are rusted and eventually should be sand blasted and recoated.
- **Generator Cooling Pipes** - The generator cooling pipes outside the bulb are rusted and should be cleaned and recoated. The pipes should be inspected and analyzed to determine wall thickness and deterioration to prevent water leakage into the generator air cooling system.
- **Intake Screens** – COH staff reports that annual inspection of the intake screens are conducted and screens that are damaged have been replaced (i.e., approximately 33 percent of the screens have been replaced in the last five years). It is expected that redesign and replacement of the screens will continue as part of the planned acquisition of a new trashrake. In accordance with the COH's 10-year capital budget, redesign, fabrication, and installation of a new trashrake is scheduled for 2018.
- **Generators** - New resistance thermal detectors (“RTDs”) have been installed for the generator cold and hot air side. Some repair work was performed by Mohler on each generator rotor in March 2014. Insulation was migrating out,

requiring tapping into place, adding Nomex shims where necessary, and then adding ties and epoxy/curing to hold them in-place. Oil leakage into the generator stators has been reported and periodic cleaning/inspection should be performed to monitor the situation.

- **Generator Voltage Regulator and Protection** – The unit generators utilize a brushless excitation system. Basler DECS-400 voltage regulators and other protection were upgraded in 2008, 2009, and 2010.
- **Generator Step-up Transformers** – GSU #2 and GSU #3 bushing oil leaks were repaired in 2015 and are part of an ongoing bushing seal replacement schedule. Spare bushings should be purchased for the GSUs.
- **DC Equipment** – DC batteries and battery chargers are in the process of being replaced. Replacements are on-site and will be replaced during 2016. It was reported that a hydrogen gas monitor/alarming system was installed in the battery room.
- **Electrical Equipment Labels** – Arc flash hazard labels are not installed, but an arc flash study was completed in early 2015 and we understand the recommendations are being implemented. Arc flash hazard analyses are used to determine flash protection boundaries and incident energy levels at designated working distances from electrical equipment. Available short-circuit current and protective coordination details are required to perform the arc flash hazard analysis. Results from the analysis will be important to GHPP safety, as it should determine the proper personal protection equipment to be worn when working on GHPP electrical equipment or if there is no safe working distance when certain equipment and systems are energized. See Appendix B for photographs of the switchgear.
- **Switchgear** – Equipment exteriors appear as we would expect for the Plant's age. Review of maintenance logs suggests ongoing maintenance of circuit breakers, and use of parts from one unit to restore operation in another. We understand generator 4160 V circuit breakers were replaced in 2009; however, complete replacement of 480 V and 4160 V switchgear systems should be further evaluated.
- **Station Service Transformers** – The 4160 V/480 V transformers are dry-type, open-ventilated, and particular attention to the arc flash hazard should be given in this area.
- **Emergency Diesel Generator** – Diesel generator breaker was sent off-site for repair during 2015 and has been returned to service.
- **138 kV Switchgear and Underground Transmission Line** – High side of each GSU connects to an isolation contactor. The utility side of each contactor is bussed together, then connected to a 138 kV SF6 gas-filled circuit breaker.

SF6 leaks at circuit breaker seals have been reported; approximately 2,000 feet underground from powerhouse to switchyard on-site. The Plant is equipped with a spare spool of HV cable, approximately 1,000 feet in length.

- **Controls** – Plant controls are antiquated (including turbine governors) and should be updated to a modern distributed control system. Uninterruptible power supply, control switches, miscellaneous equipment controls (such as gates), and air conditioning systems should be evaluated when adding the new control system. These improvements are included in the COH's 10-year capital budget at an estimated cost of approximately \$4 million (controls and governor upgrades) for the combined three units (see Table 3-3).
- **Dewatering Piping** – Based upon a report prepared by MWH Americas, the dewatering piping at the GHPP needs replacement as soon as possible. Leidos has learned that the COH will replace all of the dewatering piping on all three units and has agreed to install a redundant temporary dewatering system in the event that the replacement is not complete by the Meldahl / Greenup closing date.

Recommendations included in the five-year expenditure table of the Kleinschmidt Report are incorporated in the COH's 10-year capital budget allocation and in Table 3-3.

Based on our review of information received, site observations, past reports, and planned major maintenance work, the GHPP mechanical and electrical systems appear to be in comparable condition to that observed in 2008 (i.e., as reported in Benham's 2008 report), while considering components of some of the systems are approaching the end of their expected useful life.

## **2.3 Interconnection Transmission Line Condition**

The GHPP is interconnected to the electric grid through an existing 14.44-mile 138 KV transmission line, consisting of wood pole structures except for two steel river crossing structures. AMP reports that the line was inspected in 2014 and minor repair issues were identified and repaired. AMP also reports that the COH replaced a number of structures about two years ago and with those replacements, the structures are in reasonable condition, considering their age. During January 2015, the GHPP reported that a helicopter survey of the line was conducted. During that survey, three separate pole insulator strings were noted as broken and damaged. These insulators were subsequently repaired by the COH line crews. In addition, the crew replaced another insulator string that was identified during the repair work. Based on this information, the transmission line appears to be in reasonable condition; however, due to the age of the line, regular inspection should be conducted in the future. The 10-year major maintenance budget summarized in Table 3-3 provides budget allowances for future periodic repairs.



## Section 3

# MAJOR MAINTENANCE ACTIVITIES COMPLETED AND PLANNED

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### 3.1 Major Maintenance Completed or Currently Planned

Historical maintenance expenditures for GHPP were provided by COH and are listed in Table 3-1, including estimated expenditures for 2015. Table 3-2 summarizes recent major maintenance work completed by GHPP during the last three years along with current planned major maintenance work planned for completion during 2015. COH provided a summary description and timing for regularly scheduled maintenance for major equipment and systems, which is included in Appendix D.

**Table 3-1**  
**Historical Annual Greenup Maintenance Expenditures**

Year	Expenditure (\$)
2006	183,903
2007	560,100
2008	577,680
2009	552,024
2010	323,971
2011	603,209
2012	375,758
2013	302,832
2014	1,709,151
2015 <sup>(1)</sup>	1,389,990 <sup>(1)</sup>

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(1) 2015 maintenance expenditures are estimated.

**MAJOR MAINTENANCE ACTIVITIES  
COMPLETED AND PLANNED**

**Table 3-2  
Greenup Hydro Powerhouse Repairs/Improvements**

<b>Project</b>	<b>Cost</b>	<b>Date</b>	<b>Remarks</b>
Well Pump Motor Controllers	\$70,000.00	Spring 2013	Work completed
15 Upper Screens	\$134,250.00	October 2013	Work completed
Elevator Controls Upgrade	\$25,149.00	January 2014	Work completed
# 2 Air Compressor	\$2,500.00	January 2014	Work completed Compressor rebuild
Well Pump #2 Replacement	\$4,450.00	January 2014	Work completed
2 Lower Screen(s) Unit # 3	\$119,750.00	February 2014	Work complete March 2014
Unit # 2 Air / Oil Seal	\$51,000.00	March 2014	Work complete March 2014
Rotor Insulator Repairs	\$221,171.00	March 2014	Work complete March 2014
Stoplogs Modifications	\$875,000.00	June 2014	Work completed June 2014
2 Dewatering Pump repairs	\$20,000.00	December 2014	Work completed December 2014
Unit #1 & #2 Transformer Leaks	\$24,990.00	October 2014	Work completed. Unit #1 High & Low side repairs, Unit #2 High Side repairs
Unit #2 & #3 Bottom & Top Screen replacements	est. \$350,000	January 2015	Work completed Replaced 6 bottom screens & 9 top screens
Unit #2 & #3 Transformer Leaks	\$35,649.00	Spring 2015	Complete Low side repairs #2 & Both Hi & Low side repairs on unit #3
Unit #1 Carbon Seal Repair	est. \$350,000	February 2015	Replacing wear ring and reassemble new carbon seals & oil seals
Argentum relay upgrade	n/a	January 2015	Work completed by EKPC. COH also replaced 4 line insulators
SF-6 Substation Leak Repairs	est. \$63,450	Fall 2015	Work completed
Dewatering Piping Replacement	est. \$1,200,000	Fall 2015 and 2016	Initial engineering work completed. Implementation expected in 2016
Fisherman's Platform & Station entrance railing replacement	est. \$85,000	Spring 2015	Work completed
Arc Flash Study	est. \$27,000	Spring 2015	Study completed
Station Batteries & Rectifier replacement	est. \$56,000	Spring 2015	Equipment received- Installation in 2016
Smoke Detectors	est. \$5000	Spring 2015	Work completed
Turbine Oil Conditioner install	est. \$60,000	Summer 2015	Work completed
Emergency Egress Ladder	est. \$78,000	Summer 2015	Work completed
Transformer Rooms Fire Damper	est. \$25,000	Summer 2015	Work completed

## **3.2 Long-Term Major Maintenance Plan**

Due to the age of the GHPP and the long-term plan for continued operation of the plant, a long-term major maintenance program is needed to address replacement and repair of mechanical and electrical system components throughout the plant. Recognizing this need, the Kleinschmidt study, noted in Section 1.1, was conducted in 2014 to define a long-term major maintenance program. Table 3-3 summarizes the latest GHPP 10-year major maintenance plan and budget for the period 2016–2025 based on information provided to Leidos by COH. For individual line items, both a timing and budget amount is included, along with a priority for completion of the line item (with a designation of “1” as highest priority). Early versions of this table were reviewed by Leidos and discussions were conducted with both AMP and COH concerning the magnitude of major maintenance work scheduled and the impact of the major maintenance on operations and performance. As a result, COH has developed projected outage requirements and future power production estimates for GHPP, including projected forced outage rates, routine maintenance outage hours and major maintenance outage hours. These projections are included in Appendix C. Table 3-4 summarizes the results of these projections by COH and provides their estimated power production estimates for the period 2016–2020.

As part of the planning for the long-term major maintenance program, COH and AMP have agreed that the costs for the Dewatering Piping Replacement item in Table 3-3 (\$1,200,000 on line item #18) will be the sole responsibility of COH, instead of sharing the cost in proportion to the future ownership (i.e., COH – 51.4% and AMP - 48.6%).

Based on Leidos’ review of the latest GHPP 10-year major maintenance plan (“MMP”) and budget (Table 3-3) and the associated production impact analyses (Table 3-4), while considering the background information which supports the MMP (i.e., Kleinschmidt Report, Leidos’ initial investigations, GHPP planning/analyses), it is Leidos’ opinion that the MMP is thorough, comprehensive, and reasonable to support GHPP improvements and operations.



