<u>10:00 a.m. (EST)</u>
1-866-362-9768
940-609-8246#

OMA Energy Committee Agenda
May 18, 2017

Welcome and Introductions	Brad Belden, Belden Brick, Chair
Counsel's Report • PUCO case highlights • PowerForward	Kim Bojko, Carpenter Lipps & Leland
Customer-Sited Resources Report • Energy efficiency program updates • Energy efficiency peer network activity • PJM developments	John Seryak, PE, RunnerStone, LLC
State Public Policy Report • Statehouse report • Utility legislation / legislative proposals • Customer campaign to protect competition	Ryan Augsburger, OMA Staff
Presentations • 10:15 PUCO PowerForward	Commissioner Beth Trombold
• 11:00 PJM Report	Kerry Stroup, PJM Interconnection
• 11:30 A Legislator's Perspective	Representative Mark Romanchuk Member, House Public Utilities Committee
Electricity Market Trends	Susanne Buckley, Scioto Energy
Natural Gas Market Trends	Richard Ricks, NiSource, Columbia Gas of Ohio
Lunch	

2017 Energy Committee Calendar
Meetings will begin at 10:00am

Thursday, May 18, 2017
Wednesday, August 23, 2017
Thursday, November 16, 2017

Meeting sponsored by:

DYNEGY

ROVER PIPELINE
An ENERGY TRANSFER Company

M. Beth Trombold
Term ends April 10, 2018

Commissioner M. Beth Trombold was appointed to the Public Utilities Commission of Ohio (PUCO) by Governor John Kasich in 2013.

Commissioner Trombold serves as vice-chair of the PUCO. She is a member of the National Association of Regulatory Utilities Commissioners (NARUC) where she serves on the Committee on Energy Resources and the Environment. She is the immediate past president of the Organization of PJM States, Inc. (OPSI), an organization of 14 state commissions in the service area of PJM, the regional transmission operator. Trombold is chair of the Independent State Agencies Committee (ISAC) focused on transmission needs within PJM. She also serves on the Financial Research Institute (FRI) advisory board at the University of Missouri.

Prior to her appointment, Trombold served as assistant director of the Ohio Development Services Agency (ODSA). A long time public servant, she also served in a variety of roles within the PUCO, including director of Economic Development and Public Affairs. During her career, Commissioner Trombold led legislative efforts on many important utility issues; including: electric restructuring, natural gas choice, and telecommunications reform.

Commissioner Trombold received a bachelor's in business administration from Ohio University and a master’s in public policy and management from The Ohio State University. She currently serves on the Glenn College Alumni Society Board. In 2002, the PUCO awarded Trombold the Frank B. Richards Award for Excellence in Management and Public Service. In 2012, she received the Outstanding State Government Alumnus Award from the Voinovich School of Leadership and Public Affairs at Ohio University.

She lives in Columbus with her husband and three children.

Mark J. Romanchuk - House District 2

[Mark J. Romanchuk Home]

State Representative Mark Romanchuk is serving his third term in the Ohio House of Representatives. He represents the 2nd Ohio House District, which comprises all of Richland County.

Representative Romanchuk has over 30 years of experience in small business, systems engineering and management, and community development. He is the owner and president of PR Machine Works, Inc., a contract manufacturer providing precision machining, fabrication, and assembly services in the city of Ontario. Prior to his work with PR Machine Works, he worked at Hughes Aircraft Company as a U.S. diplomat to the former Soviet Union in support of the Intermediate Range Nuclear Forces (INF) Treaty. He was also based in Japan as a team leader and technical advisor to the U.S. Navy in support of the F/A – 18 aircraft.

He has been heavily involved in his community, particularly in local efforts to create jobs and in workforce development. He is a member of the National Tooling and Machining Association and served as Economic Region 6's team leader for the state's "Ohio Skills Bank," which strives to develop regional manufacturing career pathways.

Furthermore, he is the co-founder and past president of the Regional Manufacturing Coalition and is the past chairman of the Richland Area Chamber of Commerce Board of Directors. He currently serves on the Leadership Board of the Richland Community Development Group, the North Central State College Foundation and the Mansfield Sertoma Club. He is an active member of the National Federation of Independent Business and the Ohio Manufacturers' Association.

Representative Romanchuk resides in Ontario with his wife, Zoi, and his dog, Gizmo.

To: OMA Energy Committee
From: Ryan Augsburger
Re: Energy Public Policy Report
Date: May 18, 2017

Overview
Significant energy policy questions are being debated before the General Assembly. 2017 is a budget year and lawmakers must complete work on the voluminous bill by the end of June. Afterwards, expect summer and fall discussions even more focused on electric regulation.

PUCO Gives FirstEnergy Subsidy / Sets Precedent
In October, the PUCO awarded FirstEnergy a $1B plus subsidy to prop up the company and its affiliate. Far be it from the $9B sought most recently by the Akron-based utility. Appeals will follow, but the PUCO effectively brought closure to the lengthy ESP application which initially included the power purchase agreement (PPA) that was later blocked by the FERC after the PUCO approved the PPA application last March. The OMA Energy Group (OMAEG) opposed the proposal in every chapter and will continue to seek reversal in appeal. See counsel's report.

Re-Monopolization
FirstEnergy and other investor owned utilities are calling for legislation to *re-monopolize* aspects of utility-owned generation. Significant conversations are ongoing with state leaders. Expect to see a second pro-utility legislation emerge before the end of June.

Zero Emissions Nuclear (ZEN) Credit = Nuke Bailout
Companion legislation has been introduced and is being considered by lawmakers in the Ohio House and Senate to require customers to <u>annually</u> provide a $300 million bailout to subsidize the uneconomical nuclear power plants for up to sixteen years. Total customer cost could exceed $5 billion. HB 178 is sponsored by Representative Anthony DeVitis of Summit County. SB 128 is sponsored by Senators John Eklund of Lake County and Frank LaRose of Summit County.

FirstEnergy, long a champion of competition has publicly switched positions and is now calling for customers to bailout their (subsidiary's) nuclear power plants. The proposal is similar to proposals in New York, Illinois and Pennsylvania. See summary and cost-impact resource materials. The OMA strongly opposes the legislation and is working with other opponents to coordinate advocacy. Concerned manufacturers will want to contact state lawmakers to express concern.

Protecting Competitive Electric Markets
In 1999, with the passage of Senate Bill 3, Ohio began a transition to deregulated generation. That transition which has taken over a decade, has delivered customer choice, cost-savings and innovation. One of the main tenets of deregulation was forcing then-integrated utility companies to sell or spin-off their generation. "Stranded costs" and other above-market surcharge constructs enabled the utilities to have their generation paid for by Ohioans for a second time. If approved in some form, the subsidy cases and Nuke bailout legislation would represent yet another above-market payment to utilities by customers who realize no benefit.

The OMA has been a proponent of markets, supporting the original deregulation legislation and opposing utility profit subsidy schemes that distort the market and result in new above-market charges on manufacturers.

Several noteworthy studies have demonstrated how the market delivers lower prices, choice and innovation without compromising reliability. See attached resource materials.

The opportunity to advance legislative reform to protect competitive markets has arrived. The OMA has been working with other customer groups to develop a customer-protection reform package. We expect to see a bill introduced soon. A campaign plan has been developed to help steer the advocacy. Contact OMA staff to learn how you can support the cause.

PUCO Appointment
Earlier this year, Governor Kasich appointed Lawrence Friedeman and Daniel Conway to terms on the PUCO. Friedman has background with competitive energy supplier IGS Energy and Conway was most recently a regulatory attorney with a Columbus law firm.

Natural Gas Infrastructure
The OMA continues to express industry support for the Rover Pipeline and Nexus Pipeline. Billions of dollars of pipeline investment are underway by several different developers. The Rover Pipeline secured FERC approval in early February. Natural gas production continues to grow in the Buckeye state even with depressed pricing. In fact, Ohio natural gas prices are among the lowest around the globe today.

Transportation Budget
Earlier this year, the transportation budget was amendment to increase the amount a gas distribution utility may collect to pay for economic development projects, such as line extensions to a new manufacturer.

Kilowatt Hour Tax
The main state budget bill, House Bill 49, has been used as a vehicle for an amendment that will provide a narrowly drafted exemption from kWh tax for a defined manufacturer.

Energy Standards Legislation
The Governor acted on his threat to veto House Bill 554 last December. The bill weakened the energy standards that had been frozen since 2015 by then SB 310. Together with over fifty co-sponsors, Representative Bill Blessing introduced HB 114 which is very similar to the vetoed legislation. The House overwhelmingly approved the measure which is now pending in the Senate.

***Financial Integrity* Bailouts**
In Spring of 2016, we reported on favorable Supreme Court decisions that protect customers from inappropriate utility overcharges. The Court decision pertained to both AEP and DP&L but also established precedent. Last year Dayton Power & Light developed a legislative proposal to reverse Supreme Court decision that fairly protects customers from transition charges. The legislative proposal would authorize PUCO to impose riders on customers' electric bills to fund a utility bailout any time a utility claims their "financial integrity" is threatened. No further visible activity – stay vigilant.

Energy

OMA Testifies against Nuke Bailout
May 12, 2017

Thomas Lause, Vice President, Treasurer, Cooper Tire & Rubber Company, this week **testified on behalf of the OMA** in opposition to **HB 178** and its proposed multi-billion-dollar bailout of FirstEnergy's uneconomic, uncompetitive nuclear power plants in Ohio. Lause is an OMA director and serves on the finance committee of the OMA board.

"We are keenly interested in public policies that will drive lowest cost energy resources and solutions – rather than policies that will impose billions of dollars of unwarranted, anti-competitive, above market charges on our businesses," Lause testified.

"If enacted as introduced, House Bill 178 would cost FirstEnergy's customers an estimated $300 million a year, for up to 16 years, to subsidize two Ohio nuclear power plants operated by FirstEnergy's subsidiary, FirstEnergy Solutions. That adds up to $4.8 billion."

If enacted, this bill would pile onto the billions of dollars of above-market charges Ohio utilities have been able to put on customers' bills. *5/11/2017*

"Nuke Bailout" Bill Sponsors Testify
May 5, 2017

This week, members of a senate committee heard from SB 128 bill sponsors Senators **John Eklund** (R-Chardon) and **Frank LaRose** (R-Copley). SB 128 (and companion legislation HB 178) would impose non-bypassble riders on FirstEnergy customers to subsidize its nuclear plants. The proposal mandates $300 million annually in new customer charges for up to 16 years.

The **senators testified**: "Wholesale electricity prices are artificially and unsustainably low, making it nearly impossible for nuclear plants to operate in Ohio and nearby states."

The OMA joined a coalition with the Ohio Chemistry Technology Council, AARP and others in opposing the legislation.

"This proposed nuclear bailout will hurt current Ohio businesses and could stop new businesses from investing in Ohio," said OMA director, David W. Johnson, CEO, Summitville Tiles, Inc. "Senate Bill 128 and House Bill 178 will increase the cost of doing business in FirstEnergy's territory."

In a **coalition press release**, OMA V.P. and Managing Director of Public Policy Services Ryan Augsburger, said "Manufacturers support nuclear power as part of an 'all-of- the above' energy portfolio, but Senate Bill 128 is a wolf in sheep's clothing. The legislation would impose an unwarranted new multi-billion- dollar tax on Ohio businesses and families, stunt innovation and discourage investment in new generation assets in our state." *5/4/2017*

OMA Energy Group Files Concerns re. AEP Ohio's Plans
May 5, 2017

Against the backdrop of the PUCO's PowerForward discussion on the future of electricity, the **OMA Energy Group** (OMAEG) **this week filed testimony** on AEP Ohio's plans for micro-grids, renewable energy, submetering, and electric vehicle charging stations.

OMAEG's testimony pointed to concerns with AEP Ohio's request to own assets that are currently obtainable through competitive markets; the lack of time-of-use pricing with the advanced technologies; and the dearth of details, as well as the undefined, unlimited estimated costs to customers (including capital costs, carrying costs, and ongoing operation and maintenance costs). *5/4/2017*

Ohioans to Subsidize Out-of-State Nukes?
April 28, 2017

The recently introduced nuke bailout bill, **Senate Bill 128**, would cost FirstEnergy ratepayers $300 million a year for up to 16 years to subsidize two Ohio nuclear plants.

It gets worse: the legislation appears to require Ohioans to subsidize out-of-state nuclear generation. FirstEnergy generates nuclear power in Pennsylvania.

Its companion bill is **House Bill 178**. Read an **analysis** of the bills, and a **memo on a bogus cost cap** in them.

FirstEnergy CEO Chuck Jones **testified** on the House bill this week. Under questioning, he insisted that these above market charges were neither a bailout nor subsidies. Legislators seemed skeptical of that statement. *4/20/2017*

PJM Resource Mix More Diverse, Reliable
April 21, 2017

Beginning in 2015, PJM Interconnection has produced a series of papers examining how aspects of its operations, planning and markets could and should evolve given the changing landscape of the electric power industry.

The latest work paper, **PJM's Evolving Resource Mix and System Reliability**, "evaluates the changing resource mix in PJM given environmental regulations, the preponderance of low-cost natural gas, the increasing penetration of renewable resources and demand response, and the potential for retirements of nuclear power resources."

PJM's resource mix has diversified over recent years. The study finds that the mix consisted of 91% coal and nuclear resources in 2005. In 2016, that had changed to 33% coal, 33% natural gas, 18% nuclear and 6% renewables including hydro.

The study's conclusion: "The expected near-term resource portfolio is among the highest-performing portfolios and is well equipped to provide the generator reliability attributes."

That is: for those worried about reliability in the face of electricity system change: relax, it's good. *4/20/2017*

House Bill Would Raise FirstEnergy Power Rates
April 14, 2017

This week, Rep. **Anthony DeVitis** (R-Uniontown) introduced **House Bill 178**. Dubbed the FirstEnergy "nuke bailout" bill, the measure would require customers in the FirstEnergy service territory to pay an additional $300 million annually on electric bills to subsidize the Perry and Davis-Besse power plants for up to16 years.

This is companion legislation to SB 128 that Senators **John Eklund** (R-Chardon) and **Frank LaRose** (R-Hudson) introduced last week.

Under the bill, manufacturers would not be able to "shop around" the rate increase that will be imposed on all distribution customers, regardless of their energy supplier.

The OMA **opposes** the legislation. *4/13/2017*

How Much Will "Nuke Bailout" Bill Cost FirstEnergy Customers?
April 14, 2017

Senate Bill 128 and companion House Bill 178 create a new above-market charge on all customers in the FirstEnergy service territories that would be used to subsidize the two nuclear power plants operated by FirstEnergy's subsidiary, FirstEnergy Solutions.

Manufacturers in FirstEnergy territory that use about 1,000,000 kWh/year and spend about $100K per year now for electricity would see an annual incremental cost of $5,700. Over the 16 year term, they would pay an additional $91,000.

Large manufacturers that use 100,000,000 kWh and spend approximately $6 million per year now for electricity would see an annual jump of $567,000. They would pay over $9 million more over the 16 year life of the proposed term.

To calculate your potential exposure to the legislation, multiply your annual kWh usage by $0.00567. *4/13/2017*

Nuclear Energy Bailout Bill Introduced
April 7, 2017

Senator **John Eklund** (R-Chardon) this week introduced **Senate Bill 128**. The legislation imposes a new above-market charge on all customers in the FirstEnergy service territories. The revenue will be used to subsidize the two nuclear power plants operated by FirstEnergy's subsidiary, FirstEnergy Solutions.

FirstEnergy Solutions is financially stressed, and potentially facing bankruptcy, the company has said. This bill is the latest in a series of attempts by the company to shore up its finances on the backs of its distribution customers.

The bill provides hundreds of millions per year for up to 16 years and can be increased by state regulators. Customers would not be able to "shop around" the charges.

The OMA opposes the bill. OMA president Eric Burkland issued a statement saying: "FirstEnergy should not be allowed to prop up its business on the backs of Ohio consumers. While manufacturers support nuclear power as part of an all-of-the-above energy portfolio, Senate Bill 128 is wolf in sheep's clothing." **Read the full statement here**. *4/6/2017*

House Sends Clean Energy Rollback Bill to the Senate
April 7, 2017

House Republicans overwhelmingly approved **House Bill 114** last week by a vote of 65-31. The legislation weakens clean energy standards that were originally enacted in 2008. Similar legislation was approved late last session by the General Assembly but vetoed by Governor Kasich.

With 65 House votes, there is potential to override a possible gubernatorial veto. The bill now moves to the Senate. *4/6/2017*

Natural Gas Infrastructure Expanded in Transportation Budget
April 7, 2017

Last week the General Assembly completed work on the state transportation budget, **House Bill 26**. The legislation funds certain operations of the Ohio Department of Transportation (ODOT) and the Department of Public Safety and makes other law changes. Governor Kasich added his signature making the bill effective on March 31.

An **amendment was added** to increase the limit for a natural gas company infrastructure development rider to $1.50 per billing period, up from $2 per year. The rider can be used by a gas utility to cover costs of expanded gas infrastructure and is considered a useful economic development resource. *4/6/2017*

More Power: Combined Heat & Power (CHP) Webinar is April 6
March 31, 2017

Inside Ohio's manufacturing community – and other businesses – lies the potential to generate 11,000 Megawatts of electrical power, enough to power the combined residential population of Ohio, Michigan, and Kentucky by using the waste heat from power generation to generate steam or hot water.

Combined heat and power (CHP) technology has the reliability of base load generation, is the most energy-efficient fuel-generation technology, has low emissions, and uses local natural gas.

The many benefits of CHP have led to a recent uptick in CHP development in Ohio, with much of the new power generation occurring at manufacturing facilities.

Learn more about CHP potential, how to determine if your facility is a good candidate for CHP, and what incentives are available to help finance CHP at your facility during a webinar, Thursday April 6, at 10:00 a.m.

DP&L and AEP Ohio will discuss their new CHP incentive programs and OMA's energy consultant John Seryak will cover CHP benefits and potential barriers to implementation. The webinar is co-hosted by the OMA, the Ohio CHP Connection, and the Ohio Environmental Council.

Register here. There is no charge. Or contact **John Seryak**. *3/28/2017*

OSU Study: Regulatory Charges Make Consumers Lose Money in Electricity Markets
March 24, 2017

A recently released study from researchers at The Ohio State University shows that consumers have been the losers under the regulatory regime of the Public Utilities Commission of Ohio (PUCO) in recent years.

"(The years of transition to market pricing have) coincided with a natural gas boom and expansions in hydraulic fracturing utilization in Ohio. The resultant low natural gas prices have reduced the profitability of utility-owned generation, predominantly coal-fired plants.

These changes have driven down generation costs.

“PUCO, however, has permitted through its Electric Security Plan approval process atypical increases in riders and surcharges on household electric bills that allow utilities to recover lost profits from their corporately-separated generation businesses. In essence, households in Ohio never saw the benefits of competition, but have instead been forced to subsidize the losses of an aging coal fleet through a system of inflated riders and surcharges on their home electricity bills,” finds the study.

This research reinforces the need for the state to reform the PUCO rate-making process, as called for by the OMA and the Office of the Ohio Consumers’ Counsel.

Read the full study **here** and its policy brief **here**. *3/17/2017*

Deja Vu Bill on Clean Energy Standards
March 24, 2017

Just months after Governor Kasich vetoed legislation that would have weakened existing clean energy standards, House Republicans have introduced a similar measure.

Together with 54 other co-sponsors, Rep. **Bill Seitz** (R-Cincinnati), Chairman of the House Public Utilities Committee, introduced **House Bill 114**. The bill revises and weakens enforcement of renewable energy standards and energy efficiency standards. With 55 co-sponsors, the bill has nearly enough co-sponsors to override a potential gubernatorial veto. The House will need to muster 60 votes to inoculate itself.

Three hearings on the bill have been held so far. This week **testimony submitted by Ceres**, a non-profit sustainability advocacy organization, made the case against the bill, saying: “Nestle, Whirlpool, Owens Corning and others-support clean energy standards because they help businesses cut energy costs, avoid the volatility of fossil fuel prices, and help companies stay competitive.” *3/23/2017*

Settlement Improves Deal for DP&L Customers
March 24, 2017

After months of negotiations **DP&L reached a settlement** with the PUCO staff and other parties in its electric security plan case (ESP III).

The Dayton utility last October had applied for a subsidy rider on customers’ bills of $145 million per year for eight years, totaling approximately $1.16 billion.

The settlement instead gives the utility a subsidy of $105 million for three years for a total of $315 million. The subsidy will be paid by a new rider on all customers’ bills in the DP&L service territory.

Carpenter Lipps & Leland (CLL), counsel for the OMA Energy Group, participated in the negotiations and secured this and other improvements.

The **OMA Energy Group** is a group of OMA members who have a voice in critical PUCO cases and legislation, help steer the OMA’s legal resources, and get first-hand updates and weekly members-only case summaries. Contact the OMA’s **Ryan Augsburger** to learn more. *3/23/2017*

PUCO Launches “PowerForward”
March 17, 2017

Public Utilities Commission of Ohio (PUCO) chairman Asim Haque has launched a new, and welcome, initiative termed “**PowerForward**.”

The agency announced: “PowerForward is the PUCO’s review of the latest in technological and regulatory innovation that could serve to enhance the consumer electricity experience. Through this series, we intend to chart a clear path forward for future grid modernization projects, innovative regulations and forward-thinking policies.

“Our hope is that the expertise of many stakeholders can help us better frame the grid of the future. We want to know what technologies or changes are needed, so that innovative regulations and forward-thinking policies can be developed.”

The initiative begins on April 18, 19 and 20 with a three-day “A Glimpse of the Future” series that will feature presentations examining technologies affecting a modern distribution grid; what the future grid could offer consumers; and what technologies are in development to realize such enhancements.

Ohio has been mired for years in a debate about old generating plants. This initiative gives the state an opportunity to have a conversation about developing and investing in new, innovative technologies.

The chairman has invited Ohio manufacturers to participate with their own stories and thoughts about new, or emerging, technologies. Contact OMA's **Ryan Augsburger**, if you'd like to participate. *3/14/2017*

Nuke Subsidies Threaten Markets
March 17, 2017

The most recent **State of the Market Report** from Monitoring Analytics, PJM's market monitor, says state mandated subsidies for nuclear power plants threaten the viability of competitive power markets.

The monitor states that subsidies "threaten the foundations of the PJM capacity market as well as the competitiveness of PJM markets overall."

Subsidies "suppress incentives for investments in new, higher efficiency thermal plants but also suppress investment incentives for the next generation of energy supply technologies and energy efficiency technologies. These impacts are long lasting but difficult to quantify precisely," writes the monitor.

Illinois and New York have created nuke subsidies. FirstEnergy is proposing a $300 million a year subsidy for its two old, uneconomic nuclear facilities. *3/14/2017*

Ohio Electric Deregulation Saving Consumers $3 Billion a Year
March 10, 2017

A recent whitepaper produced by OMA indicates that deregulation has dramatically lowered the generation rates offered to Ohio customers as cost-based ratemaking has been replaced by competitive market-based auctions.

Combined, shoppers and non-shoppers saved more than $16 billion from 2011 to 2015 due to Ohio's move away from electric generation monopolies and to competitive markets.

There are additional documented benefits of deregulation including substantial investment in Ohio's energy infrastructure. Eight new natural gas-powered plants are in various stages of construction throughout Ohio. Four more are in various planning stages.

Improvements in energy efficiency and reliability have been secured. Reserve margins of capacity are steadily in the 20 percent range, which is in excess of the 15 percent target established by PJM Interconnection, the grid manager.

Read the whitepaper, **Competitive Markets for Electricity Deliver $3 Billion a Year in Savings to Ohio Electricity Consumers**. *3/7/2017*

Above-market Charges on Consumers: $15 Billion & Rising
March 10, 2017

According to the Office of the Ohio Consumers' Counsel, from 2000 to 2016, Ohio's electric utilities collected $14.67 billion in above-market charges from all customers regardless whether the customers were purchasing generation supply from a competitive supplier. Most of these charges were approved by the Public Utilities Commission of Ohio (PUCO) to help the utilities manage through the transition from regulated pricing to market-based pricing.

Utilities continue to prevail in PUCO cases, however, resulting in new non-bypassable riders on customers to generate revenue needed to ameliorate the utilities' (or their parent companies') cash-flow problems and/or improve their profitability. In late 2016, the PUCO issued two rulings authorizing the collection of more than $1 billion of ratepayer money to prop up the corporate earnings of FirstEnergy and allowing an "unknown" amount for subsidies for unregulated AEP Ohio generation. In addition, Dayton Power & Light has a pending PUCO case that if approved would cost its customers another $625 million dollars over five years.

As consumers' generation charges are dropping in the market as a result of electric generation deregulation, their non-generation charges, which in some cases include dozens of nonbypassable riders, are on the rise – eating away at customers' overall savings with no corresponding benefits. These riders function as a new tax on families and businesses and are a drag on the state's economy.

Read more in this recent OMA whitepaper: **Ohio's Electric Utilities' Above-Market Charges Are Anti-Competitive For Ohio's Consumers**. *3/7/2017*

OMA EEPN Goes to Marietta
March 10, 2017

This week, the OMA Energy Efficiency Peer Network (EEPN) toured a combined heat & power installation at Solvay Specialty Polymers USA, LLC in Marietta.

The EEPN schedules plant tours several times a year for members to see energy innovations.

If you'd be interested in joining the EEPN, just send an email to OMA's **Denise Locke**, with your contact information.

Thank you, Solvay Specialty Polymers, for your generosity! *3/9/2017*

OMA Argues on Behalf of Duke Customers at Supreme Court of Ohio
March 3, 2017

Pictured: OMA energy counsel Kim Bojko of Carpenter Lipps & Leland, Larry Sauer of the Office of the Ohio Consumers' Council and Rob Brundrett of OMA staff

This week OMA's energy counsel, **Kim Bojko**, of Carpenter Lipps & Leland, argued before the Supreme Court of Ohio on behalf of the Appellants requesting that it overturn a Public Utilities of Ohio (PUCO) order that awarded Duke $55.5 million from customers for cleanup costs associated with two former manufactured gas plants that have not been in operation for 50-89 years.

Bojko stated that the PUCO improperly applied the ratemaking statutes in Ohio that do not permit recovery of expenses associated with plants that were not used and useful in rendering service to Duke's distribution customers during the test year.

OMA and the Office of the Ohio Consumers' Counsel, among others, appealed the PUCO decision three years ago. The court will render a decision in the near future.

FES Worth Less than its Debt
February 24, 2017

On an **investor call** this week, FirstEnergy indicated that the company experienced a loss of $6.2 billion in 2016 on sales of $14.6 billion. CEO Chuck Jones discussed the possibility of bankruptcy for FirstEnergy Solution(FES), the generation-owning subsidiary of the company.

The company took a large write-down of its Ohio and Pennsylvania generating assets. FES is now valued at $1.6 billion. It's total long-term debt is $3 billion.

The CEO said FirstEnergy aims to exit the generating business by 2018. It will sell or close the plants, he indicated.

Meanwhile, the company is seeking legislation that would provide very large customer-paid subsidies for its two Ohio nuclear plants. Obviously, such subsidy mandates would make the plants more valuable to a purchaser. Just as obviously, the subsidies would punish ratepayers with no benefit. *2/23/2017*

Upcoming Plant Tour of Combined Heat & Power Installation
February 24, 2017

There is a growing interest among Ohio manufacturers to better understand the benefits, feasibility and hurdles to combined heat and power applications (CHP).

Therefore, the OMA **Energy Efficiency Peer Network** (EEPN) has scheduled its next plant tour for **Thursday, March 9** at the Solvay Specialty Polymers plant in Marietta, Ohio.

The Solvay Specialty Polymers facility in Marietta features a new combined heat and power plant. The tour is hosted by Solvay, Varo Engineers and DTE Energy Services.

Limited to 30 registrants; must be a manufacturing member of OMA to participate.

See the event and registration details here. *2/20/2017*

DP&L Files Proposal for $625M from Customers over 5 Years
February 17, 2017

Dayton Power & Light (DP&L) is litigating a proposal at the Public Utilities Commission of Ohio (PUCO) that, if approved, will allow it to impose more above-market charges on customers in its service area. The estimated cost of the rider is $625 million over five years. The rider will not be by-passable by shopping with a competitive supplier.

DP&L intends to use the $625 million to reduce its debt and allegedly invest in its grid; however, this is too large of a subsidy to bailout DP&L's parent, DPL Inc., and the holding company, AES. There are also many other proposed above-market charges embedded in the proposal that will cost customers even more money during the term of the proposal.

We have estimated the potential cost to DP&L customers. **Click here**. OMA energy counsel Carpenter Lipps & Leland has prepared **this analysis of the case**.

The **OMA Energy Group** is opposing the measure. OMA members can take action by making a phone call to or arranging a meeting with elected officials to express opposition to this proposal. Contact Governor Kasich (**contact information**) and your state senator and state representative (**look up here**).

Here is a **sample letter** (in Word) for communicating with elected officials. *2/14/2017*

Governor Makes Appointments to PUCO
February 17, 2017

Late this week Governor Kasich **announced the following appointments** to the Public Utilities Commission of Ohio:

Lawrence R. Friedeman of Waterville (Lucas Co.) will replace M. Howard Petricoff. Friedeman received his bachelor's degree and juris doctorate from University of Pittsburgh. He is currently Vice President of Regulatory Affairs and Compliance at IGS Energy.

Daniel R. Conway of Upper Arlington (Franklin Co.) replaces Lynn Slaby, whose term is expiring. Conway received his bachelor's degree from Miami University and his juris doctorate from the University of Michigan. He is currently an attorney at Porter, Wright, Morris and Arthur LLP and is an adjunct professor at The Ohio State University Law School. *2/16/2017*

Ohioans Prefer Energy Choice
February 10, 2017

A recent poll of Ohioans found support for the benefits of a deregulated energy marketplace. The Fallon Research firm was engaged by the Alliance for Energy Choice to measure Ohioans' attitudes and opinions about energy policies.

- 91.5% oppose changing Ohio law to allow utilities, like AEP and First Energy, to charge customers for the cost to build their new plants.
- 78.7% oppose a change in law that would eliminate the ability to shop for the best price for electric and natural gas service from a variety of providers and require customers to take services only from their local utility.

- 62% disagree that utility customers should pay the additional cost to support uneconomical power plants because it may preserve jobs in certain communities.
- 55.5% agree that Ohio should increase electric market competition, even if it means the elimination of the government-mandated electric utility monopoly that has existed for decades.

Here are **all the results**. *2/6/2017*

Rover Pipeline Gets Go Ahead from FERC
February 10, 2017

Last week, the Federal Energy Regulatory Commission (FERC) issued a certificate of public convenience and necessity for the **Rover Pipeline** project. The Coalition for the Expansion of Pipeline Infrastructure (CEPI), of which OMA is a member, **applauded FERC** for releasing the certificate after two years of thorough review.

Once in operation, the Rover Pipeline will fill a critical need of natural gas producers in the Marcellus shale region. While production levels have steadily risen in recent years thanks to new extraction technologies, the ability to transport those resources to end markets has been lacking. Now, with the Rover Pipeline clearing a major regulatory hurdle, natural gas producers in Ohio, Pennsylvania, and West Virginia are one step closer to meeting demand for affordable, domestically-produced natural gas. *2/6/2017*

HB105 **OIL AND GAS FUNDING LIMIT** (CERA J, HILL B) To limit the amount of revenue that may be credited to the Oil and Gas Well Fund and to allocate funds in excess of that amount to local governments, fire departments, and a grant program to encourage compressed natural gas as a motor vehicle fuel.

Current Status: 5/16/2017 - House Ways and Means, (Second Hearing)

State Bill Page: https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA132-HB-105

HB143 **ELECTRIC DISTRIBUTION COMPANY DEFINITION** (SPRAGUE R) To clarify the definition of "electric distribution company" for kilowatt-hour tax purposes.

Current Status: 3/29/2017 - Referred to Committee House Public Utilities

State Bill Page: https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA132-HB-143

HB178 **ZERO-EMISSIONS NUCLEAR PROGRAM** (DEVITIS A) Regarding the zero-emissions nuclear resource program.

Current Status: 5/16/2017 - House Public Utilities, (Third Hearing)

State Bill Page: https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA132-HB-178

SB50 **WELL INJECTION-PROHIBITION** (SKINDELL M) To prohibit land application and deep well injection of brine, to prohibit the conversion of wells, and to eliminate the injection fee that is levied under the Oil and Gas Law.

