

Ohio Energy

23RD ANNUAL OHIO

**Energy
Management
CONFERENCE**

Workshop BB

**Ohio Power Company
(AEP Ohio): Significant
Developments Impacting
Electric Rates**

**Wednesday, February 20, 2019
11:15 a.m. to 12:30 p.m.**

Biographical Information

James F. Loder, Director of Energy Management
Pixelle Specialty Solutions LLC, 228 S. Main Street, Spring Grove, PA 17362
717-225-2887 James.Loder@pixelle.com

Jim started his energy career with Pacific, Gas and Electric in Merced, California in 1982 as an energy conservation engineer. Jim progressed at PG&E as a planning engineer, PURPA interconnection coordinator and positions in Account Management, Marketing and Sales. Jim joined Allegheny Energy in Greensburg, PA in 1996 working primarily in the Energy Trading and Structured Products groups for AYE's unregulated power generation affiliate, Allegheny Energy Supply. Jim's primary responsibilities at Supply were structured commodity product sales to industrial, commercial and wholesale customers.

Jim joined Pixelle Specialty Solutions LLC (formerly P.H. Glatfelter) in Spring Grove, Pennsylvania in 2008 as the Global Director of Energy Management. Jim's primary responsibilities for Pixelle Specialty Solutions LLC's energy intensive paper mills include power generation sales, energy rates and tariff review, regulatory and legislative participation and energy efficiency initiatives. Jim is also responsible for the development and expansion of Pixelle Specialty Solutions LLC's renewable energy portfolio.

Jim is a graduate of Penn State with a B.S. In Mechanical Engineering and received an MBA from Holy Names College in Oakland, California.

Andrea E. Moore, Director – Regulatory Services, AEP Ohio
850 Tech Center Drive Gahanna, Ohio 43230
aemoore@aep.com

Andrea Moore is the Director of Regulatory Services for Ohio Power Company (AEP Ohio) in Gahanna, Ohio. In this role she directs the preparation and presentation of regulatory matters to management as well as regulatory bodies. She plans, organizes and directs the development and support of pricing structures, rider and true-up filings, tariff maintenance, pilot programs, special contracts and other pricing initiatives.

Prior to joining AEP, Andrea was a Staff Accountant for Mills Pride. Andrea received a Bachelor of Science degree in accounting with a finance minor from The University of Rio Grande. She also obtained a Master of Business Administration degree from Franklin University.

Biographical Information

**Joseph G. Bowser, Technical Specialist, McNees Wallace & Nurick LLC
21 East State Street 17th Floor, Columbus, Ohio 43215
614-719-2852 jbowser@mwncmh.com**

Joe Bowser is a Technical Specialist in the Columbus, Ohio office of McNees Wallace & Nurick LLC. In this role he focuses on helping clients address issues that affect the price and availability of utility services. As part of his responsibilities, he also provides clients with assistance in evaluating and acting upon opportunities to secure value for their demand response and other capabilities in the base residual auction (“BRA”) and incremental auctions conducted by PJM Interconnection LLC (“PJM”) as part of the Reliability Pricing Model (“RPM”).

Prior to joining McNees Wallace & Nurick LLC, Joe worked with the Ohio Consumers’ Counsel as Director of Analytical Services. There he managed the analysis of financial, accounting, and ratemaking issues associated with utility regulatory filings, and assisted in policy development and strategy. Joe also spent ten years at Northeast Utilities, where he held positions in the Regulatory Planning and Accounting departments of the company. He provided litigation support in regulatory hearings and assisted in the preparation of the financial/technical documents filed with state and federal regulatory commissions. Joe began his career with the Federal Energy Regulatory Commission (FERC), where he lead and conducted audits of gas and electric utilities in the Eastern and Midwestern regions of the United States.

Joe is a member of the American Institute of Certified Public Accountants, and received a Bachelor of Science degree in Accounting from Clarion State College. He also obtained a Master of Science degree in Finance from Rensselaer Polytechnic Institute.