Section 3

Table 3-3  
Greenup Hydroelectric Power Project  
Proposed 10-Year Capital Budget  
City of Hamilton, Ohio

No.	Task	Item No.	Origin	Priority	Outage	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Project Total
<b>Environmental</b>																
1	GSU Pit PCB check, containment cleaning & Pit refill (3)	S14	City	1	N	50,000										50,000
<b>Total Environmental</b>																
<b>Preservation</b>																
2	Deck and Cell Concrete Repairs	S6	Klein	2	N		50,000	51,500	53,045	54,636	56,275	57,964	59,703	61,494	63,339	507,955
3	Facility Steel Integrity Inspections (Ultrasonic)	S13	City	2	N		10,000									10,000
4	138 KV Line Pole Inspection & replacements	E8	Klein	1	N	100,000	103,000	106,090	109,273	112,551	115,927	119,405	122,987	126,677	130,477	1,146,388
<b>Total Preservation</b>																
						100,000	163,000	157,590	162,318	167,187	172,203	177,369	182,690	188,171	193,816	1,664,343
<b>Productivity</b>																
5	New Intake Structure & Screen design	S3	Klein	2	4 Mo.		150,000							2,120,256		2,270,256
6	Replace Entrance Door at Elevator landing	S5	Klein	3	N		10,000									10,000
7	Replace Trash rake	M1	Klein	2	N			800,000								800,000
8	Replacement Trash rake Rails	M2	Klein	2	N			107,000								107,000
9	Prentice Log Remover Replacement	M3	Klein	1	N	300,000										300,000
10	Cooling Water Piping Replacement (3.2.1)	M5	Klein	2	1 Wk.		47,700	49,131	50,605							147,436
11	480 VAC tap on each level for welding machines	E9	Klein	1	N	16,000										16,000
12	Meter & Relay Protection Upgrades (unit only 3.2.1)	E12	Klein	2	2 Wk.		100,000	50,000	51,500	53,045						254,545
13	New Offices/Temporary Contractor Trailer Offices	S15	City	1	N	200,000	400,000									600,000
<b>Total Productivity</b>																
						516,000	707,700	1,006,131	102,105	53,045	-	-	-	2,120,256	-	4,505,237
<b>Reliability</b>																
14	Downstream Gate(s) Upgrade (Unit Order: 3.2.1)	S11	Klein	1	3 Wk.		309,000	318,270								927,270
15	Bulb nose cooling tube inspection/reconditioning		City	2	4 Wk.		75,000	77,250	79,568							231,818
16	Carbon Seals water supply and drainage improvements	M10	C/K	1	2 Days	175,000										175,000
17	Capital Spares	S12	Klein	2	N		400,000	102,800								502,800
18	Dewatering Piping Replacement	M6	Klein	1	N	1,200,000										1,200,000
19	HVAC Ducting & Air Conditioner replacement / Heater	M7	Klein	1	N	150,000										150,000
20	Replace Well Water w/ City Water Line	M8	Klein	1	N	325,000										325,000
21	Carbon Shaft Seal Replacement (Unit Order: 3.2.1)	M9	Klein	1	6 Wk.		250,000			281,377			307,468			838,846
22	Turbine LO Heat exchanger Upgrade	M11	Klein	2	1 Wk.		70,000	72,100	74,263							216,363
23	Generator Brakes Upgrade	M12	Klein	3	1 Wk.		71,400	73,542	75,748							220,690
24	Generator Dehumidifiers Upgrade (Unit Order: 3.2.1)	M13	Klein	2	2 Wk.		12,800	13,184	13,580							39,564

Section 3

No.	Task	Item No.	Origin	Priority	Outage	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Project Total
25	Turbine LO Conditioner Install. (Piping & Elect.)	M16	City	1	N	60,000										60,000
26	Turbine Runner Hub Inspection (1,2,3)	M17	City	2	6 Wk.					50,000	250,000	257,500	265,225			822,725
27	Air / Oil Seal Replacement	M18	City	3	4 Wk.						80,000			80,000		160,000
28	Generator Condition Assessment		City	3	1 Wk.		100,000									100,000
29	Generator Robors Insulators Refurbishment (1,2,3)	E3	Klein	3	Y						360,000	370,800	381,924			1,112,724
30	Spare Rotor Poles	E4	Klein	3	N					72,000						72,000
31	2 Generator Cleanings & 1 Stator Rewind (3,1,2)	E5	Klein	3	12 Wk.					80,000	82,400	975,000				1,137,400
32	Spare Generator Coils	E6	Klein	3	N					45,000						45,000
33	Security System Upgrade - Security Card ID's	E14	Klein	3	N		102,800	105,884								208,684
34	Control Room Controls Upgrade	E15	Klein	3	4 Wk.		300,000		750,000							1,800,000
35	Emergency Diesel Gen. (manual) Sync Upgrade	E13	Klein	3	1 Wk.			22,000	22,000							44,000
36	Governor Upgrade	E16	Klein	3	4 Wk.		150,000	1,000,000	1,000,000							2,150,000
37	Elevator Controls Upgrade & Recertification	E18	City	1	N											100,000
38	Purchase Generator Step Up Transformer		Klein	3		100,000					1,844,811					1,844,811
39	Replace 480 V and 4160 V switchgear		Klein	3							100,000					100,000
<b>Total Reliability</b>						2,310,000	1,841,000	763,030	2,015,158	2,300,377	2,717,211	1,603,300	954,617	80,000	-	14,584,694
<b>Safety</b>																
40	Gallery Ventilation System	M20	City	1	N	80,000	250,000									330,000
<b>Total Safety</b>						80,000	250,000	-	-	-	-	-	-	-	-	330,000
<b>Safety &amp; Productivity</b>																
41	Pit Cover (1 Cover, 3 Grate Structures)	S2	Klein	1	N	450,000										450,000
<b>Total Safety &amp; Productivity</b>						450,000	-	-	-	-	-	-	-	-	-	450,000
<b>Vehicles</b>																
42	Replace 1989 3/4 ton truck	S8	Klein	2	N		35,000			30,000						35,000
43	Replace 2009 SUV & 2005 SUV w/1 vehicle	S9	Klein	2	N											30,000
<b>Total Vehicles</b>						-	35,000	-	-	30,000	-	-	-	-	-	65,000
44	Project Management		City		N	200,000	206,000	212,180	218,545	225,102	231,855	238,810	245,975	253,354	260,955	2,292,776
<b>Total Greenup</b>						3,706,000	3,202,700	2,138,931	2,498,126	2,775,711	3,121,268	2,019,479	1,383,282	2,641,781	454,770	23,942,050
Priority 1						3,506,000	1,312,000	424,360	109,273	393,928	115,927	119,405	430,456	126,677	130,477	6,668,504
Priority 2						-	950,500	1,322,965	322,560	187,681	306,275	315,464	324,928	2,181,750	63,339	5,975,462
Priority 3						-	734,200	179,426	1,847,748	1,989,000	2,467,211	1,345,800	381,924	80,000	-	9,005,309
<b>Total</b>						3,506,000	2,996,700	1,926,751	2,279,581	2,550,609	2,889,414	1,760,669	1,137,307	2,388,427	193,816	21,649,274

**Table 3-4**  
**Greenup Estimate Power Production 2016-2020**  
**Annual MWH Production**

	2016	2017	2018	2019	2020
<b>Energy Before Forced and Scheduled Outages</b>					
Unit 1	95,230	95,230	95,230	95,230	95,230
Unit 2	109,227	109,227	109,227	109,227	109,227
Unit 3	105,737	105,737	105,737	105,737	105,737
<b>Total of Energy Before Forced and Scheduled Outages</b>	<b>310,194</b>	<b>310,194</b>	<b>310,194</b>	<b>310,194</b>	<b>310,194</b>
<b>Major Maintenance Outages</b>	<b>3,000</b>	<b>12,220</b>	<b>9,168</b>	<b>7,135</b>	<b>20,188</b>
<b>Net After Maintenance</b>					
Unit 1	95,230	94,230	92,230	91,135	91,134
Unit 2	109,227	105,147	105,147	107,187	102,061
Unit 3	102,737	98,597	103,649	104,737	88,635
<b>Total Net Energy after Maintenance</b>	<b>307,194</b>	<b>297,974</b>	<b>301,026</b>	<b>303,059</b>	<b>281,831</b>
<b>Forced Outage (8%)</b>					
Unit 1	7,618	7,291	7,291	7,291	7,291
Unit 2	8,738	7,918	8,412	8,412	7,918
Unit 3	8,125	8,125	8,125	8,125	7,566
<b>Total Forced Outage</b>	<b>24,482</b>	<b>23,334</b>	<b>23,828</b>	<b>23,828</b>	<b>22,744</b>
<b>Net After Maintenance and Forced Outages</b>					
Unit 1	87,611	86,939	84,939	83,844	83,844
Unit 2	100,489	97,229	96,735	98,775	94,143
Unit 3	94,612	90,472	95,524	96,612	81,070
<b>Total Energy After Maintenance And Forced Outages</b>	<b>282,712</b>	<b>274,640</b>	<b>277,198</b>	<b>279,231</b>	<b>259,056</b>

## Section 4

# CONCLUSIONS

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Average annual plant production during the period 1997–2007 was 274,112 MWH and average annual plant maintenance downtime during this same period was 5.43 percent

Average annual plant production during the period 2008–2015 was 261,858 MWH and average annual plant maintenance downtime during this same period was 14.6 percent.

Based on the review of the historical operating data for GHPP and EGADS outage data included in Appendix A for the period 2011–2015, forced outages and maintenance outages have significantly increased over the past seven years compared to the period from 1997–2007 and these outages are affecting the power production performance of GHPP.

Due to the age of the GHPP and the long-term plan for continued operation of the plant, a long-term major maintenance program is needed to address replacement and repair of mechanical and electrical system components throughout the plant. As a result, a 10-year capital program for major maintenance work is planned with an estimated cost of approximately \$24 million, including estimated budgets in the range of \$3.0 million per year during the next five years.

Based on information provided by AMP and GHPP the 138 kV interconnection transmission line appears to be in reasonable condition, however, due to the age of the line regular inspection should be conducted in the future and refurbishment completed as needed.

Based on our review of information received, site observations, past reports and planned major maintenance work, the GHPP mechanical and electrical systems appear to be in comparable condition to that observed in 2008 (i.e., as reported in Benham’s 2008 report), while considering components of some of the systems are approaching the end of their expected useful life.

Based on Leidos’ review of the latest GHPP 10-year major maintenance plan (“MMP”) and budget (Table 3-3) and the associated production impacts (Table 3-4), while considering the background information which supports the MMP (i.e., Kleinschmidt Report, Leidos’ initial investigations, GHPP planning/analyses), it is Leidos’ opinion that the MMP is thorough, comprehensive and reasonable to support GHPP improvements and operations.

Considering the historic and projected major maintenance costs for GHPP, COH and AMP have agreed that the costs for the Dewatering Piping Replacement costs (Table 3-3, line item #18) will be the responsibility of COH, instead of sharing the cost in proportion to the future ownership (i.e., COH – 51.4% and AMP- 48.6%).



## Appendix A: EGADS OUTAGE DATA 2011-2015

**Table A-1**  
**Greenup EGADS Outage Summary 2011-2015**

		Unit 1	Unit 2	Unit 3	Plant	
EGADS Reported Outage Hours	(1)	35,329.9	34,565.7	27,794.0	<b>97,689.6</b>	
Verification Test Hours	(1)	<b>22,571.0</b>	<b>27,737.0</b>	<b>21,901.0</b>	<b>72,209.0</b>	
Reserve Shutdown	(1)	<b>107.0</b>			<b>107.0</b>	
Net Actual Outage Hours		11,985.3	6,104.3	5,244.8	23,334.4	
						Total
Total Period Hours (5 Years)		43,800.0	43,800.0	43,800.0	<b>118,260.0</b>	
Maintenance Outage Hours	(1)	4,059.2	2,269.2	545.9	6,874.3	<b>27.09%</b>
Maintenance Outage Rate	(2)	9.3%	5.2%	1.2%	5.8%	
Forced Outage Hours	(1)	8,466.8	2,828.5	2,805.5	14,100.8	<b>55.57%</b>
Forced Outage Rate	(3)	19.3%	6.5%	6.4%	11.9%	
High Water/Low Water - Code 7110	(1)	125.9	1,731.1	2,541.5	4,398.5	<b>17.33%</b>
High Water/Low Water Rate	(4)	0.3%	4.0%	5.8%	3.7%	
Net Actual Outage Hours		12,651.9	6,828.7	5,893.0	25,373.6	100.00%

(1) Hourly data for Units 1, 2, 3 as reported by the City of Hamilton to PJM

(2) Maintenance Rate equals Maintenance Outage Hours divided by Total Period Hours minus Reserve Shutdown, minus High Water/Low Water Hours

(3) Forced Outage Rate equals Forced Outage Hours divided by Total Period Hours

(4) High Water/Low Water Rate equals High Water/Low Water Hours divided by Total Period Hours minus Reserve Shutdown

