



POWER SUPPLY | GENERATION | FINANCIAL | MEMBER SERVICES | RISK MANAGEMENT | SUSTAINABILITY

# Hydroelectricity: Powering the Future of Ohio's Municipal Electric Utilities

*Erin Miller, Director of Energy Policy & Sustainability* | 05/04/2017



# AMP Vision, Mission and Values

## ***Vision***

To be public power's leader in wholesale energy supply and value-added Member services.

## ***Mission***

To provide Members with the benefits of scale and expertise in providing and managing energy services.

## ***Values***

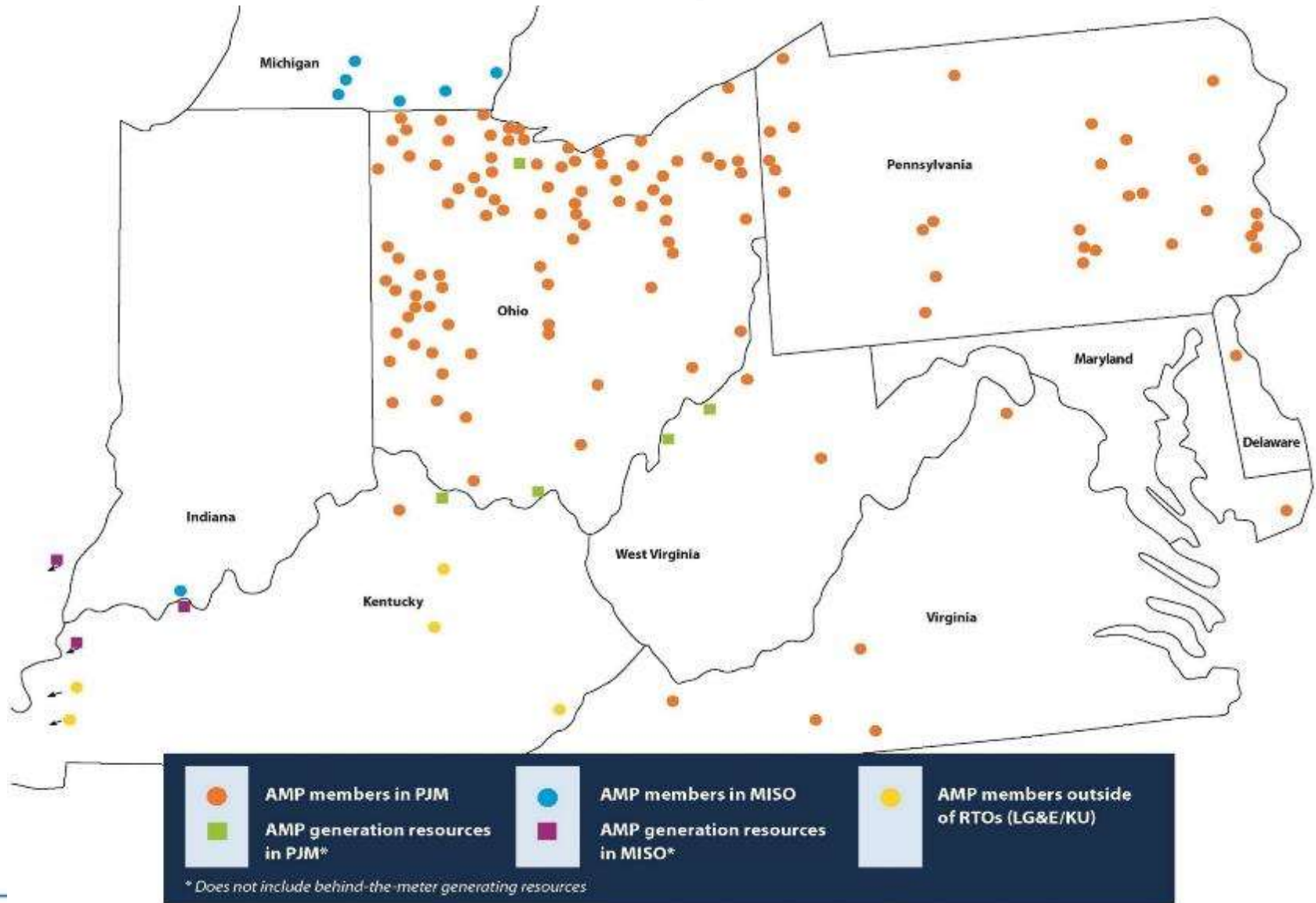
- **Cooperation:** Work together to achieve common goals.
- **Integrity:** Be honest, fair, reliable and ethical.
- **Innovation:** Develop new and creative approaches that increase value to our members.
- **Action Oriented:** Anticipate, adapt and act.
- **Effective Communication:** Foster open, honest, timely and responsible two-way communications; listen actively and show respect for others.
- **Member Focus:** To continually improve timely, dedicated and professional support to our members and their customers.

