



# SUSTAINABILITY PERFORMANCE

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## At A Glance Fourth Quarter 2016

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Included below is AMP's 2016 Q4 At a Glance sustainability report. The quarterly update is intended to measure and compare the progress of sustainability metrics while also highlighting accomplishments in the quarter. If you have any questions or would like additional information, please contact Erin Miller, director of energy policy and sustainability, at 614.540.1019 or [emiller@amppartners.org](mailto:emiller@amppartners.org).

## FOCUS FORWARD AND 2016 APPA PUBLIC POWER FORWARD CONFERENCE

AMP staff and consultants offered a webinar on Oct. 24 to review the content of the Focus Forward Member Toolkit. The webinar was attended by representatives from 15 member communities and a recording is available on the AMP [Member Extranet](#).



In December, members of the AMP Board of Trustees and AMP staff attended the American Public Power Association (APPA) Public Power Forward Summit in Arlington, Virginia. Held annually, the Public Power Forward Summit is an event for those in public power to explore the important policy, operational and communications issues defining the future of the industry. AMP's Focus Forward Initiative was developed to assist AMP members in addressing these national trends. Attendees of this year's summit heard presentations and learned about:

- Industry changes and shifting state/federal landscape, including initial implications for public power under President Trump's administration.

- The future of energy storage and public power case studies focused on integrating storage and solar.
- Department of Energy (DOE) grid modernization public power case studies highlighting federally funded public power projects focused on grid resiliency, distribution system monitoring and fiber upgrades.
- Consumer perspectives of Public Power Forward including changes to rate design and shifting customer preferences. A presentation from E Source highlighting these shifts has been attached.

Tom Natarian, AMP Board member and director of operations for the Borough of Ephrata, presented on the importance of using technology and rate design to meet customer expectations and maintain utility operations.

The Public Power Forward Summit is part of the APPA's Public Power Forward initiative, designed to help prepare members for the changing climate of the electric industry. The presentations from the conference are available on APPA's website.

A link to APPA's website has been posted to the Public Power Forward portion of the AMP extranet.

AMP staff is interested in obtaining member feedback for recommended areas of focus for 2017. Please contact Erin Miller at 614.540.1019 or [emiller@amppartners.org](mailto:emiller@amppartners.org) with ideas or topics.

## ENVIRONMENT emissions in short tons

Oct. 1, 2016 – Dec. 31, 2016

<b>CO2 emissions:</b> 729,598	<b>SO2 emissions:</b> 489.44	<b>NOx emissions:</b> 213.73
<b>PM emissions:</b> 20.89	<b>CO emissions:</b> 21.16	<b>VOC emissions:</b> 5.23

## ENERGY EFFICIENCY & ECOSMART CHOICE REC SALES

Oct. 1, 2016 – Dec. 31, 2016

<b>Efficiency Smart Percent of 2014-2016</b> Target: 149%	<b>Efficiency Smart - Cumulative Savings</b> 2014-2016: 68,962 MWh	<b>EcoSmart Choice REC Sales:</b> 11,271 MWh
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## AMP HEADQUARTERS RECYCLING

Oct. 1, 2016 – Dec. 31, 2016

<b>AMP HQ Recycled Glass, Plastic &amp; Metals</b> (in lbs): 79	<b>AMP HQ Recycled paper and cardboard</b> (in lbs): 2,310
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## AMI CONTINUED PROGRAM ROLLOUT

Many AMP members are considering advanced metering infrastructure (AMI) deployments as an alternative to their existing manual, handheld or drive-by metering system.

AMP's AMI program provides an alternative for members considering deploying the technology. Instead of deploying and supporting these systems locally or choosing a vendor-hosted solution, AMP developed a collaborative solution in conjunction with 11 members considering AMI deployments.

AMP researched the AMI marketplace by reviewing responses from over 20 vendors and selected top-tier providers to give members access to technology and capabilities that can provide the foundations for a smart city.

The program allows for lower cost acquisition of electric, water and gas meters and communications equipment through purchasing aggregation, sharing of key resources necessary to deploy meters and systems operation. The IT infrastructure is also provided using a shared services operating model.

AMP is working with industry-leading technology partners to deliver a comprehensive solution, which includes:

- Extensive information enabling local utilities to become fully educated on AMI.
- Unit pricing on electric, water and gas meters, and communications modules and installation services.
- No meter vendor lock-in.
- Field networks capable of supporting AMI, street lighting control and a variety of other communications needs.
- An extensive application portfolio including customer portals, GIS and SCADA interfaces, and engineering applications.

- A fully managed AMI-headend and meter data management system.
- Advanced cybersecurity, intrusion prevention, data encryption and monitoring of all systems.
- Dedicated staff to manage the system and issue resolution.

AMP's first member deployment is underway and several members are expected to execute contracts in 2017. AMP has a goal of serving over 200,000 meters by the end of 2018.

For additional information about AMP's AMI program, please contact Jared Price, assistant vice president of IT and chief technology officer, at [jprice@amppartners.org](mailto:jprice@amppartners.org) or 614.540.1069; or Brannndon Kelley, chief information officer, at [bkelly@amppartners.org](mailto:bkelly@amppartners.org) or 614.540.0879.

## ECOSMART CHOICE

Eight member communities purchased more than 11,200 MWh of green power in the fourth quarter through AMP's EcoSmart Choice program. The program totaled more than 48,000 MWh in 2016 and welcomed the City of Hudson in 2017 as its ninth participating member community.



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 of renewable energy certificates (RECs).

## EFFICIENCY SMART

At the end of the fourth quarter 2016, actual savings achieved under the second Efficiency Smart contract stood at 68,962 MWh (or 149 percent of the three-year target).



Efficiency Smart 3.0 was made available to members in September 2016. The new Efficiency Smart product menu features four performance-based service options and numerous a la carte service options at various price points. Members are able to choose a contract for performance-based and a la carte services at any time due to the program's rolling subscription feature.

All energy savings for the performance-based products are independently verified and guaranteed. Municipalities taking a performance-based service will be refunded for any guaranteed savings not delivered.

The expanded program's open enrollment continues and subscriptions are available.

## SOLAR PHASE II PROJECT DEVELOPMENTS

DG AMP Solar, LLC, a wholly owned subsidiary of NextEra Energy Resources, has continued construction progress on the Tier I sites. Bowling Green, Prospect and Marshallville sites reached mechanical completion of construction in late fourth quarter, with commercial operation following in early 2017. Individual site highlights include the completion of a 1.75 mile, 69 kV line extension at Bowling Green and a 0.5 mile, 13.2 kV line extension at Marshallville.

Construction and site development activities began at Front Royal in November 2016. The site reached mechanical completion of construction in March 2017. Additional sites are under development in Ohio, Michigan and Delaware. Due diligence activities and planning for Tier 2 sites continues.

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## AMP HYDRO UPDATE

As of the end of Q4, the Belleville, Cannelton, Willow Island, Greenup and Meldahl plants continue commercial operations. A monthly energy production summary of the hydro facilities is highlighted below.

In the fourth quarter of 2016, construction continued at the Smithland plant. This included the installation of the Unit 1 upper discharge ring and Unit 3 generator hatch cover and access shaft. Turbine and generator installation work was underway, as well as the testing, flushing and installation of the oil piping systems for the turbines and generators in Units 2 and 3. Installation of the fire alarm system, plant grounding and water level monitoring systems was also underway in Q4, and construction of the recreation area was nearing completion.

As of the date of publication, the Smithland's Unit 1 has been watered up.

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## AMP RENEWABLE ENERGY PRODUCTION: EMISSIONS AVOIDANCE

	Q4 MWh	Quarterly CO2 emissions avoided (Tons)	Quarterly SO2 emissions avoided (Tons)	Quarterly NOx emissions avoided (Tons)
Belleville Hydro (JV5)	74,174	37,606	59.71	28.93
Greenup Hydro	87,258	44,240	70.24	34.03
Meldahl Hydro	146,748	74,401	118.13	57.23
Cannelton Hydro	133,642	67,756	107.58	52.12
Willow Island Hydro	63,269	32,077	50.93	24.67
AMP Wind Farm (JV6)	3,139	1,591	2.53	1.22
Napoleon Solar	894	453	0.72	0.35
Landfill Gas	83,983	42,579	67.61	32.75
Blue Creek Wind	40,765	20,668	32.82	15.90

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## EMPLOYEE GIVING

Staff at AMP headquarters gave back to the Columbus area community for the 2016 holiday season by donating to the Mid-Ohio Foodbank and Community Shelter Board. Employees collected more than 300 pounds of canned goods, toiletries, clothing and other items to be donated to the two organizations.

In addition to holiday giving initiatives, AMP employees donated a total of \$4,687.50 in 2016 to local charities through payroll deduction.



## POWER GENERATION

in net MWh

Oct. 1, 2016 – Dec. 31, 2016

**AMP Wind Farm (JV6): 3,139**

**AMP Fremont Energy Center (AFEC): 137,448**

**Belleville Hydro (JV5): 74,174**

**Greenup Hydro: 87,258**

**Meldahl Hydro: 146,748**

**Cannelton Hydro: 133,642**

**Willow Island Hydro: 63,269**

**Prairie State Generating Co. (PSGC) (delivered to participants): 584,158**

**Distributed Generation: 122**

**Landfill Gas: 83,983**

**Blue Creek Wind: 40,765**

**Napoleon Solar: 894**

## HEALTH & SAFETY

Oct. 1, 2016 – Dec. 31, 2016

**Employee Work Related Fatalities:**

0

**Recordable Incidents or Accidents:**

0

**Lost Work Day Incidents:**

0

## COMMUNITY

Oct. 1, 2016 – Dec. 31, 2016

**AMP Employee Charitable Giving: \$4,687.50**

