Sustainability Performance

At A Glance

Third Quarter 2018

July 1, 2018 — Sept. 30, 2018

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Included below is American Municipal Power, Inc.'s (AMP) 2018 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.

A ribbon cutting ceremony for the Smyrna Solar Facility on July 10, celebrating completion of the 1.5 MW project.

SMYRNA SOLAR FACILITY REACHED COMMERCIAL OPERATION

A ribbon cutting ceremony was held for the Smyrna Solar Facility on July 10, celebrating completion of the 1.5 MW project. With the addition of this solar project, the Delaware Municipal Electric Corporation (DEMEC) and its member communities maintain more than 26 MW of solar power, which is more than 50 percent of the state's solar generation.

The project is the result of a partnership between DEMEC, AMP and DG AMP Solar, LLC, a subsidiary of NextEra Energy Resources (NextEra), and is part of the AMP Solar Phase II Project, which will lead to the construction of approximately 60 MW of new solar electric generation facilities.

Solar technology continues to become more efficient and cost-effective, and it is an important component in diversifying member generation portfolios. With the addition of the Smyrna site, the Solar Phase II Project has a total of 33 MW at 11 solar facilities in member communities that are in commercial operation. Approximately another 27 MW are in the study or development phase.

PSGC LAUNCHES NEW CONSERVATION EFFORT

The Prairie State Generating Company (PSGC) announced plans to aid monarch butterfly population growth. Milkweed, a necessary plant for monarch butterflies, has already been planted in multiple areas across the energy campus, and plans for additional plantings are underway.

The Illinois Department of Natural Resources (IDNR) Division of Natural Heritage works to improve and increase the amount of habitat for native pollinators statewide, including Illinois' state insect, the monarch butterfly. The monarch butterfly population has decreased in the United States by 88 percent from 1999 to 2012. Their larvae can only eat milkweed, a plant that is indigenous to Illinois. Many milkweed plants grow in public locations that are mowed on a routine basis.

PSGC joined IDNR's statewide initiative to aid the growth of the monarch butterfly population. "Sustainability is one of Prairie State's core values. We are committed to being good environmental stewards. This campus-wide conservation effort is just one way we can contribute to the long-term sustainability of the monarch butterfly and other pollinators that are critical to agricultural growth in the state," said Don Gaston, president and CEO of PSGC.

AMP/OMEA ANNUAL CONFERENCE A SUCCESS

More than 300 participants took part in the 2018 AMP/Ohio Municipal Electric Association (OMEA) Annual Conference, held in Cleveland, Sept. 24-27.

Following the welcome from AMP President/CEO Marc Gerken and his opening remarks regarding major disruptors within the industry, AMP and OMEA welcomed Sue Kelly, President/CEO of the American Public Power Association. Kelly provided an update on challenges and opportunities currently facing public power.

Conference participants also heard from Steve Collier of Milsoft Utility Solutions, discussing new technologies and business models disrupting the industry, and from Kelly Daly, an industry expert providing an update on how industries across the globe are using drones and what regulations are to be considered.

During the conference, participants were able to attend panel discussions regarding energy market trends — including the value of local generation, an overview of electric vehicle technologies and charging infrastructure, best practices for crisis communications and social media strategy, and state and federal legislative updates.

In addition to the many sessions and events, AMP, OMEA and the various project participants held membership meetings throughout the four-day annual conference.

ADVANCED METERING INFRASTRUCTURE PROGRAM

Deployments:

- Borough of Ephrata – Ephrata's base AMI system has been deployed and ElectSolve continues to develop, integrate and deploy value added applications and modules to the operational data management system portal, uCentra. These value adds include CentraVU customer engagement portal, line loss analysis, voltage analysis and transformer load analysis.
- City of Seaford – Seaford's electric mass meter deployment is complete and the installers, NextGen, continue the water mass meter deployment. As of Sept. 30, there were 3,718 active electric meters and 647 active water meters and modules deployed in Seaford.
- City of Milford – Milford's electric mass meter deployment is nearly complete and the water mass meter deployment continues. As of Sept. 30, there were 6,691 active electric meters and 1,461 active water meters and modules deployed in Milford.

Water meter deployment in Milford, Del. on July 24.

Marc Gerken (left) AMP President/CEO, and Steve Dupee (right), AMP Board of Trustees Chair, stand in front of AMP's ChargePoint charging station and AMP's fleet plug-in hybrid vehicle.

AMP CELEBRATES INSTALLATION OF EV CHARGING STATION

On July 19, AMP celebrated the installation of an electric vehicle (EV) charging station at its Columbus headquarters.

"AMP is committed to our sustainability principles," said Marc Gerken, AMP president and CEO. "Providing employees, tenants, visitors and members an EV charging station with free charging for their vehicles is an exciting achievement."

In January, AMP completed the installation of the CT4000 ChargePoint charging station for two electric vehicles. The CT4000 is the first ENERGY STAR® certified EV charger because it charges efficiently and conserves power when not charging. Each of the two Level 2 charging ports supply up to 7.2 kW and can charge any EV. The project was approved by the AMP Board of Trustees in 2017.

The July 19 event was held in partnership with Smart Columbus' day-long EV Ride & Drive Roadshow. The Ride & Drive Roadshow allowed AMP Board of Trustees members and AMP staff to test drive of some of the newest electric vehicles on the market.

As the winner of the U.S. Department of Transportation's first-ever Smart City Challenge, Columbus was awarded $50 million in grant funding and the designation as America's Smart City. The initiative seeks to transform mobility, working to deploy more affordable, reliable and sustainable transportation options. Smart Columbus was formed as a part of those efforts.

ECOSMART CHOICE

The City of Westerville joined the EcoSmart Choice® program in July.

Ten member communities purchased 11,116 megawatt 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

At the end of the third quarter, actual savings achieved under the third Efficiency Smart contract stood at 24,093 MWh (Net). There are currently 25 member communities participating in the Efficiency Smart program.

Revenue from the sale of Efficiency Smart capacity savings for the delivery year 2017–2018 in PJM of approximately $34,640 were paid this quarter.

FOCUS FORWARD

The Focus Forward Advisory Council (FFAC) and EV sub-group met July 12 to discuss distributed energy resources (DER), such as energy storage, electric vehicles (EV) and solar. The group provided updates on key takeaways from the recent American Public Power Association (APPA) and Smart Electric Power Alliance (SEPA) conferences they attended, a summary of EV adoption and projection rates for our region and the latest progress on the Volkswagen Clean Air Act Settlement grant money.

On Aug. 21, the EV sub-group met to review the "Electric Vehicles: Lessons learned for public power systems" document, which was released in final form in September at the 2018 AMP/OMEA Annual Conference, and available here (login required).

On Sept. 26, the FFAC met at the AMP/OMEA Annual Conference to reflect on the past year and plan 2018/2019 priorities and activities. The following four priorities were identified by the group, reinforcing the importance of FFAC's previous efforts and suggesting the topics warrant continued attention.

1. Assist membership with all facets of electric vehicles (fleet, customer, accessing grant funding, cooperative procurement, public charging stations, etc.)
2. Educate membership on emerging DER (energy storage, microgrids, solar, sample timelines and steps, rate designs)
3. Assist membership with digital customer communications (social media toolkit, billing portals, web applications)
4. Assist membership with DER / distribution system technical evaluations (distribution level assessment and modeling, energy storage evaluations)

In addition, AMP published Update articles educating members on SEPA's solar, storage and demand response snapshot reports, webinars of interest and utility commission grid modernization trending efforts.

LEGISLATIVE AND REGULATORY UPDATES

AMP tracks important rules and provides updates to members as appropriate. Originally published in October 2015, the U.S. Environmental Protection Agency (EPA) released the Clean Power Plan (CPP) with a goal of reducing CO2 emissions from electric utilities by directing states to develop plans to achieve federally mandated emissions reductions. The rule was immediately challenged and implementation held in abeyance by the U.S. Supreme Court.

On Aug. 31, 2018, the EPA published the proposed Affordable Clean Energy (ACE) Rule, which is intended to replace the CPP. AMP/OMEA submitted comments on the proposed rule Oct. 31. They can be found here.

AMP RENEWABLE ENERGY PRODUCTION: EMISSIONS AVOIDANCE

	Q3 2018 MWh	CO2 emissions avoided (Tons)*	SO2 emissions avoided (Tons)*	NOx emissions avoided (Tons)*	Total emissions avoided (Tons)
Belleville Hydro (JV5)	63,960	30,317	24.30	21.11	30,362
Greenup Hydro (total plant)	89,155	42,259	33.88	29.42	42,323
Meldahl Hydro	130,488	61,851	49.59	43.06	61,944
Cannelton Hydro	135,226	64,097	51.39	44.62	64,193
Willow Island Hydro	51,501	24,441	19.57	17.00	24,448
Smithland Hydro	94,275	44,686	35.82	31.11	44,753
AMP Wind Farm (JV6)	1,193	565	0.45	0.39	566
Napoleon Solar	1,213	575	0.46	0.40	576
Landfill Gas**	87,312	575,126	33.18	28.81	575,188
Blue Creek Wind	16,286	7,720	6.19	5.37	7,731
EcoSmart Choice	11,116	5,269	4.22	3.67	5,277
Efficiency Smart (cumulative savings)	92,415	43,805	35.12	30.50	43,870
Solar Phase II	15,114	7,164	5.74	4.99	7,175
Carbon Offset*** Forestation Projects	467 acres	122			122
					908,528

*http://pjm.com/-/media/library/reports-notices/special-reports/20180315-2017-emissions-report.ashx?la=en
**Includes direct emissions reduced from methane (CO2e) and avoided emissions from CO2. https://www.epa.gov/lmop/landfill-gas-energy-benefits-calculator
***U.S. EPA estimates 1.043 tons of CO2 is sequestered annually by one acre of average U.S. forest.

GREEN BOND FINANCED HYDRO PROJECTS – Q3 2018 REPORT

	Meldahl	Combined Hydro (Cannelton, Willow Island, Smithland)
Net Renewable Capacity (MW)	108.8	208
Net Renewable Generation (MWh)	130,488	281,002
Capacity Factor (%)	54%	61%
Emissions Avoidance		
CO2 (GHG) emissions avoided (Tons)	61,851	133,195
SO2 emissions avoided (Tons)	49.59	106.78
NOx emissions avoided (Tons)	43.06	92.73

2017 PJM Market Power Emissions Rate[1]	
CO2 (GHG) emissions Factor (lbs/MWh)	948
SO2 emissions Factor (lbs/MWh)	0.76
NOx emissions Factor (lbs/MWh)	0.66

2017 PJM Market Power Fuel Breakdown [2]	
Coal	32.28%
Oil	5.50%
Natural Gas	53.26%
Nuclear	1.23%
Wind	7.28%
Other	0.45%
Totals	100.00%

[1] PJM 2013-2017 CO2, SO2 and Nox Emissions Rates Report March 15, 2018
[2] PJM State of the Market Report, 2017 Table 3-7

POWER GENERATION

in net MWh

July 1, 2018 — Sept. 30, 2018

AMP Wind Farm (JV6): 1,193

AMP Fremont Energy Center (AFEC):* 1,140,089

Belleville Hydro (JV5): 63,960

Greenup Hydro:* 89,155

Meldahl Hydro: 130,488

Cannelton Hydro: 135,226

Willow Island Hydro: 51,501

Smithland Hydro: 94,275

Prairie State Energy Campus (PSGC):** 696,707

Distributed Generation: 14,246

Landfill Gas: 87,312

Blue Creek Wind:** 16,286

Napoleon Solar: 1,213

Solar Phase II: 15,114

* Total plant ** AMP's share

HEALTH AND SAFETY

July 1, 2018 — Sept. 30, 2018

Employee Work Related Fatalities: 0

Recordable Incidents or Accidents: 0

Lost Work Day Incidents: 0

COMMUNITY

July 1, 2018 — Sept. 30, 2018

AMP Employee Charitable Giving: $6,722

ENVIRONMENT

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

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CO2 emissions: 1,300,231

SO2 emissions: 634.8

NOx emissions: 332.8

PM emissions: 45.4

CO emissions: 39.3

VOC emissions: 10.8

Hg emissions (in lbs.): 6.2

HAZARDOUS, UNIVERSAL, OTHER WASTE

July 1, 2018 — Sept. 30, 2018

3.37 tons non-haz waste (**AFEC)**

TRASH PULLED FROM THE OHIO RIVER

July 1, 2018 — Sept. 30, 2018

252 tons

ENERGY EFFICIENCY AND ECOSMART CHOICE REC SALES

July 1, 2018 — Sept. 30, 2018

Efficiency Smart Cumulative Savings

2014-2018: 92,415 MWh **2018 Q3:** 2,144 MWh

EcoSmart Choice REC Sales: 11,116 MWh

AMP HEADQUARTERS RECYCLING

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Recycled glass, plastic, metals, paper and cardboard

14,298 lbs.