AEP-Ohio (“Ohio Power”)

Priceless Insights into Developments Affecting Electric Rates in AEP-Ohio’s Service Territory, including Rates & Tariffs, Shopping and Savings Opportunities, PJM Capacity Auction Update, Demand Response, and Impacts of the Tax Cuts and Jobs Act of 2017

23rd Annual Ohio Energy Management Conference

February 20, 2019

Joseph Bowser - Technical Specialist



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Outline for Today's Presentation

- ESP III – Extension Application
- Tax Cuts and Jobs Act of 2017
- Transmission Rates
- Proposed Solar Energy Projects
- PJM Capacity Auctions/Demand Response Opportunities
- Generation Supply Shopping/Standard Service Offer Prices



ESP III – Case No. 13-2385

ESP III covered the three-year period June 1, 2015 through May 31, 2018

- Provided for full transition to market
- Standard Service Offer (SSO) rate is based on competitive bid auctions that procure energy and capacity for periods synchronized to the PJM planning year (June through May)
- Filing to be made by April 30, 2016 to extend the ESP III term through 5/31/2024 – (“ESP Extension”)



ESP III Extension Case (16-1852-EL-SSO)

- Case filed November 23, 2016
- Would extend the current ESP III term through May 2024
- Request to extend the Interruptible Power Rider (IRP) for the full term of the amended ESP (through May 31, 2024). The IRP would be available to current IRP tariff customers as well as 250MW of additional interruptible load. The application also requested that the IRP credit be increased from \$8.21/KW-Month, the current rate, to \$9/KW-Month starting June 2016
- Implement nonbypassable placeholder rider, the Renewable Generation Rider (RGR), that would allow AEP-Ohio to collect for the life of the plant its investment in renewable generation projects. Parties may challenge in a future proceeding any request by the Company to recover above-market costs associated with renewable projects. Power from these renewable projects would be dedicated to customers



ESP III Extension Case Continued. . .

- Continue the nonbypassable Distribution Investment Rider (“DIR”) with increased annual caps on spending
- Continue nonbypassable Enhanced Service Reliability Rider (“ESRR”) to recover costs of vegetation management.
- Continue nonbypassable gridSMART Rider.
- Extend the Competitive bid process for Standard Service Offer procurement.
- Implement new nonbypassable Distribution Technology Rider (DTR)
The rider would involve installation of electrical vehicle charging stations, microgrids, and smart lighting controls, as well as enhancement of security of critical distribution infrastructure
- Continue Energy Efficiency and Peak Demand Rider (“EE/PDR”).
- Continue Economic Development Rider (“EDR”).
- Stipulation submitted to PUCO on August 25, 2017



ESP III Extension Case Continued. . .

- Stipulation's main points:
 - The ESP is extended until June 2024
 - Company will file a base distribution rate case by June 1, 2020
 - Continues Rider DIR with increased caps
 - Approved a placeholder rider for the RGR
 - Status quo recovery of OVEC costs through the non-bypassable PPA rider is retained by the Company through the extended ESP term absent legislation that provides for alternative recovery (the PPA rider provides that the net costs or credits of the Company's contractual entitlement in OVEC generation is reflected in the PPA)
 - Rider DTR is withdrawn, and a new rider (Smart City Rider) is established to fund micro grid costs, electric vehicle rebates, and research & development costs. The rider will sunset after 4 years.



ESP III Extension Case Continued. . .

- Power Forward Rider is established for the term of the extended ESP at an initial rate of zero. Rider to be activated based on PUCO findings and directives in its Power Forward initiative.
- Rider IRP continued for term of Extended ESP, with existing customers' credit beginning June 2018 at \$9/kW-month, and new customers' credit is equal to 0.7 times the PJM base residual auction clearing price. IRP credit expanded to up to 160 additional MW of load for existing AEP customers and up to 120 MW for new industry
- Hearings on Stipulation held in November 2017
- PUCO decision approving the Stipulation is issued on April 25, 2018.
- Revised rates effective June 1, 2018.



Tax Cuts and Jobs Act of 2017 (TCJA)

- Among other provisions, the TCJA reduced the corporate federal income tax rate from 35% to 21%, effective January 1, 2018
- Commission opened a COI (Commission Ordered Investigation) case in January 2018
- Utilities are to reserve a regulatory liability on their books as of January 1, 2018 for the amount they will need to reduce rates by
- Comments were filed on February 15, 2018, to address:
 - The rate components that will need to be reconciled with the TCJA
 - The process/mechanics for reconciling rates with the TCJA
 - Discussion of revenue requirements
 - Level of tax expense recovered through base rates
 - Treatment of riders containing a federal income tax component
 - Accumulated deferred income taxes



Tax Cuts and Jobs Act of 2017 (TCJA) Continued...

- Hearing held on July 10, 2018 on limited issue of whether the utilities should be required to establish a deferred tax liability effective January 1, 2018.
- Several riders have been adjusted to reflect the lower federal income tax rate (estimated to provide over \$65 million in tax savings to customers annually) that was effective January 1, 2018:
 - Rider BTCR
 - Rider DIR
 - Rider ESRR
 - gridSMART rider
 - EE/PDR rider (shared savings)



Ohio Power Company's Motion for a Procedural Schedule (18-1007-EL-UNC)

- Filed June 8, 2018 requesting the PUCO use this case to implement matters regarding the TCJA
- July 11, 2018 - Procedural conference at PUCO
- Sept. 26, 2018 - Stipulation filed with the PUCO
- Stipulation provided that:
 - Ohio Power establish a Tax Savings Credit Rider (TSCR) effective 11/1/18 at a credit rate for non-residential customers of \$0.00111/kWh and expected to run through 12/31/19. The TSCR rate is expected to be \$0.00090/kWh beginning 1/1/20. The components of the TSCR are the impacts of the reduction in the federal income tax rate to 21% commencing 1/1/18, and the amortization of unprotected excess deferred taxes over 6 ¼ years
 - The amortization of protected excess deferred taxes over approximately 30 years as a reduction to Rider DIR (Distribution Investment Rider)
- Oct. 3, 2018 - Stipulation approved
- Nov. 1, 2018 - Rates were effective



Transmission Rates

- Prior to ESP III, market-based and non market-based transmission costs recovered through the bypassable Transmission Cost Recovery Rider (TCRR)
- TCRR terminated in May 2016
- New Basic Transmission Cost Rider (BTCR) effective June 1, 2015 recovers non-market based transmission costs and is a non-bypassable rider
- For SSO customers, market-based transmission costs are included in the CBP bids, effective 6/1/15
- Transmission costs and rates have been escalating over the last several years due largely to rapidly increasing investment in transmission facilities, and high returns on equity permitted by the FERC for setting wholesale transmission rates
- Annual BTCR update effective April 2018, an increase in the revenue requirement of about 25%, mainly due to January 1, 2018 increase in Network Integration Transmission Services (NITS) costs under PJM's Open Access Transmission Tariffs, and transmission enhancement charges (charge for transmission expansion projects whose costs are allocated regionally throughout PJM).



Transmission Rates Continued...

- Filing made May 8, 2018 to put revised rates into effect June 1, 2018
- The 6/1/18 rates were decreases from those put into effect on April 1, 2018
- New rates reflected impacts of the TCJA as revised in PJM's Open Access Transmission Tariff (reducing the NITS revenue requirement), and a settlement at the Federal Energy Regulatory Commission.
- The 2019 FERC Formula Rate update was posted on 11/1/18 for an increase in the NITS rate from \$59,818/MW-year to \$65,866/MW-year
- The next revision to the retail Rider BTCR rates is expected to be filed in January 2018 to be effective April 1, 2018
- Filing made on January 14, 2019 for revised rates effective April 1, 2019
- Proposed rates were decreases from the current rates – due mainly to a large prior period over-recovery
- Company indicated it may update later for default payments billed by PJM



Renewable Energy Purchase Agreement (REPA) (Case No. 18-1392)

- Application filed 9/27/18
- Ohio Power sought approval to include two proposed solar energy projects in Rider RGR (Renewable Generation Rider) One 300 MW project and one 100 MW project
- Company executed 20-year REPAs for the projects' energy, capacity, and environmental attributes
- Seeking recovery through the RGR (inclusive of REPA costs and “debt equivalency” costs for the life of the facilities)
- Company estimates the REPAs will save customers approx. \$218 million compared to the market over the 20 year period
- Testimony of parties submitted January 2, 2019 and Staff testimony on Jan. 9, 2019
- In a related case, Ohio Power filed on 9/19/18 in 18-501, an amendment to its 2018 Long Term Forecast Report (LTFR)
- Company asking PUCO to find that there is a need for at least 900 MW of renewable generation resources located in Ohio based on information provided in the amended LTFR filing



REPAs continued . . .

- In the LTFR case, the Company indicated:
 - Projects will help to meet customers' demonstrated need and demand for in-state renewable energy and will provide economic benefits
 - Projects will increase fuel diversity, curb the trend of Ohio being a net importer of energy, and make Ohio more attractive to new businesses
- Some other parties argued:
 - The proposal shifts risks on to customers as the RGR is a non-bypassable rider
 - PJM has an excess reserve margin already
 - If customers want renewable energy, allow them to enter into dedicated contracts with the Company
- Company asked to consolidate the LTFR and REPA cases – request was granted
- Hearings began in January 2019



PJM Load Management (aka PJM Emergency Load Response)

- **What is it?** A program in which customers receive compensation in exchange for agreeing to curtail load if asked to do so by PJM. A request to curtail load is called an “event”
- **What two resources types are there?** (1) Pre-emergency Resources – all load management is this type unless granted an exception to be an emergency resource; (2) Emergency Resources – load management resources that use generation are only allowed to operate during PJM emergency conditions that require a declaration of an Energy Emergency Alert
- **How much advance notice do participants receive for making curtailments?** The standard advance notification is 30 minutes, but a participant can seek up to 120 minutes if reducing load in 30 minutes would result in damage to feedstock or equipment, or if safety issues would result.
- **2017-2018 DR registrations:**
 - 30 minute notice 60%
 - 60 minute notice 4%
 - 120 minute notice 36%



Who Participates in PJM Load Management?

PJM Demand Response Capability 2015-2016 by Sector

Manufacturing	50%	
Residential		14%
Office Buildings		9%
Schools		8%
Hospitals		5%
Retail Service	4%	
Other	10%	

2015-2016 Load Reduction Methods

Adjusting a Manufacturing process	39%
Reducing HVAC	27%
Behind-the-meter Generator	23%
Lighting	8%
Other	3%



PJM Load Management

- How is compensation determined?

- PJM permits demand resources to be counted like a capacity resource.
- Demand resources bid into the PJM RPM auctions, through which PJM acquires its needed capacity, three years in advance of the delivery year.
- Compensation is based on the auction clearing prices for the demand resource type times the customer's curtailment commitment.

Example: assume a 2MW commitment at a clearing price of \$164.77/MW-day
gross compensation = $164.77 \times 2 \times 365$ days = approx. \$120,000

- Is there any other compensation available?

- Yes, participants may also be eligible for emergency energy compensation if PJM calls an event and the participant curtails load during the event

- Can I participate in Load Management on my own?

- Participation is required to be through a Curtailment Service Provider (CSP). Any PJM member can act as a CSP, and EDCs, LSEs and retail customers that are PJM members may take on the role of a CSP

A listing of CSPs is published on the PJM website.



AEP Load Management Base Residual Auction Clearing Prices (\$ per MW-Day)

PRODUCT	2017-18	2018-19	2019-20	2020-21	2021-22
Limited	\$106.02	N/A	N/A	N/A	N/A
Extended Summer	\$120.00	N/A	N/A	N/A	N/A
Annual	\$120.00*	N/A	N/A	N/A	N/A
Base	N/A	\$149.98	\$80.00	N/A	N/A
CP	\$151.50(1)	\$164.77	\$100.00	\$76.53	\$140.00
AEP Load Price	\$119.81	\$162.44	\$96.77	\$76.53	\$140.53

(1) CP cleared in the 2017-18 Transition Auction

*Annual gross revenues per MW = \$120.00 x 365 days = \$43,800



PJM Load Management

- **How does PJM determine when to dispatch load management?**
 - PJM will dispatch when expected to be short on reserves. Typically means that most of the economic generation available has been dispatched and load management is expected to be needed to meet system load and reserves to avoid loading maximum emergency generation or taking other emergency actions. For a typical capacity shortage, PJM will deploy the 120 minute lead time resources first and stagger the amount dispatched so that the load reductions are ramped-in as system conditions materialize. The 30 minute lead time resources are expected to be used for unexpected system issues, when capacity is needed immediately.
 - Typically, load management is dispatched by zone unless there is a more localized issue, when PJM may dispatch by subzone.
- **What happens if a customer fails to reduce load in a PJM event for all or part of its kW commitment?**
 - Under-compliance charges are assessed depending on the degree of the underperformance and the particular DR type – i.e. Limited, Base, CP, etc.



PJM Load Management Events

DELIVERY YEAR (June 1 – May 31)	NUMBER OF EVENTS
2001—2002	4
2002—2003	3
2003—2004	0
2004—2005	0
2005—2006	2
2006—2007	2
2007—2008	1
2008—2009	0
2009—2010	1
2010—2011	7
2011—2012	1
2012—2013	2
2013—2014	14*
2014—2015	0
2015—2016	0
2015—2017	0
2017—2018	0
2018—2019	?

Since the 2009—2010 Delivery Year, load management has averaged 97+% performance when called on to curtail load.

** 9 of the events occurred in January 2014 and March 2014.*



Peak Shaving to Reduce Electric Supply Costs

- Customers may be able to reduce their capacity costs by managing their Peak Load Contribution (PLC)
- PLC is determined between June 1 and Sept. 30 of the prior delivery year, based on customer loads during the PJM 5 CP hours

PJM's MW load on the 5 CP hours in the summer of 2018:

8/28/2018	HE 1700	150,454
9/04/2018	HE 1700	148,285
6/18/2018	HE 1700	148,169
9/05/2018	HE 1700	147,621
8/27/2018	HE 1700	145,509

Estimated annual cost avoidance for 3 MW peak shaving strategy

2020-2021	\$98,000
2021-2022	\$182,000

Note: benefits of cost avoidance must be weighed against costs of effectuating the curtailments (e.g. the hours that a customer will be required to curtail load during all 5 CP hours will typically be more than DR program participation has required)



OP's CBP Auction to Establish SSO Prices For the ESP III

- Several auctions have been conducted to date
- To procure energy, capacity, and market based transmission and transmission ancillary services
- Five delivery periods are covered:

	<u>Blended Price</u>
■ June 2015 thru May 2016	\$54.87/MWH
■ June 2016 thru May 2017	\$52.37/MWH (100%)
■ June 2017 thru May 2018	\$51.14/MWH (100%)
■ June 2018 thru May 2019	\$49.35/MWH (100%)
■ June 2019 thru May 2020	\$47.53/MWH (83%)



AEP-Ohio (Percent of Electric Load Shopping)

AEP-OHIO	Nov. 30, 2018	Sept. 30, 2017	Sept. 30, 2016	Sept. 30, 2015	Sept. 30, 2014
Residential Sales	35.3%	35.0%	34.1%	35.1%	32.5%
Commercial Sales	86.1%	85.9%	86.0%	85.7%	84.2%
Industrial Sales	97.4%	97.9%	97.5%	88.1%	79.9%
Total Sales	74.7%	74.9%	71.5%	69.9%	66.3%



Shopping For Your Electric Generation Supply?

- Price to Compare (PTC) – your avoidable charges if you shop, typically expressed in cents/kWh – PTC includes:
- Generation Energy Rider (Rider GEN-E)
- Auction Cost Reconciliation Rider (Rider ACRR)
- Generation Capacity Rider (Rider GEN-C)
- Rider AER (Alternative Energy Rider) charges



Takeaways

- Opportunities to reduce your electric bills by obtaining service from competitive suppliers of generation service
- Current ability to participate in PJM demand response programs for customers with curtailable load – the programs may, and usually do change
- Peak shaving is another option for reducing electric bills
- Reducing your electric bill requires customers to be proactive
- To learn more, contact:

Joe Bowser jbowser@mwncmh.com



Questions?

Useful Web Sites:

- AEP www.aep.com
- PUCO www.puco.ohio.gov
- PJM www.pjm.com
- IEU-Ohio www.ieu-ohio.org
- FERC www.ferc.gov