**Table A-2  
Greenup 1  
Event Report (12/04/15) Page 1 of 3**

Unit name	Utility	Event Start Date/Time	Event End Date/Time	Event Duration	Event Description
Greenup 1	441	1/7/2011 9:52	1/7/2011 10:07	0.3	Clear Blade Obstruction
Greenup 1	441	1/24/2011 16:13	1/24/2011 16:58	0.8	52 L Trip due to false alarm
Greenup 1	441	2/2/2011 16:53	2/2/2011 17:20	0.5	Trip during in-house power transfer
Greenup 1	441	2/3/2011 6:01	2/3/2011 13:10	7.2	Fire panel upgrade
					Free trashrake bucket hung on inlet screen
Greenup 1	441	2/8/2011 11:30	2/8/2011 12:20	0.8	
Greenup 1	441	1/15/2011 11:00	8/10/2011 20:00	4,976.0	
					Downstream Gate Repairs & Underwater inspection
Greenup 1	441	8/25/2011 8:04	10/6/2011 16:49	1,016.8	Water in Lube Oil from carbon Seal system
Greenup 1	441	10/31/2011 10:13	11/3/2011 14:32	76.3	Governor Oil tank level too high.
Greenup 1	441	12/7/2011 13:15	12/7/2011 14:48	1.6	Air / Oil Seal replacement
Greenup 1	441	12/12/2011 16:00	1/27/2012 13:00	1,101.0	
Greenup 1	441	1/27/2012 13:00	2/1/2012 0:00	107.0	
Greenup 1	441	2/2/2012 15:18	2/2/2012 20:00	4.7	Collection Sump level abnormal.
					Trashrake cable stuck on inet screen.
Greenup 1	441	2/11/2012 0:02	2/11/2012 0:59	1.0	
Greenup 1	441	2/14/2012 13:00	2/16/2012 17:45	52.8	Oil leak into Generator
					Water in Lube Oil from carbon Seal system
Greenup 1	441	3/15/2012 19:03	3/27/2012 14:57	283.9	Water in Lube Oil from carbon Seal system
Greenup 1	441	4/30/2012 9:06	5/11/2012 7:17	262.2	Screen repairs on Unit #2 (Diver Safety)
Greenup 1	441	5/21/2012 12:04	5/21/2012 16:17	4.2	Screen repairs on Unit #2 (Diver Safety)
Greenup 1	441	5/22/2012 9:15	5/22/2012 16:52	7.6	Screen repairs on Unit #2 (Diver Safety)
Greenup 1	441	5/23/2012 8:03	5/23/2012 16:51	8.8	Screen repairs on Unit #2 (Diver Safety)
Greenup 1	441	5/24/2012 8:08	5/24/2012 16:05	8.0	Screen repairs on Unit #2 (Diver Safety)
Greenup 1	441	5/25/2012 7:21	5/25/2012 17:10	9.8	Screen repairs on Unit #2 (Diver Safety)
Greenup 1	441	5/29/2012 8:02	5/29/2012 16:26	8.4	Screen repairs on Unit #2 (Diver Safety)
Greenup 1	441	5/30/2012 8:13	5/30/2012 16:14	8.0	Screen repairs on Unit #2 (Diver Safety)
Greenup 1	441	5/31/2012 8:30	5/31/2012 16:34	8.1	Screen repairs on Unit #2 (Diver Safety)
Greenup 1	441	6/1/2012 8:30	6/1/2012 16:20	7.8	Screen repairs on Unit #2 (Diver Safety)
Greenup 1	441	6/4/2012 8:38	6/4/2012 16:35	8.0	Screen repairs on Unit #2 (Diver Safety)
Greenup 1	441	6/5/2012 8:40	6/5/2012 16:33	7.9	Screen repairs on Unit #2 (Diver Safety)
Greenup 1	441	6/6/2012 8:37	6/6/2012 17:08	8.5	Screen repairs on Unit #2 (Diver Safety)
Greenup 1	441	6/7/2012 8:35	6/7/2012 16:48	8.2	Screen repairs on Unit #2 (Diver Safety)

## Appendix A

Unit name	Utility	Event Start Date/Time	Event End Date/Time	Event Duration	Event Description
Greenup 1	441	6/8/2012 8:31	6/15/2012 18:17	177.8	Water in Lube Oil from carbon Seal system
Greenup 1	441	8/10/2011 20:00	7/13/2012 23:00	8,115.0	Verification Test Hours
Greenup 1	441	7/16/2012 10:30	7/21/2012 17:21	126.9	Water in Lube Oil from carbon Seal system
Greenup 1	441	7/28/2012 16:22	8/4/2012 15:14	166.9	Water in Lube Oil from carbon Seal system
Greenup 1	441	8/5/2012 20:18	8/18/2012 8:06	299.8	Water in Lube Oil from carbon Seal system
Greenup 1	441	8/18/2012 18:38	9/18/2012 9:00	734.4	Water in Lube Oil from carbon Seal system
Greenup 1	441	9/18/2012 9:00	9/28/2012 15:21	246.4	Water in Lube Oil from carbon Seal system
Greenup 1	441	10/1/2012 14:33	10/1/2012 20:16	5.7	Water in Lube Oil from carbon Seal system
Greenup 1	441	10/31/2012 4:00	10/31/2012 8:51	4.9	Water in Lube Oil from carbon Seal system
Greenup 1	441	12/20/2012 16:00	12/20/2012 17:07	1.1	Trashrake cable stuck on inet screen.
Greenup 1	441	12/21/2012 10:47	12/21/2012 14:32	3.8	Trashrake cable stuck on inet screen.
Greenup 1	441	3/15/2013 2:42	3/15/2013 13:17	10.6	Turbine Blade Control Problem
Greenup 1	441	3/21/2013 13:17	3/21/2013 17:29	4.2	Turbine Blade Control Maintenance Procedure
Greenup 1	441	4/2/2013 21:48	4/3/2013 15:37	17.8	Turbine Blade Control Problem
Greenup 1	441	4/5/2013 9:03	4/5/2013 16:11	7.1	Trash Screen Inspection / Divers
Greenup 1	441	4/22/2013 13:35	4/22/2013 16:44	3.2	Screen repairs
Greenup 1	441	4/23/2013 9:00	4/23/2013 16:50	7.8	Screen repairs
Greenup 1	441	4/24/2013 8:07	4/24/2013 16:47	8.7	Screen repairs
Greenup 1	441	4/25/2013 8:04	4/25/2013 16:29	8.4	Screen repairs
Greenup 1	441	4/26/2013 8:05	4/26/2013 16:29	8.4	Screen repairs
Greenup 1	441	4/30/2013 8:03	4/30/2013 16:52	8.8	Screen repairs
Greenup 1	441	5/1/2013 8:05	5/1/2013 16:23	8.3	Screen repairs
Greenup 1	441	5/2/2013 8:06	5/2/2013 16:12	8.1	Screen repairs
Greenup 1	441	5/3/2013 8:05	5/3/2013 16:37	8.5	Screen repairs
Greenup 1	441	5/8/2013 8:30	5/8/2013 16:53	8.4	Screen repairs
Greenup 1	441	5/9/2013 8:03	5/9/2013 17:12	9.2	Screen repairs
Greenup 1	441	5/10/2013 8:03	5/10/2013 16:18	8.3	Screen repairs
Greenup 1	441	7/13/2013 18:15	7/15/2013 15:45	45.5	Turbine blades load setting control problem.
Greenup 1	441	9/3/2013 8:03	9/3/2013 15:26	7.4	Yearly Screen Inspection
Greenup 1	441	11/22/2013 16:07	11/22/2013 16:15	0.1	Clear Blade Obstruction
Greenup 1	441	11/27/2013 8:19	11/27/2013 8:32	0.2	Clear Blade Obstruction
Greenup 1	441	12/18/2013 10:02	12/19/2013 23:53	37.9	High Voltage Maintenance Testing
Greenup 1	441	1/17/2014 20:25	1/17/2014 21:13	0.8	Unit Shutdown circuitry testing
Greenup 1	441	3/5/2014 8:12	3/13/2014 18:16	201.1	Rotor Insulator repair preparations / repairs
Greenup 1	441	5/21/2014 7:17	5/21/2014 7:56	0.7	Carbon Seal-Nose Cap Water Level Abnormal
Greenup 1	441	5/21/2014 8:02	5/21/2014 16:45	8.7	Carbon Seal - Turbine Oil Water Contamination
Greenup 1	441	5/21/2014 17:31	5/22/2014 8:28	15.0	Carbon Seal - Turbine Oil Water



## Appendix A

Unit name	Utility	Event Start Date/Time	Event End Date/Time	Event Duration	Event Description
Greenup 1	441	5/24/2014 17:15	5/29/2014 18:57	121.7	Contamination Carbon Seal - Turbine Oil Water
Greenup 1	441	5/29/2014 23:02	6/3/2014 11:34	108.5	Contamination Carbon Seal - Turbine Oil Water
Greenup 1	441	6/4/2014 1:38	6/4/2014 10:13	8.6	Thrust Bearing High temperature Carbon Seal - Turbine Oil Water
Greenup 1	441	6/4/2014 17:08	6/7/2014 9:50	64.7	Contamination Carbon Seal - Turbine Oil Water
Greenup 1	441	6/7/2014 21:03	6/17/2014 10:11	229.1	Contamination Carbon Seal - Turbine Oil Water
Greenup 1	441	6/17/2014 13:43	11/7/2014 8:00	3,427.3	Contamination
Greenup 1	441	6/1/2014 0:00	12/1/2014 0:00	4,393.0	Verification Test Hours Carbon Seal - Turbine Oil Water
Greenup 1	441	11/7/2014 8:00	3/4/2015 11:07	2,811.1	Contamination
Greenup 1	441	3/24/2015 13:38	3/25/2015 17:51	28.2	Electrical Control problems
Greenup 1	441	4/2/2015 12:15	4/2/2015 12:45	0.5	Governor Control MCC Fault
Greenup 1	441	6/5/2015 8:50	6/7/2015 12:50	52.0	138 KV Line Fault - fallen tree
Greenup 1	441	6/7/2015 12:51	6/7/2015 13:05	0.2	Operational check of the Downstream Gate
Greenup 1	441	12/1/2014 0:00		5,087.0	Verification Test Hours Distributive Control System (DCS) - process computer
Greenup 1	441	7/13/2015 4:36	7/13/2015 17:34	13.0	Distributive Control System (DCS) - process computer
Greenup 1	441	7/13/2015 18:08	7/13/2015 18:52	0.7	Intake channel or flume (including trash racks)
Greenup 1	441	7/23/2015 10:16	7/23/2015 13:09	2.9	Intake channel or flume (including trash racks)
Greenup 1	441	7/23/2015 18:47	7/23/2015 21:39	2.9	<OMC!> Transmission line (connected to powerhouse switchyard to 1st Substation)
Greenup 1	441	8/29/2015 6:11	9/11/2015 16:17	322.1	Bearing Oil System
Greenup 1	441	10/1/2015 9:03	10/1/2015 11:58	2.9	Governor Oil System
Greenup 1	441	10/9/2015 20:03	10/18/2015 19:59	215.9	Generator current and potential transformers
Greenup 1	441	10/23/2015 11:50	10/23/2015 14:00	2.2	<OMC!> Transmission line (connected to powerhouse switchyard to 1st Substation)
Greenup 1	441	11/7/2015 0:00	11/11/2015 0:00	96.0	Inspection A
Greenup 1	441	12/2/2015 8:07	12/2/2015 10:16	2.2	Inspection A
Greenup 1	441	12/3/2015 8:11	12/3/2015 11:23	3.2	Intake channel or flume (including trash racks)
Greenup 1	441	12/4/2015 15:10	12/4/2015 17:54	2.7	
Total Hours				35,329.9	
Verification Test Hours				22,571.0	
Reserve Shutdown				107.0	
Total Outage Hours				12,651.9	
Maintenance Outage Hours				4,059.2	
Forced Outage Hours				8,466.8	
High Water/Low Water - Code 7110				125.9	

