AMP
PUBLIC POWER PARTNERS™

SUSTAINABILITY PERFORMANCE

At A Glance

Third Quarter 2019

July 1, 2019 — Sept. 30, 2019

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Included below is American Municipal Power, Inc.'s (AMP) 2019 third quarter (Q3) "At a Glance" sustainability report. The quarterly update is intended to measure and compare the progress of sustainability metrics while also highlighting accomplishments. If you have any questions or would like additional information, please contact Erin Miller, director of energy policy and sustainability, at 614.540.1111 or emiller@amppartners.org.

AMP DAY OF SERVICE HELD TO BENEFIT WORTHINGTON RESOURCE PANTRY

On July 30 and Aug. 13, AMP provided staff the opportunity to volunteer with the Worthington Resource Pantry. Staff volunteers helped clean the pantry and restock shelves. Altogether, volunteers provided 18 hours of service.

Located less than a mile from AMP's headquarters, the Worthington Resource Pantry is a center that educates, feeds and comforts people who need a helping hand during tough economic times.

PRAIRIE STATE MINE RECEIVES SAFETY AWARD

For the second year in a row, the Prairie State Generating Company's (PSGC) Lively Grove Mine received an award for having the best incident rate for a Division I mine in the state of Illinois. The award is issued annually by the Illinois Department of Natural Resources (IDNR), Office of Mines and Minerals.

"Safety is our number one value at PSGC. We are constantly seeking ways to improve our safety processes at the mine, and that involves benchmarking ourselves against our peers," said David Hibbs, vice president of mining. "We are honored to receive this award from the IDNR."

Coal mines in Illinois are categorized into two groups: Division I and Division II mines. A Division I coal mine is classified as having greater than 550,000 man-hours worked in one year. Safety statistics from the federal Mine Safety and Health Administration are used to calculate the winner of this award for performance from July 2018 through June 2019.

Prairie State staff presented with IDNR safety award.

AMP CONTINUES HYDROPOWER AWARENESS EFFORTS

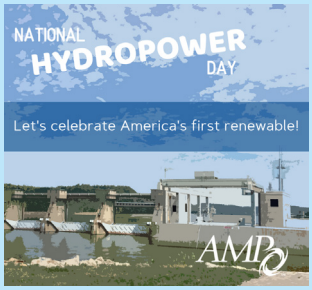
AMP has one of the largest run-of-the-river developments of hydroelectric generation in the region. The six projects that AMP participates in along the Ohio River provide more than 400 MW of renewable energy generation. Additionally, a number of AMP member communities operate their own locally-sited hydroelectric facilities.

In Q3, AMP continued to educate stakeholders about the benefits and importance of this long-term, zero-carbon resource.

On Aug. 1, AMP hosted Congressman David McKinley (R-WV) for a tour of the Willow Island Hydropower Plant. Congressman McKinley is a member of leadership in the U.S. House Energy and Commerce Committee and is a registered professional engineer.

The Willow Island Locks and Dam are located in Pleasants County, W. Va., approximately 162 river miles downstream of Point Bridge in Pittsburgh, Pa.

Congressman David B. McKinley (R-W.Va.) (center) and Jeremy Drennen, City of Philippi city manager (right) were given a tour of the Willow Island facility by Matt Steele, AMP Willow Island operations and maintenance supervisor (left).



AMP CELEBRATES NATIONAL HYDROPOWER DAY

AMP celebrated National Hydropower Day on Aug. 23, joining more than 100 other companies, organizations and individuals promoting hydropower though social media and traditional media campaigns sharing facts about hydropower. The national campaign was spearheaded by the National Hydropower Association. Overall the campaign earned more than 11 million impressions generated on social media and garnered support from members of Congress and numerous government agencies and officials.