Current Status: 2/22/2017 - Senate Energy and Natural Resources, (First Hearing)

State Bill Page: https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA132-SB-50

SB53 **NATURAL GAS RESTRICTION** (SKINDELL M) To ban the taking or removal of oil or natural gas from and under the bed of Lake Erie.

Current Status: 2/22/2017 - Senate Energy and Natural Resources, (First Hearing)

State Bill Page: https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA132-SB-53

SB65 **ENERGY STAR TAX HOLIDAY** (BROWN E) To provide a three-day sales tax "holiday" each April during which sales of qualifying Energy Star products are exempt from sales and use taxes.

Current Status: 3/22/2017 - Senate Ways and Means, (Second Hearing)

State Bill Page: https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA132-SB-65

SB128 **ZERO-EMISSION NUCLEAR PROGRAM** (EKLUND J, LAROSE F) Regarding the zero-emissions nuclear resource program.

Current Status: 5/18/2017 - Senate Public Utilities, (Second Hearing)

State Bill Page: https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA132-SB-128

OHIO LEGISLATIVE SERVICE COMMISSION

Bill Analysis

Amy L. Archer

Sub. H.B. 114

132nd General Assembly
(As Passed by the House)

Reps. Blessing, Seitz, Rosenberger, Schuring, Pelanda, McColley, Hill, Conditt, Hambley, Retherford, Brinkman, Koehler, Johnson, Green, Stein, Thompson, Roegner, Schaffer, Slaby, Scherer, Wiggam, Huffman, Becker, Riedel, Zeltwanger, Vitale, Hood, Keller, Dean, Butler, Householder, Hughes, Brenner, Dever, DeVitis, Goodman, Kick, Landis, LaTourette, Lipps, Rezabek, Romanchuk, Ryan, R. Smith, Young, Patton, Ginter, Cupp, Carfagna, Cera, Greenspan, Perales, Arndt, Faber, Sprague, Gavarone, Henne, Reineke

BILL SUMMARY

Energy efficiency and peak demand reduction

- Effectively makes the energy efficiency requirements for 2017, 2018, 2020, 2021, 2023, 2024, and 2026 no longer true requirements.
- Decreases the energy efficiency benchmarks, resulting in a decrease to the current cumulative requirement from 22.2% to 17.2%.
- Seeks to clarify that the energy efficiency requirements terminate at the end of 2027.
- Effectively makes the peak demand reduction requirements for 2017 and 2018 no longer true requirements, but keeps the benchmarks for those years (and the two years that follow) at the levels in current law.
- Requires that electric distribution utilities (EDUs) be deemed in compliance with the energy efficiency and peak demand reduction requirements and eligible for incentives approved by the Public Utilities Commission (PUCO) in any year in which their "actual cumulative energy efficiency and peak demand reduction savings" meet or exceed the "cumulative mandates."
- Requires the following to be counted toward the energy efficiency and peak demand reduction requirements and prohibits them from qualifying for shared savings:

- Energy intensity reductions resulting from heat rate improvements at electric generating plants;

- Energy efficiency savings and peak demand reductions that occur as a consequence of consumer reductions in water usage or reductions and improvements in wastewater treatment;

- Nonelectric energy efficiency savings and nonelectric peak demand reductions that occur as a consequence of an EDU's energy efficiency and peak demand reduction portfolio plan;

- The savings and reduction associated with heat rate improvements, other efficiency improvements, or other energy intensity improvements, if proposed by an EDU and achieved since 2006 from an electric generating plant that is either owned by the EDU or, in some cases, owned and operated by an EDU affiliate.

- Requires the following to be counted toward the energy efficiency requirements only (but prohibits them from qualifying for shared savings): any plan, policy, behavior, or practice that reduces the energy intensity of a facility, pipeline, building, plant, or equipment; or any water supply function or water treatment function.

- Permits electric services companies (ESCs) to apply, on behalf of customers, for an EDU's energy efficiency program.

- Provides for the ESC or customer, as the customer directs, to receive the program rebates, upon the ESC providing evidence of program completion and if the customer is located within the EDU's service territory.

- Requires the PUCO, not later than 180 days following the effective date of the bill's energy efficiency program rebate provisions, to initiate an investigation to ensure the programs are consistent with the rebate provisions and, not later than January 1, 2018, to amend its rules to bring them into conformity with those provisions.

- Adds mercantile customers to those customers that may, subject to a number of requirements, including requirements for customer reporting, opt out of an EDU's energy efficiency and peak demand reduction portfolio plan, effective January 1, 2019.

- Modifies the current definition of energy intensity and broadens the definition's applicability.

Renewable energy

- Permits, rather than requires, EDUs and ESCs to provide portions of their electricity supplies from renewable energy resources, as long as their costs of providing those portions do not exceed a 3% cost cap.

- Permits, beginning January 1, 2019, and subject to rules that the bill requires the PUCO to adopt, all customers to opt out of paying any rider, charge, or other cost recovery mechanism designed to recover an EDU's or ESC's cost of providing electricity from renewable energy resources.

- Requires continued recovery from customers of ongoing costs associated with EDUs' contracts to procure resources to comply with the current renewable energy requirements, if those contracts were entered into before the bill's effective date.

- Requires, by January 1, 2018, the PUCO to adopt rules governing disclosure to customers of the costs of electricity provided after the bill's effective date from renewable energy resources.

- Permits EDUs and ESCs to request a force majeure determination with the PUCO for the reduction of a benchmark for the permissible provision of renewable energy rather than the reduction of a benchmark for the renewable energy requirements, though due to the bill's construction, this provision will likely be moot.

- Modifies the definition of renewable energy resources and qualifying renewable energy resources to include power produced by a small hydroelectric facility and excludes small hydroelectric facilities from standards defining hydroelectric facilities.

Reporting requirements

- Beginning in 2018, requires every EDU to report to the PUCO, by July 1 of each year, its status of compliance for the prior calendar year with the energy efficiency and peak demand reduction provisions.

- Beginning in 2018, requires every EDU and ESC to report to the PUCO, by July 1 of each year, the amount of electricity that the EDU or ESC provided from renewable energy resources during the prior calendar year.

- Requires that if an EDU reports the amount of electricity provided from renewable energy resources as a portion of the supply required for its standard service offer, then that portion must be reported as a percentage of the baseline defined by the bill.

- Requires that if an ESC reports the amount of electricity provided from renewable energy resources as a portion of its electricity supply for Ohio retail consumers, then that portion must be reported as a percentage of the baseline defined by the bill.

- Defines the baseline discussed in the previous two dot points to exclude customers who opt out of paying any rider, charge, or other cost recovery mechanism designed to recover an EDU's or ESC's cost of providing electricity from renewable energy resources.

- Requires the PUCO to submit one report each year by August 1 to the General Assembly and the Ohio Consumers' Counsel detailing all of the following:

    - The amount of electricity provided by EDUs and ESCs from renewable energy resources during the year covered by the report, based on the information provided in the EDUs' and ESCs' reports to the PUCO and any other information that is public;

    - EDU compliance with the energy efficiency and peak demand reduction provisions, based on the information provided in the EDUs' reports to the PUCO and any other information that is public;

    - The average annual cost of renewable energy credits purchased by EDUs and ESCs for the year covered in the report;

    - Any strategy for encouraging the use of renewable energy resources in supplying Ohio's electricity needs in a manner that considers available technology, costs, job creation, and economic impacts.

- Requires the PUCO Chairperson to provide testimony, by September 1 of each year, on the August 1 report, to the standing committees of both houses of the General Assembly that deal with public utility matters.

- Repeals current requirements governing two annual reports that the PUCO is required to make regarding the current renewable energy, energy efficiency, and peak demand reduction requirements, including repealing a provision requiring the PUCO to allow and consider public comments on the renewable-energy report.

Bypassability of generation costs

- Expressly states that an EDU's costs for providing electricity from qualifying renewable energy resources are bypassable by any consumer that shops for an electric supplier.

Funding for home energy assistance

- Changes funding allocations for federal funds from the Home Energy Assistance Block Grant; however, due to the effective date of the changes, they will likely have no effect.

TABLE OF CONTENTS

OHIO LEGISLATIVE SERVICE COMMISSION

Bill Analysis

Amy L. Archer

H.B. 143

132nd General Assembly

(As Introduced)

Rep. Sprague

BILL SUMMARY

- Modifies the definition of "electric distribution company" for kilowatt-hour tax purposes.

CONTENT AND OPERATION

Electric distribution company definition

The bill modifies the definition of electric distribution company for kilowatt-hour tax purposes to specify that such a company does not include an (1) entity that is a self-generator, or (2) agent who both contracts with a self-generator and installs, owns, or operates an electric generation facility or associated facilities to produce electricity that is primarily dedicated to meeting some or all of the electricity requirements of the self-generator.[1] A "self-generator" is an entity that owns or hosts on its premises an electric generation facility that produces electricity primarily for the owner's consumption and that may provide any excess electricity to another entity, whether the facility is installed or operated by the owner or by an agent under a contract.[2]

Current law specifies that an electric distribution company does not include an end-user of electricity who self-generates electricity that is used directly by that end-user on the same site the electricity is generated.

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[1] R.C. 5727.80(A).

[2] R.C. 4928.01(A)(32), not in the bill.

The Ohio Manufacturers' ASSOCIATION

COMPETITIVE MARKETS FOR ELECTRICITY DELIVER $3 BILLION A YEAR IN SAVINGS TO OHIO ELECTRICITY CONSUMERS

"The great danger to the consumer is the monopoly … His most effective protection is free competition … The consumer is protected from being exploited by one seller by the existence of another seller from whom he can buy and who is eager to sell to him. Alternative sources of supply protect the consumer far more effectively than all the Ralph Naders of the world."

~ Milton Friedman

Competitive electricity markets in Ohio are working and delivering cost savings and other benefits to customers across Ohio.

Over the past 17 years, since the enactment of Ohio Amended Substitute Senate Bill 3 (SB 3) in 1999, the restructuring of Ohio's retail electricity marketplace has been implemented and refined.

The major premise of SB 3 was that competitive markets, rather than government regulation, would provide the choices, savings and other benefits that customers seek and value. This premise has been proven correct.

COMPETITIVE MARKETS ARE WORKING WELL FOR OHIO ELECTRICITY CUSTOMERS

Ohio's electric industry restructuring sought to secure safe, reliable, lowest-cost electricity for customers.

Electricity customers in Ohio today enjoy unprecedented options for shopping for generation service. The competitive market is working. It's delivering customer choice, new energy technologies, innovative energy services, and direct energy savings to customers – all while assuring energy reliability.

THE BENEFITS OF COMPETITION ARE NUMEROUS AND WELL-DOCUMENTED

Customers across the state are benefitting from competitive electricity markets in numerous ways:

LOWER COSTS. A recently completed analysis[1] of electricity prices in Ohio since 2011 found that deregulation has saved, and will continue to save, Ohio electricity customers an average of three billion dollars annually.

Deregulation has dramatically lowered the generation rates offered to customers as cost-based ratemaking has been replaced by competitive market-based auctions. Under SB 3, for their customers who do not shop for electric generation on the retail market, electric distribution utilities are required to purchase electricity via competitive auctions. From 2011 through 2015, these auctions have saved non-shopping consumers $12.9 billion.

For those customers who shopped for generation from competitive suppliers in the retail market, there have been even greater savings. From 2011 through 2015, customers who are purchasing electricity from a competitive supplier conservatively realized an additional $3.1 billion in cost savings compared to what was paid by customers who purchased generation from their incumbent utility.

Combined, then, shoppers and non-shoppers have saved more than $16 billion since 2011 due to Ohio's move away from electric generation monopolies and to competitive markets.

The transition to a competitive retail electric marketplace has allowed customers access to historically low energy prices driven by the natural gas shale boom and flattening demand for electricity. And in a free market, customers get the benefit, not the monopoly to which they have been captive.

1 *ELECTRICITY CUSTOMER CHOICE IN OHIO*: How competition has outperformed traditional monopoly regulation, November 2016, Northeast Ohio Public Energy Council

COMPETITIVE MARKETS FOR ELECTRICITY DELIVER $3 BILLION A YEAR IN SAVINGS TO OHIO ELECTRICITY CONSUMERS

INVESTMENT & ECONOMIC GROWTH. Free markets encourage entrepreneurship. Entrepreneurs drive investment. It is occurring in Ohio's electricity marketplace in a big way.

Eight new natural gas-powered plants are in various stages of construction throughout Ohio. Four more are in various planning stages.

The estimated collective capacity of the eight new plants is 8,242 MW, and they collectively represent a $7.74 billion investment. This new capacity is enough to power 7,000,000 homes which is more than 1.5 times the entire population of Ohio.

The eight new plants also will generate an incredible demand for Ohio natural gas. It is estimated, conservatively, that for every 5,000 MW of new capacity, approximately $20 billion of natural gas will be purchased over a 30-year period.[2]

PJM Interconnection is the Regional Transmission Organization that governs the grid that supplies Ohio and 13 other states and the District of Columbia. Its energy and capacity markets are sending clear price signals that are attracting substantial investment in new generation. And, by driving prices down, Ohio becomes more competitive.

IMPROVED TECHNOLOGY AND ITS EFFICIENCY IN MAKING ELECTRICITY. The markets drive technology investment and innovation. The markets are attracting to Ohio new technologies that improve energy generating efficiency, as measured by "heat rate," or the amount of BTUs needed to make a kWh of electricity. The favored base load power plant configuration in Ohio today is a water-cooled, 2-on-1 combined cycle, gas-fueled power plant, which is nearly twice as efficient as legacy coal-fired plants. This is important because enhanced efficiency conserves fuel and lowers wholesale energy prices for all consumers.

Markets also drive efficiency gains in already operating generation units. A study of 950 fossil-fuel power plants in the U.S. found that those in restructured, competitive markets increased their heat rate by 13 percent. This market-driven gain in power plant efficiency resulted in a reduction of up to 81 million tons of carbon dioxide nationally, equivalent to the amount of CO^2 produced by up to 14 million cars. The fuel efficiency gains were found to be from technical changes to the power plant, and organizational changes with the operating staff.[3] Yet another study found that nuclear plants in competitive territory gained 3 to 5 percent in efficiency compared to their regulated peers.[4]

And, consider the surging role of batteries in regulating the frequency of the electric grid. PJM has created markets to provide frequency regulation to keep local grids stable. As a result, in 2015, grid-scale batteries had already grown to provide 22 percent of the frequency regulation needed for the electric grid, from 16 percent in 2014. By the first half of 2016, the number of battery units rapidly expanded, and batteries now make up 42 percent of frequency regulation.[5]

2 JobsOhio

3 Craig, J. Dean, Savage, Scott., "Market Restructuring, Competition and the Efficiency of Electricity Generation: Plant-level Evidence from the United States 1996 to 2006.", http://www.colorado.edu/Economics/papers/Wps-09/wp09-06/09-06CraigSavage.pdf

4 Fabrizio, K, Rose, N., and Wolfram, C., "Do Markets Reduce Costs? Assessing the Impact of Regulatory Restructuring on US Electric Generation Efficiency", http://economics.mit.edu/files/9915

5 http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2016/2016q2-som-pjm-sec10.pdf

IMPROVED RELIABILITY. Competitive markets deliver reliable electricity supply. Ohio's electric generators participate in a wholesale competitive market operated by the PJM Regional Transmission Organization. To ensure that reliable electricity supply is maintained, PJM conducts a forward-looking competitive auction for generation capacity. Generation capacity is the promise of an electric generator to be available to operate when the grid requires it. PJM goes so far as to literally equate capacity to reliability. PJM plays it safe, forecasting the peak capacity requirements of the grid in future years and aiming to procure a reserve margin of about 15 percent more than it actually needs. The results show that competitive auctions work. For the past five years, PJM has procured even more reserve margin than it has targeted, on average about 20 percent annually.[6]

The amount of PJM's recent reserve margins exceeds the entire generating capabilities for all of Ohio.[7] That is to say, PJM's auction has procured so much capacity, that even on the hottest of days, it has more than enough standby resources to meet all of Ohio's capacity needs.

YEAR	RESERVE MARGIN
2019/20	22.40%
2018/19	19.80%
2017/18	19.70%
2016/17	21.10%
2015/16	20.20%

PJM projected capacity reserve margin over five years

CONCLUSION

The promise of electricity markets has become reality in Ohio. Electricity markets are delivering the anticipated benefits:

- Driving electricity costs down – an estimated $16 billion in savings from 2011 to 2015 for Ohio businesses and families
- Attracting substantial investment in new generation in Ohio – 8,242 MW of new generation and more in the planning pipeline
- Improving energy efficiency and reliability – reserve margins steadily in the 20 percent range with 13 percent gain in power plant efficiency

The policy has even greater promise for Ohio's future, if state and federal policymakers will pursue public policy that protects competitive markets in Ohio and federally.

6 Source: PJM Base Residual Auction reports, for example, see: http://www.pjm.com/~/media/markets-ops/rpm/rpm-auction-info/2019-2020-base-residual-auction-report.ashx

7 https://www.eia.gov/electricity/state/ohio/index.cfm

COMPETITIVE MARKETS FOR ELECTRICITY DELIVER $3 BILLION A YEAR IN SAVINGS TO OHIO ELECTRICITY CONSUMERS

WHAT IS CAPACITY AND HOW DOES IT IMPACT ELECTRIC COSTS?

Capacity is part of a customer's electric generation rate, along with the cost of the energy itself, and is associated with the costs a generation supplier incurs to have enough power to meet demand in a particular area during peak times. Today, it accounts for around 12 percent of the total bill.

The cost of capacity is determined through a series of forward capacity auctions conducted by a Regional Transmission Organization (RTO), which coordinates power generation and transmission and transmission within a region and is responsible for grid operations and electric reliability. In Ohio, the RTO is PJM Interconnection (PJM). Customers pay for this via their generation supplier.

In general, constrained generation supplies drive auction prices up, which in turn signals the need to build new generation assets (or reduce demand). On the other hand, an excess of generation typically drives auction prices down, discouraging the construction of new power plants.

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OHIO'S ELECTRIC UTILITIES' ABOVE-MARKET CHARGES ARE ANTI-COMPETITIVE FOR OHIO'S CONSUMERS

Ohio's 17-year transition from a regulated to a competitive market for electric generation is providing electric customers unprecedented options for shopping for – and saving on - generation service. The competitive market is working.

Market-based pricing is delivering customer choice, investment in new energy technologies, and innovative energy services. Competition is driving electricity costs down for families and businesses. Substantial investment in new generation is underway in our state, improving energy efficiency and reliability, and reducing environmental impacts.

A recent study conducted jointly by Cleveland State University and The Ohio State University found that since 2011, electricity shoppers and non-shoppers in Ohio have saved more than $16 billion as a result of market-priced electricity -- more than $3 billion a year.

Competitive markets dispatch the least cost power producer first and highest cost producer last in order to meet the instantaneous demand for energy. The hourly energy prices are set at the cost of the last plant dispatched to satisfy demand. With the demand for energy flat due to successful energy efficiency measures, uneconomic plants are not getting dispatched and, therefore, prices remain low. Independent generators and their lower-cost natural gas-fired power plants are further driving costs down (one benefit of Ohio's extensive shale gas deposits). Within this economic dispatch model traditional electric utilities heavily reliant on aging, uneconomic plants are finding it difficult to compete.

Deregulated pricing requires utilities to develop default rates (the rate paid by customers who choose not to shop) based on wholesale market prices for energy, rather than on the cost of goods, as was the case for decades. Electric generators with high costs due to aging, uneconomic power plants cannot recover enough revenues from market-based rates to recover their costs.

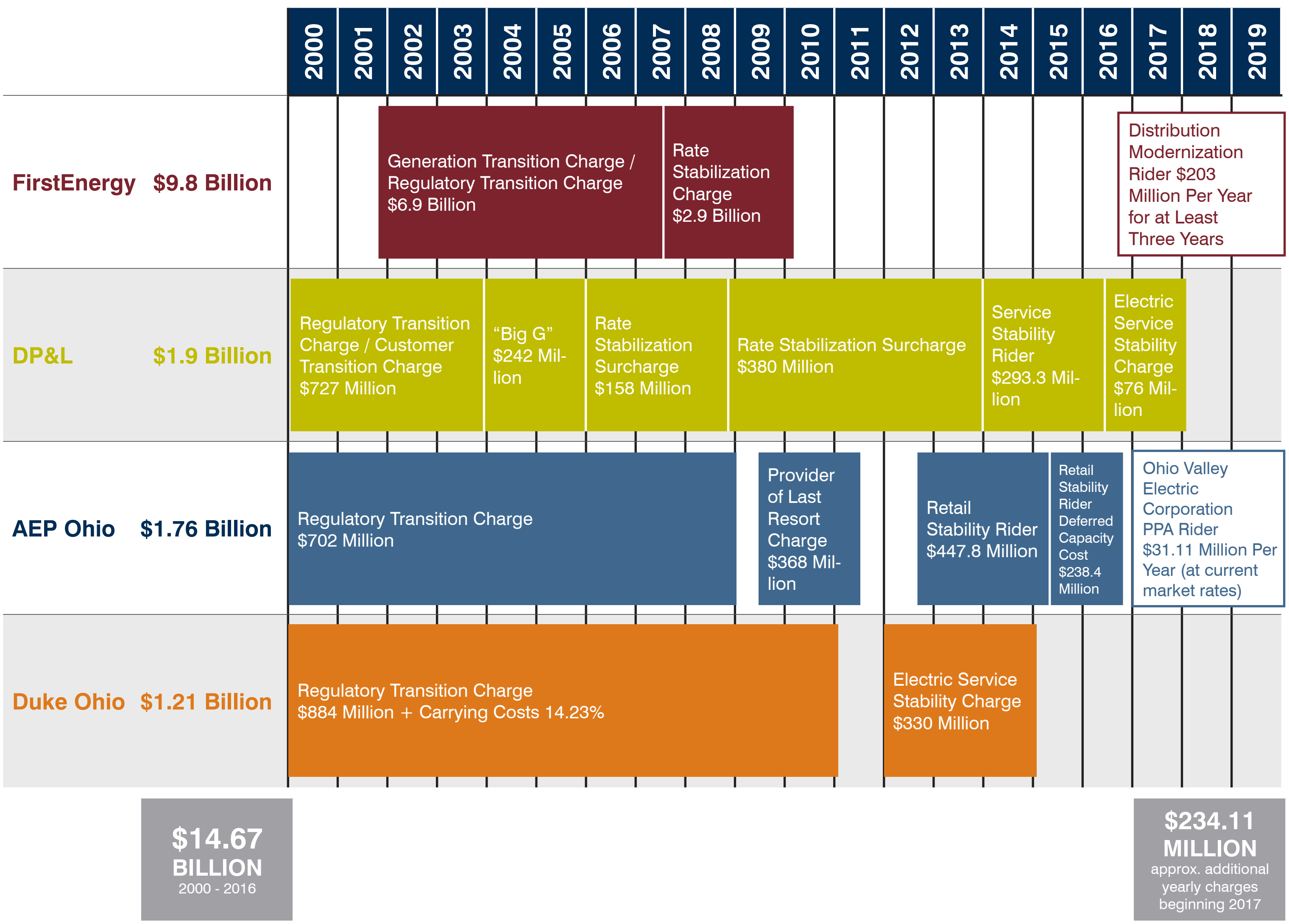
OHIO'S ELECTRIC UTILITIES' ABOVE-MARKET CHARGES ARE ANTI-COMPETITIVE FOR OHIO'S CONSUMERS

In response, Ohio utilities are proposing to protect their futures in two major ways: (a) seeking legislation to return to a form of monopolistic electricity pricing, and, in the interim, (b) continuing to force customers to pay billions of dollars in above-market charges.

According to the Office of the Ohio Consumers' Counsel, from 2000 to 2016, Ohio's electric utilities collected $14.67 billion in above-market charges from all customers regardless whether the customers were purchasing generation supply from a competitive supplier. Most of these charges were approved to help the utilities manage through the transition from regulated pricing to market-based pricing.

SUBSIDY SCORECARD - ELECTRIC UTILITY CHARGES TO OHIOANS

PUCO-APPROVED ABOVE-MARKET ELECTRIC UTILITY CHARGES SINCE 2000



SOURCE: OFFICE OF OHIO CONSUMERS' COUNSEL

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Utilities continue to prevail in Public Utilities Commission of Ohio (PUCO) cases, resulting in new non-bypassable riders on customers to generate revenue needed to ameliorate the utilities' (or their parent companies') cash-flow problems and/or improve their profitability. In late 2016, the PUCO issued two rulings authorizing the collection of more than $1 billion of ratepayer money to prop up the corporate earnings of FirstEnergy and allowing an "unknown" amount for subsidies for unregulated AEP Ohio generation. In addition, Dayton Power & Light has a pending PUCO case to collect from customers another $105 million per year for three years with an option to request a two-year extension.

This most recent round of non-bypassable riders comes at a time when the market is delivering robust benefits. These cases were all filed to keep inefficient and uneconomic utility power plants operating, essentially to prop up the value of the corporations, with no associated consumer benefits. For example, the PUCO has acknowledged that FirstEnergy's PUCO-approved Distribution Modernization Rider will not fund any specific modernization projects, but, instead, is an incentive that will prop up FirstEnergy's credit rating.

Approximate Estimated Costs to Manufacturers for FirstEnergy's Distribution Modernization Rider

Manufacturer Size	Consumption (kWh/year)	FirstEnergy		
		Annual Cost Estimate*	Total for 5-year DMR*	Total for 5-year DMR w/o tax gross up
Small (~$100k/yr in electricity costs)	1,000,000	$3,747	$18,735	$12,178
Medium (~$600k/yr in electricity costs)	7,500,000	$28,102	$140,510	$91,332
Large (~$6 million/yr in electricity costs)	100,000,000	$374,694	$1,873,468	$1,217,754
Extra large	1,000,000,000	$3,746,936	$18,734,681	$12,177,543
Territory total		**~$203 Million**	**~$1.019 Billion**	**~$662.5 Million**

**Assumes 35% Corporate Tax Gross Up*
Distribution Modernization Rider approved by PUCO in October 2016

Approximate Estimated Costs to Manufacturers for DP&L's Debt-Relief Settlement

Manufacturer Size	Consumption (kWh/year)	Estimated Annual DMR Cost ($)	Estimated 5-year DMR Cost ($)
Small	1,000,000	$7,724	$38,622
Medium	7,500,000	$52,665	$263,326
Large	100,000,000	$399,246	$1,996,232
Extra large	1,000,000,000	$3,992,465	$19,962,323

Dayton Power & Light (DP&L) Distribution Modernization Rider (DMR) to provide $105 million per year for three years, with option to request two-year extension. Pending approval by PUCO in 2017.

OHIO'S ELECTRIC UTILITIES' ABOVE-MARKET CHARGES ARE ANTI-COMPETITIVE FOR OHIO'S CONSUMERS

ABOVE-MARKET CHARGES ARE OFFSETTING LOWER GENERATION COSTS

A logical conclusion of seeing historically low wholesale and retail electricity generation prices might be that Ohioans have overall lower electric bills. But, in fact, due to the imposition of these non-generation-related utility charges, the overall cost of electricity is not going down. The utilities' non-bypassable above-market charges are dampening the benefits of lower deregulated generation costs.

THERE IS NO SHORTAGE OF GENERATION

In recent cases before the PUCO, utilities have argued that if Ohio does not approve their proposed above-market cost riders, the utilities' affiliated generation facilities will shut down, threatening the availability and affordability of electricity for Ohioans. The utilities claim that rejection of proposed new riders would send a clear message to the marketplace discouraging investment in new generation assets in Ohio.

They claim this would further compromise our future energy security – and that adequate supplies of generation can be assured only if customers subsidize continued operation of obsolete, inefficient and unprofitable power plants. The utilities continue to try to convince policymakers, regulators and customers that without guaranteed cost-recovery through some form of customer subsidization, investors will not be willing to take on the financial risk of building new generation plants in Ohio.

This is wrong. Markets are working. The energy and capacity markets operated by PJM Interconnection (the Regional Transmission Operator that manages the electricity grid for Ohio and the region) are sending clear price signals that are attracting substantial investment in new generation. Eight new natural gas-powered plants are in various stages of construction throughout Ohio (and more are on the drawing board). And for the past five years, PJM has procured even more reserve margin than it has targeted. New generation is being built -- just not by Ohio's regulated electric utilities.

Additionally, subsidies for generators to ensure reliability already exist through the PJM construct. PJM provides additional compensation to a generation owner when a unit proposed for retirement must continue operating for reliability purposes. This mechanism is precise in its award of above-market rates to only those assets proven necessary for grid stability.

PROTECT THE DEREGULATED GENERATION MARKET BENEFITS

As consumers' generation charges are dropping, their non-generation charges, which in some cases include dozens of non-bypassable riders, are on the rise – eating away at customers' overall savings with no corresponding benefits. These riders function as a new tax on families and businesses and are a drag on the state's economy.

Moving forward, Ohio needs to maintain the healthy operation of a robust competitive electric generation marketplace that is delivering price benefits to consumers and job-creating energy innovation for the state's economy. The PUCO and the Ohio General Assembly must protect the open, competitive markets created by electric industry restructuring.

The Ohio Manufacturers' ASSOCIATION

ELECTRICITY RATEMAKING REFORMS THAT PROTECT CONSUMERS

The successes of Ohio's transition to a competitive retail market for electricity generation are now documented – billions of dollars in savings for shopping and non-shopping consumers alike, robust new natural gas-fired generation projects planned and coming online, and more than adequate standby capacity as measured by the Regional Transmission Organization, PJM Interconnection.

Nonetheless, there are some statutory ratemaking provisions in current law that are clearly anti-competitive for consumers and bad for Ohio's economy. The OMA is working with legislators to craft legislation that will address the anti-competitive measures outlined in this document that are bad for consumers and for Ohio.

Problem #1: Utilities' Anti-Competitive Electric Security Plans (ESPs)

The ESPs permitted under current law allow utilities to charge customers for costs higher than market prices for generation. There is no justification for unnecessarily high, above-market charges allowed under the ESP structure. In a robust competitive electric market, ESPs are simply no longer a useful ratemaking tool and should be eliminated. The market-based option should be the prevailing rate structure.

Eliminating ESPs will fix a number of anti-competitive provisions in current law, including:

- **Utilities' Excessive Profits.** Under current law, utilities' profits are analyzed by the Public Utilities Commission of Ohio (PUCO). When the PUCO determines that a utility has earned profits deemed "excessive," the utility is not required to return the excess earnings to customers. Only if the utility's earnings are deemed "significantly excessive" is the utility required to refund the amount of excessive earnings to its customers.

- **Utilities' Assessment of Non-Generation Charges in an ESP.** Utilities have the ability to propose ESPs to the PUCO in order to set the default service pricing, including other provisions relating to the supply and pricing of electric generation service. However, current law also permits a utility to propose additional distribution-related charges in an ESP. Utilities have been using this ability to pursue – and win – above-market charges, collected via non-bypassable riders on customers' bills as "distribution charges" (that is, customers cannot "shop around" the charges). But, some of these riders have nothing to do with distribution or distribution modernization. For example, FirstEnergy was granted a "distribution modernization rider" to provide credit support to the corporation.

- **"More Favorable in the Aggregate" Standard.** Current law prescribes as a standard for PUCO approval of an ESP that its pricing (and other terms and conditions) be "more favorable in the aggregate" when compared to the expected results from the market-rate option. When ruling on ESPs, the PUCO has considered both quantitative and qualitative factors. This typically has made it easier for utilities to obtain approval of their ESPs, which are more costly for consumers compared to the market-rate option. Consumers should be able to rely on the PUCO to approve only the most favorable <u>quantitatively</u> measured rate proposal.

- **Utilities' Veto Power in ESP Cases.** Under current law, if a utility doesn't like a PUCO ruling in an ESP case, the utility can withdraw its application – in effect, granting the utility veto power in the case. This is a decidedly anti-customer policy.

- <u>CORRECTION:</u> Eliminate language in current Ohio law that permits utilities to file ESPs and implement above-market charges. With the ESP tool eliminated, utilities would provide the default service pricing via a competitive bidding process. The utilities' distribution rates would continue to be set through distribution rate cases by the PUCO. Elimination of the ESPs would force utilities to charge customers <u>only</u> for their distribution and transmission costs, established through a traditional ratemaking proceeding. Pricing for generation service would be established through a competitive process, supplied by competitive retail electric suppliers. Without an ESP, utilities would no longer be allowed to charge above-market, non-bypassable charges for costs that have nothing to do with distribution service provided by the utilities. Elimination of the ESPs also would require utilities to come before the PUCO through a traditional rate case if the utility needs an increase in its distribution rates. This would allow the PUCO to see the entirety of the utilities' books (all expenses and revenues) to appropriately determine whether a rate increase is justified.