## Appendix A

**Table A-3  
Greenup 2  
Event Report (12/0415) Page 1 of 2**

Unit name	Utility	Event Start Date/Time	Event End Date/Time	Event Duration	Event Description
Greenup 2	441	1/24/2011 16:13	1/24/2011 17:13	1.0	52 L Trip due to false alarm
Greenup 2	441	2/2/2011 16:45	2/2/2011 17:12	0.5	Trip during in-house power transfer
Greenup 2	441	1/14/2011 22:00	6/19/2011 12:00	3,733.0	Verification Test Hours
Greenup 2	441	8/26/2011 9:08	8/26/2011 14:02	4.9	Yearly Underwater Inspection
Greenup 2	441	9/14/2011 21:01	9/14/2011 22:40	1.7	Lightning Strike on 138KV Line
Greenup 2	441	10/25/2011 13:34	10/25/2011 18:15	4.7	Repair to Turbine Blade Control
Greenup 2	441	10/26/2011 14:56	10/26/2011 15:34	0.6	Repair to Turbine Blade Control
Greenup 2	441	5/11/2012 7:17	6/8/2012 15:28	680.2	Inlet Screen Repairs
Greenup 2	441	6/19/2011 12:00	8/15/2012 17:00	10,157.0	Verification Test Hours
Greenup 2	441	8/27/2012 9:05	8/27/2012 16:03	7.0	Yearly Underwater Inspection
Greenup 2	441	11/2/2012 10:40	11/2/2012 13:20	2.7	Storage Sump Oil Level too low.
Greenup 2	441	1/21/2013 15:03	1/22/2013 14:10	23.1	Oil in Generator
Greenup 2	441	4/5/2013 9:04	4/5/2013 16:25	7.4	Trash Screen Inspection / Divers
Greenup 2	441	4/22/2013 9:09	4/22/2013 16:32	7.4	Screen Repairs
Greenup 2	441	4/23/2013 9:07	4/23/2013 16:36	7.5	Screen Repairs
Greenup 2	441	4/24/2013 8:04	4/24/2013 18:33	10.5	Screen Repairs
Greenup 2	441	4/24/2013 19:08	4/24/2013 20:52	1.7	Governor oil pressure alarm fault
Greenup 2	441	4/25/2013 8:08	4/25/2013 16:55	8.8	Screen Repairs
Greenup 2	441	4/26/2013 8:05	4/26/2013 16:47	8.7	Screen Repairs
Greenup 2	441	4/30/2013 8:05	4/30/2013 17:18	9.2	Screen Repairs
Greenup 2	441	5/1/2013 8:05	5/1/2013 16:45	8.7	Screen Repairs
Greenup 2	441	5/2/2013 8:07	5/2/2013 16:37	8.5	Screen Repairs
Greenup 2	441	5/3/2013 8:06	5/3/2013 16:23	8.3	Screen Repairs
Greenup 2	441	5/8/2013 8:40	5/8/2013 16:41	8.0	Screen Repairs
Greenup 2	441	5/9/2013 8:05	5/9/2013 16:56	8.9	Screen Repairs
Greenup 2	441	5/10/2013 8:06	5/10/2013 15:38	7.5	Screen Repairs
Greenup 2	441	7/20/2013 8:01	7/20/2013 8:12	0.2	Clear blade obstruction
Greenup 2	441	9/3/2013 8:07	9/3/2013 16:07	8.0	Yearly Underwater Inspection
Greenup 2	441	11/1/2013 13:42	11/1/2013 13:53	0.2	Clear blade obstruction
Greenup 2	441	12/4/2013 9:03	12/4/2013 16:22	7.3	Divers / Trashrake carriage stuck
Greenup 2	441	12/4/2013 20:26	12/5/2013 19:26	23.0	Storage Sump Oil Level too low.
Greenup 2	441	12/5/2013 19:40	12/6/2013 21:41	26.0	* No fault indication
Greenup 2	441	12/13/2013 13:13	12/13/2013 13:20	0.1	Collection Sump Water Level
Greenup 2	441	12/13/2013 13:21	12/23/2013 4:01	230.7	Abnormal
Greenup 2	441	12/29/2013 15:46	12/30/2013 14:22	22.6	Air / Oil Seal Repair & Rotor
Greenup 2	441	1/1/2014 0:00	3/12/2014 18:38	1,697.6	Insulator Repairs
Greenup 2	441	4/4/2014 10:30	4/4/2014 12:54	2.4	Governor Control repairs
Greenup 2	441	5/21/2014 7:25	5/21/2014 8:45	1.3	Downstream Gate Control
Greenup 2	441	12/1/2013 0:00	6/1/2014 0:00	4,367.0	Malfunction
Greenup 2	441	8/30/2014 16:00	8/31/2014 2:00	10.0	Verification Test Hours
					Turbine Lube Oil High
					Temperatures (Reduced Load -
					Not offline)

## Appendix A

Unit name	Utility	Event Start Date/Time	Event End Date/Time	Event Duration	Event Description
Greenup 2	441	10/20/2014 6:10	11/2/2014 12:40	319.5	Scheduled Maintenance
Greenup 2	441	6/1/2014 0:00	12/1/2014 0:00	4,393.0	Verification Test Hours
Greenup 2	441	11/7/2014 8:05	1/22/2015 19:20	1,835.3	Inlet Screens - Scheduled Maintenance
Greenup 2	441	2/27/2015 10:41	3/4/2015 11:07	120.4	Intake Screen damage / repairs
Greenup 2	441	3/4/2015 11:07	3/24/2015 13:38	481.5	High water
Greenup 2	441	3/24/2015 13:38	4/3/2015 19:22	245.7	Greenup Rehab
Greenup 2	441	4/20/2015 15:05	4/20/2015 20:41	5.6	Startup delay after High Water
Greenup 2	441	5/4/2015 8:12	5/12/2015 18:24	202.2	Scheduled Maintenance - Transformer Oil Leak repairs
Greenup 2	441	6/5/2015 8:50	6/6/2015 12:14	27.4	138 KV Line Fault - fallen tree
Greenup 2	441	12/1/2014 0:00		5,087.0	Verification Test Hours
Greenup 2	441	7/24/2015 15:22	7/24/2015 17:52	2.5	Intake channel or flume (including trash racks)
Greenup 2	441	8/23/2015 10:43	8/25/2015 15:00	52.3	480-volt circuit breakers
Greenup 2	441	8/29/2015 6:11	9/11/2015 16:17	322.1	<OMC!> Transmission line (connected to powerhouse switchyard to 1st Substation)
Greenup 2	441	9/30/2015 11:05	9/30/2015 15:23	4.3	Governor Oil System
Greenup 2	441	10/9/2015 20:04	10/18/2015 17:09	213.1	Governor Oil System
Greenup 2	441	11/7/2015 0:00	11/11/2015 0:00	96.0	<OMC!> Transmission line (connected to powerhouse switchyard to 1st Substation)
Greenup 2	441	12/3/2015 12:25	12/3/2015 14:52	2.5	Inspection A
Greenup 2	441	12/4/2015 12:02	12/5/2015 19:46	31.7	Governor Oil System
Total Hours				34,565.7	
Verification Test Hours				27,737.0	
Reserve Shutdown					
Total Outage Hours				6,828.7	
Maintenance Outage Hours				2,269.2	
Forced Outage Hours				2,828.5	
High Water/Low Water - Code 7110				1,731.1	

## Appendix A

**Table A-4:  
Greenup 3  
Event Report (12/04/15) Page 1 of 2**

Unit name	Utility	Event Start Date/Time	Event End Date/Time	Event Duration	Event Description
Greenup 3	441	12/9/2010 20:09	1/26/2011 21:55	621.9	Air /Oil Seal Replacement
Greenup 3	441	1/27/2011 5:11	1/27/2011 6:46	1.6	Generator Thermal Protection Unit trip during In-House power transfer
Greenup 3	441	2/2/2011 16:45	2/2/2011 17:12	0.5	
Greenup 3	441	2/2/2011 17:12	2/5/2011 5:53	60.7	Governor Pump replacement
Greenup 3	441	8/26/2011 9:10	8/26/2011 14:18	5.1	Yearly Underwater Inspection
Greenup 3	441	9/14/2011 21:01	9/14/2011 22:53	1.9	Lightning Strike on 138KV Line
Greenup 3	441	10/26/2011 10:06	10/26/2011 14:41	4.6	Turbine Blade Control Repairs
Greenup 3	441	1/14/2011 5:00	11/15/2011 7:00	7,322.0	Verification Test Hours
Greenup 3	441	5/22/2012 10:30	5/22/2012 16:40	6.2	Inlet Screen Repairs
Greenup 3	441	5/23/2012 8:10	5/23/2012 16:33	8.4	Inlet Screen Repairs
Greenup 3	441	5/24/2012 8:03	5/24/2012 15:47	7.7	Inlet Screen Repairs
Greenup 3	441	5/25/2012 7:22	5/25/2012 16:46	9.4	Inlet Screen Repairs
Greenup 3	441	5/29/2012 8:05	5/29/2012 16:14	8.2	Inlet Screen Repairs
Greenup 3	441	5/30/2012 8:08	5/30/2012 16:14	8.1	Inlet Screen Repairs
Greenup 3	441	5/31/2012 8:30	5/31/2012 16:34	8.1	Inlet Screen Repairs
Greenup 3	441	6/1/2012 8:27	6/1/2012 16:30	8.1	Inlet Screen Repairs
Greenup 3	441	6/4/2012 8:30	6/4/2012 16:20	7.8	Inlet Screen Repairs
Greenup 3	441	6/5/2012 8:48	6/5/2012 16:44	7.9	Inlet Screen Repairs
Greenup 3	441	6/6/2012 8:34	6/6/2012 16:24	7.8	Inlet Screen Repairs
Greenup 3	441	6/7/2012 8:33	6/7/2012 16:36	8.1	Inlet Screen Repairs
Greenup 3	441	6/8/2012 8:28	6/8/2012 15:18	6.8	Inlet Screen Repairs
Greenup 3	441	11/15/2011 7:00	6/14/2012 19:00	5,099.0	Verification Test Hours
Greenup 3	441	12/1/2012 2:27	12/1/2012 2:38	0.2	Downstream Gate - Out of Sequence
Greenup 3	441	4/5/2013 9:04	4/5/2013 16:36	7.5	Trashrake Screen Inspection / Divers
Greenup 3	441	4/22/2013 9:06	4/22/2013 16:41	7.6	Inlet Screen Repairs
Greenup 3	441	4/23/2013 9:04	4/30/2013 17:03	176.0	Inlet Screen Repairs
Greenup 3	441	5/1/2013 8:06	5/1/2013 16:31	8.4	Inlet Screen Repairs
Greenup 3	441	5/2/2013 8:08	5/2/2013 17:54	9.8	Inlet Screen Repairs
Greenup 3	441	5/3/2013 8:07	5/3/2013 16:14	8.1	Inlet Screen Repairs
Greenup 3	441	5/8/2013 8:36	5/8/2013 16:28	7.9	Inlet Screen Repairs
Greenup 3	441	5/9/2013 8:07	5/9/2013 16:44	8.6	Inlet Screen Repairs
Greenup 3	441	5/10/2013 8:13	5/10/2013 16:05	7.9	Inlet Screen Repairs
Greenup 3	441	8/21/2013 18:05	8/21/2013 18:19	0.2	Clear Blade Obstruction
Greenup 3	441	9/3/2013 8:11	9/3/2013 17:40	9.5	Yearly Underwater Inspection
Greenup 3	441	9/20/2013 14:15	9/20/2013 14:26	0.2	Clear Blade Obstruction
Greenup 3	441	9/21/2013 15:04	9/21/2013 15:27	0.4	Clear Blade Obstruction
Greenup 3	441	9/21/2013 15:42	9/21/2013 15:50	0.1	Clear Blade Obstruction
Greenup 3	441	9/21/2013 18:03	9/21/2013 21:31	3.5	Clear Blade Obstruction
Greenup 3	441	9/21/2013 21:39	9/23/2013 15:21	41.7	Clear Blade Obstruction
Greenup 3	441	11/11/2013 14:57	11/11/2013 15:05	0.1	Clear Blade Obstruction
Greenup 3	441	12/4/2013 8:59	12/18/2013 13:09	340.2	Inlet Screen Repairs
Greenup 3	441	1/1/2014 0:00	3/11/2014 9:33	1,664.6	Inlet Screen Repairs & Rotor