# About AMP

- Headquartered in Columbus, Ohio
- 166 full-time positions at headquarters and generating facilities
- Our members serve more than 650,000 customers
- 2016 system peak: 3,402 MW
- 2016 energy sales: 14.5 million MWh\*
- 2016 power sales revenue: \$1.14 billion\*
- Total assets of more than \$6.7 billion

\* ***Unaudited***

# AMP Member Footprint



# AMP

## Generation Portfolio



### Hydroelectric –

- Meldahl, 105 MW
- Greenup, 34.1 MW share
- Belleville, 42 MW
- Willow Island, 44 MW
- Cannelton, 88 MW
- Member Units, 61.8 MW



### Fossil Fuel –

- Natural Gas - Fremont Energy Center, 675 MW
- Coal - Prairie State Energy Campus, 368 MW share



Solar Power – Napoleon Facility, 3.54 MW



Landfill Gas –64 MW (PPA)



### Wind Power –

- AMP Wind Farm, 7.2 MW
- Blue Creek Wind Farm (PPA), 52 MW



AMP and Joint Venture Owned Distributed Generation Gas/Diesel, 324 MW



### Hydro Projects Under Development

#### Combined Hydro:

- Smithland, 76 MW
- RC Byrd in final licensing

### BTM Solar Under Development

Solar Phase II, up to 80MW (PPA)

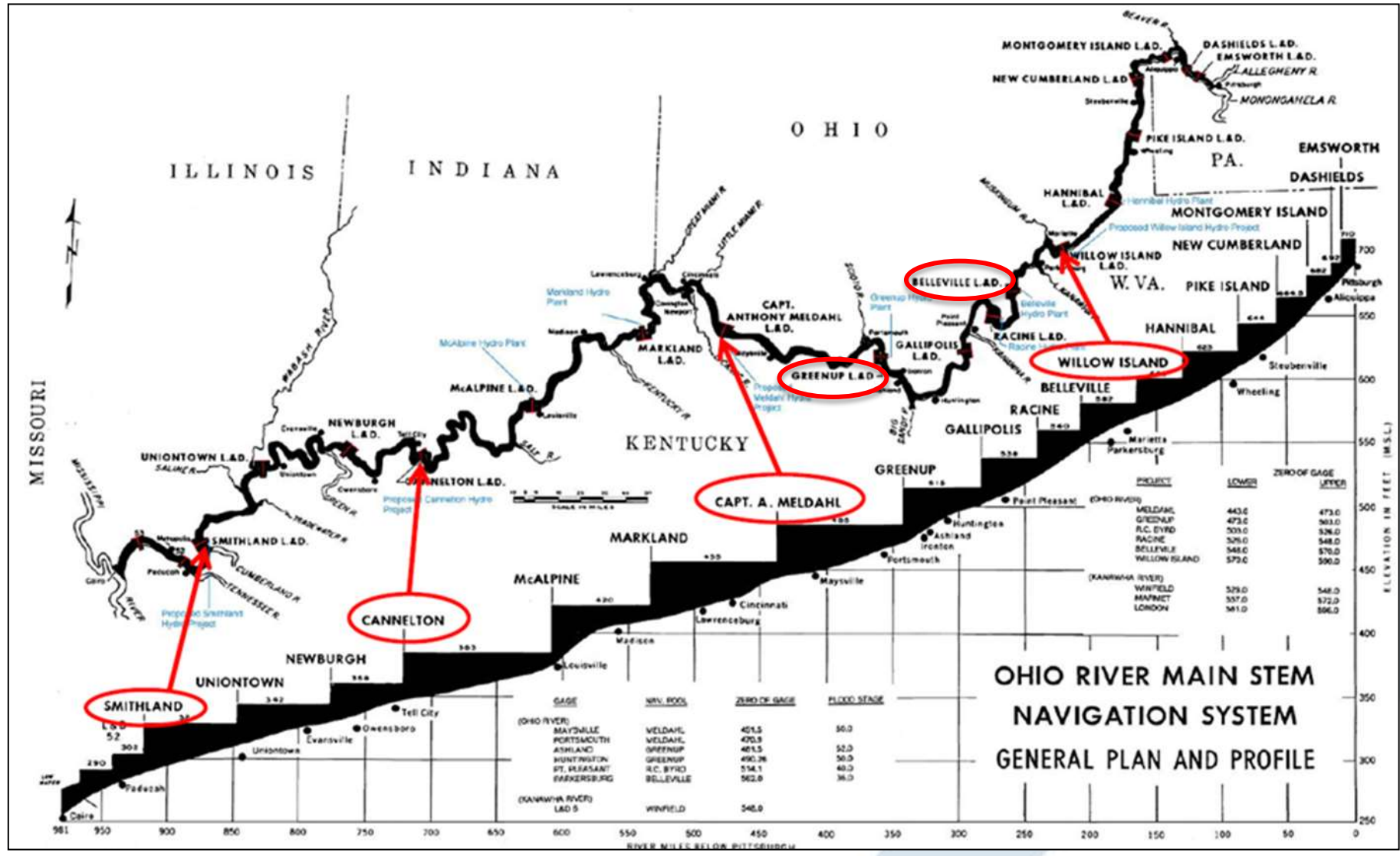
# Hydro Advantages

- Long-term investment; plants can operate 80-100 years
- No emissions; mitigates the risk of future regulation
- Run-of-the-river projects have minimal environmental impact
- Predictable performance; more accurately dispatched as a baseload resource compared to other renewable sources
- Low O&M costs
  - When debt service collections end in 2026 for Belleville facility rates will be approximately \$25/MWh

# Hydroelectric Projects Overview

- AMP completing construction of four hydroelectric projects to diversify its members' generation portfolio
- Licensing and the preliminary design phases began in 2006; Construction initiated 2010-2011
- All of the projects are run-of-the-river at existing U.S. Army Corps of Engineers locks and dams along the Ohio River
- Represents the largest deployment of new run-of-the-river hydro in the nation
- Projects will provide more than 300 MW of clean, renewable, emission free energy; enough to power over 180,000 homes annually
- More than 80 percent of combined capacity subscribed to Ohio communities

# Hydroelectric Projects Overview





# Hydroelectric Generation in 2016

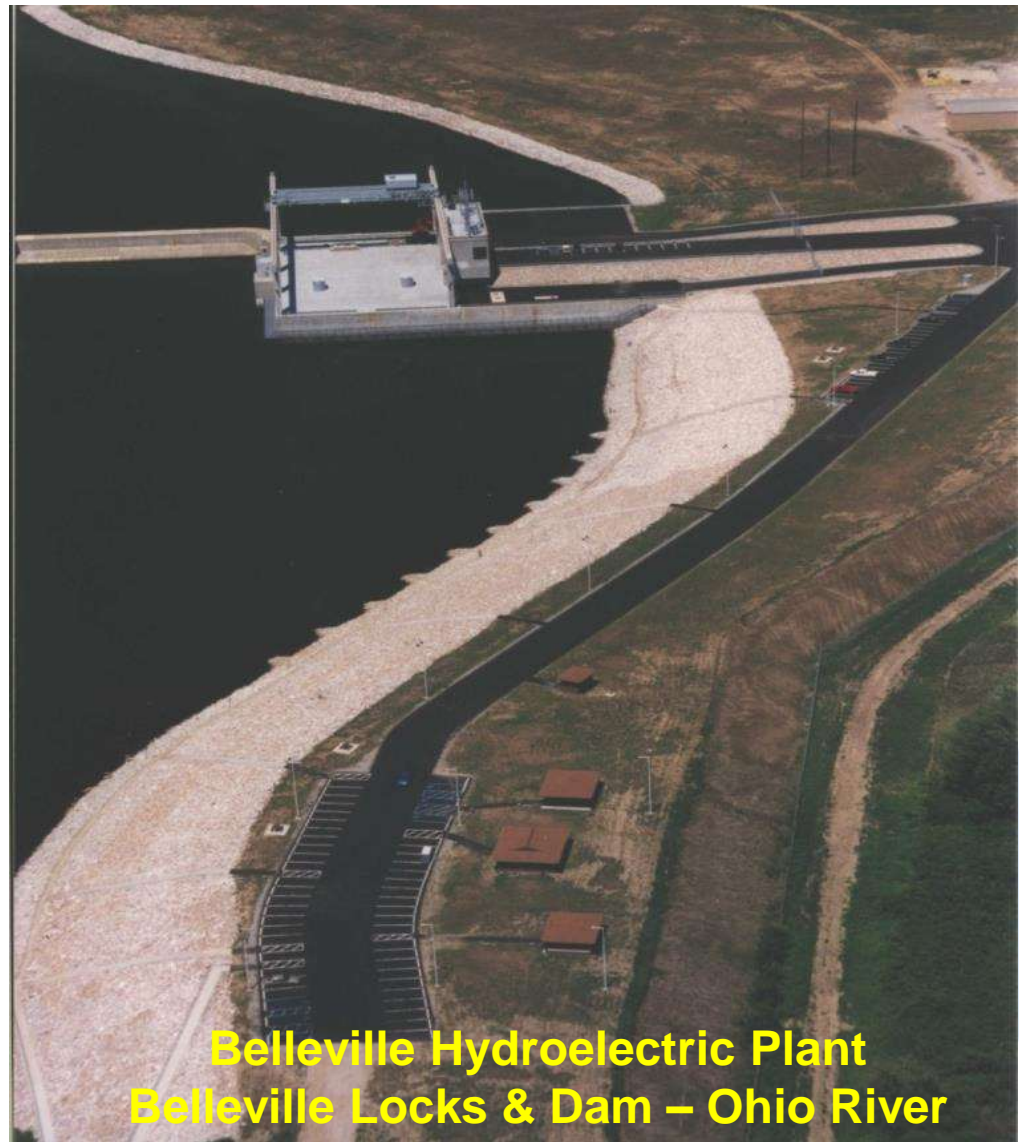
- Belleville 273,205 MWh
- Cannelton 343,202 MWh
- Willow Island 218,242 MWh
- Smithland Final stages of construction
- Meldahl 366,655 MWh
- Greenup 235,313 MWh