Problem #2:
No Provision for Customer Refunds of Unlawful Utility Charges

Current law allows a utility to recover costs when the Supreme Court of Ohio reverses a PUCO order; customers, however, are afforded no such protection. A utility is allowed to keep what it already has charged and collected from a customer <u>even after the court finds the charges to be unjustified and unlawful.</u>

- **<u>CORRECTION:</u>** Modify current law to give customers the same protection a utility has during the appeals process. Allow customers to obtain a refund of utility charges that have been collected from customers when the Supreme Court of Ohio reverses a PUCO order and finds such charges to be unlawful.

Problem #3:
Lack of Corporate Separation Between Public Utilities and Generation Ownership

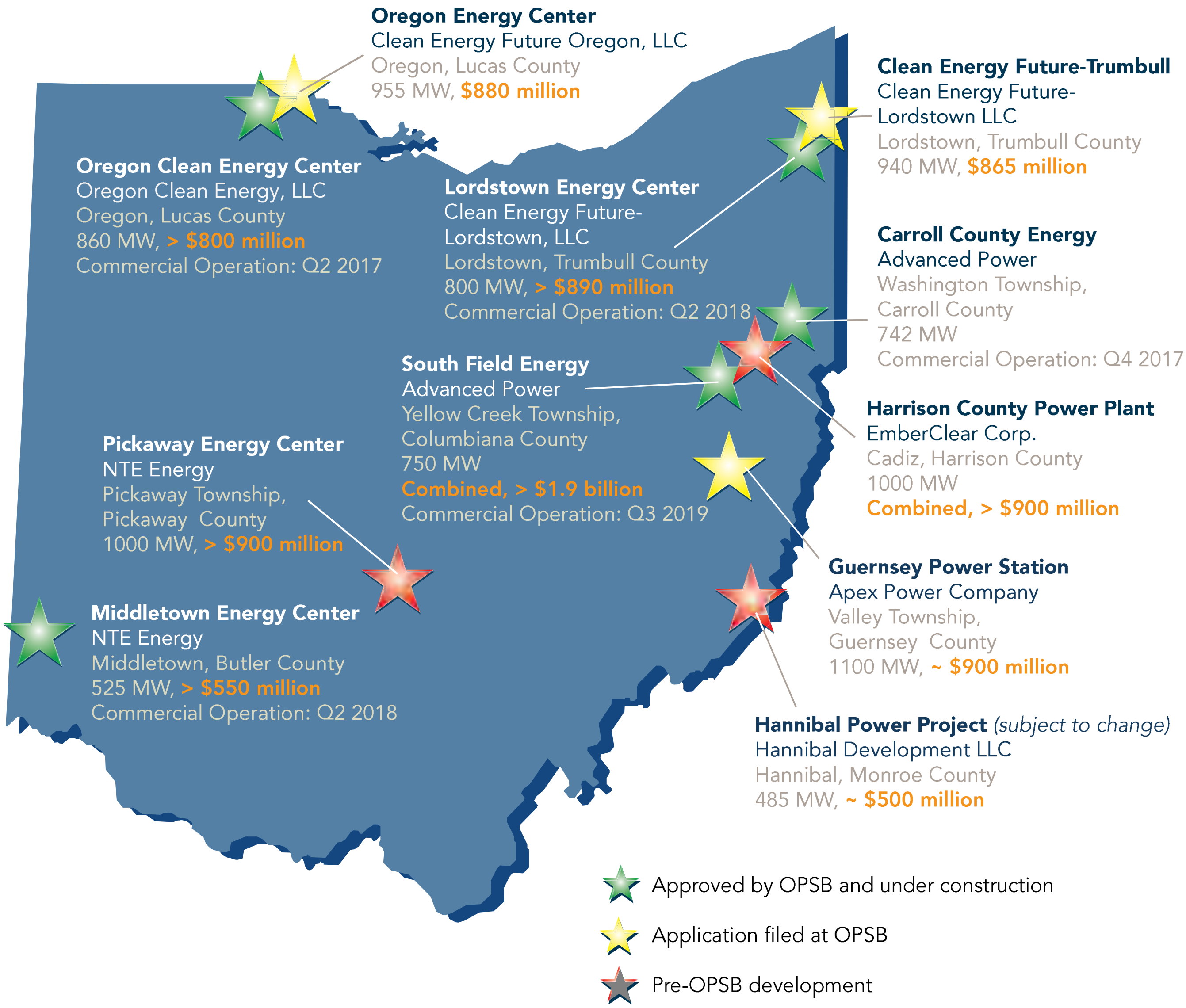
Prior to Ohio's deregulation law (Amended Substitute Senate Bill 3, enacted in 1999 with strong bipartisan support), utilities owned and operated generation plants. Am. Sub. SB3 changed that, prohibiting utilities from owning generation. Rather than spin off the ownership and control of their generation assets, however, several of the utilities placed the assets under subsidiary corporations. In recent years, the utilities have used the poor financial performance of their unregulated generation subsidiaries to justify implementing above-market customer charges to subsidize their poorly performing affiliate corporations. In recent cases, the PUCO has granted new above-market customer charges to the regulated utility company in an effort to prop up the unregulated generation company.

- **<u>CORRECTION:</u>** Protect Ohio customers from new and expanded above-market charges by clarifying that Ohio's electric generation law, Am. Sub. SB 3, means utilities and their affiliates cannot own generation, period.

The proposed actions itemized in this document will collectively undo anti-consumer ratemaking provisions that work against consumer and market interests. Enactment of the provisions would benefit Ohio by putting money into the productive economy and stimulating job-creation.

33 N. High Street, 6th Floor, Columbus, OH 43215-3005 • (800) 662-4463 • www.ohiomfg.com • oma@ohiomfg.com

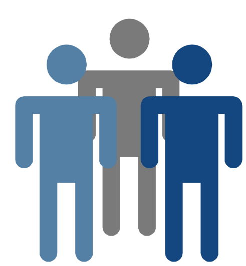
New Power Plant Investments in Ohio



▶ Total Economic Impact of New Generation

Investment: ~ $9 billion

MW capacity: 9,157



Job creation: > 10,000

For more information, please contact:

Christopher N. Slagle at 614.227.8826 or cslagle@bricker.com
Gregory J. Lestini at 614.227.4893 or glestini@bricker.com

Statewide Impact of New Power Plants to Shale Play

New natural gas power plants being built in Ohio will generate an incredible demand for natural gas. For instance, the 800 MW Lordstown Energy Center, currently under construction, would require approximately 130 million cubic feet of natural gas per day, delivered by a Dominion East Ohio Pipeline.[1] Likewise, the 742 MW combined cycle power plant currently being built by Carroll County Energy, LLC will have an anticipated fuel usage of 5,224 million British thermal units per hour (MMBtu/hr).[2]

The following scenario demonstrates the incredible demand and economic impacts of increased demand for natural gas by new power plants being built in Ohio:

Today's natural gas turbines have a heat rate, or the amount of energy used by an electrical generator or power plant to generate one kilowatthour (kWh) of electricity, of approximately 6,500 Btu/kWh.

A 1,000 MW plant has an output of 1,000,000 kWh/hr.

At full output, the facility would consume 156,000 MMBtu per day. (1,000,000 kWh x 6,500 Btu x 24 hr)

If the facility runs 75% of the time,[3] it would consume 42,705,000 MMBtu per year. (156,000 MMBtu x 365 days x 0.75)

If gas is delivered at $2.90/MMBtu,[4] the facility will spend $123,844,500 per year to buy gas.

Over a 30-year period,[5] this facility will purchase more than $3.6 billion of natural gas.

The impact of new plants in Ohio:

- For every 5,000 MW of new capacity: approximately **$20 billion** of natural gas purchases over a 30-year period.
- For every 10,000 MW of new capacity: over **$40 billion** of natural gas purchases of a 30-year period.

New natural gas power plants in Ohio are driving natural gas infrastructure development. For example:

OCE
OREGON CLEAN ENERGY

A new 24-inch diameter, 22-mile long pipeline is currently being constructed to serve the Oregon Clean Energy Center.

South Field
ENERGY

A new 20-inch diameter pipeline is being constructed to serve the power plant under development by South Field Energy, LLC.

LORDSTOWN
ENERGY CENTER

A new 24-inch diameter pipeline is being constructed to serve the Lordstown Energy Center.

[1]OPSB Staff Report of Investigation, Case No. 14-2322-EL-BGN (July 13, 2015).

[2]Application of Carroll County Energy, LLC, Case No. 1752-EL-BGN, at 11 (Nov. 15, 2013).

[3]In early years, a plant may run upwards of 90% of the time, but over its lifetime (approximately 50-years), the running time may gradually decrease.

[4]This is a very conservative estimate because it is expected that natural gas prices will increase modestly.

[5]This is a very conservative estimate. New natural gas power plants will have a life of approximately 50-years.

RUNNERSTONE
INFORMATION IS POWER

RunnerStone, LLC

3709 N. High Street, Suite 100, Columbus, OH 43214
614.268.4263

MEMORANDUM

Date: April 20, 2017

To: OMA Energy Group (OMAEG)

From: John Seryak, PE (RunnerStone, LLC)

Kim Bojko, Counsel to the OMAEG (Carpenter Lipps & Leland)

RE: Analysis of SB 128/HB 178 – Zero-Emissions Nuclear (ZEN) Credit Program

---

Senate Bill 128 (SB 128) and a companion bill, House Bill 178 (HB 178), were recently introduced in the Ohio General Assembly. SB 128/HB 178 propose to change Ohio's policy regarding electricity generation resources. Ohio's current policy regarding electricity resources states:

> *"Ensure diversity of electricity supplies and suppliers, by giving consumers effective choices over the selection of those supplies and suppliers and by encouraging the development of distributed and small generation facilities."*

SB 128/HB 178 would alter state policy, mandating the operation of nuclear generation, even if it is inefficient or more costly in the competitive market:

- Nuclear generation technology would be given special status that no other technology enjoys, as it would be state policy to specifically ensure "diversity of … resources, including zero-emissions nuclear resources."
- The state would no longer limit itself to ensuring diversity through choice and encouragement, but instead would encourage diversity by recognizing "<u>the need</u> for nuclear energy resources."
- State policy would also be changed to ensure diversity of, and <u>recognize need for</u>, a more generalized category of electricity resources that provide "fuel diversity and environmental and other benefits."

SB 128/HB 178: Zero-Emission Nuclear Credits

- ZEN = Attributes of 1 MWh nuclear generation
- Cost: approx. $300 million/yr, for 16 years or $4.8 billion total
- Allows and needs out-of-state ZEN credits to meet mandates
- Shifts state policy from support for competitive markets to specific generator "need"
- Limits customer intervention at PUCO
- Would cost a small manufacturer $90,000 over 16 years
- Would cost large, intensive manufacturer $90 million over 16 years

In brief, the state's current policy of diversity through choice, encouragement, and elsewhere mentioned innovation and access, establishes competitive market conditions for electricity generation. SB 128/HB 178 would seriously infringe upon this market policy by dictating a "need" for nuclear technology, and opening the door to a "need" for other unspecified technologies that meet fuel diversity, environmental, and "other" benefits.

SB 128/HB 178 also set forth how the state would meet the new policy goal of recognizing a need for nuclear generation. Broadly speaking, SB 128/HB 178 create a Zero-Emissions Nuclear Credit mechanism, or ZEN credits, which would be bought from Ohio's nuclear generators, as well as generators operating out of state, and paid for by some of Ohio's customers.

Details of the ZEN credit mechanism:

- ZEN credit definition: A ZEN credit would equal the "attributes" associated with one megawatt hour (MWh) of nuclear generation. "Attributes" is not defined, but presumably refers to emissions attributes, meaning the lack of emission pollutants. However, attributes could extend to include other environmental externalities of electric generation that may someday be priced in, such as water use or spent fuel storage.
- ZEN credit price: SB 128/HB 178 mandate that the initial price of a ZEN credit be $17, and that the PUCO should periodically adjust the price for inflation.
- ZEN credit quantity: The number of ZEN credits to be purchased will equal 1/3 of a distribution utility's customer load, provided that the distribution utility has a qualified nuclear resource within its certified territory. Additionally, if that distribution utility is owned by a holding company, which in turn owns other distribution utility companies in Ohio, all of that holding company's Ohio distribution utilities would be required to participate in the ZEN credit program. In plain terms, this would include all three of FirstEnergy Corp.'s distribution companies (Cleveland Electric Illuminating, Toledo Edison, Ohio Edison), but not AEP Ohio, DP&L, or Duke. The total annual distribution load of the FirstEnergy Ohio distribution utilities is approximately 54 million MWh, resulting in a requirement to purchase about 18 million ZEN credits.
- ZEN credit program duration: The ZEN credit program could last for 16 years (eight 2-year terms).
- ZEN credit cost: The customers of the FirstEnergy Ohio distribution utilities would be required to purchase 18 million ZEN credits at a price of $17 per ZEN, totaling ~$300 million per year (plus any increases for inflation).The cost to Ohio ratepayers over the 16 years term of the program would be at least $4.8 billion.
- ZEN credit availability, Out-of-state ZEN credits: Ohio's two nuclear power plants, Davis-Besse and Perry, fall short of producing 18 million ZEN credits per year. In fact, according to the U.S. Energy Information Administration, not once has nuclear generation in Ohio produced 18 million MWh since 2001.
    - In the most recent 5 years, Ohio nuclear plants produced on average 16.7 million MWh. Thus, an additional 1.3 million ZEN credits would need to be purchased from out-of-state nuclear resources. If the production trend continues, Ohio customers would consistently send $21.5 million each year to out-of-state nuclear resources.
    - In 2003, nuclear generation in Ohio fell to approximately 8.5 million MWh. In such a year, Ohio would spend approximately $160 million on out-of-state ZEN credits.

- SB 128/HB 178 further amends the state policy to extend long-term "environmental and 'other' benefits" to the region, not just the state.
- Nuclear plant eligibility: SB 128/HB 178 provide remarkably specific criteria around which power generating resources are eligible.
    - In and Out-of-State Eligibility: Importantly, separate definitions exist for "in-state nuclear energy resources," and for "all other nuclear energy resources." Hypothetical Environmental Baselines: In-state nuclear resources would be eligible by comparing the emissions of the nuclear plant to that of "the predominant electric generation source … as of the time the resource commenced operation." The impact of those hypothetical emissions would assume "the then predominant electric generation source" was located in the exact same place as the nuclear plant. The intent of this provision seems to be to compare the emissions impact of nuclear plants not against what would currently likely replace the nuclear plants – a mix of natural gas, renewable energy, and energy efficiency, all sited at different locations – but instead against 30-40 year old generation technology, which was likely predominantly inefficient coal-power plants with high emissions. This would have the effect of bolstering the alleged environmental benefits to the region of nuclear technology, but would be wholly untethered to reality.
- ZEN program process:
    - SB 128/HB 178 dictates that financial data and statements submitted by nuclear plant owners desiring to sell ZEN credits to Ohio customers would not be made public.
    - ZEN program cost recovery would be collected from customers of FirstEnergy's Ohio electric distribution utilities through a non-bypassable rider.
    - The FirstEnergy Ohio distribution utilities would also be allowed to recover "indirect" costs that are not defined.
    - The cost of the ZEN program would be limited to a 5% increase on the total retail electric bill paid by any one customer. However, the FirstEnergy Ohio distribution utilities are allowed to defer any costs incurred over the cap, add interest, and recover from customers over a subsequent 12-month period.
    - The PUCO would have only 50 days to designate a nuclear plant as an eligible nuclear resource, or any nuclear resource that applies would be automatically eligible. Since presumably out-of-state nuclear resources could be eligible, and there are specific environmental requirements for all nuclear resources, the list of participating plants is not obvious, and could be open to challenge based on the requirements SB 128/HB 178 set forth. However, it is unlikely a robust process could take place at the PUCO within 50 days. Thus, even out-of-state nuclear plants could receive de facto eligibility without the full review of the PUCO and intervening stakeholders.
- Transfer of ZEN eligibility to other companies:
    - If a current nuclear plant owner sells or transfers its nuclear power plant, the amount of ZEN credits purchased from the transferred nuclear resource would be reduced by half of the net proceeds otherwise available from the resource's known obligations. The

language is not clear and seems to blend concepts--the level of required ZEN credits for subsequent periods is reduced by proceeds that the seller would otherwise receive from the credits in past period. It also appears that even with this reduction, the requirement for the Ohio distribution utilities to purchase ZEN credits equal to 1/3 of their load remains, implying that Ohio customers would simply need to purchase more out-of-state ZEN credits.

Impact on Manufacturers

The ZEN credit program costs would currently be limited to FirstEnergy's Ohio customers, even though SB 128/HB 178 clearly state that the benefit of the program is to the "region." The table below shows the annual and 16-year impact to small, medium, large, and extra-large manufacturers located in the service territories of the FirstEnergy Ohio distribution utilities. The total cost, annually and for the full term, is shown, as well as the portion of the cost that could go to out-of-state nuclear plants. A small manufacturer could pay approximately $91,000 extra over the 16-year term, whereas a large manufacturer with significant local employment could pay approximately $9 million extra, and an extra-large manufacturer could pay over $90 million extra over the course of the ZEN program.

		Annual			16-year Term		
Manufacturer Size	Consumption (kWh/year)	In-State ZEN Cost	Out-of-State ZEN Cost	Total ZEN Cost	In-State ZEN Cost	Out-of-State ZEN Cost	Total ZEN Cost
Small (~$100k/yr in electricity costs)	1,000,000	$ 5,383	$ 284	$ 5,667	$ 86,130	$ 4,537	$ 90,667
Medium (~$600k/yr in electricity costs)	7,500,000	$ 40,373	$ 2,127	$ 42,500	$ 645,974	$ 34,026	$ 680,000
Large (~$6 million/yr in electricity costs)	100,000,000	$ 538,312	$ 28,355	$ 566,667	$ 8,612,985	$ 453,682	$ 9,066,667
Extra Large	1,000,000,000	$ 5,383,116	$ 283,551	$ 5,666,667	$ 86,129,851	$ 4,536,816	$ 90,666,667

CARPENTER LIPPS & LELAND LLP

ATTORNEYS AT LAW

280 PLAZA, SUITE 1300
280 NORTH HIGH STREET
COLUMBUS, OHIO 43215

MEMORANDUM

Date: April 21, 2017

To: OMA Energy Group (OMAEG)

From: Kim Bojko

Re: Analysis of Customer Cost Cap Language in SB 128/HB 178—ZEN Credit Program

---

Senate Bill 128 (SB 128) and a companion bill, House Bill 178 (HB 178), were recently introduced in the Ohio General Assembly, altering state policy and mandating that FirstEnergy's Ohio customers subsidize FirstEnergy's nuclear generation plants. The subsidy is estimated to cost FirstEnergy's Ohio customers, at a minimum, approximately $300 million per year for 16 years or $4.8 billion total.

SB 128/HB 178 create a Zero-Emissions Nuclear credit mechanism, or ZEN credits, which would be bought from Ohio's nuclear generators, as well as out-of-state generators, and paid for by customers of the FirstEnergy Ohio distribution utilities. Under the legislation, FirstEnergy's Ohio customers would be required to purchase 18 million ZEN credits at a price of $17 per ZEN credit, totaling approximately $300 million per year (plus any increases for inflation).

While the cost of the ZEN program appears to be limited to a 5% increase on the total retail electric bill paid by any one customer, the FirstEnergy Ohio distribution utilities are authorized to defer any costs incurred over the cap, add interest, and recover that amount from customers over a subsequent 12-month period. Not only does the language in the proposed legislation authorize the creation of the deferral, it authorizes the collection of the deferral with interest over a subsequent 12-month period. Typically, under ratemaking, the Public Utilities Commission of Ohio (PUCO) would first authorize the deferral with an opportunity to recover the cost in the future (there is no guarantee that the deferral will actually be recovered from customers). The utility would then have to seek cost recovery of the deferral from the PUCO in a subsequent proceeding.

The legislation allows FirstEnergy's Ohio distribution utilities to defer any costs over the 5% cap and collect those costs with interest over the subsequent 12-month period. Accordingly, the cap is essentially meaningless as a customer will pay the 5% increase plus an additional monthly charge for the deferred amount plus interest (for any amount over the 5%). In reality, the 5% cap may be better for the utilities as they will collect their costs plus receive an interest payment with only a recovery delay of a few months.

FOR IMMEDIATE RELEASE
April 6, 2017

CONTACT
Ryan Augsburger, 614.224.5111

Ohio Manufacturers Express Strong Opposition to FirstEnergy Nuclear Bailout Bill

COLUMBUS, Ohio – The Ohio Manufacturers' Association president Eric Burkland today issued the following statement condemning the introduction of the FirstEnergy "Nuke Bailout" bill.

"Senate Bill 128 is nothing more than another attempt by utilities to force customers to pay above-market prices for electricity.

"Competitive markets for electricity are working – customers are saving real money on their monthly bills, new and innovative energy development is happening across the state, and system reliability has never been better.

"FirstEnergy should not be allowed to prop up its business on the backs of Ohio consumers. While manufacturers support nuclear power as part of an all-of-the-above energy portfolio, Senate Bill 128 is wolf in sheep's clothing. We will actively work to oppose this misguided bill."

###

About OMA: The mission of The Ohio Manufacturers' Association is to protect and grow Ohio manufacturing. Through the OMA, manufacturers and manufacturing stakeholders work directly with members of the Ohio General Assembly, state regulatory agencies, the judiciary community and statewide media with the sole focus of improving business conditions for manufacturers in Ohio.

BEFORE THE
PUBLIC UTILITIES COMMITTEE
OF THE OHIO HOUSE OF REPRESENTATIVES

REP. BILL SEITZ, CHAIRMAN

TESTIMONY
OF
THOMAS LAUSE
VICE PRESIDENT, TREASURER
COOPER TIRE & RUBBER COMPANY

ON
HOUSE BILL 178

MAY 9, 2017

Chairman Seitz . . . members of the House Public Utilities Committee . . . Good afternoon. Thank you for the opportunity to testify today on issues and concerns related to House Bill 178 and its proposed multi-billion-dollar bailout of FirstEnergy's uneconomic, uncompetitive nuclear power plants in Ohio.

My name is Thomas Lause. I am Vice President, Treasurer of Cooper Tire & Rubber Company, which is headquartered in Findlay, Ohio. In addition to its corporate headquarters, Cooper Tire also has one of its three USA-based tire manufacturing plants, its mold manufacturing plant, and its Global Technical Center located in Findlay. In addition, Cooper Tire's Mickey Thompson wholly-owned subsidiary is located in Northeast Ohio. Worldwide we employ 10,600 people, including 2,000 here in Ohio.

I also am a Director, and a member of the Finance Committee, on The Ohio Manufacturers' Association (OMA) Board of Directors.

Cooper Tire's business is primarily focused on passenger car and light vehicle replacement tires in North America. We are the 12th largest tire manufacturer in the world and the 5th largest tire manufacturer in North America.

Over the past 30 years, 14 tire manufacturing plants have closed in the United States. And today, Cooper Tire's Findlay, Ohio plant is the ***only remaining*** light vehicle tire manufacturing plant in the state.

Access to reliable, affordable electricity is a significant competitive issue for our company. We are always looking for ways to reduce our costs – including what we spend on electricity – because that frees up resources that can be used to invest back into our business and create jobs.

In an industry like the global tire industry, manufacturing costs are high and profit margins are tight. Forcing Ohio's manufacturing plants to bear these higher utility costs adds risk to our business in Ohio and impedes our ability to sustain or grow our operations here.

Every day, Cooper Tire competes for business with other American tire manufacturers and with foreign tire manufacturers from lower-cost parts of the world.

Every day, Cooper Tire strives to sustain and improve its cost competiveness through innovation, improved productivity and, in some unfortunate cases, staff reductions – all to stay competitive in the global market.

And every day, Cooper Tire determines, among its global network of manufacturing plants, where to allocate its production and where to invest its resources, with operational costs being a significant consideration.

The imposition of this additional, above-market generation-related charge would not decrease electric volatility or bring any added certainty to electricity pricing. Instead, it would increase companies' manufacturing costs and prohibit companies from taking advantage of the market rates that are available. House Bill 178 would add non-market-driven costs, which would have significant impacts on the business decisions of many manufacturing companies in the state of Ohio.

An additional charge to electricity prices would create increased costs for manufacturing companies, which would either be borne by customers or cause the companies to sacrifice already thin profit margins as they cannot recover these non-market costs. This could also deter new business investment in the state of Ohio as new companies looking to invest may choose to go elsewhere in light of increased or high electricity prices that are above-market.

We are keenly interested in public policies that will drive lowest-cost energy resources and solutions – rather than policies that will impose billions of dollars of unwarranted, anti-competitive, above-market charges on our businesses.

If enacted as introduced, House Bill 178 would cost FirstEnergy's customers an estimated $300 million a year, for up to 16 years, to subsidize two Ohio nuclear power plants operated by FirstEnergy's subsidiary, FirstEnergy Solutions. That adds up to $4.8 billion.

HB 178 would create new above-market charges that all of FirstEnergy's customers would be forced to pay. They would not be able to "shop around" the charges. And the costs would not be insignificant.

For example, manufacturers in the FirstEnergy territory that use about 1 million kilowatt-hours per year, and now spend about $100,000 per year for electricity, would see an annual incremental cost of $5,700. Over the 16-year term, they would pay an additional $91,000.

Large manufacturers that use 100 million kilowatt-hours per year, and now spend approximately $6 million per year for electricity, would see an annual jump of $567,000. They would pay more than $9 million more over the 16-year life of the proposed term.

These non-bypassable charges are unwarranted.

While manufacturers support nuclear power as part of an "all-of-the-above" energy portfolio, we are strongly opposed to subsidizing certain generation plants and being saddled with billions of dollars of unjustifiable charges over the next 16 years.

The Ohio Manufacturers' Association strongly believes in fair, market-driven competition. The subsidized charges imposed on consumers and manufacturers from HB 178 are simply not consistent with competitive markets and are not good for Ohio – in either the short term or the long term. For these reasons, the Ohio Manufacturers' Association firmly opposes HB 178. It is anti-competitive and anti-consumer, neither of which is good for our state.

Before I conclude and take any questions you may have, I want to introduce two people who are here to help me respond to your questions.

Anthony Smith is Energy Coordinator at Cooper Tire. He serves on the Board of the OMA Energy Group and is our in-house expert on energy policy.

I am pleased also to be joined by Kimberly Bojko of the Carpenter Lipps & Leland law firm. Kim serves as the OMA's chief energy attorney, representing industry positions before the state and federal regulatory commissions.

Mr. Chairman . . . members of the committee . . . this concludes my prepared remarks. Thank you for your kind attention and the opportunity to share our concerns about HB 178. Together with Kim and Anthony, I would be happy to respond to any questions you may have.

# # #

THE OHIO STATE UNIVERSITY

John Glenn College of Public Affairs
Ohio Manufacturing Institute

February 24, 2017 Revised April 3, 2017

From: Ned Hill
SUBJECT: Knowing when competitive electric markets are working

Four outcomes show if a market is successfully transitioning from being anti-competitive to competitive:

1. *Prices are lower*: Prices are lower than they would have been under previous conditions.
2. *New Investment is taking place*: Firms either invest to take advantage of business opportunities or existing plant are recapitalized under new ownership.
3. *Uncompetitive plants close; balance sheets restructure*: Existing facilities, with higher cost operations leave the market or the balance sheets of existing firms are restructured to allow new investment.
4. *Generating system reliability Improves.*

Competitive markets for electric generation have worked well:

- Savings of $3 billion a year compared to what prices would have been if electric generation remained a monopoly: $645 million from shopping and $2.3 billion from lower SSO auctions.
- The $2.3 billion in savings from purchasing electricity for SSOs in competitive auctions represents a 15% savings for customers.[1]
- System reliability has improved; PJM Interconnect has a 22.4% generation reserve margin.[2]
- Investment in electric generation capacity is taking place in Ohio.
- Inefficient power plants are either closing or being sold to better capitalized or more efficient operators. These are primarily coal fired.

Challenges exist that will hurt both electricity users and the state's economic development:

- Increases in non-bypassable riders imposed by the PUCO are partially offsetting savings from competition in generating markets.
- At least two of the state's IOUs have large debts associated with financial investments that have not worked out. Electricity customers paid $14.7 Billion in transition costs and other mandated above-market payments. These payments were intended to write down the value of uncompetitive generating assets.
  - FirstEnergy used the payments to purchase out-of-state power plants and to pay stockholders.
  - Arlington Virginia-based AES Corp purchased DP&L in June 2011 for $3.5 Billion, which included DP&L's existing debt. AES is looking to the PUCO for a return on its takeover of an Ohio utility.
- Owners of Ohio-located non-competitive electric generating facilities are attempting to use political power to re-monopolize the generation markets, including natural gas and non-carbon based generation, and raise prices. All to offset the consequences of bad business decisions and investments and to preserve the value of stockholders' shares.

Welcome to Ohio: Where lemon socialism creates crony capitalism.

[1] Separate estimates by William Bowen and Ned Hill
[2] PJM Interconnect at: http://www.pjm.com/markets-and-operations/rpm.aspx

The opinions and recommendations are those of the author and do not represent a policy position or views of either the John Glenn College of Public Affairs or The Ohio State University.

CLEVELAND PLAIN DEALER

Nuclear subsidies distort markets, hurt business, say FirstEnergy opponents

The Davis-Besse nuclear power plant is losing money competing against gas turbine power plants, says its owner FirstEnergy. The company wants Ohio lawmakers to create zero emissions credits, or ZECs to funnel more money to plant operations. The ZECs would raise customer bills by 5 percent and could be adjusted by state regulators for up to 16 years. Opponents include competitors, consumer groups and environmental groups. Some labor unions support the plan. *(Peggy Turbett)*

By John Funk, The Plain Dealer

on May 10, 2017 at 6:00 AM, updated May 10, 2017 at 12:57 PM

CLEVELAND, Ohio -- Business and consumer groups joined forces Tuesday to oppose FirstEnergy's plan to change Ohio law to create new subsidies for the power company's nuclear power plants.

On the opposite side, supporting FirstEnergy, were unions, a contractor's group, and the Perry local school district, which benefits from taxes from the Perry nuclear power plant.

The Ohio Manufacturers' Association, the Ohio Consumers' Counsel, the Lordstown Energy Center, Dynegy, now the state's largest owner of coal-fired power plants, the American Petroleum Institute and the Electric Power Supply Association were among more than a dozen groups testifying against enabling legislation before the Ohio House Public Utilities Committee.

"House Bill 178 or the Zero Emission Nuclear credit bill would provide an enormous subsidy to one nuclear operator for units that they contend are no longer economic to operate," said Robert Flexon, CEO of Houston-based Dynegy Inc.

"Our economy will not grow and prosper by artificially keeping alive business that can no longer compete in the marketplace through expensive subsidies," he told lawmakers. "That has been the case throughout American history. Were that not so, we'd still have buggy whip and icebox manufacturers and teletype and elevators operators."

Later in an interview, Flexon said the zero emissions argument, meaning the plants deserve higher rates because they don't produce carbon dioxide, is a "red herring."

"The nuclear plants are deeply out of the money. You [the state] would be throwing billions of dollars down a nuclear waste hole. These plants can't live without subsidies. Why do you want to put more bills on your citizens? It's beyond me."

Flexon was joined by William Siderewicz, president of Boston-based Clean Energy Future, which is building four gas turbine power plants at two northern Ohio locations, including Lordstown.

You would be throwing billions of dollars down a nuclear waste hole. These plants can't live without subsidies."

Calling for the House to "summarily reject" any form of the legislation, Siderewicz charged that FirstEnergy's objective was not to save Davis-Besse and Perry nuclear power plants, but to prepare for selling the plants or closing them and paying for the decommissioning.

Former Republican lawmaker Jeff Jadobson, now a lobbyist, appeared before the committee on behalf of the Ohio Consumers' Counsel and the Northeast Ohio Public Energy Council, which oppose the bill.

He said Ohio consumers are stuck with the 18th highest electric rate in the nation despite being "awash in shale oil and natural gas that have given us historically low gas prices" -- which is leading to a building boom in new gas plants.