## Appendix A

Unit name	Utility	Event Start Date/Time	Event End Date/Time	Event Duration	Event Description
					Insulator Repairs
					Turbine Lube Oil High
Greenup 3	441	8/30/2014 11:00	8/31/2014 2:00	15.0	Temperatures - reduced loading
Greenup 3	441	10/20/2014 6:17	10/31/2014 20:57	278.7	Scheduled Maintenance
Greenup 3	441	6/1/2014 0:00	12/1/2014 0:00	4,393.0	Verification Test Hours
Greenup 3	441	12/4/2014 16:05	12/4/2014 16:22	0.3	Clear Blade Obstruction
Greenup 3	441	12/30/2014 9:33	12/30/2014 11:31	2.0	Diver Inspection
					Scheduled Maintenance -
Greenup 3	441	1/11/2015 18:15	1/22/2015 16:06	261.9	Argentum repairs & Inlet Screens
Greenup 3	441	2/28/2015 14:40	2/28/2015 15:08	0.5	Clear Blade Obstruction
Greenup 3	441	3/2/2015 9:33	3/2/2015 16:10	6.6	Divers on Unit #2
Greenup 3	441	3/3/2015 9:02	3/3/2015 16:52	7.8	Divers on Unit #2
Greenup 3	441	4/20/2015 15:05	4/21/2015 11:08	20.1	Startup Delay after High Water
Greenup 3	441	4/27/2015 9:00		1,551.0	Greenup rehab
Greenup 3	441	12/1/2014 0:00		5,087.0	Verification Test Hours
					Intake channel or flume (including
Greenup 3	441	7/24/2015 8:14	7/24/2015 12:27	4.2	trash racks)
					<OMC!> Transmission line
					(connected to powerhouse
Greenup 3	441	8/29/2015 6:11	9/11/2015 16:31	322.3	switchyard to 1st Substation)
Greenup 3	441	9/16/2015 3:24	9/16/2015 10:00	6.6	Turbine governor
Greenup 3	441	9/30/2015 15:30	9/30/2015 18:02	2.5	Governor Oil System
Greenup 3	441	10/9/2015 20:05	10/18/2015 15:46	211.7	Governor Oil System
Greenup 3	441	10/18/2015 15:48	10/18/2015 16:32	0.7	Operator error
					<OMC!> Transmission line
					(connected to powerhouse
Greenup 3	441	11/7/2015 0:00	11/11/2015 0:00	96.0	switchyard to 1st Substation)
Greenup 3	441	12/4/2015 8:11	12/4/2015 12:13	4.0	Inspection A
Total Hours				27,794.0	
Verification Test Hours				21,901.0	
Reserve Shutdown					
Total Outage Hours				5,893.0	
Maintenance Outage Hours				545.9	
Forced Outage Hours				2,805.5	
High Water/Low Water - Code 7110				2,541.5	

## Appendix B: PHOTOGRAPHS

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Photograph 1: Control Room Panel





**Photograph 2: Turbine Governor Panel**



Photograph 3: 480V Motor Control Center





**Photograph 4: Generator Cooling System Piping**



**Photograph 5: Turbine Runner Blades**

## Appendix C

# Appendix C: GREENUP ESTIMATED ENERGY

Table C-1  
Greenup Estimated Energy (MWh)  
2016  
Hamilton, Ohio

No.	Task	Item No.	Origin	Priority	Outage		Month Task To Be Completed & Estimated Lost Production (MWh)												Dec	Total											
					Duration	Unit	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov														
Energy Before Forced and Scheduled Outages																															
	Unit 1						8,129	7,044	4,095	6,145	8,569	9,880	8,785	9,637	7,478	9,119	10,689	5,659	95,230												
	Unit 2						8,042	7,200	4,080	6,172	8,606	11,198	10,382	12,367	12,123	11,914	10,540	6,605	109,227												
	Unit 3						7,973	6,995	4,173	5,934	8,431	11,008	9,965	11,695	11,789	11,469	10,350	5,956	105,737												
Total of Energy Before Forced and Scheduled Outages																			24,144	21,238	12,348	18,251	25,605	32,086	29,133	33,699	31,390	32,502	31,579	18,219	310,194
1	GSU Pit PCB check, containment cleaning & Pit refill (3)	S14	City	1	N														-												
4	138 KV Line Pole Inspection & replacements	E8	Klein	1	N														-												
13	New Offices/Temporary Contractor Trailer Offices	S15	City	1	N														-												
14	Downstream Gate(s) Upgrade, (Unit Order: 3.2.1)	S11	Klein	1	3 Wk.	Unit 3	-		3,000										3,000												
16	Carbon Seals water supply and drainage improvements	M10	C/K	1	2 Days														-												
18	Dewatering Piping Replacement	M6	Klein	1	N														-												
19	HVAC Ducting & Air Conditioner replacement / Heater	M7	Klein	1	N														-												
20	Replace Well Water w/ City Water Line	M8	Klein	1	N														-												
25	Turbine LO Conditioner Instal. (Piping & Elect.)	M16	City	1	N														-												
37	Elevator Controls Upgrade & Recertification	E18	City	1	N														-												
40	Gallery Ventilation System	M20	City	1	N														-												
41	Pit Cover (1 Cover, 3 Gate Structures)	S2	Klein	1	N														-												
Net After Maintenance																															
	Unit 1						8,129	7,044	4,095	6,145	8,569	9,880	8,785	9,637	7,478	9,119	10,689	5,659	95,230												
	Unit 2						8,042	7,200	4,080	6,172	8,606	11,198	10,382	12,367	12,123	11,914	10,540	6,605	109,227												
	Unit 3						7,973	6,995	1,173	5,934	8,431	11,008	9,965	11,695	11,789	11,469	10,350	5,956	102,737												
Total Net Energy after Maintenance																			24,144	21,238	9,348	18,251	25,605	32,086	29,133	33,699	31,390	32,502	31,579	18,219	307,194
Forced Outage (8%)																															
	Unit 1						650	563	328	492	686	790	703	771	598	730	855	453	7,618												
	Unit 2						643	576	326	494	688	896	831	989	970	953	843	528	8,738												
	Unit 3						638	560	-	475	674	881	797	936	943	917	828	476	8,125												
Total Forced Outage																			1,931	1,699	654	1,460	2,048	2,567	2,331	2,696	2,511	2,600	2,526	1,458	24,482
Net After Maintenance and Forced Outages																															
	Unit 1						7,478	6,480	3,768	5,654	7,883	9,090	8,083	8,866	6,880	8,390	9,834	5,207	87,611												
	Unit 2						7,399	6,624	3,754	5,678	7,917	10,302	9,552	11,377	11,153	10,961	9,697	6,076	100,489												
	Unit 3						7,335	6,435	1,173	5,459	7,757	10,128	9,188	10,760	10,846	10,551	9,522	5,479	94,612												
Total Energy After Maintenance And Forced Outages																			22,212	19,539	8,694	16,791	23,557	29,519	26,802	31,003	28,879	29,901	29,052	16,762	282,712

# Appendix C

Table C-2  
Greenup Estimated Energy (MWh)  
2017  
Hamilton, Ohio

Month Task To Be Completed & Estimated Lost Production (MWh)																		
No.	Task	Origin	Priority	Outage		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
				Duration	Unit													
Energy Before Forced and Scheduled Outages																		
	Unit 1					8,129	7,044	4,095	6,145	8,569	9,880	8,785	9,637	7,478	9,119	10,689	5,659	95,230
	Unit 2					8,042	7,200	4,080	6,172	8,606	11,198	10,382	12,367	12,123	11,914	10,540	6,605	109,227
	Unit 3					7,973	6,995	4,173	5,934	8,431	11,008	9,965	11,695	11,789	11,469	10,350	5,956	105,737
Total of Energy Before Forced and Scheduled Outages						24,144	21,238	12,348	18,251	25,605	32,086	29,133	33,699	31,390	32,502	31,579	18,219	310,194
2	Deck and Cell Concrete Repairs	Klein	2	N														-
3	Facility Steel Integrity Inspections (Ultrasonic)	City	2	N														-
4	138 KV Line Pole Inspection & replacements	Klein	1	N														-
5	Intake Structure & Screen Redesign	Klein	2	N														-
10	Cooling Water Piping Replacement (3,2,1)	Klein	2	1 Wk.	Unit 3													-
12	Meter & Relay Protection Upgrades (unit only 3,2,1)	Klein	2	N	Study													-
13	New Offices/Temporary Contractor Trailer Offices	City	1	N														-
14	Downstream Gate(s) Upgrade, (Unit Order: 3,2,1)	Klein	1	4 Wk.	Unit 2			4,080										4,080
15	Bulb nose cooling tube inspection/reconditioning	City	2	4 Wk.	Unit 3													-
17	Capital Spares	Klein	2	N														-
21	Carbon Shaft Seal Replacement (Unit Order: 3,2,1)	Klein	1	6 Wk.	Unit 3			4,173	2,967		-							7,140
22	Turbine LO Heat exchanger Upgrade	Klein	2	1 Wk.	Unit 3				-									-
23	Generator Brakes Upgrade	Klein	3	1 Wk.	Unit 3				-									-
24	Generator Dehumidifiers Upgrade (Unit Order: 3,2,1)	Klein	2	2 Wk.	Unit 3													-
28	Generator Condition Assessment	City	3	1 Wk.	Unit 1			1,000										1,000
33	Security System Upgrade - Security Card ID's	Klein	3	N						-								-
34	Control Room Controls Upgrade	Klein	3	N														-
36	Governor Upgrade	Klein	3	N	Study													-
40	Gallery Ventilation System	City	1	N														-
42	1989 3/4 ton truck	Klein	2	N														-
43	2009 SUV & 2005 SUV Replace w/1 vehicle	Klein	2	N														-
Net After Maintenance						8,129	7,044	3,095	6,145	8,569	9,880	8,785	9,637	7,478	9,119	10,689	5,659	94,230
	Unit 1					8,042	7,200	0	6,172	8,606	11,198	10,382	12,367	12,123	11,914	10,540	6,605	105,147
	Unit 2					7,973	6,995	0	2,967	8,431	11,008	9,965	11,695	11,789	11,469	10,350	5,956	98,597
	Unit 3					24,144	21,238	3,095	15,284	25,605	32,086	29,133	33,699	31,390	32,502	31,579	18,219	297,974
Net All Units After Maintenance																		
Forced Outages (8%)																		
	Unit 1					650	563	-	492	686	790	703	771	598	730	855	453	7,291
	Unit 2					643	576	-	-	688	896	831	989	970	953	843	528	7,918
	Unit 3					638	560	-	475	674	881	797	936	943	917	828	476	8,125
All Units Forced Outages						1,931	1,699	-	966	2,048	2,567	2,331	2,696	2,511	2,600	2,526	1,458	23,334
Net After Maintenance and Forced Outages																		
	Unit 1					7,478	6,480	3,095	5,654	7,883	9,090	8,083	8,866	6,880	8,390	9,834	5,207	86,939
	Unit 2					7,399	6,624	0	6,172	7,917	10,302	9,552	11,377	11,153	10,961	9,697	6,076	97,229
	Unit 3					7,335	6,435	0	2,492	7,757	10,128	9,168	10,760	10,846	10,551	9,522	5,479	90,472
Total Greenup After Maintenance And Forced Outages						22,212	19,539	3,095	14,318	23,557	29,519	26,802	31,003	28,879	29,901	29,052	16,762	274,640

# Appendix C

Table C-3  
Greenup Estimated Energy (MWh)  
2018  
Hamilton, Ohio

Month Task To Be Completed & Estimated Lost Production (MWh)																			
No.	Task	Origin	Priority	Outage		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
				Duration	Unit														
Energy Before Forced and Scheduled Outages						8,129	7,044	4,095	6,145	8,569	9,880	8,785	9,637	7,478	9,119	10,689	5,659	95,230	
	Unit 1					8,042	7,200	4,080	6,172	8,606	11,198	10,382	12,367	12,123	11,914	10,540	6,605	109,227	
	Unit 2					7,973	6,995	4,173	5,934	8,431	11,008	9,965	11,695	11,789	11,469	10,350	5,956	105,737	
Total of Energy Before Forced and Scheduled Outages						24,144	21,238	12,348	18,251	25,605	32,086	29,133	33,699	31,390	32,502	31,579	18,219	310,194	
2	Deck and Cell Concrete Repairs	Klein	2	N														-	
4	138 KV Line Pole Inspection & replacements	Klein	1	N														-	
5	Intake Structure & Screen Redesign	Klein	1	N														-	
6	Replace Entrance Door at Elevator landing	Klein	3	N														-	
10	Cooling Water Piping Replacement (3,2,1)	Klein	2	1Wk.	Unit2													-	
12	Meter & Relay Protection Upgrades (unit only 3,2,1)	Klein	2	2Wk.	Unit3			2,088										2,088	
14	Downstream Gate(s) Upgrade, (Unit Order: 3,2,1)	Klein	1	3Wk.	Unit1			3,000										3,000	
15	Bulb nose cooling tube inspection/reconditioning	City	2	4Wk.	Unit2			4,080										4,080	
17	Capital Spares	Klein	2	N	Unit2													-	
22	Turbine LO Heat exchanger Upgrade	Klein	2	1Wk.	Unit2	-												-	
23	Generator Brakes Upgrade	Klein	3	1Wk.	Unit2													-	
24	Generator Dehumidifiers Upgrade (Unit Order: 3,2,1)	Klein	2	2Wk.	Unit2													-	
33	Security System Upgrade - Security Card ID's	Klein	3	N														-	
Net After Maintenance						8,129	7,044	1,095	6,145	8,569	9,880	8,785	9,637	7,478	9,119	10,689	5,659	92,230	
	Unit 1					8,042	7,200	0	6,172	8,606	11,198	10,382	12,367	12,123	11,914	10,540	6,605	105,147	
	Unit 2					7,973	6,995	2,085	5,934	8,431	11,008	9,965	11,695	11,789	11,469	10,350	5,956	103,649	
	Unit 3					24,144	21,238	3,180	18,251	25,605	32,086	29,133	33,699	31,390	32,502	31,579	18,219	301,026	
Total Net Energy after Maintenance																			
Forced Outage (8%)																			
	Unit 1					650	563	-	492	686	790	703	771	598	730	855	453	7,291	
	Unit 2					643	576	-	494	688	896	831	989	970	953	843	528	8,412	
	Unit 3					638	560	-	475	674	881	797	936	943	917	828	476	8,125	
Total Forced Outage						1,931	1,699	-	1,460	2,048	2,567	2,331	2,696	2,511	2,600	2,526	1,458	23,828	
Net After Maintenance and Forced Outages						7,478	6,480	1,095	5,654	7,883	9,090	8,083	8,866	6,880	8,390	9,834	5,207	84,939	
	Unit 1					7,399	6,624	0	5,678	7,917	10,302	9,552	11,377	11,153	10,961	9,697	6,076	96,735	
	Unit 2					7,335	6,435	2,085	5,459	7,757	10,128	9,168	10,760	10,846	10,551	9,522	5,479	95,524	
	Unit 3																		
Total Energy After Maintenance And Forced Outages						22,212	19,539	3,180	16,791	23,557	29,519	26,802	31,003	28,879	29,901	29,052	16,762	277,198	