AMP HOSTS CAPERTON CENTER FOR APPLIED TECHNOLOGY FOR BELLEVILLE HYDRO TOUR

On Sept. 16, AMP staff hosted 21 students and two teachers from the Caperton Center for Applied Technology (CCAT) for a tour of the Belleville Hydro Facility. CCAT is a technical school in Wood County, W. Va., providing students with a challenging technical education.

AMP/OMEA ANNUAL CONFERENCE CONTINUES TO BE A SUCCESS

More than 375 participants took part in the 2019 AMP/Ohio Municipal Electric Association (OMEA) Annual Conference, held in Columbus, Sept. 23-25.

Following AMP President/CEO Marc Gerken's opening remarks regarding major disruptors within the industry, AMP and OMEA welcomed Sue Kelly, President/CEO of the American Public Power Association (APPA) to join Gerken for an unplugged discussion, moderated by Steve Dupee, AMP Board of Trustees Chair, as both Gerken and Kelly prepare for their impending retirements and reflect upon what's to come for public power.

Conference participants also heard from Judy Chang of the Brattle Group discussing trends and drivers in the power industry and how these changes are driving value for different types of resources.

The conference included sessions covering a number of topics and trends in the power industry - including updates on efforts to control transmission costs, incentives available to assist customers with peak shaving and separate power supply agreements, the impact of electric vehicles on residential distribution systems, programs to support AMP members with technology needs and the annual federal legislative update.

ECOSMART CHOICE

Nine member communities purchased 30,698 megwatt hours (MWh) of renewable energy in the third quarter through AMP's EcoSmart Choice program.

The EcoSmart Choice program is designed to offer a green pricing option for individuals and companies who are interested in purchasing up to 100 percent renewable energy through the purchase and retirement of renewable energy certificates.

EFFICIENCY SMART

The third Efficiency Smart contract term resulted in a savings of 39,320 MWh (net) at the end of the third quarter. There are currently 27 communities participating in the Efficiency Smart program.

For upcoming subscriptions, Efficiency Smart modified its High Performance Comprehensive Program to offer both energy and demand savings options.

FOCUS FORWARD

The Focus Forward Advisory Council recommended the creation of the *Focus Forward Distributed Energy Resource Rate Design: Steps and Lessons Learned* document as an extension of the 2017 Focus Forward Member Toolkit: *Preparing for a Distributed Energy Future*©. This supplemental resource provides steps and lessons learned to help members design rates that are equitable, ensure cost recovery and fairly compensate DER customers (i.e. residential, commercial and/or industrial customers with rooftop solar).

This document condenses the Focus Forward member toolkit's rate design guide into five easy steps and includes the following:

- Summarized cost recovery rate options for all customer classes;
- Examples of metering and billing options specific to DER customers;
- Experiences of fellow members; and
- Links to resources.

AMP offers special appreciation to the following contributors: Courtney & Associates, GDS Associates Inc., members of the Focus Forward Advisory Council and the AMP members of Ephrata, Paducah, Oberlin, Minster, Hamilton and Wadsworth.

Seperately, the Focus Forward Advisory Council Electric Vehicle (EV) sub-group webinar, *Planning for EV Charging Infrastructure in Your Community*, was held Aug. 8, 2019.

Dave Roberts, senior transportation consultant for VEIC presented:

- Tips for engaging with customers and auto dealers; and
- Considerations for siting public infrastructure and options for managing loads to reduce system impacts.

AMP provided updates on the status of VW Settlement funding and the American Public Power Association (APPA) partnership with Nissan to offer member utilities, employees and their customers rebates on the all-electric 2019 Nissan LEAF.

AMP continued to educate municipal utilities on the DEED Public Power EV Planning Toolkit, giving multiple demonstrations and webinar presentations to various municipal utilities. In addition, news and updates from the APPA and the Smart Electric Power Alliance were shared.

LEGISLATIVE AND REGULATORY UPDATES

Ohio House Bill 6

The Ohio General Assembly passed, and Gov. DeWine signed into law, House Bill 6 to subsidize nuclear plants in northern Ohio, as well as two aging coal plants (in Ohio and Indiana) originally built to supply power to a federal facility that provided enriched uranium to the nation's nuclear weapons program.