"But there is a problem that is preventing Ohio families and businesses from realizing the full benefits of lower prices in the market," he said. "That problem is the continuing requests by Oho electric utilities -- now years since the 1999 deregulation law's transition period ended -- for consumers to pay subsidies above the market price of electricity."

He said FirstEnergy received $9.8 billion in subsidies between 2001 and 2010 to help it transition from the old regulated markets to competitive deregulated markets. And as of Jan.

1, the company has been permitted to collect an additional $204 million a year for up to five years in additional subsidies.

"FirstEnergy is back. Respectively, you should stop this cycle of subsidies and give consumers more of the benefit of competition intended under the 1999 law," he told the lawmakers.

Earlier in the day, Chris Zeigler, executive director of the American Petroleum Institute's Ohio division, and Erica Bowman, API chief economist, told reporters that FirstEnergy's proposed subsidies could stall the development of the 10 or more gas turbine power plants proposed or already being built in Ohio. And in turn, that could stall further development of Ohio's rich shale gas deposits.

Bowman also testified, concluding that API is strongly opposed to House Bill 178. It would skew markets by propping up uncompetitive nuclear generation, increase costs for ratepayers and job-creating industries, and discourage investment in natural gas production and gas-fired power plants. "

Other opponents included the Ohio Environmental Council, AARP Ohio, the League of Women Voters of Ohio, Ohio Citizen Action the Environmental Defense Fund and the Nuclear Information and Resource Service.

FirstEnergy initially asked that lawmakers vote on the bill by June 30, but at this point that is not expected to happen.

All of the testimony is posted on the committee's website.

Toledo Blade

http://www.toledoblade.com/Politics/2017/05/10/Subsidies-proposed-for-Ohio-nuclear-plants.html

POLITICS

Subsidies proposed for nuclear plants

Foes say consumers will pay more

By JIM PROVANCE | BLADE COLUMBUS BUREAU CHIEF
Published on May 10, 2017 | Updated 6:49 a. m.

COLUMBUS — Proposed subsidies to keep two struggling nuclear power plants humming will spike prices for consumers and make northern Ohio less attractive to investment, opponents argued on Tuesday.

However, supporters of House Bill 178 told lawmakers that shuttering the 39-year-old Davis-Besse plant near Oak Harbor and the 30-year-old Perry plant east of Cleveland would kill higher-wage, skilled jobs and threaten public safety.

"An additional charge to electricity prices would create additional costs of manufacturing companies, which would either be borne by its customers or cause companies to sacrifice already thin profit margins as they cannot recover these nonmarket-driven costs," said Thomas Lause, vice president and treasurer of Cooper Tire & Rubber Co. in Findlay and a board member of the Ohio Manufacturers Association."This could also deter new business investment in the state of Ohio as new companies looking to invest may choose to go elsewhere in light of higher electricity costs that are above-market," he told the House Public Utilities Committee.

FirstEnergy's nuclear plants have been unable to compete in an electricity market driven by abundant and cheap natural gas, but the firm insists this is not a bailout.

It has said it could be forced to close plants that Ohio should value because they do not directly emit carbon pollution, generate roughly 4,300 direct and indirect jobs, and provide about $25 million annually in state and local taxes.

The Akron-based company says the plants add diversity and reliability to Ohio's mix of home-grown electricity options.

The bill, sponsored by Rep. Anthony DeVitis (R., Green), and an identical measure in the Senate would allow subsidiary FirstEnergy Solutions, the plants' direct owner, to collect about $300 million a year from customers, even if they shop elsewhere for their power.

That could total $4.8 billion if extrapolated over the potential 16-year life of the program. It would mean an estimated $5 a month for the typical residential customer.

The subsidies to FirstEnergy Solutions would come in the form of zero-emission nuclear credits. The program, generally patterned after others in New York and Illinois, is supported by unions representing plant workers, local governments, and school districts that benefit from tax revenue.

Among the opponents are electricity marketers and environmental and consumer organizations.

They argue the annual tab could be as high as $535 million if FirstEnergy's Beaver Valley nuclear plant, just over the Ohio River in Pennsylvania, was found to be eligible. The committee's chairman, Rep. Bill Seitz (R., Cincinnati), has suggested this would be unlikely because of the general wind direction, Beaver Valley could not claim it is helping Ohio's air.

Fred Peterson, director of the Ottawa County Emergency Management Agency, said the two plants provide more than $900,000 a year in grants to emergency services in seven surrounding counties, including Ottawa, Lucas, Erie, and Sandusky near Davis-Besse. He said Ottawa's emergency warning siren exists solely because of Davis-Besse.

He recalled the polar vortex and the frigid temperatures of 2014. FirstEnergy warned him then that it may have to resort to rolling brown-outs if the electric grid wasn't up to the task.

"That was due to the instability of the grid due to the residential demand for natural gas significantly reducing the availability of natural gas for electricity generation," Mr. Peterson said. "Fortunately, we were able to avoid the rolling brown-outs, but as an emergency manager, that is a call I do not ever want to be faced with having to receive again."

The bill's opponents, however, countered that gas plants are required by the regional grid operator to have long-term contracts for gas supplies locked in to prevent a similar situation.

Bill Siderewicz is president of Clean Energy Future LLC, which is about to undetake gas plant construction in Oregon and Lordstown. The first of two Oregon plants is an 800-megawatt facility, whereas Davis-Besse can produce 900 megawatts of power. A second Oregon plant will generate 955 megawatts.

Mr. Siderewicz said 15 additional plants will be needed in Ohio, representing a capital investment of $17 billion.

"If this [nuclear credit] should go forward, you'll not just stop these two [Oregon] plants, you'll have stopped 15," he said.*Contact Jim Provance at: **jprovance@theblade.com**or **614-221-0496**.*

Akron Beacon Journal/Ohio.com

FirstEnergy wants what all of us need

By Michael Douglas
Beacon Journal editorial page editor

Published: April 22, 2017 - 07:41 PM | Updated: April 24, 2017 - 10:50 AM

FirstEnergy hardly cuts a sympathetic profile. The Akron-based power company has returned to the Statehouse looking for a revenue stream to cushion the blow from a deregulated electricity market it once embraced like no other utility in Ohio. What gall you say?

The company now proposes that lawmakers create zero emission credits for its Davis-Besse and Perry nuclear power plants. The credits would translate to subsidies, roughly $300 million a year, customers paying an additional $5 per month. The money would bolster nuclear plants struggling to compete against abundant and cheap natural gas, not to mention increasingly competitive renewable energy sources.

FirstEnergy has aligned its arguments, starting with the warning that the plants likely will close if they do not get help. The company quickly adds that closure would mean the loss of 1,400 jobs. More, local communities would see tax revenue dry up. The school district around the Davis-Besse plant would lose $8 million a year.

For Akron, there is the prospect of a weakened FirstEnergy becoming prey in a consolidating energy industry, the company headquarters departing downtown and the region, along with a record of good corporate citizenship.

Do lawmakers want to set all that in motion?

Yet the company can't seem to shake the impression that this is really about its self-interest and little more. Thus, Chuck Keiper, the executive director of the Northeast Ohio Public Energy Council, spoke for many when he described the zero emission nuclear credits as "yet another subsidy for big utilities that hit Northern Ohio electric customers in their pocketbooks. People who believe in a free market must defeat this bad idea."

Critics eagerly tell FirstEnergy: You managed your way into this predicament, and customers shouldn't be expected to bail you out. The utility already gained $200 million a year from the state Public Utilities Commission.

Actually, of the pitches FirstEnergy has made to the commission and lawmakers the past three years, these zero emission nuclear credits are the least self-interested. You bet the company needs the money. At the same time, we need the nuclear power plants to make the necessary progress against climate change.

That task deserves priority over talk about competitive generation.

A recent assessment by David Roberts of Vox helps to explain why. Among other things, Roberts examined an analysis of 30 studies since 2014 looking at whether renewable sources alone could meet 80 percent to 100 percent of the planet's energy needs by the middle of the century. That reflects the reduction in carbon emissions scientists see as necessary to prevent catastrophic climate troubles.

None of the studies found renewable sources up to the job. They see the potential for solar, wind and others making big advances. Yet even if they get to 60 percent, they have a problem. They are variable.

In other words, as Roberts notes, "grid operators can't turn them on and off as needed."

Smart minds are working to increase storage capacities and on other innovations. Even a most optimistic assessment of renewable energy must grasp the need for a steady, complementary clean power source to ensure reliable service.

Might natural gas play the part? Advocates argue that natural gas easily could fill the generation void. They are right. That goes to PJM, the transmission grid operator in Ohio and a dozen other states, stating that the loss of coal and nuclear plants would not harm reliability.

What PJM did not consider is that natural gas represents something of a trap. No doubt, it burns more cleanly than coal. It contributes now to reduced carbon emissions. As David Roberts shows, if the goal is 80 percent to 100 percent, natural gas cannot get there.

After all, it's a fossil fuel. Rely too heavily today, and the prospect holds of having to abandon well-functioning gas plants because they emit too much carbon.

Which leaves nuclear, after getting a grip on the mostly impossible dream of capturing and storing carbon emissions from power plants.

To be sure, nuclear has its own share of problems, including radioactive waste and huge construction costs. Westinghouse, an American leader in nuclear power, has filed for bankruptcy, the building of four new plants in the South in some jeopardy. Other plants have closed. New York and Illinois face legal obstacles on paths similar to what FirstEnergy wants for Ohio.

The past four decades, American nuclear know-how has diminished.

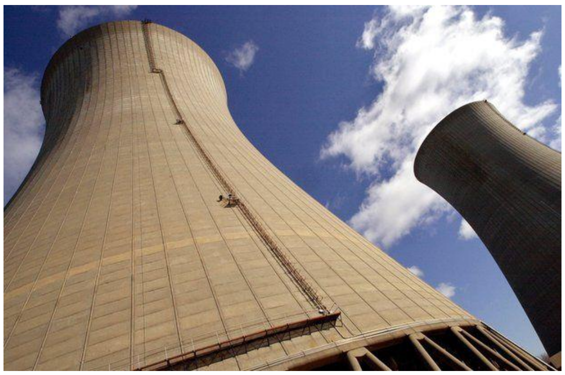
Still, the industry has a much stronger safety record than critics allow. Nuclear power, evolving and improving, is akin to the old saw about democracy, flawed but better than the alternatives. It is clean and even less costly in the long run. So, yes, recognize its value through zero emission credits.

Douglas is the Beacon Journal editorial page editor. He can be reached at 330-996-3514 or emailed at **mdouglas@thebeaconjournal.com**.

CLEVELAND PLAIN DEALER

http://www.cleveland.com/business/index.ssf/2017/05/firstenergy_nuclear_hearings_s.html

FirstEnergy nuclear hearings suspended in Ohio House



The Ohio House Public Utilities Committee has suspended any further hearings on legislation proposed by FirstEnergy to create a special charge to subsidize its nuclear power plant fleet, including the Perry plant in Lake County. The end of hearings means there will be no vote to move the legislation to the full House. *(JOHN KUNTZ)*

By John Funk, The Plain Dealer

on May 17, 2017 at 1:54 PM, updated May 17, 2017 at 3:26 PM

CLEVELAND, Ohio -- The chairman of the Ohio House Public Utilities Committee has suspended further hearings -- and a vote -- on a proposed bill allowing FirstEnergy to create a special customer charge to subsidize its nuclear power plant fleet.

"We have heard over 10 hours of testimony on this bill [House Bill 178]. I have given proponents and opponents a chance to make their case," said William Seitz, a Cincinnati Republican who chairs the committee.

"I am not sensing a keen desire on the part of the House members to vote on this and doubt that we will have more hearings in the near future unless something cataclysmic should happen."

Cataclysmic events might include a decision by FirstEnergy Solutions to seek bankruptcy protection from its creditors or a decision by the company to immediately close its four nuclear power plants.

FirstEnergy Solutions, the unregulated subsidiary of FirstEnergy, is legally the owner of all of the company's power plants. FirstEnergy Solutions has been operating with junk bond ratings for some time.

Its parent has tried to distance itself from the company, even creating a separate board of directors, which includes two FirstEnergy employees. But FirstEnergy recently had to guarantee a cash settlement between FirstEnergy Solutions and several railroad companies claiming breach of contract when FirstEnergy Solutions closed coal-fired power plants along Lake Erie and declined further deliveries.

Seitz earlier suggested a compromise -- allowing FirstEnergy's customers to opt out of the nuclear zero emission charge. That's the same provision he included in legislation about the state's renewable energy mandates.

"It seemed to find favor with many of my colleagues but not with FirstEnergy. I think they really need the $300 million," Seitz said, referring to the amount of money the nuclear charge would add to FirstEnergy's annual income. The bill would authorize the extra charge for the next 15 years, raising billions of dollars for the company.

Seitz' decision comes just a day before Chuck Jones, CEO of FirstEnergy, is scheduled to appear before the Ohio Senate Public Utilities Committee. A company spokesman said news of no further hearings is a surprise and that Jones still intends to make an appearance.

Jones is the only witness listed on the Senate committee's website for Thursday. The committee is expected to wait for the House to do its work and send the legislation to the Senate before holding additional hearings.

In an interview Tuesday following the company's annual shareholder meeting in Akron, Jones said he had been talking to the U.S. Department of Energy in an effort to seek a national solution to the plight of nuclear power plants, most of which are not able to generate power as cheaply as new gas turbine plants.

Nearly a dozen gas turbine power plants are planned for or are already under construction in Ohio. They will burn shale gas from Ohio and Pennsylvania. Plant developers say the combined cycle turbines are twice as efficient as coal or nuclear power plants.

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MEMORANDUM

To: OMA Energy Committee
From: Kim Bojko, OMA Energy Counsel
Re: Energy Committee Report
Date: May 18, 2017

Active Administrative Actions in which OMAEG is Involved:

American Electric Power (AEP):

- **PPA Rider Expansion Case (Case Nos. 14-1693-EL-RDR, et al.)**
  - AEP, Staff, Sierra Club, Ohio Energy Group, Ohio Hospital Association, IGS and others filed a stipulation seeking PUCO approval to populate the purchase power agreement (PPA) Rider with the costs associated with certain plants owned by AEP Generation Resources as well as the costs of AEP's entitlement to the OVEC output. IEU-Ohio agreed to not oppose.
  - The stipulation contains several other provisions unrelated to the PPA Rider, including: extension of the ESP III plan; expansion of the IRP program; and a proposal to develop wind and solar facilities.
  - The PUCO modified and approved the stipulation.
  - On rehearing, AEP stated that in light of the FERC decision it was going to only pursue recovery of the OVEC PPA.
  - The PUCO issued an Order on November 3, 2016, authorizing AEP Ohio to recover from customers the net impacts of AEP Ohio's OVEC contractual entitlement through the PPA Rider.
  - Several Parties requested rehearing, which are still pending.
  - Meanwhile, AEP filed revised tariffs to implement its updated PPA Rider.
- **ESP III Case (Case Nos. 13-2385-EL-SSO, et al.)**
  - Order issued on February 25, 2015, wherein PUCO approved establishment of the PPA Rider, but AEP was not authorized to collect any PPA costs through the PPA Rider.
  - Entry on Rehearing subsequently issued – PUCO deferred ruling on applications for rehearing related to the PPA Rider.

- Pursuant to the Stipulation in the PPA Rider case, AEP filed an application to extend the ESP through 2024, and included other provisions agreed to in the Stipulation, such as BTCR opt-out program, IRP extension and modifications, the Competition Incentive Rider, DIR extension and modifications, and a Sub-Metering Rider.
- The PUCO issued an Order on November 3, 2016, affirming its decision in the February 25, 2015 Order not to approve AEP Ohio's recovery of costs under the PPA Rider, including OVEC costs (but authorized the recovery in the PPA case on the same day). The PUCO also increased the Distribution Investment Rider (DIR) caps by an additional $8.6M (in addition to the $37.8M increased in the prior order, which was an increase over the amounts in the original order). Total authorized is $589.6M from 2015 through May 2018.

Year	Cap Proposed by AEP	Cap/Recovery Granted by Commission (February 25, 2015 ESP 3 Order)	Cap/Recovery Granted by Commission (May 25, 2015 Second EOR)	Cap/Recovery Granted by Commission (November 3, 2016 Fourth EOR)
2015	$155 million	$124 million	$145 million	$145 million
2016	$191 million	$146.2 million	$165 million	$165 million
2017	$219 million	$170 million	$185 million	$190 million
2018 (Jan.- May)	$102 million	$103 million	$86 million	$89.6 million
Total	$667 million	$543.2 million	$581 million	$589.6 million

- OMAEG filed another application for rehearing, which is pending.

- **Application to Amend ESP III Case/New ESP (Case Nos. 16-1852-EL-SSO, et al.)**
  - On November 23, 2016, AEP filed its application to amend its ESP extending the term through May 2024 and to add several new riders and charges. AEP also requested an expedited procedural schedule.
  - A technical conference was held in December 2016.
  - The PUCO has set a procedural schedule requiring intervenor testimony to be filed by May 2, 2017, Staff testimony by May 30, 2017, and setting the evidentiary hearing to begin on June 6, 2017
  - OMAEG filed the testimony of OMAEG witness John Seryak opposing AEP Ohio's plans for microgrids, renewable energy, submetering, and electric vehicle charging stations.
- **Global Settlement of Several Cases (Case Nos. 11-5906-EL-FAC, 14-1189-EL-RDR, 15-1022-EL-UNC, 11-4920-EL-RDR, et al.)**
  - On December 21, 2016, a Global Settlement was reached and filed with several parties, resolving several cases, including cases that were appealed to the Supreme Court of Ohio and remanded to the PUCO for reconsideration. OMAEG members and some other customers will see rate reductions as a result of the settlement.
  - Through OMAEG's participation in the cases and Settlement, OMAEG successfully negotiated one-time bill credits to offset the rate increases to those OMAEG members that would have been otherwise negatively affected. Other large customers will also

see savings from the implementation of the Settlement due to negotiated rate design modifications. All customers will also see a rate reduction in the form of a credit for the significantly excessive earnings test (SEET) in 2014. The amount of the total SEET credit passed on to customers is $20M. Additionally, those customers in the Ohio Power rate zone will receive a $2/MWh reduction in their PIRR rate.

  - Further, the parties negotiated early implementation of a limited Basic Transmission Cost Rider (BTCR) Pilot Program agreed to in AEP's purchase power agreement (PPA) rider case, and obtained an OMAEG participation level of 5 customer accounts for those members who may benefit from the program.
  - A hearing was held on the Global Settlement on January 24, 2017 and was not opposed by any parties.
  - On February 23, 2017, the PUCO adopted and approved the Global Settlement in its entirety.
  - AEP filed proposed tariffs to implement the rate changes approved under the Global Settlement to customers' bills rendered after March 1, 2017. The PUCO must approve the proposed tariffs before they go into effect.

- **EE/PDR Portfolio Plan (Case No. 16-574-EL-POR)**
  - On June 15, 2016 AEP filed its EE/PDR plan.
  - OMAEG and several other intervening parties reached a settlement to implement AEP's comprehensive EE/PDR portfolio, effective from 2017 through 2020. OMAEG obtained continued funding for EE programs in the amount of $100,000 per year, more favorable language, limitations on EE/PDR portfolio costs and shared savings that can be collected from customers, favorable combined heat and power (CHP) program incentives, and other consumer protections.
  - Hearing was held in December 2016 to adopt the stipulation without opposition.
  - On January 18, 2017, the PUCO approved AEP's EE/PDR Portfolio as modified by the settlement.

Duke Energy Ohio (Duke):

- **ESP Application (Case Nos. 14-841-EL-SSO, et al.)**
  - Order issued on April 2, 2015, wherein PUCO approved establishment of a PPA rider (Rider PSR), but Duke was not authorized to collect any PPA costs through Rider PSR.
  - Several parties, including OMA, filed applications for rehearing on May 4, 2015. The applications for rehearing are still pending.
- **2013/2014 EE/PDR Recovery (Case Nos. 14-457-EL-RDR and 15-534-EL-RDR)**
  - Duke and Staff filed a stipulation seeking to resolve the shared savings mechanisms relating to Duke's 2013 and 2014 programs.
  - OMA and others opposed the stipulation.

    - The PUCO issued a decision on October 26, 2016, approving the stipulation, which provides Duke $19.75 million in shared savings incentives.
    - Rehearing is pending.
- **Shared Savings Mechanism Extension Case (Case No. 14-1580-EL-RDR**)
    - Duke sought PUCO approval of its request to extend the use of its shared savings incentive mechanism in 2016.
    - OMA and others opposed the proposal and filed reply briefs on September 8, 2016, and are awaiting a PUCO decision.
- **EE/PDR Portfolio Plan (Case No. 16-576-EL-POR)**
    - On June 15, 2016 Duke filed its EE/PDR plan.
    - OMA and several other intervening parties reached a settlement to implement Duke's comprehensive EE/PDR portfolio, effective from 2017 through 2019. OMAEG successfully negotiated a shared savings cap and tiered incentive levels. OMA also obtained language to prohibit Duke from collecting shared savings on banked savings, and to initiate a CHP program with positive incentives. OMA further obtained funding for EE programs in the amount of $50,000 per year.
    - Both PUCO Staff and the Office of the Ohio Consumers' Counsel (OCC) are challenging the plan proposing the adoption of a cost cap for program costs and additional limitations on shared savings incurred through FirstEnergy's energy efficiency portfolio plan. OMAEG does not oppose a cost cap or additional limitations on the amount of profit FE may earn.
    - A hearing was held in February/March 2017 where OCC and PUCO Staff opposed the settlement. OCC and PUCO Staff also filed initial post hearing and reply briefs opposing the adoption of the amended stipulation and recommended an overall cost cap of $33.8 million (3.5%) on program costs and shared savings incurred through Duke's EE/DRP plan. Approval of the settlement is pending before the PUCO.
- **Distribution Rate Case (Case No. 17-0032-EL-AIR)**
    - On March 2, 2017, Duke filed an application to increase its distribution rates. The application proposes to increase the rates starting on January 1, 2018. OMAEG and other consumer groups intervened.
    - On February 23, 2017, the PUCO issued a decision that granted Duke's request to waive certain filing requirements regarding the production of generation or fuel-related information. The decision also set April 1, 2016 through March 31, 2017 as the test period and June 30, 2016 as the date certain.
    - Discovery is ongoing.
- **MGP Remediation Rider (Case No. 17-596-GA-RDR et al.)**
    - On March 31, 2017, Duke filed an application to recover 2016 costs for investigation and remediation of its Manufactured Gas Plant (MGP) site. In Duke's natural gas distribution case (Case No. 12-1685-GA-AIR), the PUCO approved up to $55.5

million for investigation and remediation costs incurred from January 2008 through December 2012.

- **Price Stabilization Rider (Case No. 17-872-EL-RDR et al)**
  - On March 31, 2017, Duke filed an application to populate its Price Stability Rider (PSR), which was established in its ESP case at $0 (Case No. 14-841-EL-SSO et al.) Duke proposes to include in Rider PSR the net costs associated with its contractual entitlement in generating assets owned by the Ohio Valley Electric Corporation (OVEC). Rider PSR will be nonbypassable.
  - OMAEG and other parties filed a joint motion to dismiss Duke's application on the grounds that the PSR was already established on a zero placeholder basis in the 2014 ESP case and the PUCO does not have authority to review Duke's application outside of an ESP under its general authority over utilities. Alternatively, the parties requested the proceedings be stayed until the PUCO has decided the applications for rehearing in the ESP case and appellate review is completed.

FirstEnergy:

- **ESP IV Application (Case No. 14-1297-EL-SSO)**
  - FirstEnergy, Staff, Ohio Energy Group, OPAE, IGS, and others filed a stipulation seeking PUCO approval of FirstEnergy's ESP IV Application together with authority to establish and populate a PPA rider (Rider RRS) with the costs associated with certain plants owned by its affiliate, FirstEnergy Solutions.
  - The stipulation also contains provisions addressing: grid modernization; energy efficiency; and a plan to transition to decoupled rates.
  - The PUCO modified and approved the stipulation.
  - On November 14, 2016, OMAEG submitted an application for rehearing of the PUCO's Fifth Entry on Rehearing adopting Rider DMR, which will collect from customers approximately $132.5 million per year, adjusted for recovery of taxes, for a total of three years, with a possible extension of two additional years.

    The PUCO approved FirstEnergy's implementation of its Rider DMR, effective January 1, 2017, and denied OMAEG's request to stay the collection of Rider DMR revenues or in the alternative, permit collection subject to refund.
  - Rehearing on the PUCO's Order approving the DMR is pending.
- **EE/PDR Plan (Case No. 16-743-EL-POR)**
  - On May 9, 2016, OMAEG filed a motion to intervene in the proceeding.
  - In December 2016, several parties reached a settlement with FirstEnergy in support of its revised EE/PDR plan. OMAEG agreed to not oppose the settlement in exchange for favorable language, limitations on shared savings that can be collected from customers, favorable CHP program incentives, and other consumer protections.
  - Both PUCO Staff and OCC are challenging the plans proposing the adoption of a cost cap for program costs and additional limitations on shared savings incurred through

FirstEnergy's energy efficiency portfolio plan. OMAEG does not oppose a cost cap or additional limitations on the amount of profit FE may earn.

- Hearings have been held on the settlement and the parties have submitted briefs.
- The matter is now pending before the PUCO.

Dayton Power & Light (DP&L):

- **Distribution Rate Increase (Case No. 15-1830-EL-AIR, et al.)**
    - The PUCO set June 1, 2015 to May 30, 2016 as the test period and September 30, 2015 as the date certain.
    - On March 22, 2017, the PUCO issued an unusual order seeking assistance for Staff in auditing DP&L's application to increase its distribution rates. The hiring of an auditor is occurring over a year and a half after DP&L's application was filed. The auditor will review DP&L's accounting accuracy, prudency, and use and usefulness of DP&L's jurisdictional rate base as presented in its application. The selection of the auditor should be complete by April 19, 2017 and a final audit report is estimated to be complete by September 29, 2017. OMAEG and other parties will have an opportunity to review any conclusions, results, or recommendations the auditor makes.
- **Electric Security Plan (Case No. 16-395-EL-SSO, et al.)**
    - DP&L filed an amended application on October 11, 2016, withdrawing its Reliable Electricity Rider (RER) request. Instead, it is now seeking a Distribution Modernization Rider (DMR) for a term of seven years to recover $145 million per year from customers.
    - DP&L and certain intervening parties filed a stipulation on January 30, 2017, which was opposed by numerous other intervening parties, including OMAEG.
    - On March 13, 2017, a new settlement was reached between a majority of the parties, including PUCO Staff and OMAEG (as a non-opposing party). Under the new settlement, DP&L will receive from customers $105M/year for 3 years with an option to request a 2 year extension of the DMR, totaling approximately $315M over three years. The Distribution Investment Rider (DIR-B) rider was eliminated (which was estimated to cost consumers $207.5M), and DP&L agreed to convert the forgone tax sharing liabilities to AES Corporation into equity payments (estimated by DP&L to be a $300M gain for customers). DP&L will also provide several OMAEG members the economic development rider (EDR) credit of $.004/kWh. For OMAEG members that do not qualify for the EDR credit, DP&L agreed to make those members see no increase in their current rates, plus a slight discount. Thus, those members will receive a collective total of $18,000 per year in shareholder dollars to compensate them for the increase in rates due to the DMR.
    - A hearing was held in April 2017 and the parties have submitted briefs. The matter is now pending before the PUCO.
- **EE/PDR Portfolio Plan (Case No. 16-649-EL-POR, et al.)**

- On June 15, 2016, DP&L filed its EE/PDR plan to continue its current EE/PDR POR for another year.
- OMAEG, Staff, and all other intervening parties, except OCC, reached a settlement to continue DP&L's EE/PDR portfolio for 2017. OMAEG obtained continued funding for EE programs in the amount of $30,000, more favorable language, limitations on EE/PDR portfolio costs and shared savings that can be collected from customers, continuation of the CHP program and incentives, and other consumer protections. OCC is challenging the collection of lost distribution revenues.
- A hearing was held on February 7, 2017 to submit the settlement where OCC waived its right to cross-examine DP&L's witnesses. The PUCO's decision to approve the settlement is pending.

Statewide:

- **Net Metering Rules (Case No. 12-2050-EL-ORD)**
    - OMAEG filed comments urging the PUCO to adopt rules that align the compensation schemes applicable to shopping and non-shopping customers.
    - Stakeholders await the PUCO's decision.
- **Submetering Investigation (Case No. 15-1594-AU-COI)**
    - The PUCO opened an investigation to determine whether the activities of submetering entities meet the definition of a public utility.
    - On December 7, 2016, the PUCO issued a decision to expand the application of the *Shroyer test*, used to determine if a landlord is operating as a public utility, to include condominium associations, submetering companies, and other similarly-situated entities. Additionally, the PUCO created new parameters for applying the test to determine whether those entities are acting as public utilities, and thus should be subject to regulation when they resell or redistribute utility service.
    - Concerned that this expansion may unlawfully classify entities that resell or redistribute electric, gas, and water utilities in commercial settings as public utilities, OMAEG joined other commercial groups to seek rehearing of the PUCO's Order that may affect commercial shared services arrangements.
    - Rehearing on the COI order is pending, as well as a PUCO decision regarding the threshold percentage.
- **PUCO Announces PowerForward**
    - The UCO announced the launch of PowerForward: a PUCO review of the latest in technological and regulatory innovation that could serve to modernize the electric distribution grid and enhance the customer electricity experience. Through PowerForward, the PUCO will comprehensively explore technology and consider how it could serve to enhance the customer electricity experience. The PUCO will be hosting national experts through a series of phases.
    - In April, the PUCO held its first of three phases for its PowerForward initiative. Phase 1: A Glimpse of the Future - was a three-day conference that featured

presentations examining technologies affecting a modern distribution grid; what our future grid could offer customers; and what technologies are in development to realize such enhancements. More information regarding Phase 1 and the upcoming Phases 2 & 3, can be found at https://www.puco.ohio.gov/industry-information/industry-topics/powerforward/

- **ZEN Legislation**
    - Senate Bill 128 (SB 128) and a companion bill, House Bill 178 (HB 178), were recently introduced in the Ohio General Assembly. SB 128/HB 178 would alter state policy, mandating the operation of nuclear generation, even if it is inefficient or more costly in the competitive market. The new legislation, creating ZEN credits is estimated to cost FirstEnergy Ohio customers approximately $300 million per year for 16 years or $4.8 billion total.

Judicial Actions—Active Cases Presently on Appeal from the PUCO to the Supreme Court of Ohio

Duke Energy Ohio:

- **Increase to Natural Gas Distribution Rates, Case No. 2014-328 (Appeal of Case No. 12-1685-EL-AIR, et al.)**
    - OMA, OCC, Kroger, and Ohio Partners for Affordable Energy appealed a PUCO order to the Ohio Supreme Court that permitted recovery from ratepayers for environmental remediation costs associated with two former manufactured gas plant sites.
    - On February 28, 2017, OMA's energy counsel, Kim Bojko, argued before the Supreme Court of Ohio on behalf of the Appellants requesting that it overturn the PUCO order that awarded Duke $55.5 million from customers for cleanup costs associated with two former manufactured gas plants that have not been in operation for 50-89 years.
    - OMA, OCC, Kroger, and Ohio Partners for Affordable Energy (Appellants) all appealed the PUCO's decision three years ago. The Court has taken the arguments under advisement and will render a decision in the near future.
- **Appeal of DP&L Electric Security Plan, Case Nos. 2017-0204 and 2017-0241 (Appeal of Case Nos. 08-1094-EL-SSO, et al. and 12-0426-EL-SSO, et al.)**
    - In DP&L's ESP II case, the Supreme Court of Ohio reversed the PUCO's authorization of the Service Stability Rider (SSR) contained in DP&L's ESP II on grounds that it was an unlawful collection of transition revenue for costs incurred by the utility before retail competition began that will not be recoverable through market-based rates. The Court found that these costs were no longer recoverable under Ohio law. Thereafter, the PUCO authorized DP&L to withdraw its ESP II after collecting SSR charges for nearly three years. The PUCO also concurrently authorized DP&L to revert back to its ESP I, but allowed it to retain certain aspects of the competitive bidding process approved under ESP II. Further, the PUCO allowed

DP&L to reinstate the Rate Stability Charge (RSC), which was originally approved in DP&L's ESP I, but later expired.

- OMAEG and others filed applications for rehearing requesting that the PUCO reverse its decisions authorizing DP&L to revert back to its ESP I and to reinstate the RSC because it was an unlawful transition charge similar to the SSR that the Supreme Court of Ohio found to be unlawful. In December, the PUCO denied these requests.

- In February, OMAEG jointly filed notices of appeal of the PUCO's Orders and subsequent entries on rehearing regarding various issues raised in DP&L's ESP I and ESP II cases. The OCC, OEG, and IEU also filed separate notices of appeal. Appellants filed merit briefs on May 15 and 16, 2017.

Federal Actions

FERC:

- **MOPR Expansion (EL16-49)**
  - On March 21, 2016, Dynegy and others filed a complaint against PJM requesting that the Minimum Offer Price Rule be expanded to apply to existing resources.
  - The complaint aims to protect against AEP and FirstEnergy offering the subsidized affiliate generating units into the capacity market below costs, which will suppress capacity prices.
  - Dominion, American Municipal Power, and others filed a motion to dismiss on mootness grounds given the FERC's order rescinding the waiver on affiliate sales restrictions previously granted to AEP, FirstEnergy, and their unregulated generating affiliates.
  - The Independent Market Monitor claims that the issues are not moot given the Staff's proposal adopted in the FirstEnergy ESP IV case for a DMR, and the pending DP&L DMR proposal.
  - The Complaint is still pending.

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Ohio Power Company for Authority to Establish a Standard Service Offer Pursuant to Section 4928.143, Revised Code, in the Form of an Electric Security Plan	)	Case No. 16-1852-EL-SSO
In the Matter of the Application of Ohio Power Company for Approval of Certain Accounting Authority	)	Case No. 16-1853-EL-AAM

TESTIMONY OF JOHN SERYAK
ON BEHALF OF THE
OHIO MANUFACTURERS' ASSOCIATION ENERGY GROUP

May 2, 2017

Introduction

Q. Please state your name and business address.

A. My name is John A. Seryak. My principal place of business is at 3709 N. High Street, Columbus, Ohio 43214.

Q. By whom are you employed and in what capacity?

A. I am the lead analyst at RunnerStone, LLC on regulatory, policy, and market matters concerning customer-sited energy resources, which we define as energy efficiency, demand response, distributed generation, and energy storage. I am also Chief Executive Officer of Go Sustainable Energy, LLC, a consultancy that provides technical assistance on energy efficiency matters to the industrial, commercial, residential, and utility sectors.

Q. On whose behalf are you testifying in this proceeding?

A. My testimony is being sponsored by the Ohio Manufacturers' Association Energy Group (OMAEG). OMAEG is a non-profit entity that strives to improve business conditions in Ohio and drive down the cost of doing business for Ohio manufacturers.

OMAEG members take service under the Ohio Power Company's (AEP Ohio or the Company) General Service (GS) 3 and GS 4 tariffs, and include transmission, sub-transmission, primary, and secondary electric services.

Q. Please describe your professional experience and qualifications.

A. I received a Bachelor's degree in Mechanical Engineering from the University of Dayton, as well as a Master's of Science degree in Mechanical Engineering. I am a licensed Professional Engineer in the State of Ohio. I have worked extensively with customer-sited resources, primarily energy efficiency, for 16 years. My experience includes fieldwork at industrial, commercial, and residential buildings identifying energy savings opportunities and quantifying the energy and dollar savings, chiefly through my responsibilities the last eleven years for Go Sustainable Energy, LLC, of which I am a founding partner. Finally, I have four years of experience in regulatory and policy analysis in regard to behind-the-meter customer-sited energy resources. In connection with these experiences, I have authored or co-authored30 peer-reviewed academic papers on technical, programmatic, cultural, and regulatory issues concerning energyefficiency and customer-sited resources.

Q. Have you participated in PUCO proceedings previously?

A. Yes, I have provided testimony and advised clients on numerous energy-related issues before the Public Utilities Commission of Ohio (PUCO), including AEP Ohio's previous Affiliate Power Purchase Agreement proceeding, Case Nos.14-1693-EL-RDR, et al., which is the stated rationale (at least in part) for AEP Ohio's filing.[1]

[1] Amended Application at 3; Direct Testimony of Moore at 3-4.

Overview and Conclusions

Q. What is the purpose of your testimony in this proceeding?

A. My testimony addresses the new charges AEP Ohio is proposing in its amended application filed on November 23, 2016 (Application) to extend and modify its current Electric Security Plan (the ESP extension includes the addition of the Renewable Generation Rider (RGR), and the Plug-In Electric Vehicles (PEVs), micro-grid, and sub-metering components of the Distribution Technology Rider (DTR)).

Given the wide scope of the issues addressed in the Application, my recommendations are concentrated on a limited number of issues. Absence of comment on my part regarding a particular aspect of the Application does not signify support (or opposition) toward the Company's filing with respect to said issue.

Q. What are your primary conclusions and recommendations?

A. I conclude that AEP Ohio's requests would seriously undermine competition with emerging technologies. Specifically, I recommend:

- The Commission should deny the RGR, or at a minimum allow it to be by-passable.
- The Commission should deny the cost recovery of PEV charging stations, micro-grids, and sub-metering in the DTR.

- The Commission should consider exploring the costs, benefits, and ownership model of emerging technologies such as PEV, their charging stations, micro-grids, and sub-metering within their PowerForward initiative.
- The Commission should ensure tariffs for PEV charging stations and micro-grids which include time-dependent price signals, such as real-time pricing or time-of-use pricing.

<u>**Customer Need for a Renewable Generation Rider (RGR)**</u>

Q. How is AEP Ohio proposing to pay for its renewable energy projects?

A. AEP Ohio proposes recovering the cost of renewable energy projects through its amended and extended ESP III to be recovered through the non-bypassable RGR rider for the life of the renewable energy project.

Q. Has anything changed from the PPA proposal to the RGR?

A. Yes. According to AEP Ohio witness Allen, the financial and physical arrangement of the renewable energy projects would be identical as the previously proposed Power Purchase Agreement (PPA) arrangement. However, AEP Ohio witness Allen lists two differences with AEP Ohio's new proposal: that AEP Ohio customers would now "actually be served" by the project,[2] and that RGR would persist for the life of the project instead of for the ESP term.

[2] Direct Testimony of Allen at 10.

Q. Has AEP Ohio presented any evidence that its customers will now "actually be served" by the proposed renewable energy projects?

A. No. Although AEP Ohio witness Allen suggests that the physical and financial arrangements are identical to the PPA proposal and that there would be no substantive change to how the renewable energy project is integrated into the electric grid, it is unclear what is meant by the statement that the renewable power facility will now "actually serve" customers. AEP Ohio has not detailed how the renewable projects would be integrated into the system in a manner that would cause the renewable projects to "actually serve" or be dedicate to specific customers, especially shopping customers. AEP Ohio's proposal also calls into question whether AEP Ohio's proposed changes to its renewable commitments are to the benefit of customers, or to the benefit of AEP Ohio.

Q. Has AEP Ohio shown need for a utility built renewable energy project?

A. No. In fact, Ohio already has a renewable portfolio standard (RPS) that establishes a floor for renewable energy development in Ohio and the region by requiring the purchase of renewable energy credits (RECs). The RPS and REC mechanism establishes a market for renewable energy projects that is adequately served by competitive businesses. Ohio's policy of spurring renewable energy development is happening without the need for vertically integrated ownership of renewable energy assets.

Q. Could the renewable energy projects AEP Ohio is considering still be built in Ohio without the RGR?

A. Yes if the renewable projects are as cost-effective as competing renewable energy projects, these projects could be built by competitive parties without the RGR.

Q. If AEP Ohio's renewable energy projects cannot be built without the RGR, would they benefit ratepayers and the public interest?

A. No. If the RGR is required to make these projects feasible, then they are by definition less economical than competitive renewable energy projects that would otherwise get built. Therefore, AEP Ohio's projects are defacto of greater cost to ratepayers than the market is able to supply, and thus do not benefit ratepayers or the public interest at this time.

Q. What are the estimated costs of AEP Ohio's renewable energy projects?

A. AEP Ohio has not estimated any costs that it intends to recover through the RGR.[3] In addition to not disclosing estimated costs of its renewable energy projects, AEP Ohio has also not proposed a cost cap on the RGR rider, resulting in a potential limitless recovery of generation service costs. Establishing and implementing the RGR at this time is equivalent to a blank check for expenditures, without any estimate or projection of such expenditures, resulting in unknown costs to consumers.

[3] Direct Testimony of Gill at 9.

Q. Do businesses already invest in and purchase renewable energy?

A. Yes. Businesses and other customers increasingly integrate renewable energy purchases, or on-site renewable energy projects, into their electricity purchasing strategies.[4] A business may purchase 100% renewable energy, or strategically purchase a percentage of its electricity from renewable sources.

Q. What impact does AEP Ohio's proposed amended ESP have on customers that have already purchased renewable energy or installed renewable energy?

A. In effect, these businesses pay twice for renewable energy: first, for their project or purchase; and second, under the RGR. Moreover, it may affect the revenue of a customer-sited renewable energy project. For example, a business may decide to keep, or sell, its RECs when it develops a renewable energy project. If a business keeps its RECs, it may bypass paying its CRES provider for compliance for the present-day Renewable Energy Portfolio (RPS). Without bypassability, a business would subsidize other ratepayers if the amended ESP includes the RGR. Also, for a business which sells its RECs, the market price of RECs may be unfairly influenced by ratepayer subsidization of AEP Ohio's renewable energy projects. That is, allowing renewable energy into AEP Ohio's amended ESP, would force a business to subsidize its competitor in the REC market.

[4] Public examples include: Amazon's recent announcement to power its new central Ohio date centers with 100% Ohio wind (http://www.dispatch.com/content/stories/business/2016/11/01/amazon-to-build-second-wind-farm-in-ohio.html); Ohio State University's announcement to power 25% of its campus with Ohio wind (http://oee.osu.edu/ohio-state-to-power-campus-with-wind-energy.html); and the GM Lordstown Plant's solar installation (http://media.gm.com/media/us/en/gm/home.detail.html/content/Pages/news/us/en/2014/Oct/1020-lordstown-chevrolet.html).

Q. Is a RGR mechanism different than an RPS in regards to development of renewable energy?

A. Yes. The RPS promotes and allows resource competition. A business may purchase RECs, sell RECs, or develop its own customer-sited renewable energy project and retain ownership of the RECs. An RPS creates a market of many buyers and many sellers, where information is transparently communicated via market prices of RECs. This competition and market pricing often serves to drive prices down. A RGR, in contrast, undercuts market development by greatly limiting the number of buyers and sellers. And, by allowing the buyer and seller to be affiliated (AEP Ohio and AEP Energy), and removing both related parties from the risk of the project (instead, the ratepayers take the risk), the potential for uneconomical decisions is high.

Q. Do you agree with Witness Allen's testimony that "[s]ince customers are paying a market based price for power either through the SSO or from a CRES provider, having a portion of their power sourced from a specific renewable facility will result in their bill being either higher or lower depending upon whether the price of power from a renewable power facility is higher or lower than the market price for power"?

A. No. First, customers taking generation service from a CRES provider may already be receiving a portion of their power from a renewable facility, which would cause the customer to pay twice for renewable power. Second, the amount of electricity purchased from a CRES provider would not be reduced. Thus, a customer bill would always be higher, based on the RGR mechanism proposed by AEP Ohio.

Q. Do you have a recommendation to the Commission?

A. Yes. The Commission should reject the inclusion of the RGR in AEP Ohio's amended ESP as being anti-competitive for the development of renewable energy. At a minimum, the Commission should require that the RGR be made bypassable for businesses that are already purchasing renewable energy or developing renewable energy projects of their own accord, so as to avoid forcing businesses to pay twice for renewable electricity or pay for more electricity than what they consume.

<u>AEP Ohio's Distribution Technology Investment Plan</u>

Q. What is AEP Ohio's Distribution Technology Investment Plan?

A. AEP Ohio is proposing a multi-initiative plan to modernize its infrastructure. In its first initiative, it proposes to install electric vehicle charging stations, microgrids, and smart lighting control in conjunction with Smart Columbus.[5] Second, AEP Ohio is seeking immediate approval to recover costs to deploy its Next Generation Utility Communication System (NextGen UCS). Third, it is proposing to enhance the physical security of its critical distribution infrastructure.

Q. How much is AEP Ohio's Distribution Technology Investment Plan expected to cost customers?

A. Costs for AEP Ohio's Distribution Technology Investment Plan will be recovered through the Distribution Technology Rider (DTR). AEP Ohio is proposing to

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[5] Direct Testimony of Osterholt at 5.

recover $48.9 million in O&M costs through 2024 and carrying charges on capital expenditures of $250.8 million made through 2020.[6] Specifically, AEP proposes to recover the following direct costs from customers:

1. Electric Vehicle Charging Stations: AEP Ohio proposes to recover $6.4 million over four years and $775,000 in O&M costs, annually.[7]
2. Microgrids: Deployment of eight to ten microgrids is expected to cost customers $52 million over four years and $1.5 million in O&M costs, annually.[8]
3. Smart Lighting: Smart lighting controls and LED replacements are expected to cost customers $30 million over four years and $2.1 million in O&M costs, annually.[9]
4. Next Generation Utility Communication System: Customers are expected to pay $69 million over four years and $1 million in O&M costs over three years.[10]
5. Distribution Substation Security Technology: Deployment of 100 substations is expected to cost customers $30 million over four years and $400,000 in O&M costs, annually.[11]

[6] Workpapers for David R. Gill, WP DRG-8 at 10 (amounts represent "loaded" O&M and Capital carrying costs from the second and fourth blocks of WP DRG-8).

[7] Direct Testimony of Osterholt at 6.

[8] Id.

[9] Id.

[10] Id.

[11] Id.

Charging Station Deployment

Q. What is AEP Ohio's proposal for public charging stations?

A. AEP Ohio is proposing as part of its Distribution Technology Investment Plan to install 250 Level 2 public smart charging stations and, 25 public DC Fast Charging Stations.

Q. How will the cost for these public charging stations be recovered?

A. AEP Ohio plans to recover the installation costs, and the costs for the public charging station's energy, capacity, and other costs through the Distribution Technology Investment Rider based on AEP Ohio's SSO rate.[12] Rather than charging the users directly benefiting from these public charging stations, AEP Ohio is proposing to allow Plug-In Electric Vehicle (PEV) owners to use Company-installed public charging stations free of charge during an initial period.[13] AEP Ohio does not say how long this period will be.

Q. What are the estimated costs of the public charging stations?

A. AEP Ohio proposes to install 250 Level 2 public smart charging stations estimated to cost between $10,000-$20,000 each for a total cost between $2.5M – $5M. AEP Ohio also proposes to install 25 DC Fast Charger charging stations costing between $50,000-$100,000 each for total cost between $1.25M – $2.5M.[14]

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[12] Direct Testimony of Osterholt at 17.

[13] Id.

[14] Id. at 15-17.

Q. What is AEP Ohio's proposal for residential charging stations?

A. AEP Ohio is also proposing to install up to 1,000 Company-owned residential charging station units at no charge to the benefiting customer during the demonstration period.[15] At a cost of $1,000-$2,000 per unit, ratepayers will pay up to $2M for private residential charging stations that will only benefit certain private residential customers.[16] Further, AEP Ohio estimates ratepayers will pay $200,000 a year to maintain the charging units.[17]

Q. Does AEP propose any alternate forms to recover costs for Plug-In Electric Vehicle charging stations?

A. Separate and in addition to the Distribution Technology Investment Plan, AEP Ohio is proposing to later file a tariff schedule for PEV charging stations.[18] The tariff will allow AEP to recover costs for expanding PEV charging stations.

Q. Do Ohio cities and Ohio businesses already invest in PEV charging stations?

A. Yes. Businesses in Ohio are already investing in PEV charging stations through a competitive market.[19] Additionally, cities are also installing PEV charging stations.[20]

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[15] Direct Testimony of Osterholt at 18.

[16] Id. at 17, 18.

[17] Id. at 17.

[18] Direct Testimony of Moore at 11.

[19] Ohio business examples include: IKEA to Install Electric Vehicle Charging Stations at Future Columbus Store (https://patch.com/ohio/cleveland/ikea-install-electric-vehicle-charging-stations-future-columbus-store)

[20] For example, see City of Cleveland to install electric vehicle charging stations for public use (http://www.cleveland.com/metro/index.ssf/2012/05/city_of_cleveland_to_install_e.html).

Q. Are PEV manufacturers investing in PEV charging stations for public use?

A. Yes. Both Tesla Motors and Nissan have invested in PEV charging stations for public use.[21]

Q. Does AEP Ohio's PEV charging station pilot adequately demonstrate the technology, and achieve its potential benefits to ratepayers?

A. No. Two critical benefits to ratepayers from PEV charging stations are:

- The ability of PEVs to charge at non-peak times of the electrical grid; and
- The ability of PEV batteries to store electricity, and potentially feed electricity back to the grid during peak times.

From an electric ratepayer perspective, these features of PEVs must be utilized to fully gain the financial benefits. Thus, time-dependent price signals are indispensable to the demonstration of the technology, preferably real-time price signals but potentially time-of-use rates. AEP Ohio's current proposal to not charge customers for the charging, and to pass the cost of electricity for public charging stations to other ratepayers at the SSO rate, completely undermines the demonstration of the PEV technology. Without some sort of time-dependent rate or pricing scheme, AEP Ohio's pilot could well result in citizens charging their electric cars during the day, increasing the likelihood of car charging at peak times. This could erase electric-system benefits to ratepayers, and potentially create additional cost burdens.

[21]For example, see PEV charging stations in Grove City, Ohio (http://www.grovecityohio.gov/topic/electric-vehicle-charging-stations/).

Q. Is the PEV demonstration project anti-competitive?

A. Yes. It is clear that competitive businesses and other organizations have the capability and interest to purchase and install PEV charging stations without utility ownership.

Q. Do you have a recommendation regarding the PEV demonstration project?

A. Yes. The Commission should reject AEP Ohio's proposal, especially AEP Ohio's requests to own charging stations and charge the costs to customers, and to provide free electricity to PEV owners and/or users. The Commission should direct AEP to file a tariff for PEV charging stations, while ensuring charging station retail electricity rates are tied to real-time pricing or time-of-use pricing. Finally, the Commission should consider the costs, benefits, and ownership model of PEV charging stations as part of its PowerForward initiative.

Microgrids

Q. What is AEP Ohio's microgrid project?

A. AEP Ohio is proposing to design and deploy eight to ten microgrids. The locations for these microgrids are not yet defined. AEP Ohio is also proposing that should the Commission approve the amended ESP and extension, it will not have to seek additional approval for the first eight to ten microgrids from the Commission.[22]

[22] AEP Ohio Response to IGS-INT-2-001 (Attachment JAS-1).

Q. Who is required to pay for the infrastructure and maintenance of the microgrid projects?

A. According to AEP Ohio witness S. Osterholt, the Company is proposing that the microgrid deployment and maintenance costs associated with this proceeding would be included in the DTR and borne by customers.[23]

Q. What are the proposed costs associated with the microgrids?

A. According the AEP Ohio witness S. Osterholt, the microgrids will cost customers $51.87 million in capital costs over four years and approximately $1.5 million annually for O&M expenses at full deployment.[24]

Q. Does AEP Ohio's proposed plan create system benefits to all ratepayers?

A. No. While microgrids could, in concept, produce benefits to the electric system, and thus all ratepayers, in much the same way electric vehicles could, AEP Ohio's proposal will not. The main features of a microgrid are the localized abilities to generate electricity, store electricity, and determine whether electricity is of greatest value to the customer or the electric grid at any given time. The value to the electric system is in the ability of the customer to reduce electricity use from the grid, or export electricity to the grid, at times of the highest cost of electricity, thereby lowering demand or increasing supply, resulting in lower electricity costs for all. Microgrids, in essence, have the potential to become dispatchable decentralized electricity resources. AEP Ohio's plan undermines the benefit

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[23] AEP Ohio Response to IGS-INT-1-004 (Attachment JAS-2).

[24] Direct Testimony of Osterholt at 25.

potential by socializing the net energy use or production of its proposed microgrids as "unaccounted for energy".

I will note that properly structured microgrids can also create important societal benefits by creating redundancy in power for critical facilities and businesses.

Q. Do you have a recommendation regarding the microgrid proposal to the Commission?

A. Yes. The Commission should reject AEP Ohio's proposal for its microgrid program which costs customers $62.1 million over the term of the amended ESP, while providing few benefits to customers as a whole. The Commission should direct AEP Ohio to file a microgrid tariff to encourage microgrid development that is funded outside of the ratepayer base. Finally, the Commission should consider the costs, benefits, and ownership model of microgrids as part of their PowerForward initiative.

Submetering Rider (SR)

Q. What is the SR?

A. The Application proposes a non-bypassable, non-specific, and undefined SR to pass through costs to customers from AEP Ohio's potential purchase of behind the meter submetering infrastructure from submetering entities, as well as pass on to customers other unspecified costs associated with submetering.[25] The SR is entirely anticipatory in nature.[26]

Q. What costs are intended to be recovered under the SR?

A. AEP Ohio has provided the example of where it may have the opportunity to purchase or replace the distribution infrastructure of certain multi-family complexes served under its tariffs. Under this scenario, AEP Ohio is proposing to collect costs associated with the purchase or replacement of such infrastructure, including collecting other undefined costs "relating to the submetering issue as a percentage of base distribution revenue."[27]

Q. Are these costs anticipatory or real in nature?

A. As stated previously, the cost of any prospective regulatory compliance related to submetering is completely anticipatory in nature. Further, it is my understanding that the issue of whether submetering entities should be regulated by the Commission would not necessarily impose new regulations on the electric distribution utilities. Nowhere in the Application or in the testimony filed in support of AEP Ohio's Application does AEP Ohio even suggest that it expects future increases in the cost of compliance with future submetering regulations, which have not been approved by the Commission.

[25] Amended Application at 17; Direct Testimony of Gill at 9.

[26] Direct Testimony of Gill at 9 ("the Submetering Rider will serve as a placeholder non-bypassable rider until the Commission approves costs to be recovered in a separate proceedings.").

[27] Direct Testimony of Moore at 12.

Q. Should the PUCO consider the SR at this time?

A. No. The establishment and implementation of SR in this proceeding is premature given the lack of specific regulations or any quantifiable expenses anticipated to be expended. Giving AEP Ohio such a rider, even as a placeholder, would be tantamount to providing AEP Ohio with a blank check for expenditures by submetering entities for activities performed by private and unregulated entities having no affiliation with AEP Ohio during an ongoing investigation into these submetering activities.[28] The possibility of AEP Ohio being required to "purchase or replace the distribution infrastructure of certain complexes to be served under AEP Ohio's tariff schedules" is entirely speculative.[29]

Q. Do you have a recommendation to the Commission?

A. Yes. The Commission should reject the inclusion of the SR in AEP Ohio's amended ESP as being premature.

Q. Does this conclude your direct testimony?

A. Yes.

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[28]See *In the Matter of the Commission's Investigation of Submetering in the State of Ohio*, Case No. 15-1594-AU-COI.

[29] Direct Testimony of Moore at 12.

OHIO POWER COMPANY'S RESPONSE TO
INTERSTATE GAS SUPPLY, INC.'S
DISCOVERY REQUEST
PUCO CASE NO. 16-1852-EL-SSO et al.
SECOND SET

INTERROGATORY

IGS-INT-2-001 Pages 21-27 of Osterholt's testimony discuss the implementation of utility- owned microgrids installed in front of the meter. If AEP Ohio's current proposal is accepted by the PUCO, would AEP Ohio go back for additional PUCO approval once each specified microgrid project is identified in order to receive approval for each specific microgrid project?

RESPONSE

No, AEP Ohio would expect that the Commission's approval for the first eight to ten microgrids would allow for deployment of these microgrids without additional regulatory proceedings.

Prepared by: Scott S. Osterholt

OHIO POWER COMPANY'S RESPONSE TO
INTERSTATE GAS SUPPLY, INC'S DISCOVERY REQUEST
PUCO CASE NO. 16-1852-EL-SSO and 16-1853-EL-AAM
FIRST SET

INTERROGATORY

IGS-INT-1-004 Scott Osterholt's testimony addresses proposed microgrid development options as part of the Smart Columbus initiative on pages 21-22.
a. Specify and provide an example of what is meant by the phrase "elect to have a Company-owned generator connected to the microgrid" found on page 22 line 12.
b. Define Company-owned generator.
c. Explain why generation assets, i.e. solar arrays, are necessary as part of the proposed microgrids.
d. Would AEP Ohio consider using any other generation type outside of solar on the proposed microgrid projects?
e. Would facilities involved in a microgrid project be required to bear a portion or the infrastructure or maintenance costs of the project?

RESPONSE

a. A Company-owned generator would be an AEP Ohio owned generator that could be used to provide power when the renewable and energy storage components do not have sufficient capacity to power the loads of the facility. An example is a location with critical power needs 24 hours a day everyday. There could be cases where the amount of renewable generation and energy storage is not enough to provide all of the power and energy needed during non-daylight hours and cloudy daytime hours while islanded from the Company distribution circuit.

b. A Company-owned generator would be an AEP Ohio owned generator that could be used to provide power when the renewable and energy storage components do not have sufficient capacity to power the loads of the facility.

c. A microgrid must have some means of generating power and energy to serve the loads of the facility when it is islanded from the Company distribution circuit.

d. Yes.

e. The Company has proposed that microgrid deployment and maintenance costs associated with this proceeding would be included in the Distribution Technology Rider. If infrastructure costs are incurred by the customer, on the customer's property, then those costs would not be included in the rider.

Prepared by: Scott S. Osterholt

CERTIFICATE OF SERVICE

I hereby certify that a true and accurate copy of the foregoing was served upon all parties of record via electronic mail on May 2, 2017.

/s/James D. Perko, Jr.
James D. Perko, Jr.

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PowerForward

Ohio | Public Utilities Commission

PowerForward is the PUCO's review of the latest in technological and regulatory innovation that could serve to enhance the consumer electricity experience. Through this series, we intend to chart a clear path forward for future grid modernization projects, innovative regulations and forward-thinking policies.

We have invited a number of industry experts to provide presentations that will help us better understand our future electric distribution grid and how technological enhancements could affect different stakeholders.

Our hope is that the expertise of many stakeholders can help us better frame the grid of the future. We want to know what technologies or changes are needed, so that innovative regulations and forward-thinking policies can be developed.

Email Updates

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What to expect?

The PUCO will kick off PowerForward on April 18, 19 and 20. The three-day "A Glimpse of the Future" series will feature presentations examining technologies affecting a modern distribution grid; what our future grid could offer consumers; and what technologies are in development to realize such enhancements. The full agenda for each series can be found in the links below as they become available.

Phase 1: A Glimpse of the Future

- Agenda
- Scheduled speakers
- HD videos

Phase 2

Phase 3

PowerForward

Ohio | Public Utilities Commission

Presentations

Click on names to the left to view presentations as they become available.

Speaker biographies

Phase 1: A Glimpse of the Future

Public Utilities Commission of Ohio

180 E. Broad Street, 11B, Columbus Ohio

Tuesday, April 18, 2017

9:00 to 9:15 a.m. - Opening Remarks

9:15 to 10:15 a.m. - Using Innovation to Enhance the Customer Experience

- Paul De Martini, Managing Director, Newport Consulting Group

10:15 to 10:30 a.m. - Break

10:30 to 11:30 a.m. - SGCC: Consumer Pulse and Market Segmentation Study

- Patty Durand, Deputy Director, Smart Grid Consumer Collaborative

11:30 a.m. to 1:00 p.m. - Lunch

1:00 to 2:30 p.m. - Innovation for the Customer: Panel 1

- Richard Caperton, Director, Regulatory Affairs, Oracle Utilities
- YeYe Zhang, Business Development, Nest – Energy Partnerships
- Katie Guerry, Vice President, Regulatory Affairs, EnerNOC, Inc.

2:30 to 2:45 p.m. - Break

2:45 to 4:15 p.m. - Innovation for the Customer: Panel 2

- Mike DiNucci, Senior Vice President, Sales, ChargePoint, Inc.
- Becky Campbell, Utility Market Development, FirstSolar, Inc.
- Manoj Kumar, Chief Executive Officer, Powerley

Wednesday, April 19, 2017

9:00 to 10:00 a.m. - Why Do We Need to Modernize the Grid?

- Jeff Taft, Chief Architect, Electric Grid Transformation, Pacific Northwest National Laboratory

10:00 to 10:15 a.m. - Break

10:15 to 11:45 a.m. - Innovation for the Grid: Panel 1

- Ty Roberts, Director, Electricity Product Marketing, Itron, Inc.
- Brian Bowen, Regulatory Affairs Manager, FirstFuel Software
- Pablo Barrague, Market Development Manager, AES Energy Storage

11:45 to 1:00 p.m. - Lunch

1:00 to 1:15 p.m. - Commission Meeting

1:15 to 2:45 p.m. - Innovation for the Grid: Panel 2

- Don Wingate, Vice President Sales, Utility Solutions, Schneider Electric
- John McDonald, Smart Grid Business Development Leader, GE Grid Solutions

2:45 to 3:00 p.m. - Break

3:00 to 4:15 p.m. - Technology Research

- Ken Loparo, Nord Professor and Chair, Department of Electrical Engineering and Computer Science, Case Western Reserve University
- Ramteen Sioshansi, Associate Professor, Department of Integrated Systems Engineering, The Ohio State University

Thursday, April 20, 2017

9:00 to 10:00 a.m. - Ohio Perspectives: Panel 1

- Ram Sastry, Vice President, Infrastructure and Business Continuity, AEP
- Joe Bentley, Vice President, Customer Operations, AES Corporation

10:00 to 10:15 a.m. - Break

10:15 to 11:45 a.m. - Ohio Perspectives: Panel 2

- Evan Wilson, Product Leader – Corporate Innovation, IGS Energy Home Services
- Thomas Hawes, Sales Director, Distributed Energy – Enterprise Sales, Direct Energy/Centrica
- Duncan Stiles, Senior Vice President, Just Energy Labs, Just Energy
- Joel Elkins, Vice President, R&D and Product Development, Think Energy, ENGIE North America

11:45 a.m. to 1:00 p.m. - Lunch

1:00 to 2:00 p.m. - Ohio Perspectives: Panel 3

- Dave Karafa, Utilities Vice President, Distribution Support, FirstEnergy
- Sasha Weintraub, Senior Vice President, Customer Solutions, Duke Energy

2:00 to 2:15 p.m. - Break

2:15 to 3:45 p.m. - Ohio Perspectives: Panel 4

- Michael A. Beirne, Vice President of External Affairs, American Municipal Power
- Mike Kurtz, Counsel, Ohio Energy Group
- Doug Miller, Vice President, Statewide Services, Ohio Rural Electric Cooperatives, Inc.
- Chris Healey, Energy Resource Planning Counsel, Ohio Consumers' Counsel

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ENERGY EFFICIENCY - DEMAND RESPONSE - CHP - RENEWABLE ENERGY - STORAGE

ENERGY COMMITTEE – MAY 2017

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Incentives	None	Available
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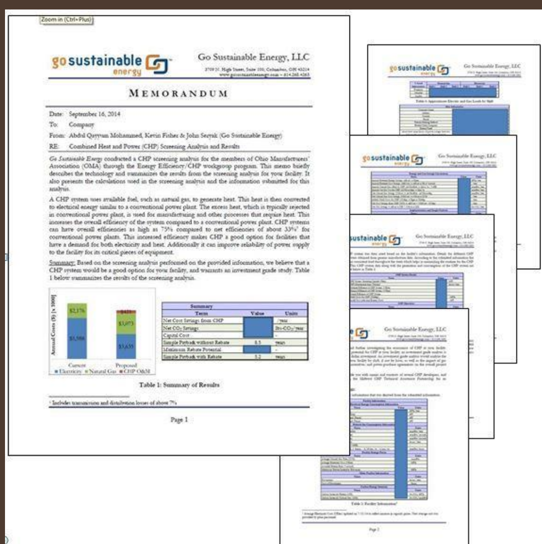

- Utilities have increased CHP incentives

UTILITY ENERGY EFFICIENCY PROGRAMS

RunnerStone, LLC
3709 N. High Street, Suite 100, Columbus, OH 43214
614.268.4263

MEMORANDUM

Date: May 18th, 2017

To: Ohio Manufacturers' Association

From: Jordan Nader and John Seryak, PE (RunnerStone, LLC)

RE: PJM and FERC Energy Market and Capacity Auction Discussions

PJM recently created a Capacity Construct & Public Policy Senior Task Force to address above-market subsidies being created or contemplated by several states within the PJM territory. Similarly, the Federal Energy Regulatory Commission (FERC) has recently conducted a Technical Conference on State Policies and Wholesale Markets.