# Appendix C

Table C-4  
Greenup Estimated Energy (MWh)  
2019  
Hamilton, Ohio

No.		Task	Origin	Priority	Outage		Month Task To Be Completed & Estimated Lost Production (MWh)												Total
					Duration	Unit	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Energy Before Forced and Scheduled Outages																			
		Unit 1				8,129	7,044	4,095	6,145	8,569	9,880	8,785	9,637	7,478	9,119	10,689	5,659	95,230	
		Unit 2				8,042	7,200	4,080	6,172	8,606	11,198	10,382	12,367	12,123	11,914	10,540	6,605	109,227	
		Unit 3				7,973	6,995	4,173	5,934	8,431	11,008	9,965	11,695	11,789	11,469	10,350	5,956	105,737	
Total of Energy Before Forced and Scheduled Outages																			
						24,144	21,238	12,348	18,251	25,605	32,086	29,133	33,699	31,390	32,502	31,579	18,219	310,194	
1	GSU Pit PCB check, containment cleaning & Pit refill (3)	City	1	N														-	
2	Deck and Cell Concrete Repairs	Klein	2	N														-	
4	138 KV Line Pole Inspection & replacements	Klein	1	N														-	
10	Cooling Water Piping Replacement (3,2,1)	Klein	2	1 Wk.	Unit 1			-										-	
12	Meter & Relay Protection Upgrades (unit only 3,2,1)	Klein	2	2 Wk.	Unit 2			2,040										2,040	
15	Bulb nose cooling tube inspection/reconditioning	City	2	4 Wk.	Unit 1			4,095										4,095	
22	Turbine LO Heat exchanger Upgrade	Klein	2	1 Wk.	Unit 1													-	
23	Generator Brakes Upgrade	Klein	3	1 Wk.	Unit 1													-	
24	Generator Dehumidifiers Upgrade (Unit Order: 3,2,1)	Klein	2	2 Wk.	Unit 1													-	
34	Control Room Controls Upgrade	Klein	3	4 Wk.	All			-										-	
35	Emergency Diesel Gen. (manual) Sync Upgrade	Klein	3	1 Wk.	All			1,000										1,000	
36	Governor Upgrade	Klein	3	4 Wk.	All													-	
Net After Maintenance																			
		Unit 1				8,129	7,044	0	6,145	8,569	9,880	8,785	9,637	7,478	9,119	10,689	5,659	91,135	
		Unit 2				8,042	7,200	2,040	6,172	8,606	11,198	10,382	12,367	12,123	11,914	10,540	6,605	107,187	
		Unit 3				7,973	6,995	3,173	5,934	8,431	11,008	9,965	11,695	11,789	11,469	10,350	5,956	104,737	
Total Net Energy after Maintenance																			
						24,144	21,238	5,213	18,251	25,605	32,086	29,133	33,699	31,390	32,502	31,579	18,219	303,059	
Forced Outage (8%)																			
		Unit 1				650	563	-	492	686	790	703	771	598	730	855	453	7,291	
		Unit 2				643	576	-	494	688	896	831	989	970	953	843	528	8,412	
		Unit 3				638	560	-	475	674	881	797	936	943	917	828	476	8,125	
Total Forced Outage																			
						1,931	1,699	-	1,460	2,048	2,567	2,331	2,696	2,511	2,600	2,526	1,458	23,828	
Net After Maintenance and Forced Outages																			
		Unit 1				7,478	6,480	0	5,654	7,883	9,090	8,083	8,866	6,880	8,390	9,834	5,207	83,844	
		Unit 2				7,399	6,624	2,040	5,678	7,917	10,302	9,552	11,377	11,153	10,961	9,697	6,076	98,775	
		Unit 3				7,335	6,435	3,173	5,459	7,757	10,128	9,168	10,760	10,846	10,551	9,522	5,479	96,612	
Total Energy After Maintenance And Forced Outages																			
						22,212	19,539	5,213	16,791	23,557	29,519	26,802	31,003	28,879	29,901	29,052	16,762	279,231	

# Appendix C

Table C-5  
Greenup Estimated Energy (MWh)  
2020  
Hamilton, Ohio

Month Task To Be Completed & Estimated Lost Production (MWh)																		
No.	Task	Origin	Priority	Outage		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
				Duration	Unit													
Energy Before Forced and Scheduled Outages																		
	Unit 1					8,129	7,044	4,095	6,145	8,569	9,880	8,785	9,637	7,478	9,119	10,689	5,659	95,230
	Unit 2					8,042	7,200	4,080	6,172	8,606	11,198	10,382	12,367	12,123	11,914	10,540	6,605	109,227
	Unit 3					7,973	6,995	4,173	5,934	8,431	11,008	9,965	11,695	11,789	11,469	10,350	5,956	105,737
Total of Energy Before Forced and Scheduled Outages						24,144	21,238	12,348	18,251	25,605	32,086	29,133	33,699	31,390	32,502	31,579	18,219	310,194
2	Deck and Cell Concrete Repairs	Klein	2	N														-
4	138 KV Line Pole Inspection & replacements	Klein	1	N														-
12	Meter & Relay Protection Upgrades (unit only 3,2,1)	Klein	2	2 Wk.														-
21	Carbon Shaft Seal Replacement (Unit Order: 3,2,1)	Klein	1	6 Wk.	Unit 1			4,173	3,086									7,259
26	Turbine Runner Hub Inspections (1,2,3)	City	2	6 Wk.	All Units													-
30	Spare Rotor Poles	Klein	3	N	Study													-
31	2 Generator Cleanings & 1 Stator Rewind	Klein	3	3 Mo.	Unit 3				5,934									-
32	Spare Generator Coils	Klein	3	N														-
34	Control Room Controls Upgrade	Klein	3	4 Wk.	All													-
35	Emergency Diesel Gen. (manual) Sync Upgrade	Klein	3	1 Wk.	All													-
36	Governor Upgrade	Klein	3	4 Wk.	Unit 3,2													-
42	1989 3/4 ton truck	Klein	2	N														-
43	2009 SUV & 2005 SUV Replace w/1 vehicle	Klein	2	N														-
Net After Maintenance																		
	Unit 1					8,129	7,044	-	3,073	8,569	9,880	8,785	9,637	7,478	9,119	10,689	5,659	91,134
	Unit 2					8,042	7,200	-	3,086	8,606	11,198	10,382	12,367	12,123	11,914	10,540	6,605	102,061
	Unit 3					7,973	6,995	-	2,967	8,431	11,008	9,965	11,695	11,789	11,469	10,350	5,956	88,635
Total Net Energy after Maintenance						24,144	21,238	-	9,125	25,605	32,086	29,133	33,699	31,390	32,502	31,579	18,219	281,831
Forced Outage (8%)																		
	Unit 1					650	563		492	686	790	703	771	598	730	855	453	7,291
	Unit 2					643	576	-	-	688	896	831	989	970	953	843	528	7,918
	Unit 3					638	-	-	475	674	881	797	936	943	917	828	476	7,566
Total Forced Outage						1,931	1,139	-	966	2,048	2,567	2,331	2,696	2,511	2,600	2,526	1,458	22,774
Net After Maintenance and Forced Outages																		
	Unit 1					7,478	6,480	-	2,581	7,883	9,090	8,083	8,866	6,880	8,390	9,834	5,207	83,844
	Unit 2					7,399	6,624	-	3,086	7,917	10,302	9,552	11,377	11,153	10,961	9,697	6,076	94,143
	Unit 3					7,335	6,995	-	2,492	7,757	10,128	9,168	10,760	10,846	10,551	9,522	5,479	81,070
Total Energy After Maintenance And Forced Outages						22,212	20,099	-	8,159	23,557	29,519	26,802	31,003	28,879	29,901	29,052	16,762	259,056

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## **Appendix D**

### **Regularly Scheduled Greenup Maintenance**

Greenup staff has provided a list of items that are included in regular annual inspections and maintenance activities. The results of these activities are repairs and/or replacement of equipment. In some instances, engineering design is required. The engineering design services and estimated cost of the equipment repair or replacement is budgeted and approved in The City of Hamilton budgeting process. The result of this process is that Greenup maintenance is planned over a two to five-year time horizon. The following is a list of regularly scheduled inspection and maintenance activities.

#### **1. Inspection of Inlet Screens (Trash Racks)**

The inlet screens are inspected annually by divers. The Greenup plant maintains an inventory of nine top screens and eleven bottom screens so that screens can be replaced on an annual basis.

#### **2. Trashrake Inspection**

The trashrake is inspected underwater by divers on an annual basis.

#### **3. Greenup Transmission Line Inspection**

The Greenup transmission line is inspected annually by Hamilton staff. This inspection is for the purpose of identifying poles and equipment that should be repaired or replaced.

#### **4. Transmission Line Right of Way Maintenance**

Hamilton has contracted with Municipal Energy Services Agency (MESA) to clear trees and brush in the transmission line Right of Way. This maintenance is conducted annually.

#### **5. Turbine Shaft/Bulb Nose Air/Oil Seal Replacement**

Greenup staff plan and replace the air/oil seals every three years on each generating unit.

#### **6. Turbine Seal Replacement**

The carbon shaft seal is planned and replaced every three to five years on each unit.

#### **7. Transformer and Switchgear Testing**

The generator step up transformers and related switchgear are planned and tested every three years.

#### **8. Generator Step Up High Voltage Bushing Seals Replacement**

The High Voltage Bushing Seals are planned and replaced every five years.

#### **9. Downstream Gate Rubber Seal Replacement**



The downstream gate seals are inspected by divers and are planned and replaced every two years. These seals are kept in inventory at Greenup so they are readily available.

#### **10. Governor Lube Oil Pump Repair and/or Replacement**

The Governor Lube Oil Pump is inspected and repaired or replaced every five years depending on its condition.

#### **11. Fire System Testing and Inspection**

The fire system is tested and inspected every year.

#### **12. Dewatering and Drainage Repair/Replacement**

The dewatering and drainage system is inspected and planned and repaired every five years. Equipment repair or replacement is dependent on condition.

#### **13. Governor Actuator**

The governor actuator is inspected and planned for repair or replacement every five years. Equipment repairs and/or replacement is dependent on condition.