The House passed version of the bill eliminated the state's renewable portfolio standard, but the Senate restored the RPS. OMEA was actively engaged in lobbying for changes to the legislation due to the detrimental impact it would have on AMP and member renewable generation projects.

The final bill retains the RPS through 2026 at a reduced rate (8.5% reduced from 12.5%) and eliminates the solar carve out. House Bill 6 did create a new subsidy for certain solar projects, with those projects now ineligible to generate RECs and participate in the RPS.

An effort to subject HB 6 to a referendum did not succeed. Opponents of the legislation are challenging the constitutionality of Ohio's referendum process and are currently awaiting the decision of the Ohio Supreme Court, after a federal court denied their request for an extension of the signature collection process.

Pennsylvania

AMP received a favorable ruling from the Pennsylvania Public Utility Commission regarding two longer-term SREC Agreements that AMP has with two Pennsylvania utilities, which purchase SRECS from the Napoleon Solar Facility.

PRAIRIE STATE SELECTED FOR DOE CARBON CAPTURE STUDY

PRAIRIE STATE Energy Campus

In September, the U.S. Department of Energy announced that the PSGC has been selected as the site of a $15 million DOE carbon capture study project.

PSGC will be investing $3.75 million in cost-share to produce a front-end engineering and design (FEED) study at one of its 800-MW coal-fired power units. The FEED study provides an opportunity to fully understand the costs and operational impacts of such a system.

CARBON MANAGEMENT

In June, AMP President/CEO Marc Gerken convened an internal, cross-departmental, Carbon Leadership Team to best position AMP and its members for a carbon constrained world. Its goals are to:

- Identify risks and opportunities to AMP and its members from a carbon constrained future;
- Educate/inform/dialogue with members about the Carbon Leadership Team;
- Set a baseline and develop a GHG emission inventory;
- Set reduction target(s);
- Identify strategies to meet target(s); and
- Develop policy statements / positions.

As part of its Carbon Management Program, AMP in partnership with the Ohio Department of Natural Resources and Columbiana County Park District, planted 467 acres of forest (over 320,000 seedlings) between 2010 and 2016. In July and August 2019, AMP conducted field visits of the reforestation sites.

Lauren Etzwiler, AMP environmental intern, standing next to an oak tree planted in 2012 in Hellbender Bluff Park. There were 125,800 trees planted over 185 acres in this park.

AMP RENEWABLE ENERGY PRODUCTION, ENERGY EFFICIENCY: EMISSIONS AVOIDANCE

	Q3 2019 MWh	CO2 emissions avoided (Tons)*	SO2 emissions avoided (Tons)*	NOx emissions avoided (Tons)*	Total emissions avoided (Tons)
Belleville Hydro (JV5)	69,307	30,772	22.18	16.98	30,811
Greenup Hydro (total plant)****	88,923	39,482	28.46	21.79	39,532
Meldahl Hydro	128,980	57,267	41.27	31.60	57,340
Cannelton Hydro	123,952	55,035	39.66	30.37	55,105
Willow Island Hydro	55,191	24,505	17.66	13.52	24,536
Smithland Hydro	86,489	38,401	27.68	21.19	38,450
AMP Wind Farm (JV6)	1,519	674	0.49	0.37	675
Napoleon Solar	1,554	690	0.50	0.38	691
Landfill Gas***	92,333	605,429	29.55	22.62	605,481
Blue Creek Wind	18,324	8,136	5.86	4.49	8,146
EcoSmart Choice	30,698	13,630	9.82	7.52	13,647
Efficiency Smart	6,689	2,970	2.14	1.64	2,974
Solar Phase II	29,194	12,962	9.34	7.15	12,979
Carbon Offset** Forestation Projects	467 acres	121.75**			121.75
					890,489

*https://www.pjm.com/-/media/library/reports-notices/special-reports/2018/2018-emissions-report.ashx?la=en

**USEPA estimates 1.043 tons of CO2 is sequestered annually by one acre of average U.S. forest.*

**** Includes direct emissions reduced from methane (CO2e) and avoided emissions from CO2. https://www.epa.gov/lmop/landfill-gas-energy-benefits-calculator*

***** AMP's share of the Greenup Hydro facility is 48.6 percent.*

GREEN BOND FINANCED PROJECTS – Q3 2019 REPORT

	Meldahl	Combined Hydro (Cannelton, Willow Island, Smithland)	Solar Phase II
Net Renewable Capacity (MW)	108.8	208	49.45
Net Renewable Generation (MWh)	128,980	265,632	29,194
Capacity Factor (%)	54%	58%	N/R
Emissions Avoidance			
CO2 (GHG) emissions avoided (Tons)	57,267	117,941	12,962
SO2 emissions avoided (Tons)	41.27	85.00	9.34
NOx emissions avoided (Tons)	31.60	65.08	N/R

2018 PJM Market Power Fuel Breakdown [2]	
Nuclear	34.20%
Natural Gas	30.60%
Coal	28.60%
Wind and Solar	2.80%
Hydroelectric	2.30%
Other	1.50%
Total	100.00%

2018 PJM Market Power Emissions Rate[1]	
CO2 (GHG) emissions Factor (lbs/MWh)	888
SO2 emissions Factor (lbs/MWh)	0.64
NOx emissions Factor (lbs/MWh)	0.49

[1] PJM 2014-2018 CO2, SO2 and Nox Emissions Rates Report April 5, 2019

[2] PJM State of the Market Report, 2018 Table 3-9

POWER GENERATION

in net MWh

July 1, 2019 — Sept. 30, 2019

AMP Wind Farm (JV6): 1,519

AMP Fremont Energy Center (AFEC):* 1,112,649

Belleville Hydro (JV5): 69,307

Greenup Hydro:* 88,923

Meldahl Hydro: 128,980

Cannelton Hydro: 123,952

Willow Island Hydro: 55,191

Smithland Hydro: 86,489

Prairie State Energy Campus (PSEC):** 652,960

Distributed Generation: 9,377

Landfill Gas: 92,333

Blue Creek Wind:** 18,324

Napoleon Solar: 1,554

Solar Phase II: 29,194

* Total plant ** AMP's share

HEALTH AND SAFETY

July 1, 2019 — Sept. 30, 2019

Employee Work Related Fatalities: 0

Recordable Incidents or Accidents: 0

Lost Work Day Incidents: 0

COMMUNITY

July 1, 2019 — Sept. 30, 2019

AMP Employee Charitable Giving: $5,813

ENVIRONMENT

emissions in short tons (AFEC, AMP share of Prairie State, gas and diesel turbines)

July 1, 2019 —Sept. 30, 2019

CO2 emissions: 1,243,466.4

SO2 emissions: 575.6

NOx emissions: 304.8

PM emissions: 27.5

CO emissions: 34.5

Hg emissions (in lbs): 5.5

HAZARDOUS, UNIVERSAL, OTHER WASTE

July 1, 2019 — Sept. 30, 2019

8,893 lbs. of waste, 31,880 lbs. of trash

TRASH PULLED FROM THE OHIO RIVER

July 1, 2019 — Sept. 30, 2019

25,580 lbs

ENERGY EFFICIENCY AND ECOSMART CHOICE REC SALES

July 1, 2019 — Sept. 30, 2019

Efficiency Smart Cumulative Savings

2014 — 2019: 107,642 MWh **2019 Q3:** 6,689 MWh

EcoSmart Choice REC Sales: 30,698 MWh

RECYCLING AND REUSE

July 1, 2019 — Sept. 30, 2019

Recycled glass, plastic, metals, paper and cardboard
17,993 lbs.