**Total = 1,436,617 MWh**

**Enough to power 136,500 homes for a year!**

# Belleville Hydroelectric Plant

- Constructed by AMP on behalf of 42 Ohio members
- Successful operation since 1999
- 42 MW plant
- Average capacity factor greater than 65%



## WILLOW ISLAND HYDROELECTRIC PLANT



- 44-MW run-of-the-river project on the Willow Island Locks and Dam, located on the Ohio River, near St. Marys, West Virginia, approximately one hour from Parkersburg. The project is located on the West Virginia side of the river.

# Smithland Hydroelectric Plant



Pre-  
construction



March  
2012



April  
2016

- Near Smithland, KY
- 76 MW
- Excavation cofferdam construction began April 2010
- Projected full commercial operation: 2017

# Cannelton Hydroelectric Plant



Pre-  
construction



January  
2011



January  
2016

- Near Hawesville, KY
- 88 MW
- Excavation cofferdam construction began May 2009
- Full commercial operation in June 2016

# Meldahl Hydroelectric Plant



Pre-  
construction



July  
2011



January  
2016

- Near Maysville, KY
- 105 MW
- Built in partnership with City of Hamilton, OH
- Excavation cofferdam construction began May 2010
- Full commercial operation in April 2016

# Hydro Financing

- Approximately \$2.7 billion
- Fully financed utilizing a combination of taxable and tax-favored bonds
- AMP benefitted from the use of Build America Bonds (BABs) and Clean Renewable Energy Bonds (CREBs) for hydro development
  - \$2.2 billion in BABs
  - \$172.9 million in CREBs
- Subsidy for both programs impacted by federal sequestration
  - Reduced 6.8% through September 2016 (reset annually)
  - Sequestration costs community member ratepayers more than \$65 million
  - Cuts last through 2025
- AMP has utilized take-or-pay contracts with its participating member utilities, which yielded favorable interest rates

# Hydropower Reform- Federal

- Hydropower licensing, permitting and re-licensing processes are bureaucratic, duplicative and time consuming
- Last year's effort was part of the Energy Policy Bill that died in conference committee
- Parts of last year's bill have been resurrected as stand alone legislation in the Senate
- House Energy and Commerce Committee recently held a hearing on the need to improve the hydro regulatory process



# State Recognition of Small Hydro

- Advocating for inclusion of small hydro as recognized renewable energy resources for meeting Ohio's RPS and qualifying for RECs
- Included in state budget (HB 49) and RPS (HB 114)

# Forward-Thinking Member Programs

- **EcoSmart Choice:** Optional green power pricing program that members can offer their customers (over 48,000 MWh enrolled in 2016)
- **Efficiency \$mart:** C&I and residential energy efficiency services providing verifiable and guaranteed cost savings (over 189,000 MWh saved in 2016)
- **Carbon Management:** purchase and generate carbon offsets; have planted more than 467 acres of trees in partnership with ODNR (323,500 seedlings)
- **Focus Forward:** assist members with transition to changing energy landscape; interconnection requirements; customer-sited generation
- **Advanced Metering Infrastructure (AMI):** AMP hosted program for participating members

# Questions?

[emiller@ampppartners.org](mailto:emiller@ampppartners.org)

**614-540-1019**