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## PROPOSED FORM OF CONTINUING DISCLOSURE AGREEMENT

This Continuing Disclosure Agreement (this “Disclosure Agreement”) is executed and delivered as of May \_\_, 2016 by American Municipal Power, Inc. (“AMP”) in connection with the issuance of its \$125,630,000 Greenup Hydroelectric Project Revenue Bonds, Series 2016A (the “Series 2016 Bonds”). The Series 2016 Bonds are being issued pursuant to a Master Trust Indenture, dated as of March 1, 2016 (the “Master Trust Indenture”), as supplemented by the First Supplemental Indenture dated as of March 1, 2016, between AMP and U.S. Bank National Association, as trustee (the “Trustee”), in substantially the form thereof heretofore provided to the Participating Underwriters (defined below). The Master Trust Indenture, as so supplemented, is herein called the “Indenture”. AMP covenants and agrees as follows:

**1. Purpose of the Disclosure Agreement.** This Disclosure Agreement is being executed and delivered by AMP for the benefit of the holders of the Series 2016 Bonds and in order to assist the Participating Underwriters (defined below) in complying with the Rule (defined below). AMP acknowledges that it is undertaking responsibility for any reports, notices or disclosures that may be required under this Agreement. AMP and its officials and its employees shall have no liability by reason of any act taken or not taken by reason of this Disclosure Agreement except to the extent required for the agreements contained in this Disclosure Agreement to satisfy the requirements of the Rule.

**2. Definitions.** In addition to the definitions set forth in the Indenture, which apply to any capitalized term used in this Disclosure Agreement unless otherwise defined in this Disclosure Agreement, the following capitalized terms shall have the following meanings:

“Annual Report” shall mean any Annual Report provided by AMP pursuant to, and as described in, Sections 3 and 4 of this Disclosure Agreement.

“Beneficial Owner” shall mean, for purposes of this Disclosure Agreement, any person who is a beneficial owner of a Series 2016 Bond.

“Dissemination Agent” shall mean AMP, acting in its capacity as Dissemination Agent hereunder, or any successor Dissemination Agent designated in writing by AMP and which has filed with AMP a written acceptance of such designation.

“EMMA” means the Electronic Municipal Market Access system for municipal securities disclosure (<http://emma.msrb.org>) or any other single dissemination agent or conduit required, designated or permitted by the SEC.

“Filing Date” shall have the meaning given to such term in Section 3.1 hereof.

“Fiscal Year” shall mean the twelve-month period at the end of which financial position and results of operations are determined. Currently, AMP’s and each MOP’s Fiscal Year begins January 1 and continues through December 31 of the same calendar year, with the exception of

the City of Danville, Virginia, whose Fiscal Year begins July 1 and ends June 30 of the following calendar year as specified in Section 4 hereof.

“Listed Events” shall mean, with respect to the Series 2016 Bonds, any of the events listed in subsection (b)(5)(i)(C) of the Rule, which are as follows:

- (1) Principal and interest payment delinquencies;
- (2) Non-payment related defaults, if material;
- (3) Unscheduled draws on debt service reserves reflecting financial difficulties;
- (4) Unscheduled draws on credit enhancements reflecting financial difficulties;
- (5) Substitution of credit or liquidity providers, or their failure to perform;
- (6) Adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701-TEB) or other material notices or determinations with respect to the tax status of the Bonds, or other material events affecting the tax status of the Bonds;
- (7) Modifications to rights of security holders, if material;
- (8) Bond calls, if material, and tender offers;
- (9) Defeasances;
- (10) Release, substitution, or sale of property securing repayment of the Bonds, if material;
- (11) Rating changes;
- (12) Bankruptcy, insolvency, receivership or similar event of the obligated person;

Note to clause (12): For the purposes of the event identified in clause (12) above, the event is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent or similar officer for AMP or an obligated person in a proceeding under the U.S. Bankruptcy Code or in any other proceeding under state or federal law in which a court or government authority has assumed jurisdiction over substantially all of the assets or business of AMP or an obligated person, or if such jurisdiction has been assumed by leaving the existing governing body and officials or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of AMP;

- (13) The consummation of a merger, consolidation, or acquisition involving AMP or an obligated person or the sale of all or substantially all of the assets of AMP or

an obligated person, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material;

- (14) Appointment of a successor or additional trustee or the change of name of a trustee, if material;

“MOP” shall mean an “obligated person” within the meaning of the Rule. Each of the Electric Plant Board of Paducah, Kentucky and the cities of Danville, Virginia, and Cleveland, Wadsworth, Orrville and Bowling Green, Ohio, is deemed a MOP.

“MSRB” means the Municipal Securities Rulemaking Board established in accordance with the provisions of Section 15B(b)(1) of the Securities Exchange Act of 1934, as amended or any other entity designated or authorized by the SEC to receive reports pursuant to the Rule.

“Official Statement” shall mean the Official Statement dated May 4, 2016 relating to the Series 2016 Bonds.

“Participating Underwriter” shall mean each original Underwriter of the Series 2016 Bonds required to comply with the Rule in connection with the offering of such Series 2016 Bonds.

“Rule” shall mean Rule 15c2-12 adopted by the Securities and Exchange Commission under the Securities Exchange Act of 1934, as the same may be amended from time to time.

“SEC” means the United States Securities and Exchange Commission.

### **3. Provision of Annual Reports.**

3.1 AMP shall, or shall cause the Dissemination Agent to, provide to the MSRB via EMMA an Annual Report which is consistent with the requirements of Section 4 of this Disclosure Agreement. Such Annual Report shall be filed on a date (the “Filing Date”) that is not later than November 30 of the succeeding Fiscal Year commencing with the report for the fiscal year ending December 31, 2016. Not later than ten (10) days prior to the Filing Date, AMP shall provide the Annual Report to the Dissemination Agent (if applicable). In such case, the Annual Report must be submitted in electronic format and accompanying information as prescribed by the MSRB and (i) may be submitted as a single document or as separate documents comprising a package, (ii) may include by specific reference other information as provided in Section 4 of this Disclosure Agreement, and (iii) shall include such financial statements as may be required by the Rule.

3.2 The annual financial statements of the MOPs shall be prepared on the basis of generally accepted accounting principles, will be copies of the audited annual financial statements and will be filed with the MSRB when they become publicly available. Such annual financial statements may be filed separately from the Annual Report.

3.3 If AMP or the Dissemination Agent (if applicable) fails to provide an Annual Report to the MSRB by the date required in subsection (a) hereto, AMP or the Dissemination Agent, if applicable, shall send a notice to the MSRB in substantially the form attached hereto as Exhibit B.

4. **Content of Annual Reports.** Except as otherwise agreed, any Annual Report required to be filed hereunder shall contain or incorporate by reference, at a minimum, (i) an updated table presenting the Participants and their allocation in the Greenup Facility expressed in kilowatts and percentages as shown on page A-1 of the Official Statement, and (ii) with respect to the MOPs, annual statistical and financial information, including operating data as described in Exhibit A attached hereto, (iii) AMP's audited financial statements and (iv) a description of the capacity factor of the Greenup Facility for the last fiscal year. For purposes of the Annual Report, it is recognized that the fiscal year for the City of Danville, Virginia begins on July 1 and ends June 30 of the following calendar year and, as such, annual statistical and financial information for such City will be as of the end of its fiscal year.

Any or all of such information may be included by specific reference from other documents, including offering memoranda of securities issues with respect to which AMP or a MOP is an "obligated person" (within the meaning of the Rule), which have been filed with the MSRB via EMMA or the Securities and Exchange Commission. If the document included by specific reference is a final Official Statement, it must be available from the MSRB via EMMA. AMP shall clearly identify each such other document so included by specific reference.

5. **Reporting of Listed Events.** AMP will provide in a timely manner to the MSRB via EMMA, if any, notice of any of the Listed Events, if material.

6. **Termination of Reporting Obligation.** AMP's obligations under this Disclosure Agreement shall terminate upon the earlier to occur of the legal defeasance or final retirement of all the Series 2016 Bonds.

7. **Dissemination Agent.** American Municipal Power, Inc. shall be the Dissemination Agent. AMP may, from time to time, appoint or engage another Dissemination Agent to assist it in carrying out its obligations under this Disclosure Agreement and may discharge any such Agent, with or without appointing a successor Dissemination Agent.

8. **Amendment.** Notwithstanding any other provision of this Disclosure Agreement, AMP may amend this Disclosure Agreement, if such amendment is supported by an opinion of independent counsel with expertise in federal securities laws to the effect that such amendment is not inconsistent with or is required by the Rule.

9. **Additional Information.** Nothing in this Disclosure Agreement shall be deemed to prevent AMP from disseminating any other information, using the means of dissemination set forth in this Disclosure Agreement or any other means of communication, or including any other information in any Annual Report or notice of occurrence of a Listed Event, in addition to that which is required by this Disclosure Agreement. If AMP chooses to include any information in any Annual Report or notice of occurrence of a Listed Event, in addition to that which is specifically required by this Disclosure Agreement, AMP shall have no obligation under this

Agreement to update such information or include it in any future Annual Report or notice of occurrence of a Listed Event.

10. **Default.** Any Beneficial Owner may take such action as may be necessary and appropriate, including seeking mandate or specific performance by court order, to cause AMP to file its Annual Report or to give notice of a Listed Event. The Beneficial Owners of not less than a majority in aggregate principal amount of Series 2016 Bonds outstanding may take such actions as may be necessary and appropriate, including seeking mandate or specific performance by court order, to challenge the adequacy of any information provided pursuant to this Disclosure Agreement, or to enforce any other obligation of AMP hereunder. A default under this Disclosure Agreement shall not be deemed an event of default under the Indenture or the Series 2016 Bonds, and the sole remedy under this Disclosure Agreement in the event of any failure of AMP to comply herewith shall be an action to compel performance. Nothing in this provision shall be deemed to restrict the rights or remedies of any holder pursuant to the Securities Exchange Act of 1934, the rules and regulations promulgated thereunder, or other applicable laws.

It shall be a condition precedent to the right, power and standing of any person to bring an action to compel performance under this Disclosure Agreement that, such person, not less than 30 days prior to commencement of such action, shall have actually delivered to AMP notice of such person's intent to commence such action and the nature of the non-performance complained of, together with reasonable proof that such person is a person otherwise having such right, power and standing, and AMP shall not have cured the non-performance complained of.

Neither the commencement nor the successful completion of an action to compel performance under this Disclosure Agreement shall entitle any person to any other relief other than an order or injunction compelling performance.

11. **Beneficiaries.** This Disclosure Agreement shall inure solely to the benefit of the Participating Underwriter and Beneficial Owners from time to time of the Series 2016 Bonds, and shall create no rights in any other person or entity.

AMERICAN MUNICIPAL POWER, INC.

By: \_\_\_\_\_  
Senior Vice President of Finance and  
Chief Financial Officer



## **EXHIBIT A**

### **PARTICIPANT INFORMATION**

- (a) Updates for the previous calendar or fiscal year, as applicable, of the statistical and financial data presented in Appendix B to the Official Statement.
- (b) The audited financial statements for the electric system or, if separate financial statements are not prepared and audited for the electric system, then the audited general purpose financial statements of the MOP. The basis of presentation of such financial statements shall be generally accepted accounting principles or such other manner of presentation as may be required by law.

**EXHIBIT B**

**NOTICE OF FAILURE TO FILE ANNUAL REPORT**

RE: American Municipal Power, Inc.  
\$125,630,000 Greenup Hydroelectric Project Revenue Bonds, Series 2016A (the  
“Series 2016 Bonds”).

CUSIP NO. 02765UJU9 – KQ6

Dated: May \_\_, 2016

NOTICE IS HEREBY GIVEN that American Municipal Power, Inc. (“AMP”) has not provided an Annual Report as required by Section 3 of the Continuing Disclosure Agreement, which was entered into in connection with the above-named Series 2016 Bonds issued pursuant to that certain Master Trust Indenture, dated as of March 1, 2016, as supplemented by the First Supplemental Indenture, dated as of March 1, 2016, each between AMP and U.S. Bank National Association, as trustee. [AMP anticipates that the Annual Report will be filed by \_\_\_\_\_.]

Dated: \_\_\_\_\_

AMERICAN MUNICIPAL POWER, INC.

By: \_\_\_\_\_  
Senior Vice President of Finance and  
Chief Financial Officer

**RESERVE ALTERNATIVE INSTRUMENT PROVIDER**

**BUILD AMERICA MUTUAL ASSURANCE COMPANY**

BAM is a New York domiciled mutual insurance corporation. BAM provides credit enhancement products solely to issuers in the U.S. public finance markets. BAM will only insure obligations of states, political subdivisions, integral parts of states or political subdivisions or entities otherwise eligible for the exclusion of income under section 115 of the U.S. Internal Revenue Code of 1986, as amended. No member of BAM is liable for the obligations of BAM.