Both the PJM and FERC efforts, and the potential resulting actions, could impact Ohio's state policies and regulations in regards to financial support for specific power plants or types of electricity generation.

FERC Technical Conference on State Policies and Wholesale Markets

FERC has held two days of technical conferences. While there was some urgency to action, FERC Acting Chairperson LaFleur pointedly noted that FERC is unable to actually address the issues until FERC has a quorum, which would require executive branch appointment of new commissioners.

Day 1 was perspectives shared from stakeholders of eastern RTOs/ISOs (ex. PJM, NYISO, ISO-NE), including state commissions, electric utilities, independent power producers, consumer advocates, and environmental groups. It is valuable to note that FERC saw fit to have States represent their views separate from electric utilities, IPPs, consumers, and environmental groups. There was significant focus on the Minimum Offer Price Rule (MOPR), and how, if at all, state subsidies should be accounted for in the market.

Day 2 focused on "five paths" that emerged during Day 1 that FERC could walk down to address long term market construction. They are generalized in the figure below.

Path 1	Path 2	Path 3	Path 4	Path 5
Subsidies Are Allowed. No or limited minimum price offer rules. This would presumabley allow subsidies or incentives to effect how resources compete in the market.	**Accomodation in a 2-part plan**. Subsidized resources are segregated out of markets to preserve the rest of the market price.	**Hybrid**: some subsidies are accounted for in the MOPR, others are not, depending on their influence on price. Could result in some subsidized generation resources not clearing the market.	**Pricing in Externalities**: Carbon and other environmental or external attributes would get priced into the market.	**Everything in the Market, Strong MOPR**: Externalities are priced in to the market, state subsidies of anykind accounted for in MOPR. Tough love if a resource doesn't clear the market.

Less market based, more utility support — More market based, more independent power producer support

PJM Capacity Construct & Public Policy Senior Task Force

PJM has held four meetings of this task force, with five more meetings scheduled through early August. PJM has identified three key working areas for the task force:

1. Identifying objectives and characteristics of well-functioning capacity markets. PJM has identified 80 objectives which it will narrow down through a member survey, currently grouped as:
    a. Resource Adequacy,
    b. Price Signals,
    c. Competitive Markets,
    d. Performance Requirements,
    e. Resilient to/Harmonizing with external influences
2. Identify current and potential public policy initiatives states could take regarding resource adequacy, fuel diversity, public, and environmental policies
    a. 14 current or potential state policies or programs that could impact markets were identified:
        i. Rate-based cost recovery for certain resources
        ii. Mandated power purchase agreements
        iii. Zero emission credits
        iv. Grant programs
        v. Tax incentives
        vi. Loan programs
        vii. Advanced cost recovery
        viii. State takeover
        ix. Holding company structure
        x. State integrated resource planning
        xi. Feed-in tariffs
        xii. Emissions tax
        xiii. Cap-and-trade
        xiv. Renewable Portfolio Standards
3. Identify areas where state actions and PJM's market and capacity auctions may not be aligned

UNITED STATES OF AMERICA

FEDERAL ENERGY REGULATORY COMMISSION

State Policies and Wholesale Markets Docket No. AD17-11-000

Operated by ISO New England Inc., New York Independent System Operator, Inc., and

PJM Interconnection, L.L.C.

Statement of Andrew Ott, President & CEO, PJM Interconnection, L.L.C.

This year, PJM is celebrating its 90th anniversary having been founded in 1927. Equally important, this year marks the 20th year since launch of PJM's competitive wholesale electricity markets. Those markets have weathered many events over the years and continually have produced efficient and competitive prices for customers. Indeed, the operation of markets in the 13-state PJM region has resulted in annual savings to the region of $2.6 Billion.

By the same token, the markets have proven, over time, their ability to serve as a nimble and flexible tool to implement a host of state and federal public policies. Just since their inception in 1993, the markets have absorbed significant external events ranging from:

- the development of retail choice and default service auctions in the majority of our states; to
- implementation of EPA's Mercury and Air Toxics rule and similar state environmental regulations each of which had a profound impact on the existing generation fleet; to
- the integration of new renewables and demand response technologies stimulated by state Renewable Portfolio standards and goals adopted in 11 of our 13 states and the District of Columbia.

The issues the Commission raises today are not new issues—they've been ones we have confronted, albeit in different forms, since the inception of the markets. As a result, I am confident that the markets are incredibly resilient and can continue (as they have in the past) to once again adapt to meeting the expressed desires of states to promote particular state public policies. For this reason, I view this entire exercise as not considering the question of "*whether* the markets should recognize state policies" but rather more as a "*how*" question; i.e., how can policy initiatives and market rules be designed in a manner which achieve the considerable benefits that competitive markets can bring in achieving those state policy goals in the most efficient manner possible.

The most recent iteration of state policies has involved explicit legislatively-driven subsidies for specific generating units. This is in notable contrast to the type of legislative efforts we have seen in the past which were more focused on providing policy support applicable to given types of nascent technology (as opposed to specific units) through renewable portfolio standards or research and development support.

At PJM, we are tackling the larger issue of addressing direct state subsidies and policy initiatives through three separate initiatives, two directly related to the issue at hand and a third, energy price formation, that - can have tangential benefits in addressing the first two initiatives. Specifically, PJM has been contemplating:

- Initiative #1: Working to proactively offer options to state policymakers that would allow states voluntarily, on either a regional or sub-regional basis, to pursue public policy objectives which can be monetized and then included in wholesale market prices within those states while still preserving an orderly and competitive economic dispatch across the entire footprint;

- **Initiative #2**: In a more responsive mode, considering market reforms to ensure that individual state actions (and, in particular unit-specific subsidies) not unduly impact the overall competitiveness of the wholesale markets and the investment signals they are designed to produce; and

- **Initiative #3**: Energy market and grid operating reforms that can lessen the perceived need for individual state action. As I note below, this initiative is not specifically tied to state actions and is an action we will be pursuing on a parallel track.

At a high level, I will touch on each of these below. I note that on January 26, 2017, PJM stakeholders endorsed a "Problem Statement" and are moving forward with a stakeholder process to address the impact of state reforms on PJM's capacity market.[1] PJM intends to utilize that process to further refine certain of these proposals to the extent they fit within the stakeholder-adopted problem statement. For those that do not neatly fit within that Problem Statement, PJM will be launching additional initiatives to raise these issues. And PJM will be reaching out to the states to further explore interest in and the details of regional or sub-regional approaches to address the policy issues they seek to address.

Initiative #1: Supporting State Actions through Development of a Regional and Sub-Regional Template.

Consistent with what we have heard from a number of state policymakers, given the interconnected nature of the grid and the integrated nature of the PJM markets, regional and even sub-regional approaches are far preferable to individual state initiatives targeted to particular units. Groups of states coming together can allow for implementation of policy initiatives that harness the competitive forces already at work through the regional dispatch to deliver cost effective and efficient means to implement a given policy goal. Moreover, regional and even sub-regional solutions can effectively address the very issue the Commission points out in its April 13 Supplemental Notice, namely the conflict in a multi-state RTO/ISO:

"if one state's policy priorities come into conflict with another state's policy priorities" [2]

In essence, a state subsidizing a particular unit essentially is "exporting" the effects of its policy choice on all of the investments in neighboring states with a price suppressive effect not only on generation but also demand response, energy efficiency and other emerging technology initiatives that those neighboring states may wish to embrace. Moreover, the subsidizing state's actions can work to erode investment throughout the region as those subsidized units now can bid below their actual costs in order to maximize their revenues through the combination of clearing prices in the market and the state subsidy as an added revenue source.

For this reason, PJM believes states in the region coming together to design a common policy initiative that can be priced in the wholesale electricity markets is a preferable approach. Nevertheless, given the diversity of our footprint, this does not necessarily require uniform agreement among 13 states and the District of Columbia. We believe that certain important state policies can be advanced effectively by a critical mass of states (even if not every state in the footprint) through agreement on

[1] A copy of the Problem Statement adopted by stakeholders can be found at http://pjm.com/~/media/committees-groups/task-forces/ccppstf/postings/ccppstf-problem-statement.ashx.

[2] *State Policies and Wholesale Markets Operated by ISO New England Inc., New York Independent System Operator, Inc., and PJM Interconnection, L.L.C.*, Supplemental Notice of Technical Conference, Agenda at 3, Docket No. AD17-11-000 (Apr. 13, 2017) (April 13 Notice).

a common set of rules that: (i) enable state policies, (ii) preserve efficient economic electricity pricing, and (iii) largely avoid, through rule design, the impacts of those policy choices on non-participating states. [3]

The April 13 Notice asks whether it is preferable for such initiatives to be monetized within the market or outside of the market. The $2.6 billion annual consumer savings resulting from the markets which I noted above provides strong evidence that a solution within the market itself can deliver the benefits of that public policy choice far more efficiently and cost effectively than if undertaken outside the markets.[4]

In fairness, our discussions with the states and stakeholders are at their beginning stage. The overall goal would be to offer a structure to a willing subset of states (if not the entire region) that would impose a cost on the emission externality or environmental attribute. This cost would be reflected in offers from generators in the energy market and in so doing become an element in PJM's wholesale electricity prices. Importantly, PJM is exploring "border adjustment mechanisms" that would address "leakage" challenges that arise with such a sub-regional approach. These measures would preserve PJM's ability to economically dispatch generation over the full PJM region, while isolating the pricing impact of the policy choice to only those consenting states in the subregion. In this way, all resources can still competitively participate in the full market while the incremental costs of the particular policy attribute are paid only by those citizens of the state which has chosen to compensate that policy initiative.

There is uncertainty surrounding Commission's jurisdiction in the context of pricing emission externalities. PJM believes a proposal of this nature, if presented to states as option they can choose or reject, can be adopted by states and their affected utility systems, with active PJM facilitation, independent from the rules of the RTO regulated by the FERC.

Initiative #2: Market Reforms in Response to Individual State Subsidies.

The above initiative is one that involves states and PJM coming together to design policy initiatives that work within the wholesale market structure. But we have recently seen state initiatives that have been undertaken unilaterally and which involve out-of-market-direct ratepayer subsidies to particular distressed units. Even when well-intentioned, these efforts can have a price suppressive effect on the entire market.

PJM has addressed these types of situations previously through a flexible market design. For example, states that can meet their needs from capacity wholly within a designated service territory can effectively price capacity in their state through the Fixed Resource Requirement (FRR) mechanism. By the same token, PJM worked with public power to provide a self-supply exemption to Minimum Offer Pricing Rule (MOPR) and similarly accommodated state-specific traditional regulatory mechanisms as additional exceptions to the MOPR process. Nevertheless, state actions subsidizing particular units while

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3 For example, the five states in the PJM region that have adopted retail choice and also are home to nuclear plants could come together as a sub-region to support a multi-state initiative to ensure that the existing nuclear investment is sustained during this period of low energy prices.

4 Although the Regional Greenhouse Gas Initiative (RGGI) is a prime example of a multi-state initiative undertaken outside the market, RGGI has had to wrestle with both pricing and "leakage" issues both of which are issues that can be more directly addressed through solutions that work within a market structure. One example of a market structure that could enhance the policy goals of a sub-region of states would be the application of a border adjustment so as to ensure appropriate pricing both within the affected area and outside that area.

those units remain in the market for additional revenues, can, through its price suppressive effect, lead to “exporting” the impacts of that state initiative well beyond that state’s borders. As a result, past solutions may not work for this particular form of subsidization. On the other hand, those units can serve as valuable capacity resources to serve the larger region’s reliability needs.

To address these new forms of subsidization PJM put forward at its August 2016 Grid 20/20 Forum a “Capacity Market Repricing” proposal to allow the quantities of those subsidized resources to be recognized as capacity for purposes of meeting the PJM installed reserve margin (so as to avoid the “paying twice” problem) while insulating the overall market clearing price from the impact of those subsidies. PJM’s capacity market repricing proposal is a work in progress intended to address the impacts of individual state actions on the capacity market. I need to be clear---it is by definition a less preferable solution, particularly on a stand-alone basis, than the regional and sub-regional initiative outlined above. But the Capacity Market Repricing proposal is designed to address the subsidizing state “exporting” the adverse impacts of its decision on the entire market.

The Capacity Market Repricing proposal principally is focused on the capacity market. Further work will need to be undertaken to address impacts on energy market prices. In any event, the Capacity Market Repricing proposal and/or alternatives to that proposal are directly the subject of the stakeholder process presently underway in PJM---a process where PJM intends to work with stakeholders to develop market adjustments. In the *Calpine* MOPR Complaint case in Docket No. EL16-49-000, PJM sought a directive from the Commission to bring such a proposal to the Commission by a specified date certain. Although this request has yet to be acted upon by the Commission, PJM still believes such a directive will help move the stakeholder process along, demonstrate the Commission’s seriousness in addressing the issue and provide an important signal to the marketplace of the Commission’s intentions to ensure timely resolution of these issues. As a result, we continue to urge affirmative support from the Commission for these efforts including directives that help to sustain momentum on these issues.

Initiative #3: Energy Market Reforms and Focus on Resilience.

Although not directly related to state actions, I would be remiss if I did not note that PJM is simultaneously looking at various operational and pricing changes to enhance the resilience of the system and improve transparent price formation.

PJM’s Grid Resilience Initiatives: Along these lines, on March 30, 2017 PJM issued a paper entitled “PJM’s Evolving Resource Mix and System Reliability” which noted PJM’s present level of reliability but also underscored the need to focus on system resilience as the system becomes more dependent on natural gas and its underlying pipeline infrastructure. Part of enhancing the system to be more resilient to potential high risk and ‘black sky’ events obviously focuses on enhancing the transmission system through the planning process. But we are *equally* looking at a set of operational reforms where, under certain circumstances, PJM would commit additional reserves or otherwise operate the system more conservatively. This effort has commenced through the Grid 20/20 Forum we just held on April 19.

PJM’s Price Formation Initiatives: Similarly, we are encouraged by the Commission’s price formation initiatives. I have, in a variety of public forums, raised a variety of measures that should be discussed to build on the Commission’s present set of price formation reforms. These discussions would focus on addressing issues such as allowing all units that are needed to serve load to set LMP rather than, in certain cases, being relegated to recovering their costs through uplift.[5] Other initiatives we wish to discuss include the impact of negative pricing and other means to price the value of diversity to address some of the resilience issues I noted above. Although PJM is prepared to raise these issues with stakeholders and state policymakers as well as this Commission, these issues are not limited to the PJM region. As a result, we seek Commission support for addressing these issues on a national level to supplement and support our PJM-specific initiatives.

These actions are all independent of the effort to address state initiatives and will move forward expeditiously. But obviously such actions can also have the impact of more appropriately valuing various resource's contribution to reliable operations while still maintaining the competitive outcomes that are the bedrock of PJM's market design. We intend to continue to work with the Commission and stakeholders on these issues but note that they could have an impact on lessening the perceived need of state policymakers to take initiatives to support particular generating units.

The Overall Role of the RTO.

The Commission's April 13 Notice asks a number of questions on the role of the RTO and its markets given various state policy initiatives. From the earliest days of formation of the power pool, the reserve margin needed to ensure resource adequacy was set at the regional level rather than individual state level in order to harness the ability of the larger region to efficiently utilize resources across a very large footprint so as to achieve the reliability goal at efficient prices. The importance of undertaking that function as a region, and the customer savings that it provides, is as relevant today as it was in the earliest days of PJM, especially given our increased dependency on interstate pipelines and renewable resources distant from load centers. Thus, there is an important continuing role for the RTO in that important task.

Similarly, a number of states in our footprint moved toward restructuring in the 1990's. As part of that effort, states allowed for competition and regional markets to establish resource adequacy in lieu of state-driven Integrated Resource Plans and embraced use of a competitive spot market energy price for voluntary purchases of energy and for overall price transparency. This important role of the RTO markets also has not changed and none of the states that have considered unit-specific subsidies has indicated intent to simply reregulate the electricity industry in its state.[6] As a result, here too, we believe the RTO plays a critical role and will continue to do so in developing ways to accommodate state public policy initiatives.

PJM and its markets, with the support of stakeholders and states have led the way in finding solutions to vexing industry issues over these past ninety years. We know we need to continue to dialogue on these important issues and engage in sometimes difficult but always respectful and well-intentioned explorations of solutions. We are committed to redoubling our efforts on this important task and appreciate this dialogue as one of many we will continue to have on these important issues. I look forward to your questions and comments.

[5] We note that the Commission's recent Fast-Start Resource Notice of Proposed Rulemaking in Docket No. RM17-3-000 begins to address these issues by allowing Fast-Start Resources potentially to set price through LMP. We believe it is prudent to begin to address this issue on a larger scale rather than simply limiting the class of units eligible to set price to Fast-Start Resources.

[6] In fact, given that many of the restructured states in PJM's footprint are net importers from the rest of the PJM region, the ability of a single state to control its destiny through reregulation itself raises many practical questions.

PJM Interconnection uses a system called locational marginal pricing to establish the price of energy purchases and sales in the PJM wholesale electricity market. LMP takes into account the effect of actual operating conditions on the transmission system in determining the price of electricity at different locations in the PJM region.

Locational marginal pricing reflects the value of the energy at the specific location and time it is delivered.

- When the lowest-priced electricity can reach all locations, prices are the same across the entire PJM grid.
- When there is congestion – heavy use of the transmission system – the lowest-priced energy cannot flow freely to some locations. In that case, more expensive electricity is ordered to meet that demand. As a result, the locational marginal prices are higher in those locations.

Congestion generally raises the LMP in the receiving area of the congestion and lowers the LMP in the sending area. Operating conditions that limit the delivery capacity of specific transmission lines also can contribute to congestion and result in LMP changes.

Locational marginal prices are calculated by PJM's computer systems and posted on www.pjm.com every five minutes. This enables market participants to factor the information into their decision-making. (The current system demand, forecast demand and zonal LMPs are shown on the PJM home page; additional price information is available by choosing "Operational Data" or "Data Viewer Guest" from the PJM Data Shortcuts on the home page.)

The calculations used to determine LMPs take into account electricity demand, generation costs and the use of and limits on the transmission system. The price tells PJM market participants the cost to serve the next megawatt of load at a specific location. The calculations factor in all the available generating sources to come up with the mix that creates the lowest production cost, while observing all limits on the transmission system.

The use of actual operating conditions and energy flows in determining LMPs encourages the efficient use of the electric grid and enhances reliability. LMPs give price signals that encourage new generation sources to locate in areas where they will receive higher prices. It signals large new users to locate where they can buy lower-cost power. It also encourages the construction of new transmission facilities in areas where congestion is common, in order to reduce the financial impact of congestion on electricity prices.

Locational marginal prices reinforce the reliability of the electric grid. They provide price signals that make market participants partners with PJM in maintaining reliability. With the information about grid conditions provided by LMPs, market participants can see when and where the system is stressed. Prices also tell market participants when congestion or supply shortages are taking place and allow them to react quickly to the situation.

Feb. 23, 2017

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Electricity Market Update

May 2017

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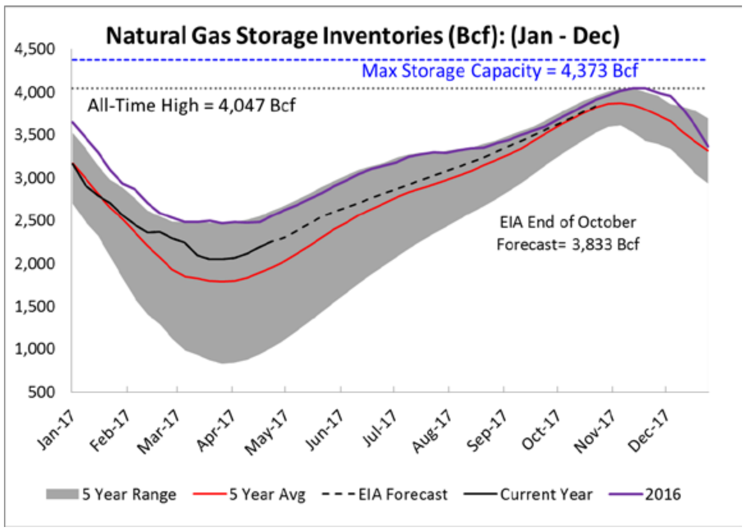
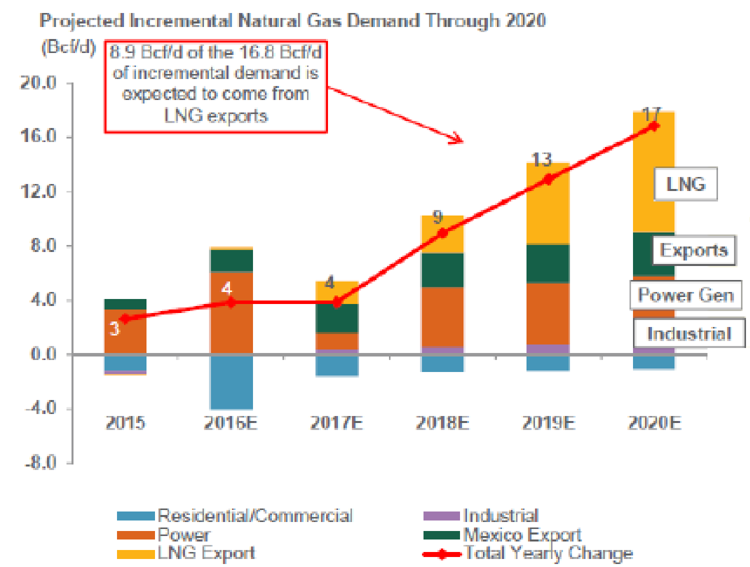
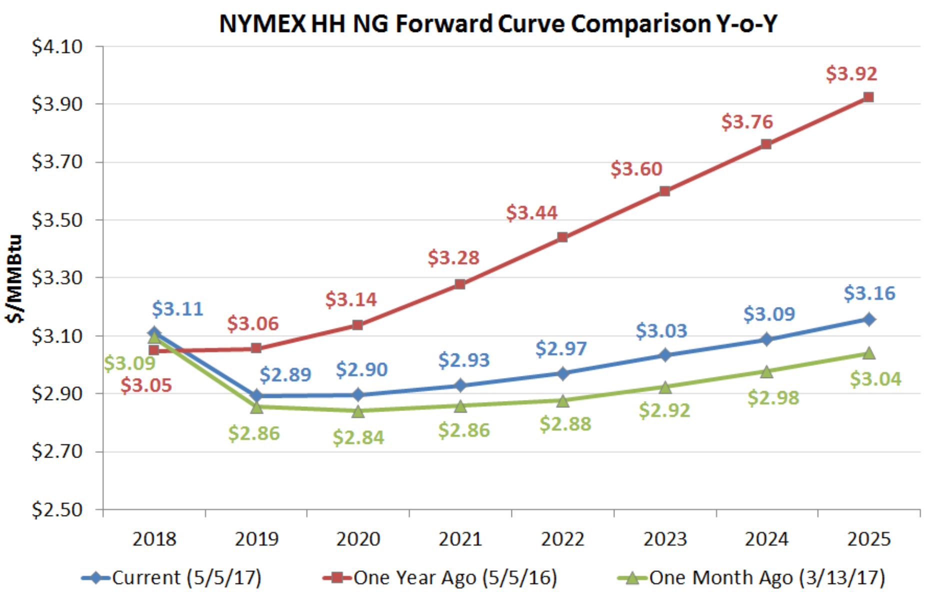
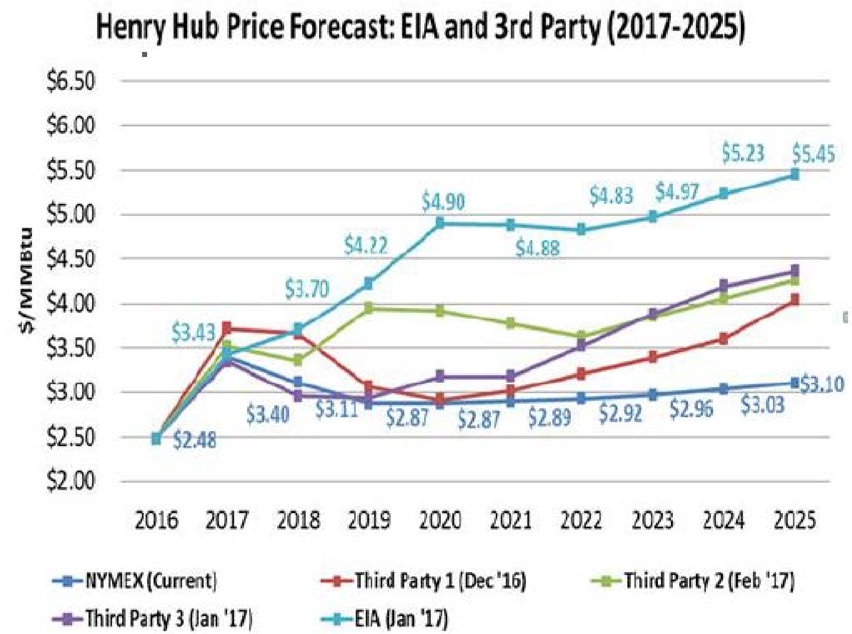
Storage and Demand



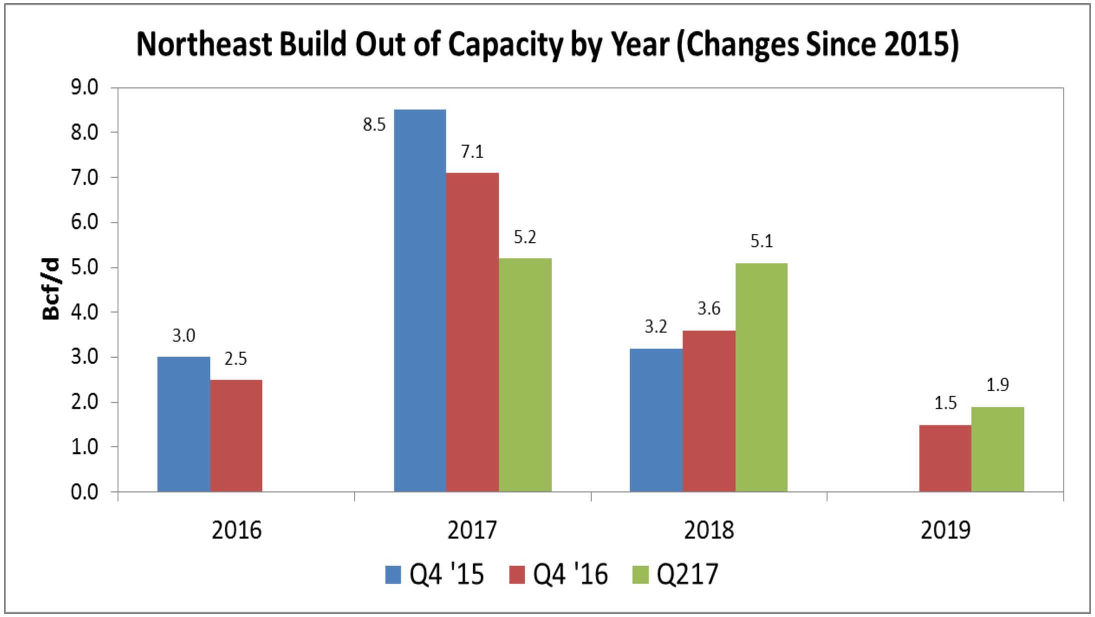


Forward Prices & Forecasts





New Pipeline Projects



2017 Pipeline Projects	Project	In-Service Date	Year	Flow Direction	Volume (MMcf/d)
Texas Gas	Northern Supply Access	4/1/2017	2017	OH -> LA	384
Transco	Dalton Expansion	5/1/2017	2017	NJ -> GA	448
TETCO	Adair Southwest	9/1/2017	2017	OH -> KY	200
TETCO	Access South	9/1/2017	2017	OH -> MS	320
TETCO	Lebanon Extension	9/1/2017	2017	PA, OH -> IN	102
Energy Transfer Partners	Rover	10/1/2017	2017	OH -> MI, CAN	3,250
Columbia Gas Transmission	Rayne Xpress	11/1/2017	2017	KY -> LA	621

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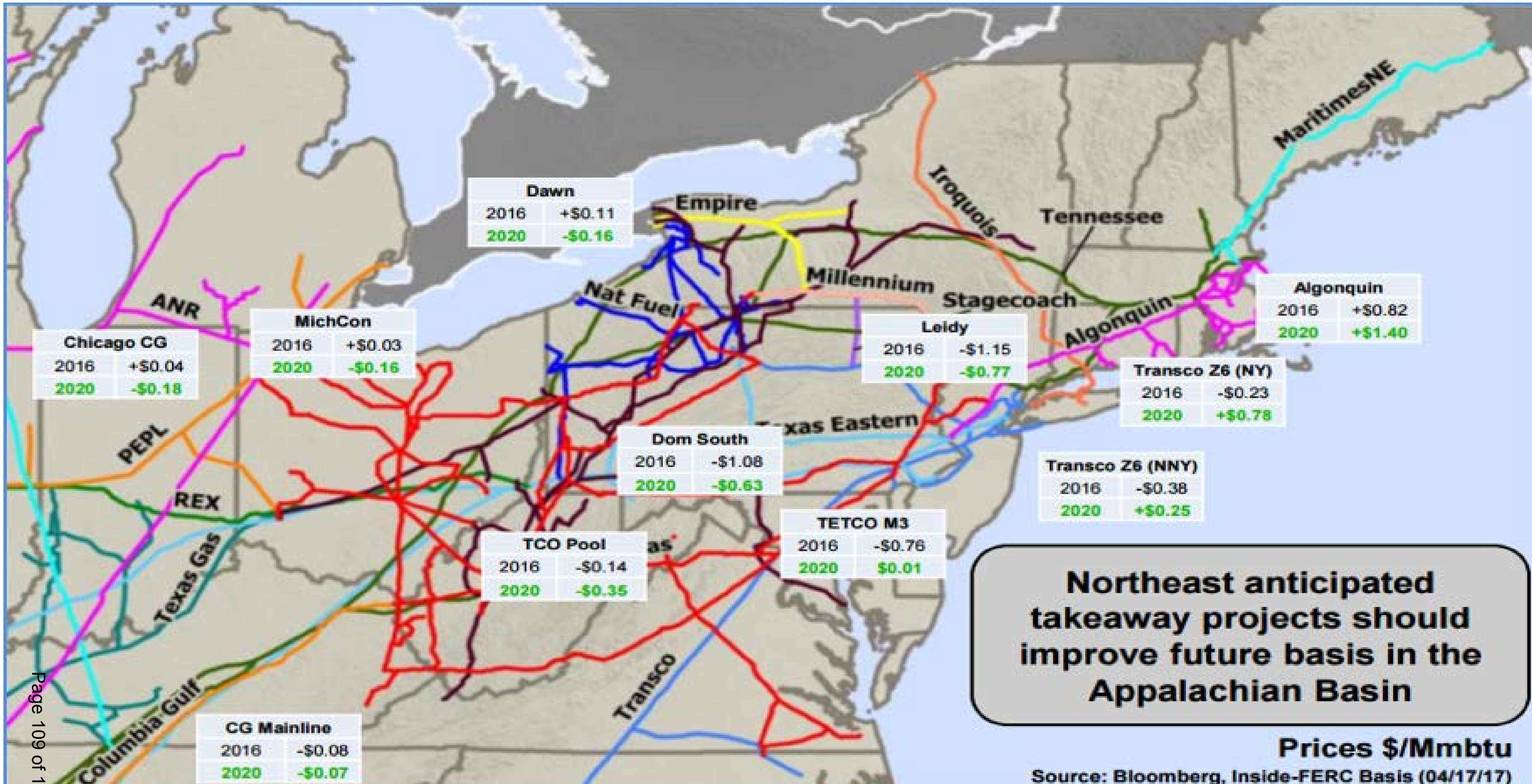
Natural Gas Market



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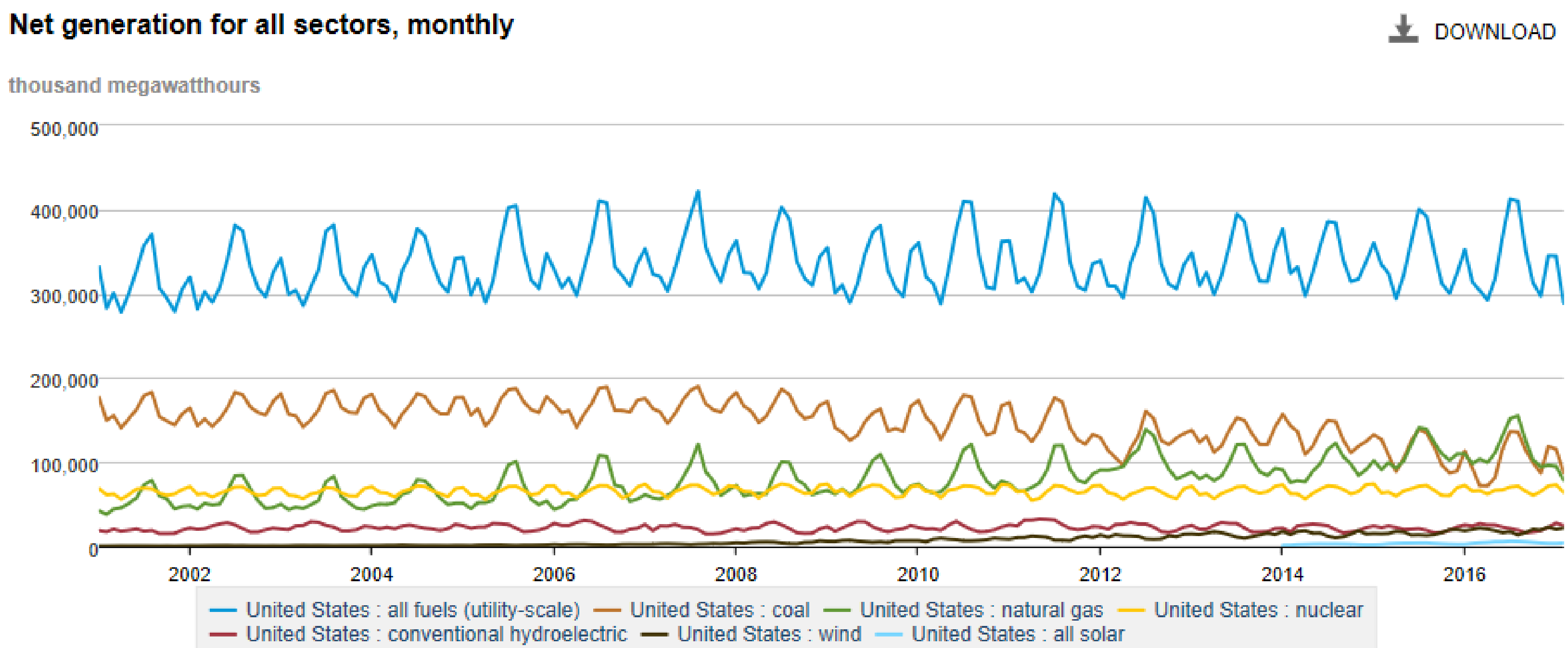
Electric Market



Source: U.S. Energy Information Administration

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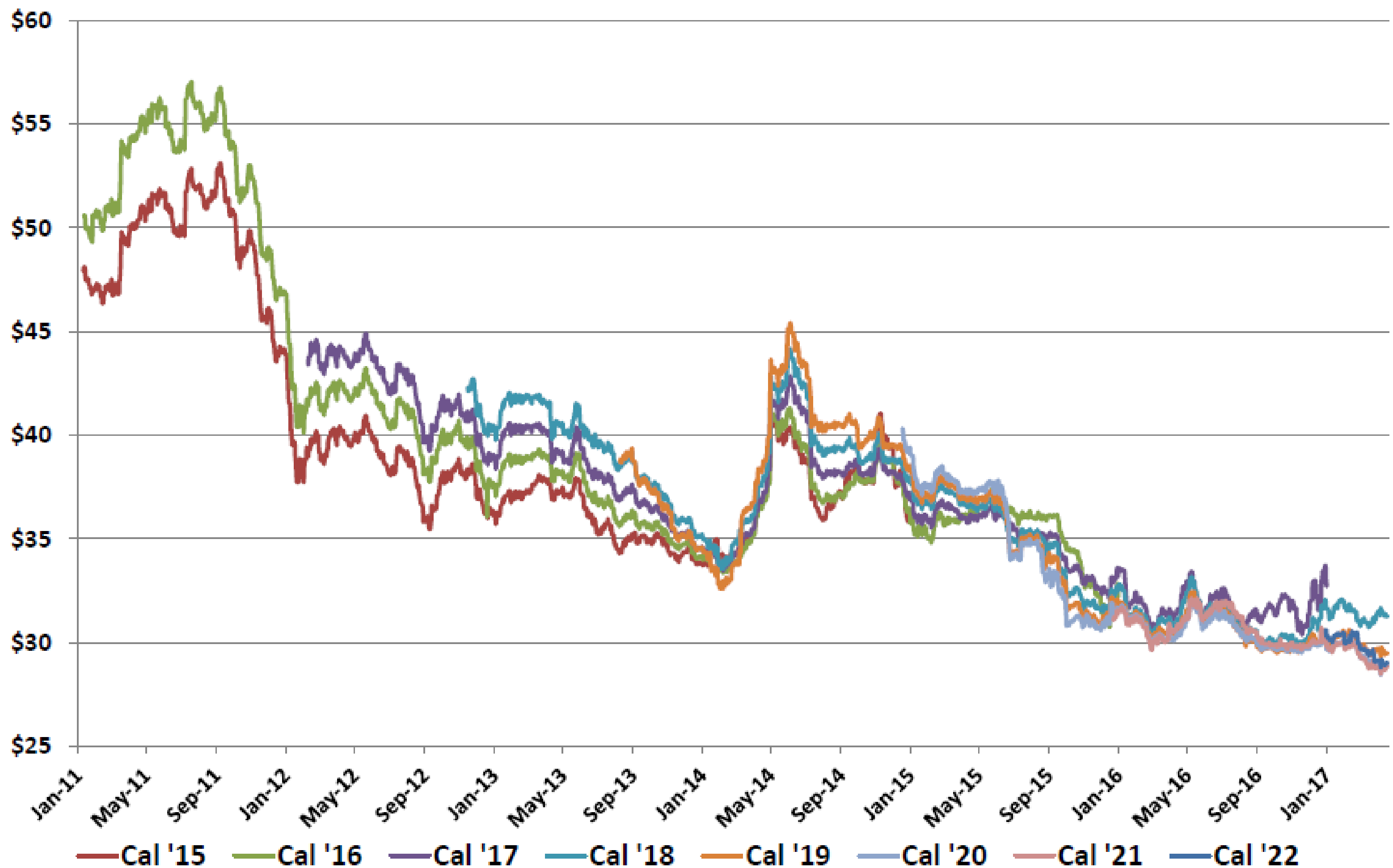
Electric Market



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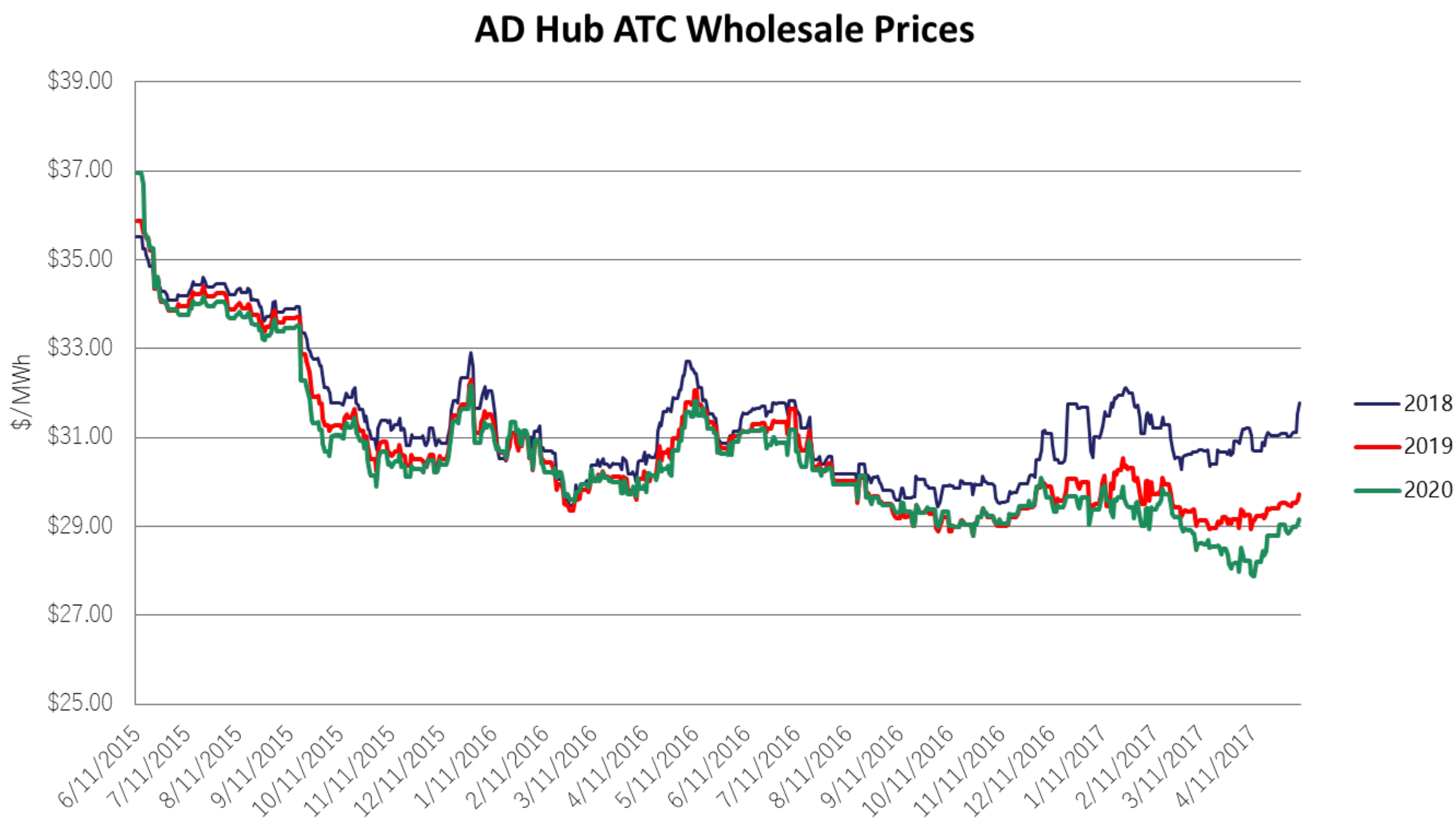
Electric Market



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Natural Gas Update
OMA Energy Committee

Richard Ricks
NiSource
May 18, 2017

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Agenda

- Weather & Outlook
- Gas Storage & Pricing
- Gas Demand, Production & Rig Counts
- Recent Developments

Weather & Outlook

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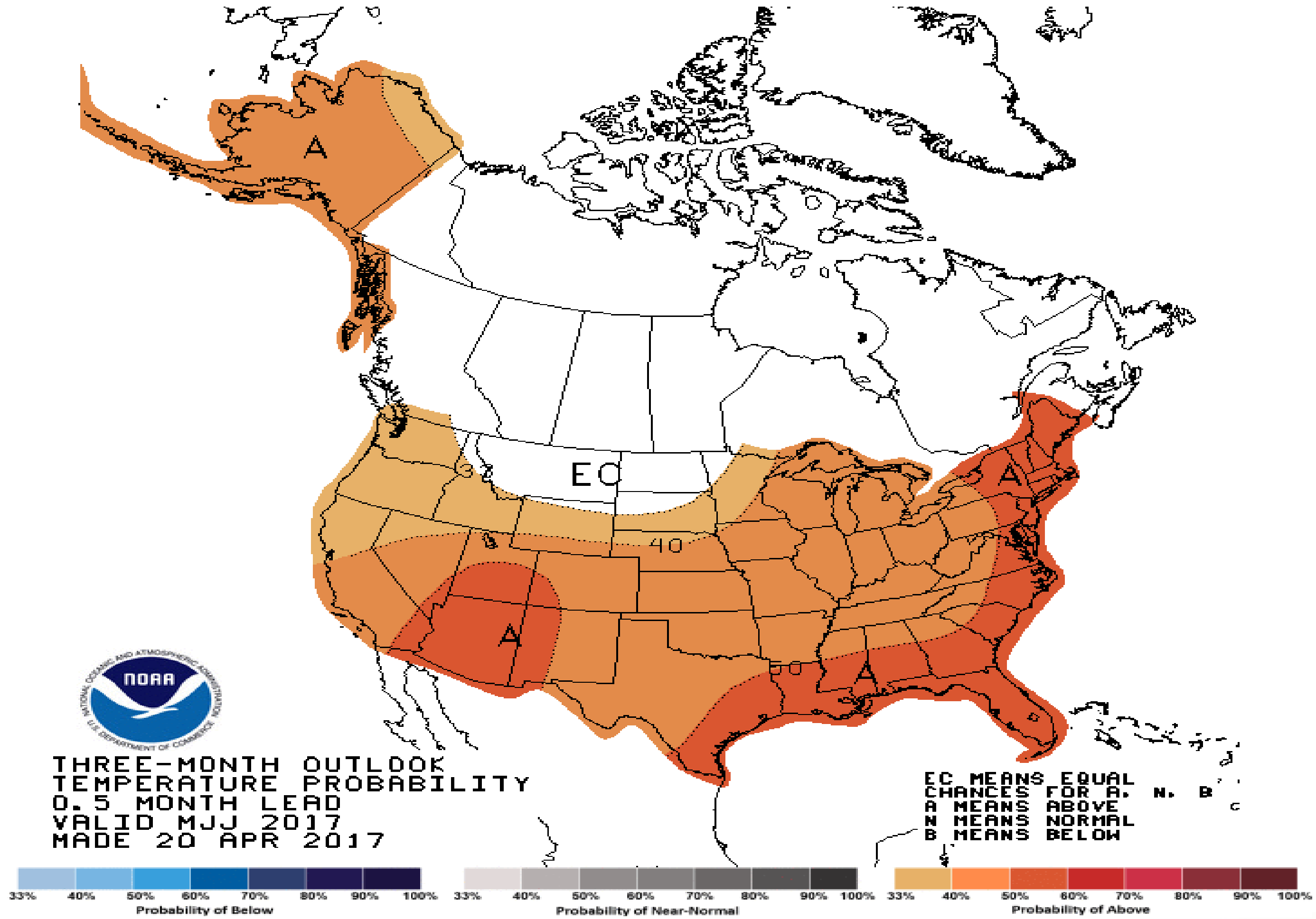
3 Month Temperature Outlook – Warm



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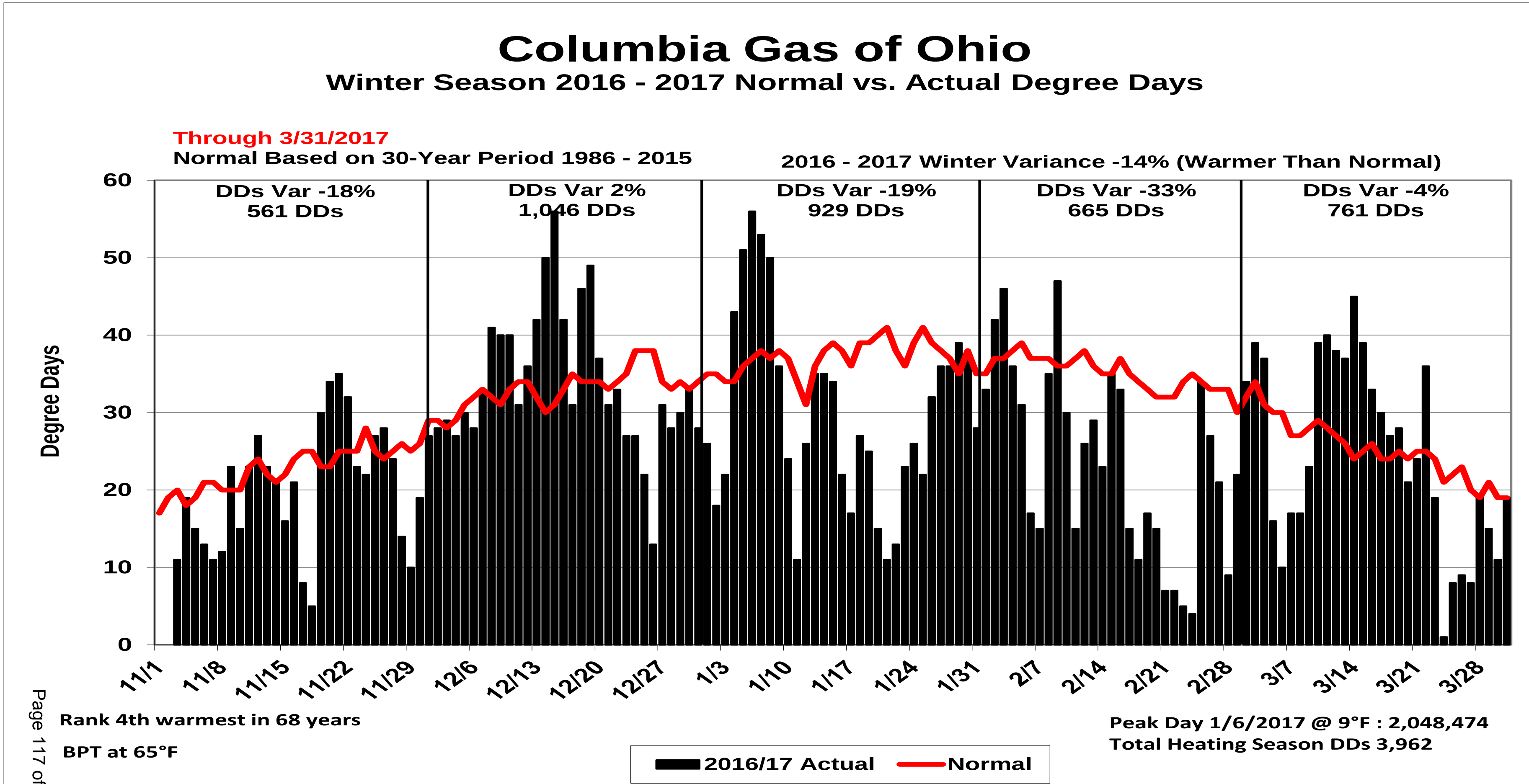
Ohio Degree Days – 16/17 Winter – Warm



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Storage & Gas Pricing

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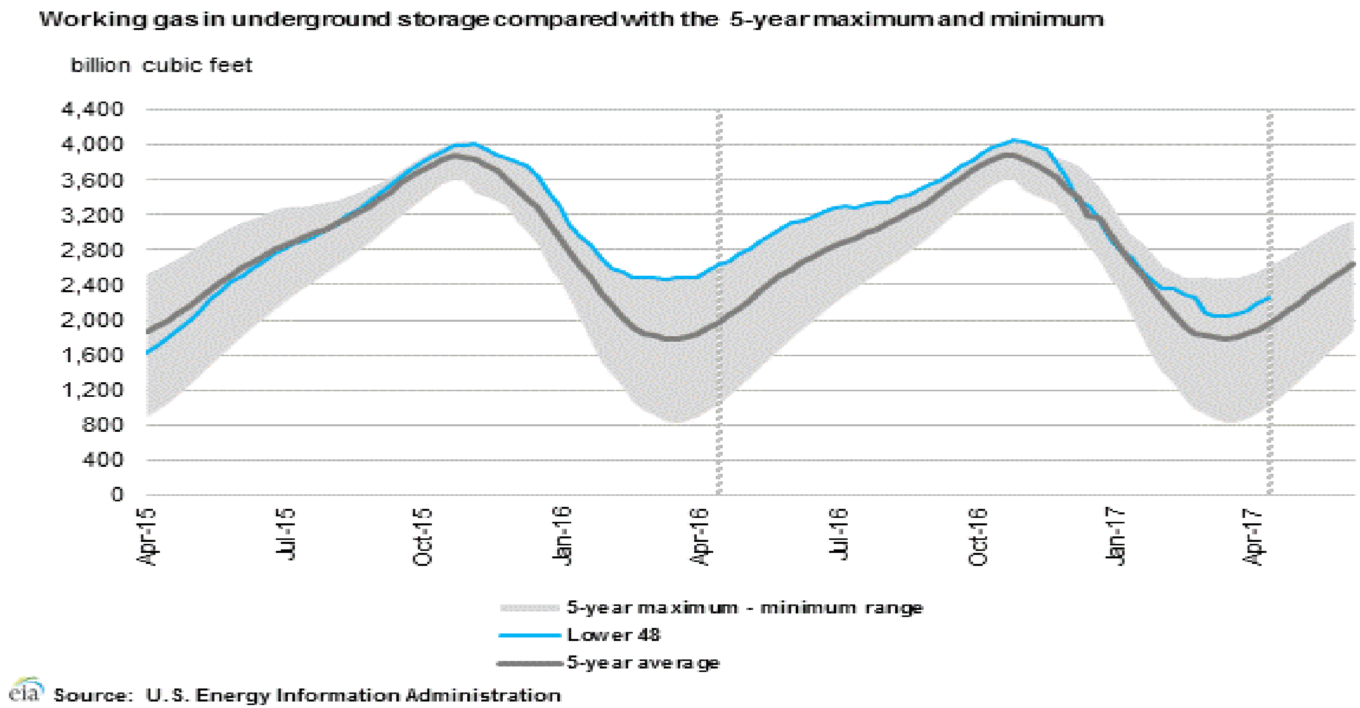
Storage – Slightly Above "5 Yr Average" Position

Working gas in storage was 2,256 BCF as of Friday, April 28, 2017, according to EIA estimates. This represents a net increase of 67 BCF from the previous week. Stocks were 359 BCF less than last year at this time and 303 BCF above the five-year average of 1,953 BCF. At 2,256 BCF, total working gas is within the five-year historical range.



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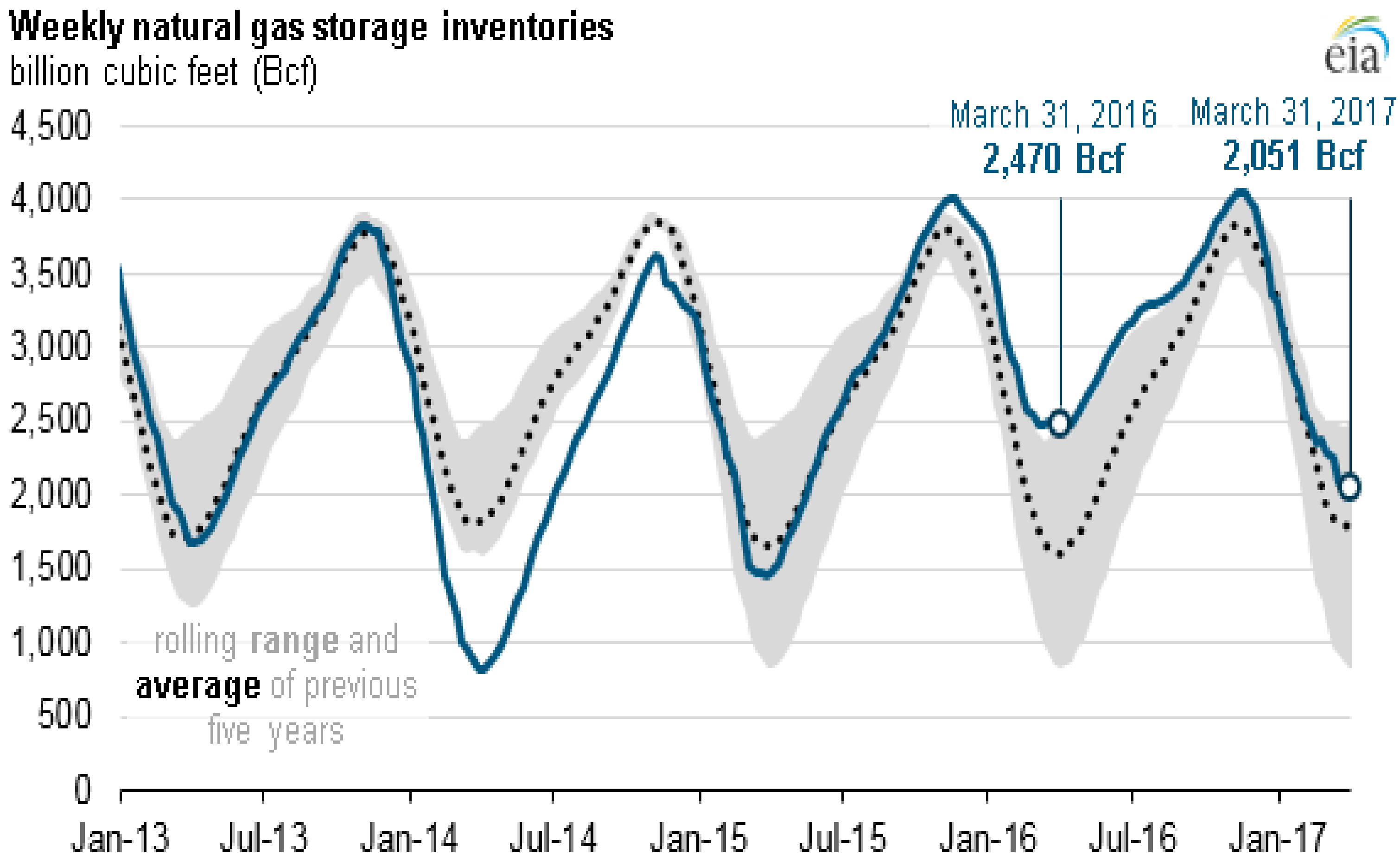
The last few year's Storage position



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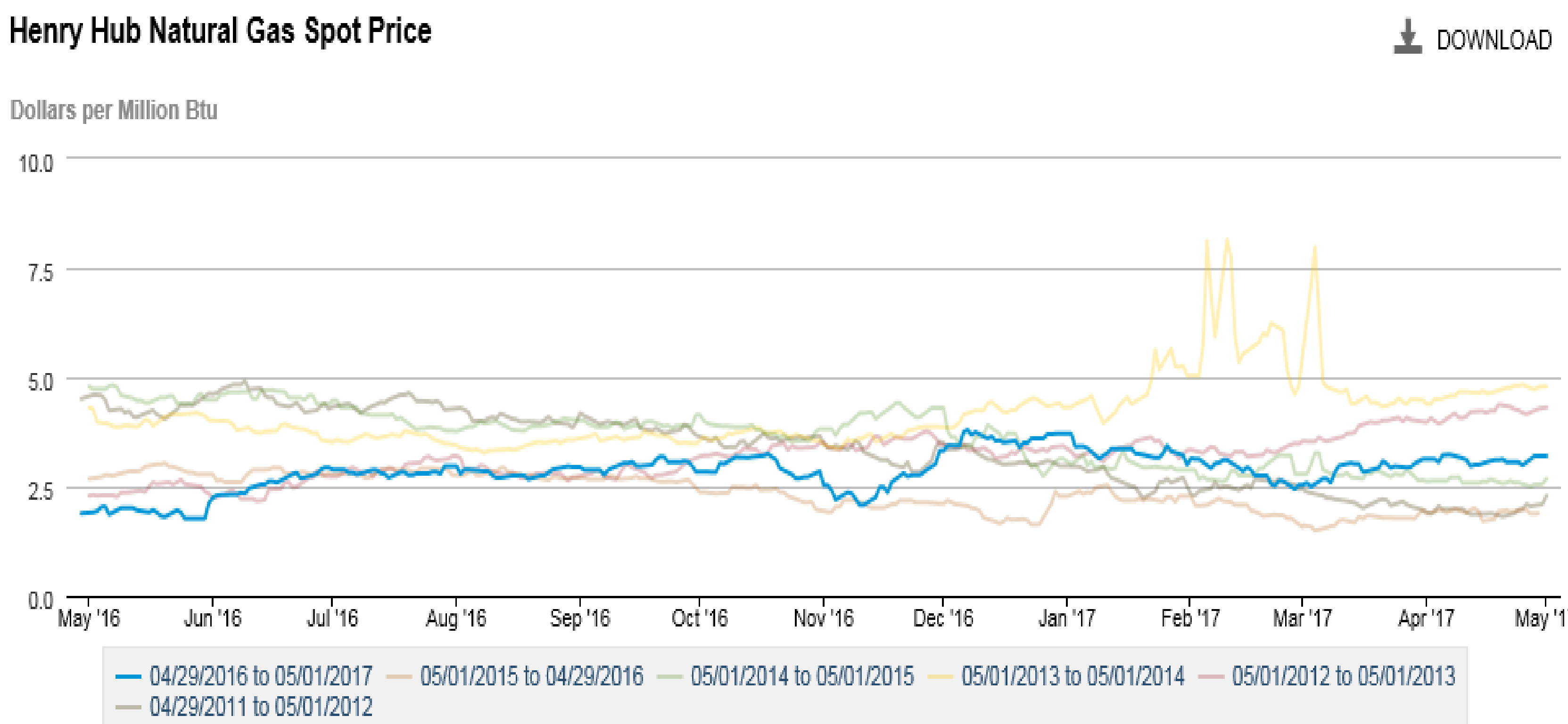
NYMEX Prompt Month Settlement – 5 Years



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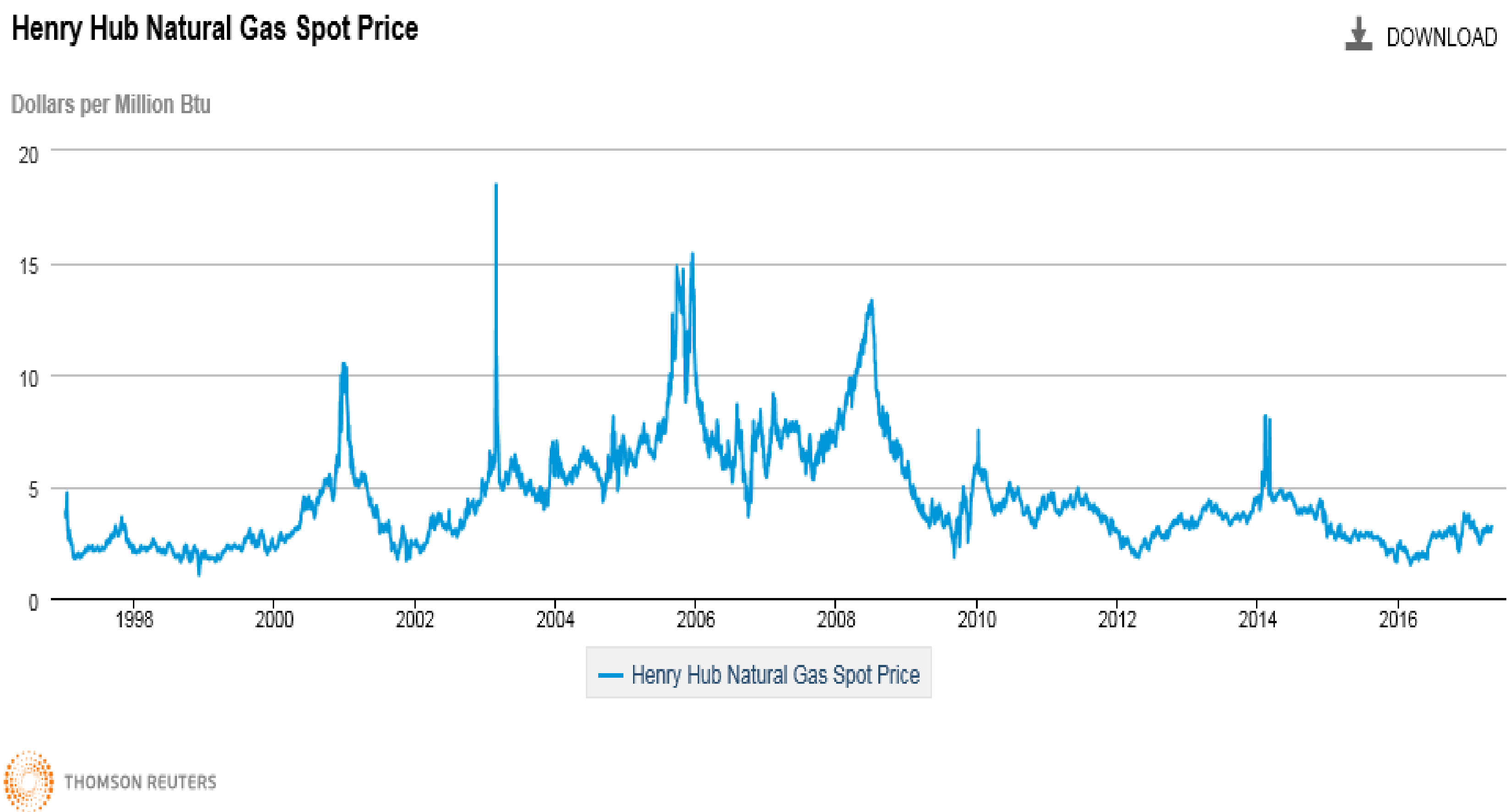
NYMEX Prompt Month Settlement History



NYMEX Term Pricing – May 11, 2017

TERM	PRICE 2-3-17	PRICE 5-11-17
3 month	$3.11	$3.36 (+$0.25)
6 month	$3.18	$3.39 (+$0.21)
12 month	$3.28	$3.38 (+$0.10)
18 month	$3.18	$3.23 (+$0.05)

Select Hub Pricing – Higher
May 11, 2016

HUB LOCATION	11-11-16	5-11-17	
Henry Hub	$3.00	$3.11	(+$0.11)
TCO Pool	$2.85	$3.01	(+$0.16)
Houston Ship Channel	$2.92	$3.20	(+$0.28)
Dominion South Point	$2.69	$2.88	(+$0.19)
TETCO M-3	$2.86	$2.94	(+$0.08)
TGP Zone 4	$2.54	$2.74	(+$0.20)

Dominion, TCO, TETCO, & TGP pricing is Marcellus Area Appalachian trading discount to Henry Hub; yet firming up

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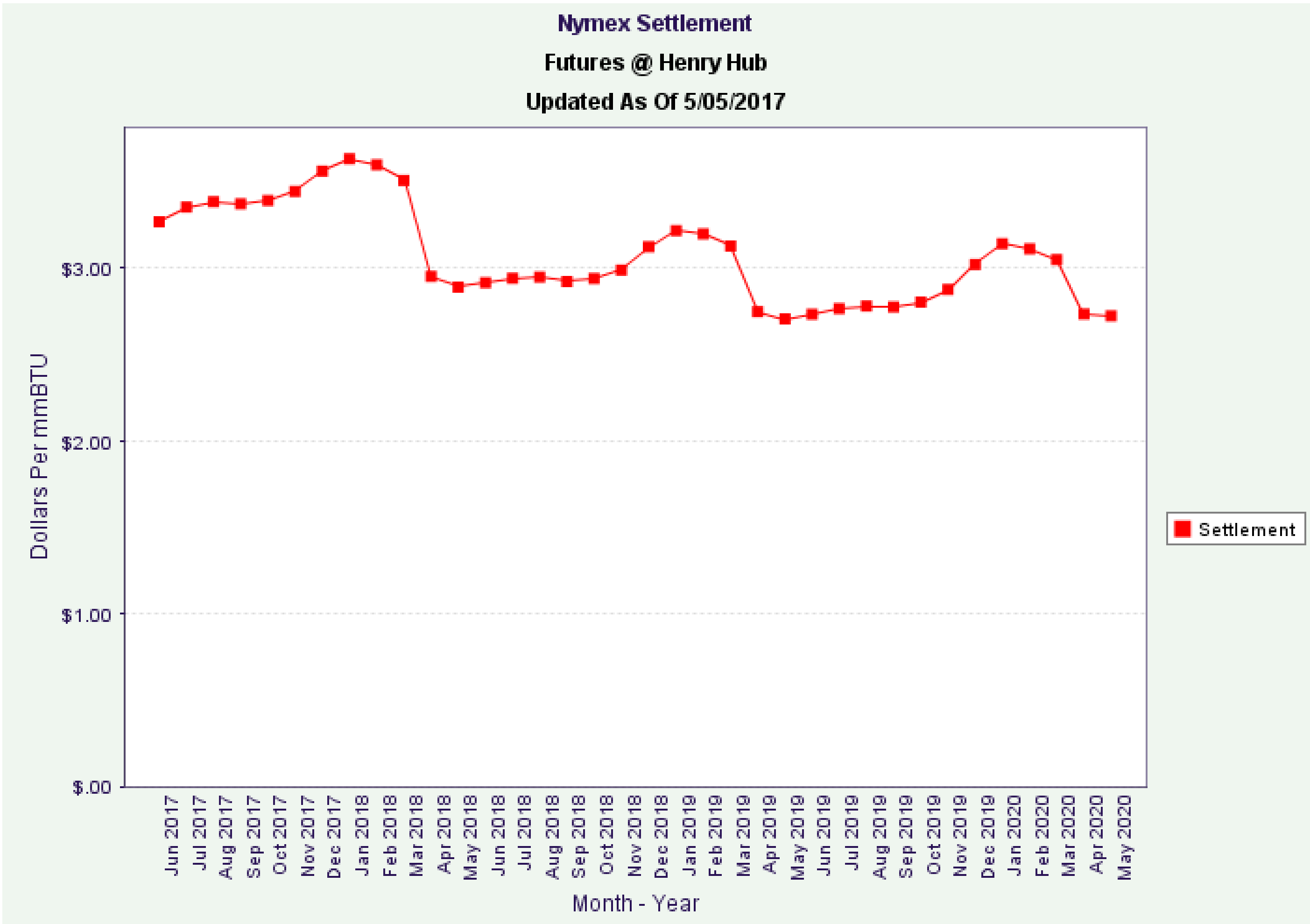
NYMEX Futures Settlement – 5-5-17



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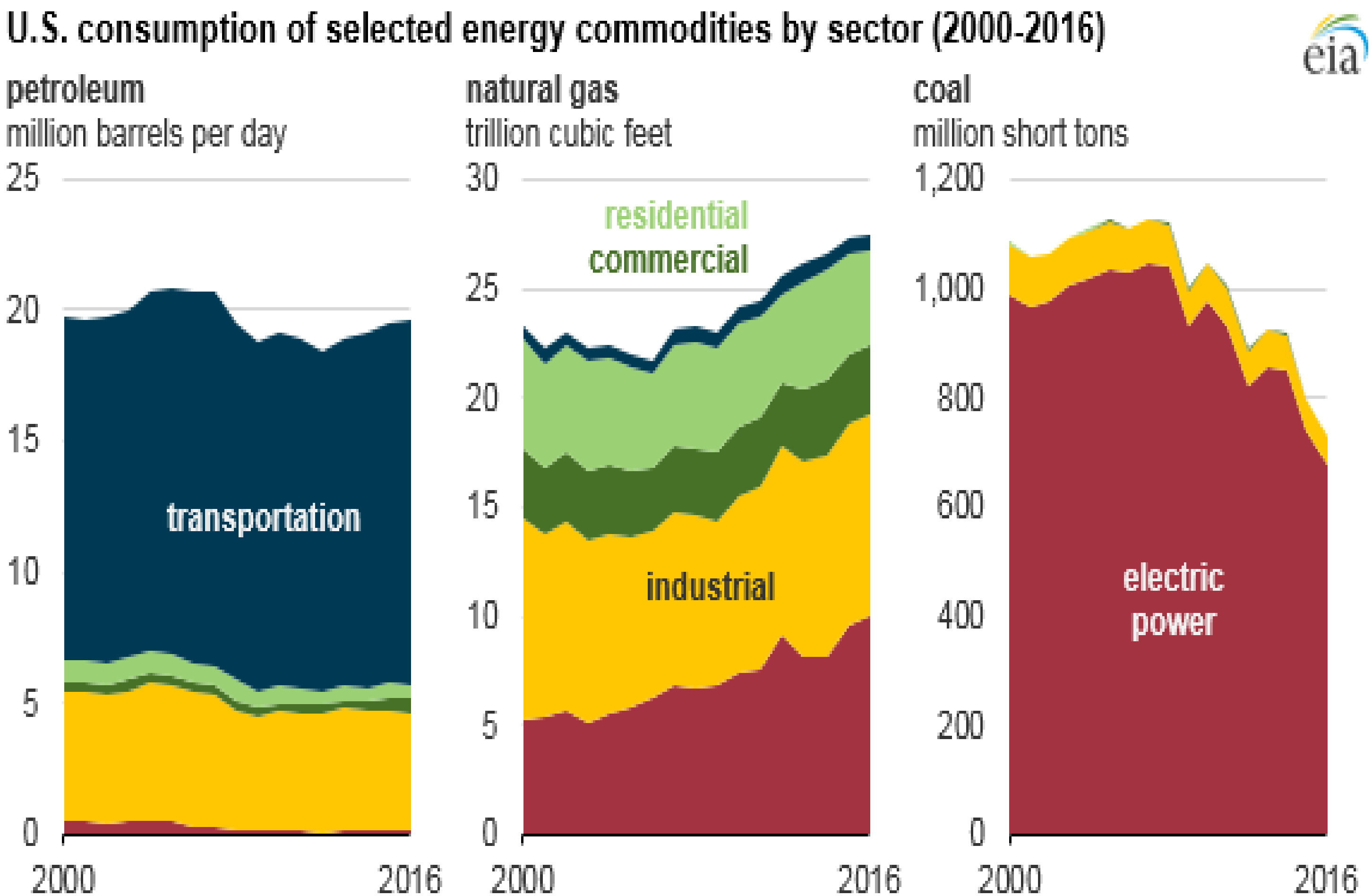
Demand, Production & Rig Count

Gas Demand continues to Increase; Coal Down



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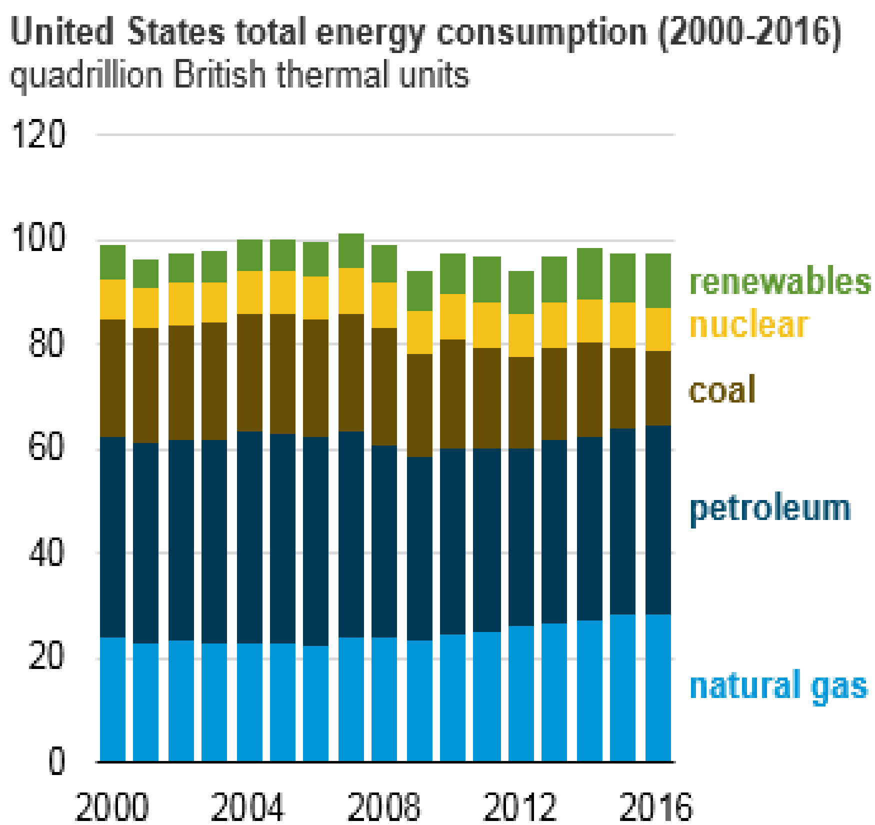
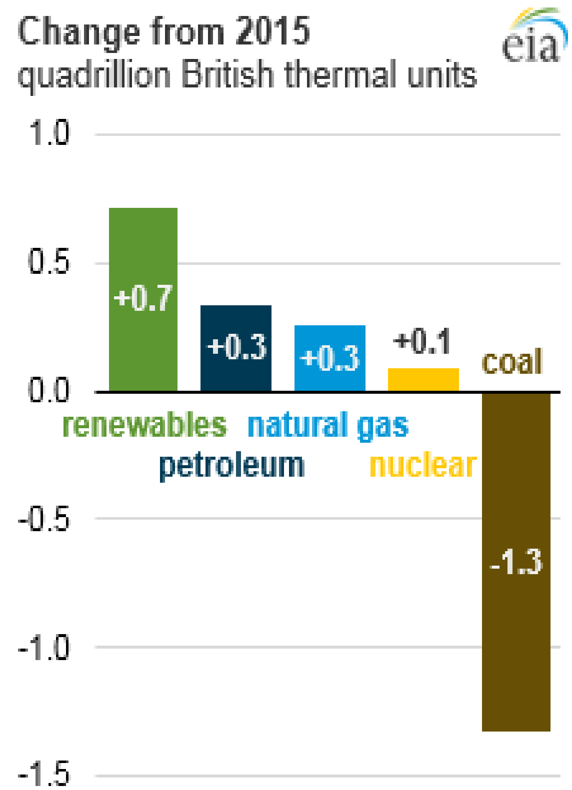
Total US Energy Consumption Relatively Flat





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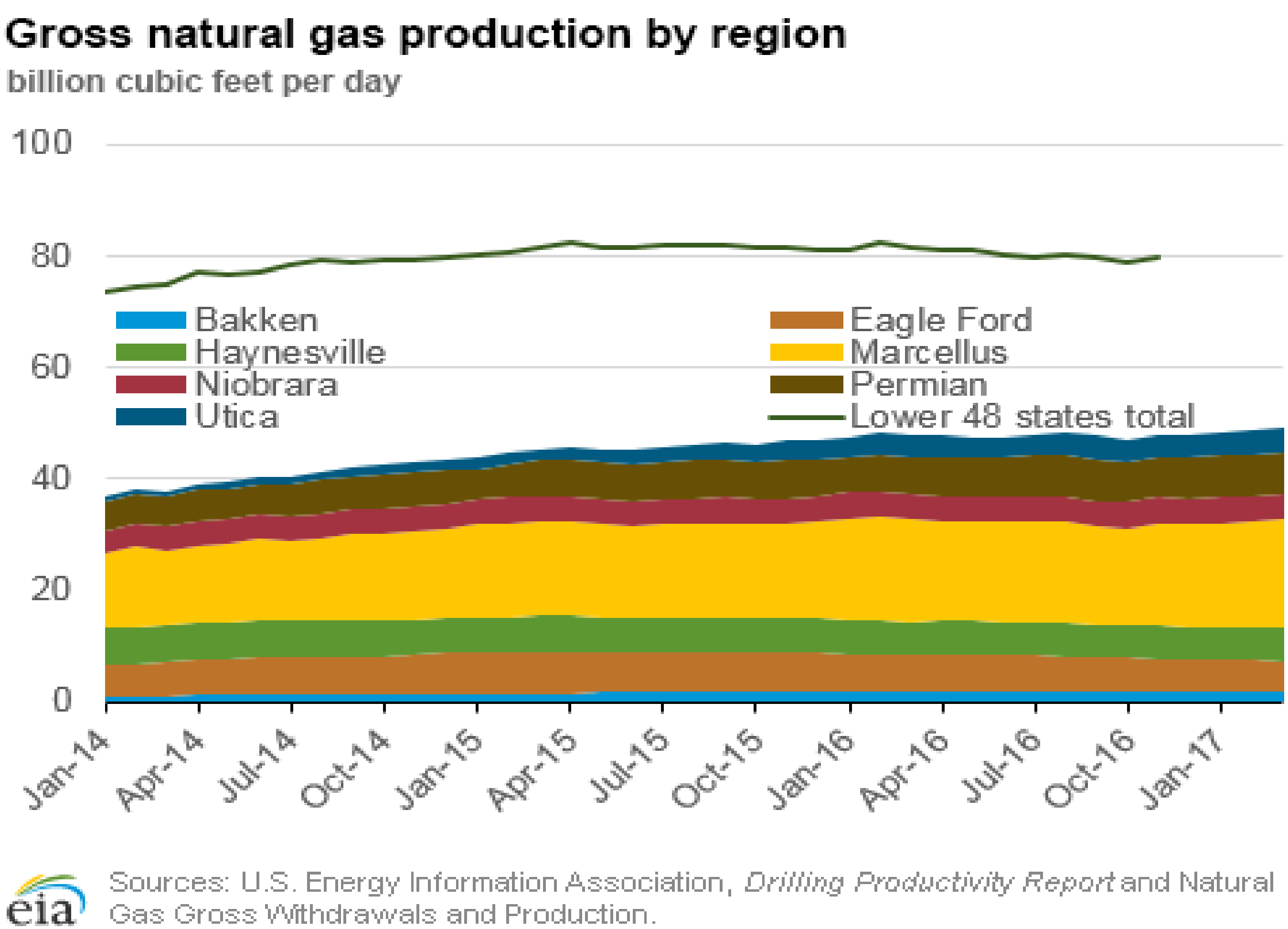
Domestic Production Slightly Leveling Off



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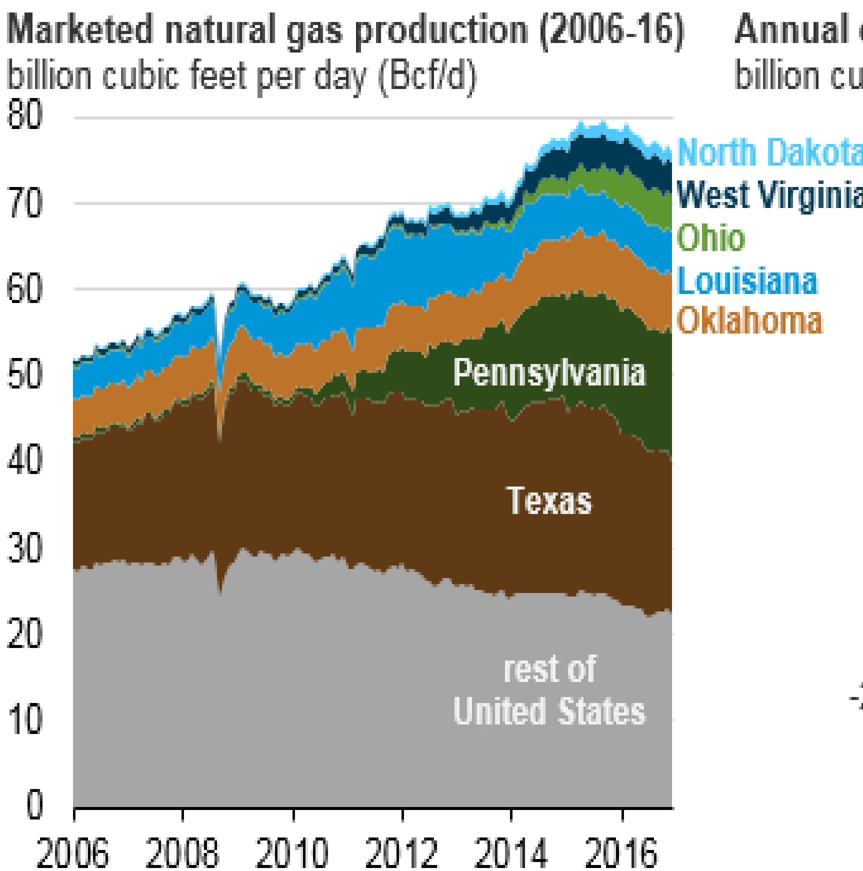
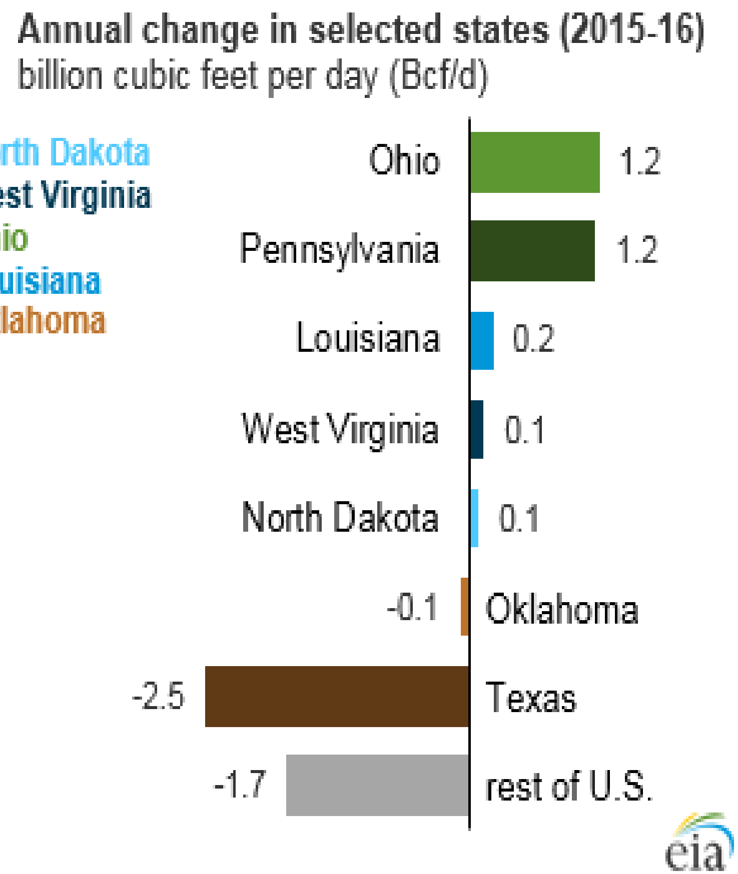
OH & PA Shale Gas Production Increasing





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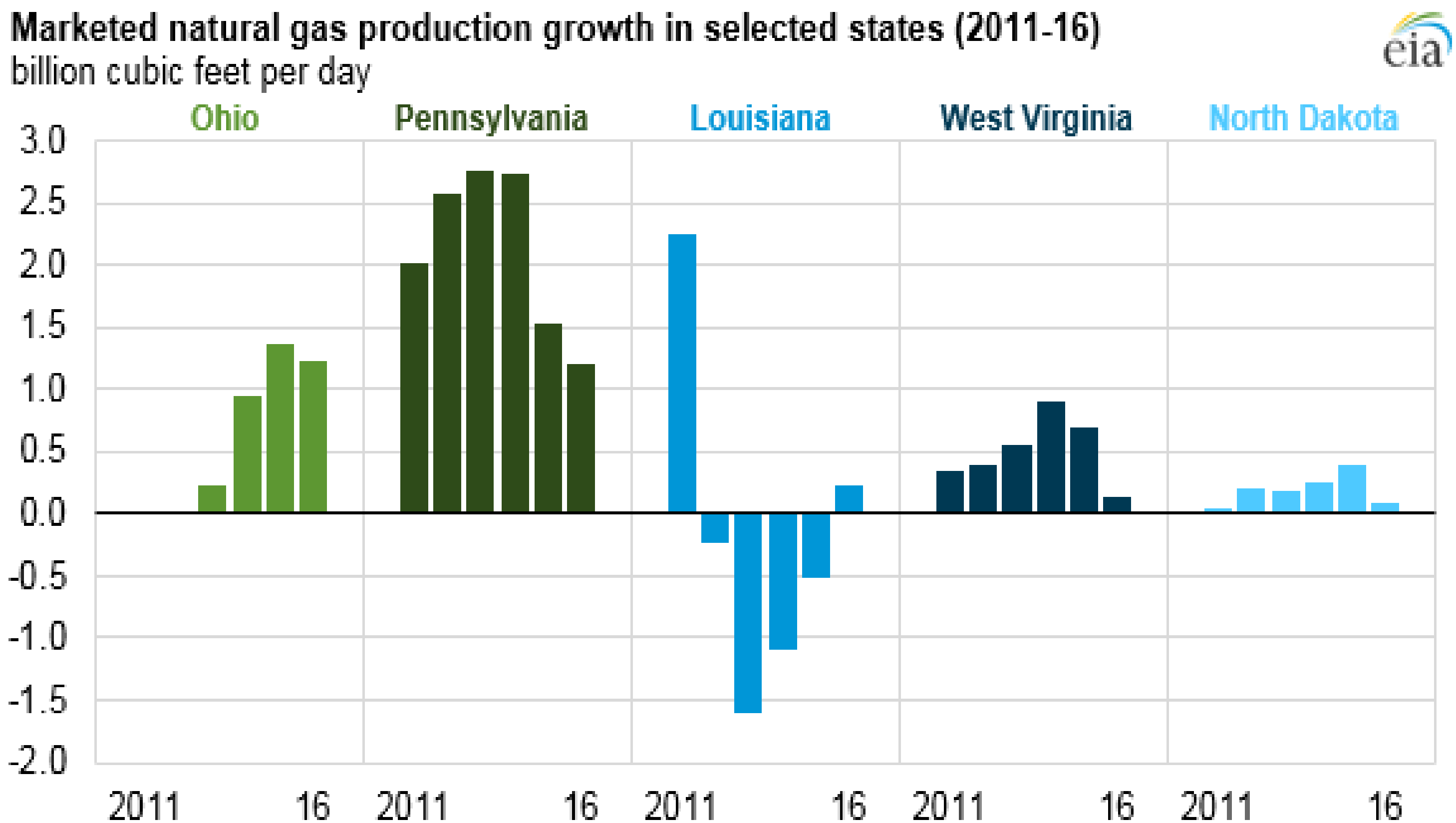
OH & PA Shale Gas Production Increasing



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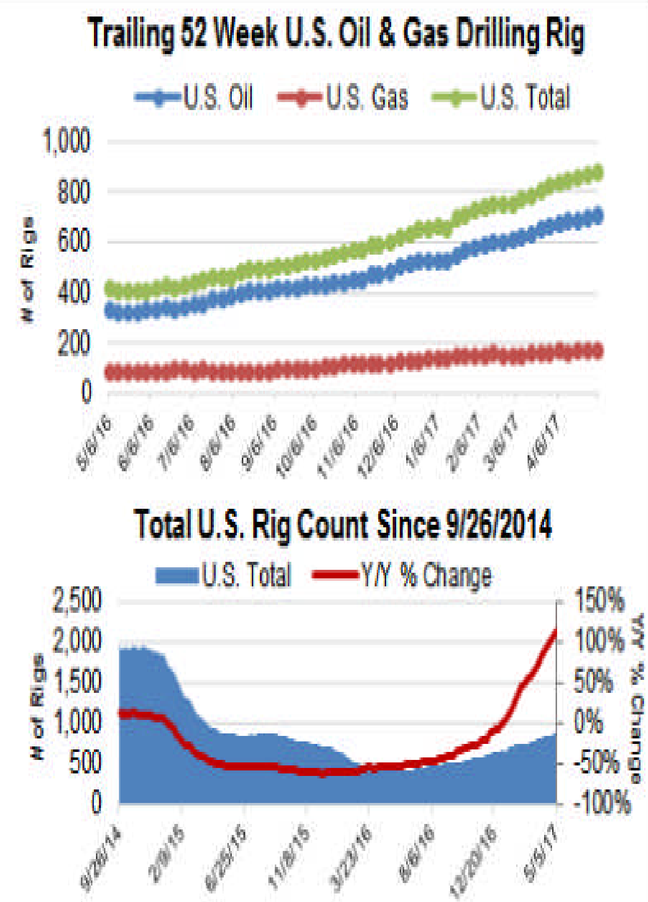
Rig Count – Recent Increases – 5-5-17

Weekly U.S. Oil & Gas Drilling Rig Summary As Of 5/5/2017

Rig Type	5/5/17	4/28/17	% Change Last Week	5/6/16	% Change Last Year
Oil	703	697	1%	328	114%
Gas	173	171	1%	86	101%
Disposal/Other	1	2	-50%	1	0%
Land	853	849	0%	388	120%
Inland/Barges	5	4	25%	3	67%
Offshore	19	17	12%	24	-21%
Horizontal	734	730	1%	318	131%
Vertical	76	77	-1%	53	43%
Directional	67	63	6%	44	52%
TOTAL U.S. DRILLING RIGS	877	870	1%	415	111%



Source: Baker Hughes, NGI's Daily GPI calculations

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Recent Developments

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Gas & Oil Infrastructure Project Updates

- Rover project (3.3 BCF/Day) under construction, however has had some recent issues with associated EPA fines and delays
- TransCanda's Leach & Rayne Express projects also under construction
- Trump nominates two FERC Commissioners; May have a FERC quorum in about two months

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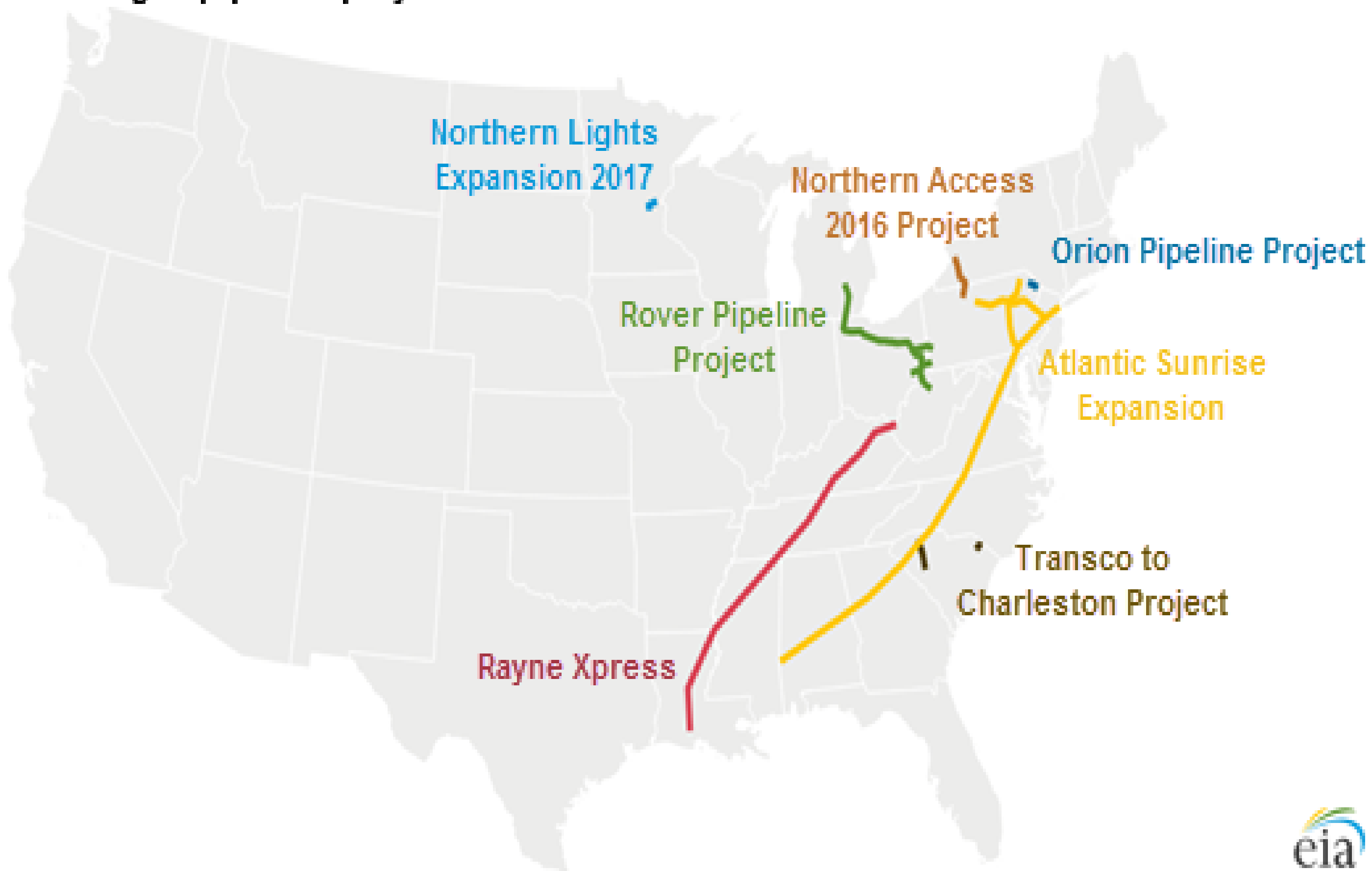
Gas & Oil Infrastructure Project Updates

Natural gas pipeline projects certificated in 2017



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Thank You