The address of the principal executive offices of BAM is: 200 Liberty Street, 27<sup>th</sup> Floor, New York, New York 10281, its telephone number is: 212-235-2500, and its website is located at: [www.buildamerica.com](http://www.buildamerica.com)\*.

BAM is licensed and subject to regulation as a financial guaranty insurance corporation under the laws of the State of New York and in particular Articles 41 and 69 of the New York Insurance Law.

BAM's financial strength is rated "AA/Stable" by Standard and Poor's Ratings Services, a Standard & Poor's Financial Services LLC business ("S&P"). An explanation of the significance of the rating and current reports may be obtained from S&P at [www.standardandpoors.com](http://www.standardandpoors.com)\*. The rating of BAM should be evaluated independently. The rating reflects the S&P's current assessment of the creditworthiness of BAM and its ability to pay claims on its policies of insurance. The above rating is not a recommendation to buy, sell or hold the Series 2016A Bonds, and such rating is subject to revision or withdrawal at any time by S&P, including withdrawal initiated at the request of BAM in its sole discretion.

*Capitalization of BAM*

BAM's total admitted assets, total liabilities, and total capital and surplus, as of December 31, 2015 and as prepared in accordance with statutory accounting practices prescribed or permitted by the New York State Department of Financial Services were \$479.6 million, \$42.3 million and \$437.3 million, respectively.

BAM is party to a first loss reinsurance treaty that provides first loss protection up to a maximum of 15% of the par amount outstanding for each policy issued by BAM, subject to certain limitations and restrictions.

BAM's most recent Statutory Annual Statement, which has been filed with the New York State Insurance Department and posted on BAM's website at [www.buildamerica.com](http://www.buildamerica.com), is incorporated herein by reference and may be obtained, without charge, upon request to BAM at its address provided above (Attention: Finance Department). Future financial statements will similarly be made available when published.

BAM makes no representation regarding the Bonds or the advisability of investing in the Bonds. In addition, BAM has not independently verified, makes no representation regarding, and does not accept any responsibility for the accuracy or completeness of this Official Statement or any information or disclosure contained herein, or omitted herefrom, other than with respect to the accuracy of the information regarding BAM, supplied by BAM and presented in this Appendix I – "Reserve Alternative Instrument Provider".

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\* Information that may be found at such websites is not incorporated by specific reference in this Official Statement.

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## MUNICIPAL BOND DEBT SERVICE RESERVE INSURANCE POLICY (SA)

ISSUER: American Municipal Power, Inc., Ohio

Policy No: 2016N\_\_\_\_\_

MEMBER: American Municipal Power, Inc., Ohio

Effective Date: \_\_\_\_\_

BONDS: Greenup Hydroelectric Project Revenue  
Bonds, Series 2016A

Initial Risk Premium: \$ \_\_\_\_\_

Initial Member Surplus Contribution: \$ \_\_\_\_\_

Total Initial Insurance Payment: \$ \_\_\_\_\_

MAXIMUM POLICY LIMIT: \$ \_\_\_\_\_

Annual Premium: 0.\_\_\_\_% of Policy Limit, payable  
on the dates and in the amounts set forth on  
Schedule A

BUILD AMERICA MUTUAL ASSURANCE COMPANY ("BAM"), for consideration received, hereby UNCONDITIONALLY AND IRREVOCABLY agrees to pay to the trustee (the "Trustee") or paying agent (the "Paying Agent") for the Bonds named above under the Security Documents, subject only to the terms of this Policy (which includes each endorsement hereto), that portion of the principal of and interest on the Bonds that shall become Due for Payment but shall be unpaid by reason of Nonpayment by the Issuer.

BAM will make payment as provided in this Policy to the Trustee or Paying Agent on the later of (i) the Business Day on which such principal and interest becomes Due for Payment and (ii) the first Business Day following the Business Day on which BAM shall have received a completed Notice of Nonpayment in a form reasonably satisfactory to it. A Notice of Nonpayment will be deemed received on a given Business Day if it is received prior to 1:00 p.m. (New York time) on such Business Day; otherwise, it will be deemed received on the next Business Day. If any Notice of Nonpayment received by BAM is incomplete, it shall be deemed not to have been received by BAM for purposes of this paragraph, and BAM shall promptly so advise the Trustee or Paying Agent who may submit an amended Notice of Nonpayment.

Payment by BAM to the Trustee or Paying Agent for the benefit of the Owners shall, to the extent thereof, discharge the obligation of BAM under this Policy. Upon disbursement under this Policy in respect of a Bond and to the extent of such payment, (a) BAM shall become the owner of such Bond, any appurtenant coupon to such Bond and right to receipt of payment of principal of or interest on such Bond and shall be fully subrogated to the rights of the Owner, including the Owner's right to receive payments under such Bond and (b) BAM shall become entitled to reimbursement of the amount so paid (together with interest and expenses) pursuant to the Security Documents and Debt Service Reserve Agreement.

The amount available under this Policy for payment shall not exceed the Policy Limit. The amount available at any particular time to be paid to the Trustee or Paying Agent under the terms of this Policy shall automatically be reduced by and to the extent of any payment under this Policy. However, after such payment, the amount available under this Policy shall be reinstated in full or in part, but only up to the Policy Limit, to the extent of the reimbursement of such payment (after taking into account the payment of interest and expenses) to BAM by or on behalf of the Issuer. Within three (3) Business Days of such reimbursement, BAM shall provide the Trustee or the Paying Agent with Notice of Reinstatement, in the form of Exhibit A attached hereto, and such reinstatement shall be effective as of the date BAM gives such notice.

Payment under this Policy shall not be available with respect to (a) any Nonpayment that occurs prior to the Effective Date or after the end of the Term of this Policy or (b) Bonds that are not outstanding under the Security Documents. In no event shall BAM incur duplicate liability for the same amounts owing with respect to the Bonds that are covered under this Policy and any other BAM issued insurance policy.

Except to the extent expressly modified by an endorsement hereto, the following terms shall have the meanings specified for all purposes of this Policy. "Business Day" means any day other than (a) a Saturday or Sunday or (b) a day on which banking institutions in the State of New York or the Insurer's Fiscal Agent (as hereinafter defined) are authorized or required by law or executive order to remain closed. "Debt Service Reserve Agreement" means the Debt Service Reserve Agreement, dated as of the effective date hereof, in respect of this Policy, as the same may be amended or supplemented from time to time. "Due for Payment" means (a) when referring to the principal of a Bond, payable on the stated maturity date thereof or the date on which the same shall have been duly called for mandatory sinking fund redemption and does not refer to any earlier date on which payment is due by reason of call for redemption (other than by mandatory sinking fund redemption), acceleration or other advancement of maturity (unless BAM shall elect, in its sole discretion, to pay such principal due upon such acceleration together with any accrued interest to the date of acceleration) and (b) when referring to interest on a Bond, payable on the stated date for payment of interest. "Nonpayment" means, in respect of a Bond, the failure of the Issuer to have provided sufficient funds to the Trustee or, if there is no Trustee, to the Paying Agent for payment in full of all principal and interest that is Due for Payment on such Bond. "Nonpayment" shall also include, in respect of a Bond, any payment made to an Owner by or on behalf of the Issuer of principal or interest that is Due for Payment, which payment has been recovered from such Owner pursuant to the United States Bankruptcy Code in accordance with a final, nonappealable order of a court having competent jurisdiction. "Notice" means delivery to BAM of a notice of claim and certificate, by certified mail, email or telecopy or other acceptable electronic delivery, from and signed by the Trustee or the Paying Agent, which notice shall be in a form and substance satisfactory to BAM and shall specify and include (a) the person or entity making the claim, (b) the Policy Number, (c) the claimed amount, (d) payment instructions, (e) the date such claimed amount becomes or became Due for Payment, (f) representations and agreements regarding the assignment and subrogation rights of BAM, and (g) such other provisions as BAM may reasonably require. A form of such Notice can be obtained from BAM upon request. "Owner" means, in respect of a Bond, the person or entity who, at the time of Nonpayment, is entitled under the terms of such Bond to

payment thereof, except that "Owner" shall not include the Issuer, the Member or any person or entity whose direct or indirect obligation constitutes the underlying security for the Bonds. "Policy Limit" means the lesser of (i) the Maximum Policy Limit set forth above and (ii) the dollar amount of the debt service reserve fund required to be maintained for the Bonds by the Security Documents from time to time (the "Reserve Account Requirement"). The Policy Limit shall automatically and irrevocably be reduced from time to time by the amount of each reduction in the Reserve Account Requirement, as provided in the Security Documents. "Security Documents" means any resolution, ordinance, trust agreement, trust indenture, loan agreement and/or lease agreement or any similar document and any additional or supplemental document executed in connection with the Bonds. "Term" means the period from and including the Effective Date until the Termination Date. "Termination Date" means the earlier to occur of (i) the date on which the Bonds are no longer outstanding under the Security Documents and (ii) \_\_\_\_\_ [date].

BAM may appoint a fiscal agent (the "Insurer's Fiscal Agent") for purposes of this Policy by giving written notice to the Trustee and the Paying Agent specifying the name and notice address of the Insurer's Fiscal Agent. From and after the date of receipt of such notice by the Trustee and the Paying Agent, (a) copies of all notices required to be delivered to BAM pursuant to this Policy shall be simultaneously delivered to the Insurer's Fiscal Agent and to BAM and shall not be deemed received until received by both and (b) all payments required to be made by BAM under this Policy may be made directly by BAM or by the Insurer's Fiscal Agent on behalf of BAM. The Insurer's Fiscal Agent is the agent of BAM only, and the Insurer's Fiscal Agent shall in no event be liable to the Trustee, Paying Agent or any Owner for any act of the Insurer's Fiscal Agent or any failure of BAM to deposit or cause to be deposited sufficient funds to make payments due under this Policy.

To the fullest extent permitted by applicable law, BAM agrees not to assert, and hereby waives, only for the benefit of each Owner, all rights (whether by counterclaim, setoff or otherwise) and defenses (including, without limitation, the defense of fraud), whether acquired by subrogation, assignment or otherwise, to the extent that such rights and defenses may be available to BAM to avoid payment of its obligations under this Policy in accordance with the express provisions of this Policy. This Policy may not be canceled or revoked.

This Policy sets forth in full the undertaking of BAM and shall not be modified, altered or affected by any other agreement or instrument, including any modification or amendment thereto. Except to the extent expressly modified by an endorsement hereto, any premium paid in respect of this Policy is nonrefundable for any reason whatsoever, including payment, or provision being made for payment, of the Bonds prior to maturity. THIS POLICY IS NOT COVERED BY THE PROPERTY/CASUALTY INSURANCE SECURITY FUND SPECIFIED IN ARTICLE 76 OF THE NEW YORK INSURANCE LAW. THIS POLICY IS ISSUED WITHOUT CONTINGENT MUTUAL LIABILITY FOR ASSESSMENT.

In witness whereof, BUILD AMERICA MUTUAL ASSURANCE COMPANY has caused this Policy to be executed on its behalf by its Authorized Officer.

BUILD AMERICA MUTUAL  
ASSURANCE COMPANY

By: \_\_\_\_\_  
Authorized Officer

SPECIMEN



## SCHEDULE A

[illegible]

## Notices (Unless Otherwise Specified by BAM)

Email:

claims@buildamerica.com

Address:

200 Liberty Street, 27<sup>th</sup> floor

New York, New York 10281

Telecopy: 212-235-1524 (attention: Claims)

NOTICE OF REINSTATEMENT

[DATE]

[TRUSTEE][PAYING AGENT]  
[INSERT ADDRESS]

Reference is made to the Municipal Bond Debt Service Reserve Insurance Policy, Policy No. \_\_\_\_\_ (the "Policy"), issued by Build America Mutual Assurance Company ("BAM"). The terms which are capitalized herein and not otherwise defined shall have the meanings specified in the Policy, or if not defined therein, in the Debt Service Reserve Agreement.

BAM hereby delivers notice that it is in receipt of payment from the [Issuer], or on its behalf, pursuant to the Debt Service Reserve Agreement and, as of the date hereof, the Policy Limit is \$ \_\_\_\_\_, subject to reduction as the Reserve Account Requirement for the Bonds is reduced in accordance with the terms set forth in the Security Documents.

BUILD AMERICA MUTUAL  
ASSURANCE COMPANY

By: \_\_\_\_\_  
Name:  
Title:



