



Energy Committee

May 21, 2015

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**2015 Energy Committee
Calendar**
Meetings will begin at 10:00am

Thursday, August 27, 2015
Thursday, November 19, 2015

OMA Energy Committee Meeting Sponsor:



**OMA Energy Committee Agenda
May 21, 2015**

Welcome and Introductions	Brad Belden, Belden Brick, Chair
Special Presentation	Honorable Tim Schaffer (R-Lancaster), Chair Ohio House Public Utilities Committee
Member Spotlight	John Rosenburg & Mike Kaser Whirlpool Corporation
Customer-Sited Resources Report	John Seryak, PE, RunnerStone, LLC
<ul style="list-style-type: none"> • Energy Efficiency Program Updates • EE Peer Network Activity • Demand Response & CHP • PJM Auctions & Activity 	
State Public Policy Report	Ryan Augsburger, OMA Staff
Natural Gas Utilization	Brad Couch, Ariel Corporation
Counsel's Report	Kim Bojko, Carpenter Lipps & Leland Rebecca Hussey, Carpenter Lipps & Leland
<ul style="list-style-type: none"> • Utility power purchase agreements (PPAs) 	
Presentations	
<ul style="list-style-type: none"> • Nexus Pipeline Project Update • Electricity Market Trends and <i>Electric Load Analysis Report</i> • Natural Gas Market Trends 	<p>Bruce Tague, Hicks Partners for Spectra</p> <p>Susanne Buckley, Scioto Energy</p> <p>Richard Ricks, NiSource, Columbia Gas of Ohio</p>
Lunch	

Meeting sponsored by:





Rep. Tim Schaffer To Chair House Public Utilities Committee

January 13, 2015

COLUMBUS -

Speaker of the Ohio House of Representatives Clifford A. Rosenberger (R-Clarksville) appointed Rep. Tim Schaffer (R-Lancaster) to serve as Chairman of the House Public Utilities Committee.

“I am humbled that Speaker Rosenberger has approached me to serve in this capacity,” Schaffer said. “This is an exciting new opportunity to serve my constituents by working on public utilities issues, which is a subject area that greatly impacts all Ohioans. I look forward to working with Vice-Chair Kristina Daley Roegner, Ranking Member Mike Ashford, and the rest of our committee to craft strong public utility policy in order to make Ohio a better place to live, build a business, and raise a family.”

Schaffer was sworn in to the Ohio House last week, after serving in the Ohio Senate for eight years, where he most recently served as the Chairman of the Senate Committee on Ways and Means. He previously served in the Ohio House from 2001 to 2006.

Schaffer represents the 77th District in Fairfield County, including Pickerington, Lancaster, Baltimore, Millersport, Pleasantville, Thurston, Rushville and West Rushville.

OHIO HOUSE OF REPRESENTATIVES

PUBLIC UTILITIES COMMITTEE

MEMBERS

 <p>Tim Schaffer (R) Chair</p>	 <p>Kristina Roegner (R) Vice Chair</p>	 <p>Mike Ashford (D) Ranking Member</p>
 <p>Ron Amstutz (R)</p>	 <p>Thomas E. Brinkman, Jr. (R)</p>	 <p>Jim Buchy (R)</p>
 <p>Kathleen Clyde (D)</p>	 <p>Margaret Conditt (R)</p>	 <p>Robert R. Cupp (R)</p>
 <p>Mike Dovilla (R)</p>	 <p>Timothy E. Ginter (R)</p>	 <p>Christina Hagan (R)</p>



David Hall (R)



Brian Hill (R)



Nathan H. Manning
(R)



Sean O'Brien (D)



John M. Rogers (D)



Mark J. Romanchuk
(R)



Scott Ryan (R)



Michael Sheehy (D)



Stephen Slesnick (D)



Kent Smith (D)



WHIRLPOOL/ONE ENERGY WIND PARTNERSHIP



***Mike Kaser -- Director of Engineering and
Technology
John Rosenberg -- Senior Manager of Construction
and Sustainability
May 21, 2015***

WHIRLPOOL -- 100 YEARS OF EXCELLENCE

- **#1 Appliance Manufacturer In The World**
 - **Laundry**
 - **Refrigeration**
 - **Dishwashers**
 - **Small Appliances**

- **\$20 Billion Sales Annually**

- **100,000 Employees Worldwide**

- **Sales in 170 Countries**
 - **Key Trade Partners Include Home Depot, Lowes, and Sears**

- **Key Competition Include GE, LG, Samsung and Bosch**

- **70 Manufacturing And Research Facilities Around The World**



Findlay	Dishwashers
Clyde	Washers
Marion	Dryers
Greenville	Small Appliances
Ottawa	Freezers & Compactors



Additional US Based Manufacturing in Iowa, Tennessee, and Oklahoma

Nearly 10,000 Whirlpool employees are in Ohio.



Whirlpool Findlay Is The Largest Dishwasher Manufacturer In The World!




**The BEST in the WORLD
from our family to
yours...Always**

★★★★ FINDLAY OPERATIONS ★★★★★



**Critical Business Need:
The Undisputed Choice - Remain The #1 Dishwasher
Manufacturer**

Employees

- Average 2,300

Square Feet

- Manufacturing 1,029,000 sq. ft.
- Distribution Center 550,000 sq. ft.

Operational Facts

- 3 Platforms (TTSS, PLTT, Portable)
- 13,000 Units Per Day
- 250 SKU's
- 5 Assembly Lines
- Support Operations (Stamping, Molding, Dishrack)
- Strong Lean Focus

Years of Seniority

- Less than 5 years = 29%
- 5-9 years = 10%
- 10-14 years = 18%
- 15-19 years = 2%
- 20+ years = 41%

Average age - 45

Gender

- Male = 64%
- Female = 36%

Residence

- Hancock County = 47%
- All Other = 53%

OUR ENDURING VALUES ARE THE FOUNDATION FOR CONTINUOUS SUCCESS: RESPECT, TEAMWORK, INTEGRITY, SPIRIT OF WINNING & DIVERSITY WITH INCLUSION

WHIRLPOOL/ONE ENERGY WIND FARM

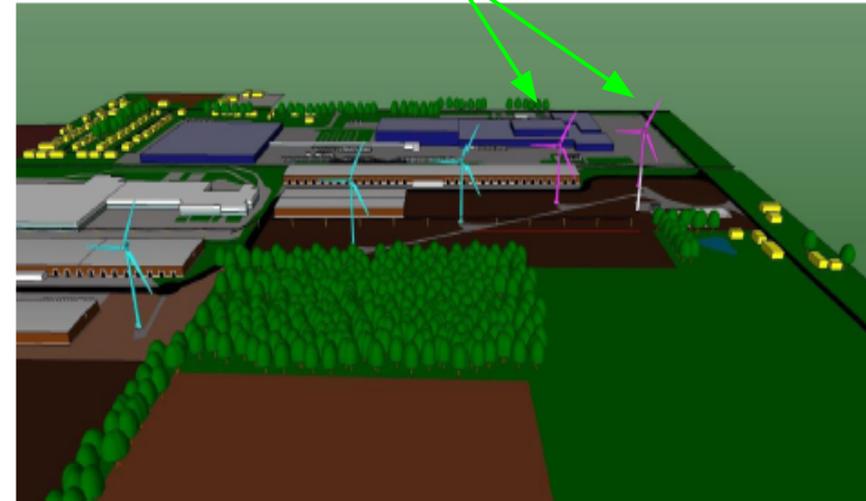
- **Business Need:** Reduce Energy Costs and Lower Our Overall Manufacturing Carbon Footprint
- **Solution:** Wind Energy In Partnership with One Energy with the purchase of wind energy to power the plant
- **Plan:** Purchase Power from New Turbine Wind Farm



*Generates Enough Renewable Energy To
Power 300-400 Homes Each*

- Exhaustive studies completed
- 20 year fixed rate with optional renewals
- Offsets 20% of our electrical consumption
- No upfront cost to Whirlpool; \$18M project financed by One Energy
- (2) 1.5 Megawatt rate Wind Turbines
- Real-time metering and web access to energy produced vs. consumed
- No Whirlpool maintenance required
- Whirlpool only pays for electricity produced - Net Metering
- One Energy is a local partner and offers turnkey solution
 - www.oneenergywind.com

Whirlpool Wind Turbines



***Groundbreaking
In Mid June***

Generating Green Energy!

WHIRLPOOL/ONE ENERGY COMMUNITY BENEFITS

- Wind Interactive Study Park and Energy Facility (W.I.S.P.E.R. Facility)
 - One Energy offices on site
 - Open to the public
 - Educational opportunities
 - Scholarships
 - \$5,000 per year per turbine to S.T.E.M (Science, Technology, Engineering, and Math) participants

- Tax Revenue for Local Community (\$9K per Turbine)



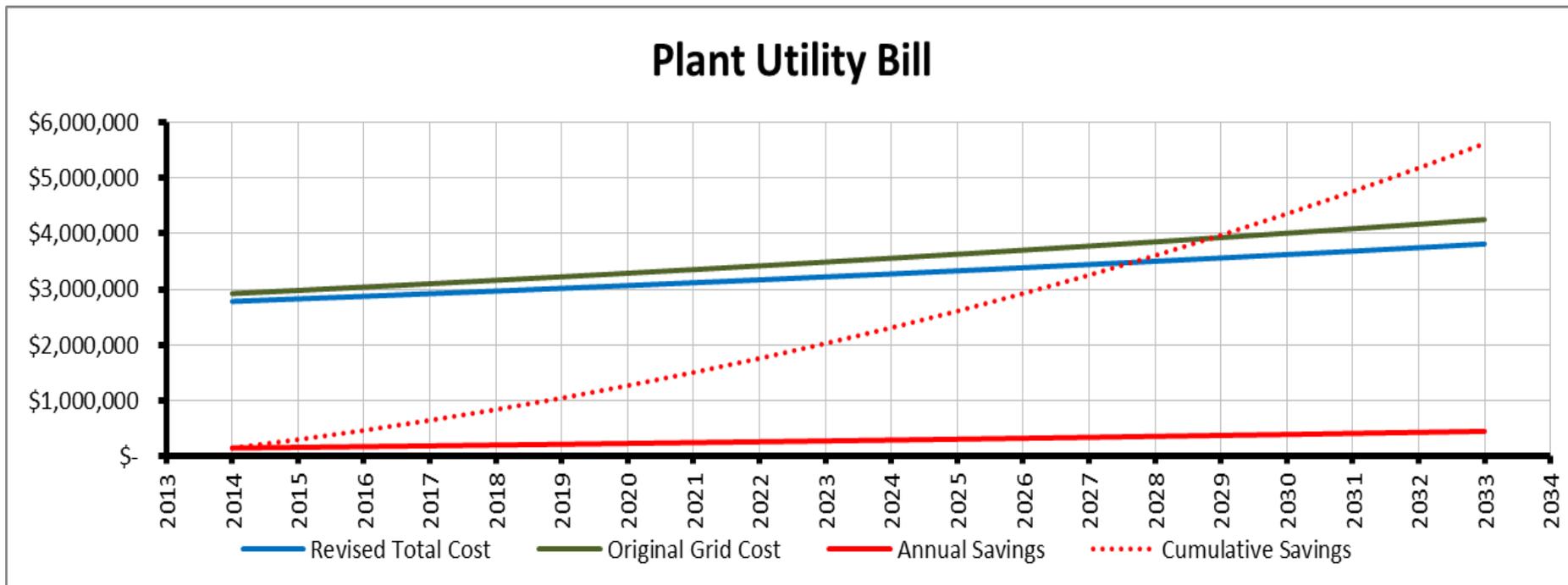
WIND FARM CONCERNS

Concerns:

- FAA hazard area
- Location of nearby structures
- Ice throw
- Shadow flicker
- Noise
- Net Metering capabilities



Total of 5 turbines : Whirlpool (2) & Ball Metal (3)



- Delivers Cost Savings In An Ultra Competitive Environment
- This graph represents savings assuming 20% of energy consumed is produced by wind energy
- Additional opportunity could be realized if higher wind energy is produced

20 year locked in rate versus 3.9% potential annual increase on the grid

Whirlpool Steps for Wind Turbines

- Review proposed structure of Wind Turbine project
- Validate all the information
- Review of facility master plan for future use of surrounding area
- Validate the consumption of plant energy vs. proposed % of total produced by wind
 - Are there any contracts in place for current energy consumption minimums
- Review PPA (Power Purchase Agreement) language
- Review the agreement and confirm the interpretation by company treasury if PPA is considered as capital lease or true operating expense - Utility Expense
- Review if property has existing easements in place that may benefit the project
- Review the evaluation of savings dollars and projected savings based on agreement duration
- Conduct “walk-down” of area to investigate the path of electrical lines and main connection location of the wind turbines
- Present business case and sign off from leadership
- Construction of Wind Turbines and commissioning



QUESTIONS ??





CUSTOMER-SITED RESOURCES REPORT

ENERGY COMMITTEE – MAY 2015

- Power resources are moving behind the meter
- Customer-sited resources effect the price of electricity, can reduce costs for manufacturers, and may provide revenue. They are:

Energy Efficiency



Combined Heat & Power / Waste Energy Recovery



Demand Response



Distributed Renewables & Storage



Energy Efficiency Peer Network

- ❑ 5/13/15 – Tour of Honda’s Marysville Assembly Plant
- ❑ Hydrogen fuel cell lift trucks, styrofoam densification, heat recovery wheel, T8 and LED lights, on-site in-house developed cooling tower micro-hydro
- ❑ 20 attendees from 10 manufacturers – oversubscribed!



Energy Efficiency Peer Network

- Coming meetings
 - July 15th by webinar, 10 am – 11 am
 - September 16th, tour @ Crown Battery
- Network
 - Plant tours – peer learning
 - Educational, peer learning webinars
 - DIY tools
 - Free technical assistance (10 companies received assistance last year)
- Join - <http://www.ohiomfg.com/omas-chpwere-work-group/>



Utility	Efficiency Programs in 2015- 16	Opt-Out Available	Updates
AEP	Yes	No	<p><u>Rebate Cap</u></p> <p>Project incentives capped at \$25k unless entered in Bid2Win</p> <p><u>Green Motor Rewind</u></p> <p>https://aepohio.com/save/business/programs/EmotorRe windProgram.aspx</p> <p><u>Financing w/ Key Bank</u></p> <p>https://www.aepohio.com/save/business/programs/EfficientFinancingPilot.aspx</p> <p><u>Continuous Energy Improvement program</u></p> <p>\$0.02 /kWh saved each year for 3 years</p>
DP&L	Yes	No	<p><u>CHP incentives in custom program - \$0.08 /kWh, \$100 /kW, Cap - \$500k or 50% of cost</u></p>

Utility	Efficiency Programs in 2015-16	Opt-Out Available	Updates
Joint (DP&L, AEP)			Discounted cogged belt @ point-of-sale
Duke	Yes	No	Self-direct exemption should be evaluated in lieu of custom rebate
FirstEnergy	None	Yes	Rider persists, we recommend – Opt-out for above-primary customers – Self-direct exemption for secondary, primary
Municipals	Varied	No	27 communities in Efficiency Smart http://www.energysmart.org/communities + Westerville, Cuyahoga Falls city run programs
Cooperatives	Minimal	No	

ENERGY EFFICIENCY

Payments available - PJM payments for energy-efficiency capacity available to all manufacturers; money on the table if you complete an efficiency project

Lowers electricity price - Suppresses price of capacity

All can participate - Especially important for manufacturers with no access to utility-operated energy-efficiency programs



*We kicked the tires,
it works*

- ❑ **Base Residual Auction** – Delayed until no later than August 10th, pending FERC ruling on Capacity Performance
- ❑ **Capacity Performance (ER15-623)** –
 - ❑ FERC found proposal deficient, sent back to PJM
 - ❑ PJM responded promptly, FERC ruling by June 6th
 - ❑ Generally speaking, increases incentives and penalties for underperformers, restructures capacity categories, would likely result in increased capacity costs
- ❑ **DR and EE (ER15-852)** – FERC rejected PJM filing as premature, considering Supreme Court hearing of EPSA v FERC

- DP&L allowing CHP as a custom measure
 - \$0.08 /kWh, \$100 /kW
 - Incentive capped at 50% of project cost or \$500,000
 - Launched this week
- Receive free CHP screening from OMA Energy - Efficiency Peer Network
- Four new CHP projects in Ohio, learn about implications at the OMA Energy Group
 - Jay Industries
 - Solvay
 - Kraton Polymers
 - Dublin Rec. Center



To: OMA Energy Committee
From: Ryan Augsburger
Re: Energy Public Policy Report
Date: May 21, 2015

Overview

The two-year session of the General Assembly began in early January 2015. Only a few bills and resolutions have advanced this session. Representative Tim Schaffer (R-Lancaster) chairs of the House Public Utilities Committee. Senator Bill Seitz (R-Cincinnati) chairs the Senate Public Utilities Committee. So far legislative activity has been eclipsed by the state budget which will be the focus until later in June. Outside of standing legislative committees, a panel of lawmakers holds hearings to study the now-frozen alternative energy standards. A significant caseload is pending at the PUCO.

Governor Kasich Appoints Porter

In February, Governor John Kasich appointed Andre Porter to a seat on the Public Utilities Commission. Porter took office in early April and was elevated by the Governor as Chair of the PUCO.

Electricity Rates and Regulation

Significant utility rate cases are pending at PUCO. Distribution utilities have filed cases proposing power purchase agreements. The cases are highly controversial and have been reported in the press. A ruling by the PUCO on the AEP case rejected some of the utility's request in the short term, but may leave the possibility open in the longer term. See OMA white paper or OMA Energy Group testimony for more information.

Federal Greenhouse Gas Regulations GHG and 111(d)

Comment period closed December 1 on proposed USEPA regulations of GHG emissions under the existing Clean Air Act. The OMA filed comment together with the NAM and individually.

Ohio EPA and the PUCO filed comment on behalf of the state as did the Ohio attorney general. The gist of the testimony: as proposed, 111(d) revisions are unworkable.

Natural Gas Infrastructure

The OMA has expressed support for Keystone XL nationally and more locally for the development of the Rover Pipeline and Nexus Pipeline. Billions of dollars of pipeline investment are underway by several different developers.

Capacity Prices

Capacity prices, a portion of an electricity bill, are set by three-year looking forward auctions at PJM, will increase beginning in summer of 2015, dramatically so in FirstEnergy service territory. Ask staff or counsel for an overview document.

Energy Efficiency Legislation

Legislation was enacted last year (SB 310) to revise Ohio's energy standards. The issue has been reported and discussed at OMA meetings for nearly two years.

SB 310 froze the alternative energy standards for two years and created a legislative study committee to assess the impacts of the standards. The study committee has met monthly. The

committee is co-chaired by Senator Troy Balderson and Representative Kristina Roegner. A report is due in September.

Manufactured Gas Plant Remediation Costs

The OMA intervened in Duke Energy's gas distribution case before the PUCO case and is appealing the unfavorable decision. The Ohio Supreme Court is expected to rule on the merits later this year.

Polar Vortex *Pass-Through* Charges

Generation customers of First Energy Solutions (FES) were notified by the provider that they would be billed for a regulatory event associated with the polar vortex power shortages in January 2014. The one-time charge is outside the terms of the contract. If allowed by regulators, the charges would result in an unfavorable precedent for all customers. Several OMA members are working collectively to contest the charges. Contact staff to learn more.

Energy Legislation

Prepared by: The Ohio Manufacturers' Association
Report created on May 20, 2015

- HB8** **OIL-GAS LAW** (HAGAN C) To revise provisions in the Oil and Gas Law governing unit operation, including requiring unit operation of land for which the Department of Transportation owns the mineral rights, and to specify that the discounted cash flow formula used to value certain producing oil and gas reserves for property tax purposes is the only method for valuing all oil and gas reserves.
Current Status: 4/14/2015 - Senate Energy and Natural Resources, (First Hearing)
State Bill Page: <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-HB-8>
- HB23** **OIL-GAS LEASE INCOME** (AMSTUTZ R) To use one-half of any income from oil and gas leases on state land to fund temporary income tax reductions, to modify the law governing the use of new Ohio use tax collections from remote sellers for income tax reductions, and to require the Director of Budget and Management to recommend whether or not income tax rates should be permanently reduced after the Director certifies a temporary rate reduction resulting from the accrual of money in the Income Tax Reduction Fund.
Current Status: 5/12/2015 - **REPORTED OUT AS AMENDED**, House Ways and Means, (Fifth Hearing)
State Bill Page: <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-HB-23>
- HB64** **OPERATING BUDGET** (SMITH R) To make operating appropriations for the biennium beginning July 1, 2015, and ending June 30, 2017, and to provide authorization and conditions for the operation of state programs.
Current Status: 5/21/2015 - Senate Finance - Corrections Subcommittee, (Fourth Hearing)
State Bill Page: <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-HB-64>
- HB72** **ENERGY IMPROVEMENT DISTRICTS** (CONDITT M) To authorize port authorities to create energy special improvement districts for the purpose of developing and implementing plans for special energy improvement projects and to alter the law governing such districts that are governed by a nonprofit corporation.
Current Status: 5/6/2015 - **BILL AMENDED**, House Public Utilities, (Fourth Hearing)
State Bill Page: <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-HB-72>
- HB83** **OIL-GAS ROYALTY STATEMENT** (CERA J) To require the owner of an oil or gas well to provide a royalty statement to the holder of the royalty interest when the owner makes payment to the holder.
Current Status: 3/10/2015 - House Energy and Natural Resources, (First Hearing)
State Bill Page: <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-HB-83>
- HB122** **PUBLIC UTILITIES COMMISSION MEMBERSHIP** (LELAND D) To require that each major political party be represented on the Public Utilities Commission, to specify that not more than three commissioners may belong to or be affiliated with the same major political party, and to require that Public Utilities Commission Nominating Council lists of nominees include

individuals who, if selected, ensure that each major political party is represented on the Commission.

Current Status: 3/24/2015 - Referred to Committee House Government Accountability and Oversight

State Bill Page: <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-HB-122>

HB162 SEVERANCE TAX RATES (CERA J) To change the basis, rates, and revenue distribution of the severance tax on oil and gas, to create a grant program to encourage compressed natural gas as a motor vehicle fuel, to authorize an income tax credit for landowners holding an oil or gas royalty interest, and to exclude some oil and gas sale receipts from the commercial activity tax base.

Current Status: 5/12/2015 - House Ways and Means, (First Hearing)

State Bill Page: <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-HB-162>

HB176 GAS-FUEL CONVERSION PROGRAM (HALL D, O'BRIEN S) To create the Gaseous Fuel Vehicle Conversion Program, to allow a credit against the income or commercial activity tax for the purchase or conversion of an alternative fuel vehicle, to reduce the amount of sales tax due on the purchase or lease of a qualifying electric vehicle by up to \$500, to apply the motor fuel tax to the distribution or sale of compressed natural gas, to authorize a temporary, partial motor fuel tax exemption for sales of compressed natural gas used as motor fuel, and to make an appropriation.

Current Status: 5/5/2015 - Referred to Committee House Ways and Means

State Bill Page: <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-HB-176>

HB190 WIND FARM SETBACKS-COUNTY (BURKLEY T, BROWN T) To permit counties to adopt resolutions establishing an alternative setback for wind farms and to extend by five years the deadlines for obtaining the qualified energy project tax exemption.

Current Status: 5/12/2015 - Referred to Committee House Public Utilities

State Bill Page: <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-HB-190>

HCR7 TAX EXEMPT MUNICIPAL BONDS (SPRAGUE R) To urge the President and the Congress of the United States to preserve the tax-exempt status of municipal bonds.

Current Status: 3/17/2015 - House Local Government, (First Hearing)

State Bill Page: <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-HCR-7>

HCR9 SUSTAINABLE ENERGY-ABUNDANCE PLAN (BAKER N, BOOSE T) To establish a sustainable energy-abundance plan for Ohio to meet future Ohio energy needs with affordable, abundant, and environmentally friendly energy.

Current Status: 5/6/2015 - **ADOPTED BY HOUSE**; Vote 96-1

State Bill Page: <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-HCR-9>

SB46 LAKE ERIE DRILLING BAN (SKINDELL M) To ban the taking or removal of oil or natural gas from and under the bed of Lake Erie.

Current Status: 2/18/2015 - Referred to Committee Senate Energy and Natural Resources

State Bill Page: <https://www.legislature.ohio.gov/legislation/legislation->

[summary?id=GA131-SB-46](https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-SB-46)

- SB47** **DEEP WELL BRINE 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: 2/18/2015 - Referred to Committee Senate Energy and Natural Resources
State Bill Page: <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-SB-47>
- SB58** **CONDITIONAL SEWAGE CONNECTION (PETERSON B)** To authorize a property owner whose property is served by a household sewage treatment system to elect not to connect to a private sewerage system, a county sewer, or a regional sewerage system under specified conditions.
Current Status: 3/4/2015 - Referred to Committee Senate Energy and Natural Resources
State Bill Page: <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-SB-58>
- SB100** **SALES TAX HOLIDAY-ENERGY STAR (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: 3/4/2015 - Referred to Committee Senate Ways and Means
State Bill Page: <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-SB-100>
- SB120** **OIL-GAS LAW REVISION (SCHIAVONI J)** To amend sections 1509.33 and 1509.99 and to enact section 1509.051 of the Revised Code to revise enforcement of the Oil and Gas Law, including increasing criminal penalties and requiring revocation of permits for violations of that Law relating to improper disposal of brine.
Current Status: 3/10/2015 - Referred to Committee Senate Energy and Natural Resources
State Bill Page: <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-SB-120>
- SB164** **UTILITY SMART METER CONSENT (JORDAN K)** To enact section 4928.661 of the Revised Code to require electric distribution utilities to obtain a customer's consent prior to installing a smart meter on the customer's property.
Current Status: 5/13/2015 - Introduced
State Bill Page: <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-SB-164>
- SB166** **HORIZONTAL WELL EMERGENCY PLAN (GENTILE L)** To enact sections 1509.39 and 1509.391 of the Revised Code to require the owner of a horizontal well to develop and implement an emergency response plan for the purpose of responding to emergencies at the surface location of the well and to specify what must be included in the plan and to whom and the manner in which it must be submitted.
Current Status: 5/18/2015 - Introduced
State Bill Page: <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-SB-166>

Energy

OMA Members Tour Energy Technologies at Honda



Members of the OMA Energy Efficiency Peer Network (EEN) toured Honda's Marysville Assembly plant this week to learn about process innovations that are driving down energy consumption and reducing waste and emissions.

Technologies demonstrated included hydrogen fuel cell lift trucks, onsite hydro-generation, and styrofoam densification.

The OMA EEN is open to OMA's manufacturing members. [Learn more here.](#) 5/14/2015

Net Metering State of Play in Ohio

Ohio law permits net metering, which is a billing arrangement that enables customers who produce their own electricity to receive credit on their utility bills for any surplus electricity that flows back into the electric utility's distribution system. Net metering is often an important component of financing certain alternative energy projects, such as rooftop solar.

However, after a series of applications for rehearing by various interested parties on the net metering provisions, the Public Utilities Commission of Ohio (PUCO) issued an order in March finding that additional input pertaining to the net metering rules would be beneficial.

In addition to the PUCO's ongoing review, the issue of net metering is also before the Ohio Supreme Court and, potentially, the Ohio General Assembly. [Read more](#) about the net metering state of play from OMA Connections Partner Bricker & Eckler LLP. 5/14/2015

NERC Raises Reliability Concerns

The North American Electric Reliability Corporation (NERC) has released a [second assessment](#) of the proposed Clean Power Plan of the Obama administration.

The assessment produced four major findings: (1) the plan is expected to accelerate a fundamental change in electricity generation mix in the United States and transform grid-level reliability services, diversity, and

flexibility, (2) industry needs more time to develop coordinated plans to address shifts in generation and transmission, (3) implementation plans may change the use of the remaining coal-fired generating fleet from baseload to seasonal peaking, potentially eroding plant economics and operating feasibility, and (4) energy and capacity will shift to gas-fired generation, requiring additional infrastructure and pipeline capacity.

NERC is a not-for-profit international regulatory authority whose mission is to assure the reliability of the bulk power system in North America. NERC develops and enforces reliability standards. 4/28/2015

AEP Ohio Customers: Rewind Your Motors!

Did you know that motors often lose efficiency during the rewinding process? To combat this loss of energy efficiency, AEP Ohio offers the [Emotor Rewind Pilot](#) program.

AEP Ohio is certifying motor service centers that follow energy-efficient rewind practices. The [Emotor Rewind Pilot](#) covers motors from 300 hp to 5,000 hp. Motors that are rewound through the pilot are expected to be 0.5% to 2% more efficient. AEP Ohio offers a \$2.00/hp incentive to Ohio manufacturers that take advantage of this rewind program.

To date, [Hannon Electric](#) in Canton and [Electric Motor & Service](#) in Zanesville have been certified for the program. Manufacturers interested in an efficient rewind can use these two motor service centers, or contact AEP Ohio's [Rick Sullivan](#) to start the process of certifying the motor service center you use. 4/28/2015

DP&L Offers Combined Heat & Power Workshop

Combined Heat & Power (CHP), also known as cogeneration, is the simultaneous production of electricity and heat from a single fuel source.

On Tuesday, May 19, DP&L is offering a [free workshop](#) for businesses to learn more about CHP. The workshop is from 9:00 a.m. to noon, includes lunch, and will be held at the University of Dayton River Campus in Dayton.

Benefits of CHP can include: greater efficiency than separate generation of electricity and thermal energy, lower operating costs, reduction in emissions including CO₂, NO_x, and SO₂, increased power reliability, enhanced power quality, and reduction of grid congestion.

Learn whether your facility is a good CHP candidate and find out about DP&L incentives. DP&L offers free feasibility screening. [Register here.](#) 4/28/2015

What Does It Cost to Save Electricity?

4.6 cents.

That's the average total cost of saving a kilowatt-hour in 20 states from 2009 to 2013, according to a report from the Lawrence Berkeley National Lab titled, [The Total Cost of Saving Electricity Through Utility Customer-Funded Energy Efficiency Programs: Estimates at the National, State, Sector and Program Level](#), released this week.

The researchers conclude: "The cost of saving energy is still cheap."

They found that the utility program costs are less than the cost of retail electricity or the cost of new generation. As a result, residential consumers saved 3.3 cents per kWh through the utility programs; commercial and industrial customers averaged 5.5 cents in savings per kWh saved. *4/29/2015*

OMA Members Receive Energy Efficiency Awards

AEP Ohio honored 22 businesses, individuals and schools from throughout the state at its Energy Efficiency Awards event held this week. The award recognizes AEP Ohio's business customers and partners that have demonstrated a strong commitment to energy efficiency.

Among the recipients are OMA members, Crown Battery Manufacturing Company, Fremont, and AMG Vanadium, Cambridge. *4/30/2014*

"Quadrennial Energy Review" Released

This week the U.S. Department of Energy released its first "[Quadrennial Energy Review](#)," created to identify the "threats, risks, and opportunities for U.S. energy and climate security, enabling the federal government to translate policy goals into a set of integrated actions."

The review contains recommendations for action to ensure resilience and security of transmission and distribution infrastructure, modernize the electric grid, modernize U.S. energy security infrastructure (all fuels), improve "shared transport" infrastructure, integrate North American energy markets, and improve environmental performance of energy infrastructures.

Read a [fact sheet](#) on the review. *4/28/2015*

Join OMA Energy Efficiency Peer Network for Honda Tour

Honda of America is hosting a plant tour for the OMA Energy Efficiency Peer Network group on May 13th from 10:00 a.m. until 12:00 p.m. The plant tour will be of the Marysville Automotive Plant and will focus on aspects of the manufacturing process, energy efficiency and sustainability initiatives and features. Efficiency and sustainability highlights will include hydrogen fuel cell fork-lifts, LED high bay lighting, micro-hydro generation and a styrofoam densifier.

After the plant tour, guests are invited to tour the [Honda Heritage Center Museum](#). Lunch can be purchased at the Honda Heritage Center.

Steel-toed shoes, hard hats and safety glasses will be required for the plant tour. Please RSVP to OMA energy consultant [John Seryak](#) by May 6th if you'd like to attend.

Remember to [join the mailing list](#) for the Energy-Efficiency Peer Network to receive timely notifications. *4/23/2015*

Ethane Cracker Coming to Ohio?

On Wednesday, Governor Kasich [announced](#) the possibility of construction in Ohio of a chemical cracker to refine shale gas and gas liquids. The governor announced that Belmont County has been tentatively chosen by the company. Jobs-Ohio, the state's economic development agency, has been working to attract the cracker for two years.

The project is a partnership between PTT Global of Thailand and Marubeni Corp., a Japanese investment advisor. The project will now undergo 12 to 16 months of engineering study and permitting work before a final decision is made.

Several other cracker projects have been discussed in the region to take advantage of the rich shale plays of Ohio, West Virginia and Pennsylvania. None yet have been developed. *4/23/2015*

Porter Sworn in as PUCO Chair

This week Commissioner Lynn Slaby [swore in](#) the new chairman of the Public Utilities Commission of Ohio (PUCO), [Andre T. Porter](#).

Porter began his five-year term as commissioner on April 11, 2015. As chairman he leads the sole state agency charged with regulating public utility service. The role of the PUCO is to assure all residential, business, and industrial consumers have access to adequate, safe and reliable utility services at fair prices while facilitating an environment that provides competitive choices.

Porter also chairs the Ohio Power Siting Board, which reviews, evaluates and approves the siting of electric generation plants and electric and natural gas transmission lines. 4/16/2015

Governor Picks Porter for PUCO Lead

As expected, Governor Kasich has selected Andre Porter to chair the Public Utilities Commission of Ohio (PUCO). Porter's five-year term begins Saturday.

Porter previously headed the Ohio Department of Commerce for the governor. He is a graduate of Capital University, and earned his law degree from Ohio State. 4/7/2015

PUCO Turns Down Duke Energy Ohio's Request for Power Purchase Agreement Funding

On April 2, 2015, the Public Utilities Commission of Ohio (Commission) issued an Opinion and Order on Duke Energy Ohio's recent electric security plan (ESP) application. The Commission made determinations of special importance to OMA members served by Duke, [summarized here](#) by OMA energy counsel Carpenter Lipps & Leland LLP.

Among them, the Commission ruled on Duke's proposed Price Stabilization Rider (PSR), which would finance the company's proposed purchase power agreement as it relates to the company's interest in the Ohio Valley Electric Corporation (OVEC), placing the financial risk of operating the OVEC plant on customers, rather than shareholders.

The Commission ruled that while the financing mechanism is authorized under Ohio law, it found that Duke had not sufficiently demonstrated that the PSR would provide customers benefits commensurate with the rider's potential costs; thus, it denied recovery of any costs through the PSR. The Commission, however, authorized Duke to establish a placeholder PSR at an initial rate of zero. 4/9/2015

FERC Rejects PJM Demand Response Plan

This week the Federal Energy Regulatory Commission (FERC) [rejected](#) regional transmission operator PJM's plan to change how demand response is valued in capacity auctions, and how capacity resources are paid, or penalized for failure to be online.

The jurisdiction of FERC over wholesale demand response is in litigation through an appeal of a district court's ruling to the U.S. Supreme Court. PJM was attempting a stop-gap measure in reaction to the uncertainty caused by the litigation.

Groups representing consumers, including the OMA, were concerned that the PJM's proposal would squash demand response and raise prices. The FERC action, thus, is favorable. Much more to come. 4/2/2015

PUCO Chairman Steps Down

Public Utilities Commission of Ohio (PUCO) [Chairman Tom Johnson](#) stepped down this week. He said it was for unspecified personal reasons. He will remain on

the five-member commission until the end of his term in 2019.

It has been widely speculated that Andre Porter, whom the governor recently appointed to the commission, will become the next chairman. Porter will be sworn in next month.

There are a number of potentially very costly cases for manufacturers pending before the commission. Who is in the chairmanship matters, a lot. 4/2/2015

Portman: Let States Opt-Out of Carbon Regs

Ohio's U.S. Senator Rob Portman this week proposed a [major amendment](#) to the Senate Budget Resolution that would "give any state the option to opt-out of greenhouse gas regulations from the Environmental Protection Agency (EPA) if the state determines the regulations would increase retail electricity prices, threaten electricity reliability, or have a negative impact on the state's economy."

Portman noted that "compliance costs over the next 15 years could be as much \$366 billion if all four of the Clean Power Plan's building blocks get implemented." 3/26/2015

Grid Operator to Lawmakers: Electricity Generation is Sufficient

PJM Executive Vice President, Markets, Andrew Ott told members of the legislative Energy Mandates Study Committee that grid reliability is not in jeopardy due to coal plant retirements.

In his [testimony](#), Ott stated: "(S)hortly after the US EPA issued its final Mercury and Air Toxics Standards rule, PJM began to receive notification of retirements from generation owners. Some of the retirements have already occurred and most will be complete by May 31, 2015. ...The operation of the power grid will remain reliable because the PJM forward capacity market is attracting investment in new gas-fired resources and alternative resources... and the PJM's regional transmission planning process has identified transmission upgrades necessary to maintain reliable power grid operation."

He added: "PJM has evaluated the impact of potential increases in intermittent resources on the regional power grid and found that such resources can be integrated reliably as long as they are supported with adequate transmission infrastructure upgrades."

This [PowerPoint presentation](#) supplements Ott's testimony. 3/19/2015

PUCO Anticipates Net Increase in Ohio Generation

Despite the announced shuttering of six coal-fired generating units in Ohio, the Public Utilities Commission of Ohio (PUCO) told the House Public Utilities Committee that it expects new natural gas plants to make up for the generation, and then some.

The PUCO said that the following coal plants will go offline by this summer: NRG Power in Lakeshore, FirstEnergy in East Lake and Ashtabula, AEP Ohio in Muskingum County and Pickaway County, and Dayton Light & Power in Hutchings. These plants generate about 3,400 megawatts (MW) of electricity.

Various project developers will have six new natural gas plants coming online over the next five years, located in Oregon, Middletown, Rolling Hills, Meigs County, Carroll County and Lordstown. They are expected to generate 4,300 MW of power.

The PUCO noted that the regional grid operator, PJM, has responsibility for assuring adequate power capacity in Ohio and the entire 13 state region. 3/5/2015

Join OMA Energy Efficiency Peer Network

The OMA Energy-Efficiency Peer Network (EENP), formerly the OMA CHP/WER/EE Work Group, 2015 calendar is set. The EENP is a peer-sharing, learning group for facility and energy managers charged with managing energy consumption and peak demand in their facilities.

The service was improved for 2015 based on input from manufacturers to include: plant tours hosted by Honda and Crown Battery; peer-learning webinars on efficiency projects; do-it-yourself tools; professional consulting and technical assistance for your energy-efficiency projects.

You can learn more about and join the network [here](#). There is no charge for members.

The upcoming EENP meeting will address demand response and peak-load contribution (PLC) management via webinar on March 25th from 10:00 - 11:00 a.m. [Register here](#). 3/5/2015

PUCO Rejects AEP Plant Subsidies, But...

In good news, for now, for AEP electricity consumers, the Public Utilities Commission of Ohio (PUCO) this week “[declined to adopt](#) the company’s proposed purchase power agreement as it relates to the company’s interests in the Ohio Valley Electric Corporation (OVEC).”

OVEC operates two power plants (one in Ohio) and is co-owned by a number of utilities. AEP has sought to place the financial risk of operating the OVEC plant onto customers, rather than shareholders. In a separate filing, AEP proposes the same risk shifting for other plants. And, in yet another filing, FirstEnergy seeks the same types of customer subsidies for several of its plants.

However, the commission left the door open for considering power purchase agreements in the other cases: “Although the Commission found that the proposed power agreement was permitted under Ohio

law, after weighing the evidence of record, the Commission was not persuaded that the proposal would benefit ratepayers.”

The [OMA Energy Group](#) opposes these utility proposals in each of the cases pending at the PUCO. 2/25/2015

OMA Member Views on Energy Studied

Last fall, OMA members were surveyed by the George Mason University to assess their views on their energy needs, renewable energy, and their preferences for energy policies at the state and national level. A total of 120 people responded to the survey, from 100 companies.

Among the key findings:

- A large majority of respondents say that uncertainty about energy costs makes planning difficult for their companies. They say their companies are very concerned about volatility in their energy costs and price increases.
- Two-thirds of respondents’ companies have made changes over the past five years to reduce energy risks; over half made energy efficiency improvements (57%) and 40 percent signed long-term energy contracts.
- Ninety-five percent of the companies represented in the survey are likely to make efficiency improvements over the coming five years.
- Close to two-thirds of respondents (63%) say that energy investments must have a positive return in two years or less. Over a quarter (27%) are willing to wait three years for positive returns, but only five percent are willing to wait longer than that.
- Forty percent of respondents say their company has an energy conservation goal. The primary motivation for this goal is to reduce the company’s energy costs, but environmental benefits are also an important motivation.

The survey results are used to develop OMA energy services and public policy positions. Here is the survey report: [Energy and Ohio’s Manufacturers: Risks, Opportunities & Policy Preferences](#) and a [brief summary of key findings](#). 2/25/2015

GM Presents to OMA Energy Committee

Rob Threlkeld, Global Manager – Renewable Energy, General Motors, this week made a [presentation](#) to the OMA Energy Committee on GM’s principles of waste reduction, energy efficiency, resource preservation and greener vehicles.

Threlkeld discussed with committee members the execution of a large solar project at the company's Lordstown assembly plant. The 2.2 MW project cost about \$4.4 M. 2/26/2015

Energy Market Trends for Manufacturers

Each quarter, one of the OMA Energy Committee meeting features that members rate most favorably are the electricity and natural gas market trend reports.

This week Richard Ricks, Manager - Large Customer Relations, of Columbia Gas of Ohio presented [natural gas market trends](#), while Susanne Buckley, Managing Partner, Scioto Energy analyzed [electricity markets and pricing](#) for Ohio consumers. 2/26/2015

FERC Filing Announced for Rover Pipeline

This week the Federal Energy Regulatory Commission (FERC) posted the official application from the Rover

Pipeline project. This is the next step toward the future construction of the project. In response, Ryan Augsburger of the OMA said in a statement:

"Manufacturers in Ohio and nationwide rely upon reliable access to affordable energy – especially natural gas – to stay competitive and create jobs. Investing in new infrastructure like the Rover Pipeline will allow for further economic expansion in the manufacturing sector. We look forward to FERC's timely review of the Rover Pipeline." 2/26/2015

Porter Returns to PUCO

Governor Kasich has appointed his commerce department director, Andre T. Porter, as a commissioner at the Public Utility Commission of Ohio (PUCO).

Porter previously served at the commission, prior to his appointment to the commerce department. Porter takes the seat previously held by Steve Lesser. 2/26/20

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MEMORANDUM

To: OMA Energy Committee
From: Kim Bojko and Rebecca Hussey, OMA Energy Counsel
Re: Energy Committee Report
Date: May 21, 2015

Administrative Actions in which OMA Energy Group is Actively Involved:

American Electric Power (AEP Ohio):

- ESP Application (Case No. 13-2385-EL-SSO, et al.)
 - Opinion and Order issued on February 25, 2015, wherein Commission approved establishment of Rider PPA but did not authorize AEP Ohio to collect any costs through the rider mechanism
 - Commission granted the applications for rehearing filed by numerous parties in order to provide itself with additional time to consider the issues raised therein
- PPA Rider Expansion Case (Case No. 14-1693-EL-RDR, et al.)
 - OMA Energy Group filed a motion to intervene on October 23, 2014
 - On May 15, 2015, AEP filed an Amended Application in which AEP seeks the following:
 - Commission approval of AEP's proposal to enter into a new affiliate power purchase agreement between the Company and AEP Generation Resources, Inc., through which the Company would purchase the output of specific generating units owned by AEPGR
 - Approval of inclusion of the net impacts of the new Affiliated PPA in the PPA Rider
 - Approval of inclusion in the PPA Rider the net impacts of the AEP's contractual entitlement to a share of the electrical output of generating units owned by OVEC
- Retail Stability Rider Case (Case No. 14-1186-EL-RDR)
 - AEP has requested authority to recover from customers an additional \$463 million, representing a deferred capacity regulatory asset, through Rider RSR
 - On April 2, 2015, the Commission issued an order approving AEP's recovery of the deferred capacity regulatory asset without considering arguments that such recovery was subject to refund

- Recently OMA Energy Group, OCC, and OHA filed a joint application for rehearing requesting Commission consideration of making RSR approval subject to refund
- Fuel Adjustment Clause Case (Case No. 11-5906-EL-FAC, et al.)
 - These cases involve a review of AEP Ohio's fuel and alternative energy costs for the 2012, 2013, and 2014 audit periods
 - In the course of the proceedings, the Commission is entertaining arguments on AEP Ohio's alleged double recovery of certain capacity-related costs
 - Discovery is presently ongoing
- CHP Incentive Cases (Case Nos. 14-2296-EL-EEC and 14-2304-EL-EEC)
 - These cases involve the joint applications AEP Ohio and two manufacturers for approval of special arrangement agreements to commit the savings from the manufacturers' planned combined heat and power (CHP) systems to AEP Ohio for use in achieving its energy efficiency benchmarks in exchange for an incentive payment
 - We intervened in the cases to protect manufacturers in the following ways:
 - To increase the incentive provided to CHP system owners
 - To correspondingly decrease the incentive provided to the EDU when CHP projects are committed for its use
 - To ensure that costs to other customers would not increase
 - To ensure that AEP Ohio is in compliance with the shared savings cap to which it agreed in its portfolio plan case

Duke Energy Ohio:

- ESP Application (Case No. 14-841-EL-SSO, et al.)
 - Opinion and Order issued on April 2, 2015, wherein Commission approved establishment of the Price Stabilization Rider (PSR) but did not authorize Duke to collect any costs through the PSR
 - Several parties, including OMA, recently filed applications for rehearing of the Commission's decision
- Shared Savings Mechanism Extension Case (14-1580-EL-RDR)
 - Duke has requests extension of its shared savings mechanism for 2016, which would result in further unlimited incentives for the utility, even for minimal compliance with energy efficiency and peak demand reduction benchmarks
 - OMA filed comments on Duke's application on December 5, 2014, and reply comments on January 9, 2015
 - Commission recently set June 9, 2015 hearing date for consideration of the matter
 - Testimony must be filed by June 2, 2015

FirstEnergy:

- ESP IV Application (Case No. 14-1297-EL-SSO)
 - Under the proposal submitted in FirstEnergy's Application, customers may be exposed to millions in costs associated with a 15-year power purchase agreement between FirstEnergy and FirstEnergy Solutions (FES) regarding generation from FES' Sammis coal generation facility and its Davis Besse nuclear generation facility, as well as FirstEnergy's entitlement to generation from the OVEC facilities pursuant to Rider RRS
 - In December 2014, FirstEnergy, Ohio Energy Group, AEP Ohio, the City of Akron, the Council of Smaller Enterprises, the Cleveland Housing Network, the Consumer Protection Association, the Council for Economic Opportunities in Greater Cleveland, the Citizens Coalition, Nucor Steel Marion, Material Sciences Corporation, the Association of Independent Colleges and Universities of Ohio, and the International Brotherhood of Electrical Workers Local 245 filed a joint stipulation in the proceeding which would expose ratepayers to millions in additional costs under various riders
 - On May 4, 2015, FirstEnergy filed six pieces of supplemental testimony addressing the factors to be addressed when a PPA is under consideration (AEP Ohio factors), as announced by the Commission in the AEP ESP Opinion and Order
 - OMA Energy Group filed additional testimony (Supplemental Testimony of Ned Hill) addressing the AEP Ohio factors on May 12, 2015
 - The following deadlines apply to the proceeding:
 - May 29—Staff testimony due
 - June 2—prehearing conference
 - June 15—evidentiary hearing commences
- Portfolio Plan Amendment Case (Case No. 12-2190-EL-POR, et al.)
 - Under the amended plan, customers are exposed to extremely limited offerings from the utility, but are still at risk for shared savings incentives
 - Commission presently reviewing issues on rehearing, including whether FirstEnergy's budget for Rider DSE should be decreased to reflect the limited program offerings for which it has sought Commission approval under its amended plan

Statewide:

- S.B. 310 Rules Proceeding (Case No. 14-1411-EL-ORD)
 - Commission issued Finding and Order determining that the costs of shared savings, when included in the EE/PDR rider, are actual costs being paid by customers that are directly related to EDUs' compliance with the EE and PDR requirements, and that it is reasonable to count such shared savings expenses as part of the cost of compliance in the year they are incurred

- Commission is presently reviewing applications for rehearing on the issues of including shared savings in the cost of compliance on customer bills, whether it is appropriate to report on customer bills only those costs incurred by the utility, and others
- Challenges to the FirstEnergy Solutions RTO Expense Surcharge
 - Customers at risk for millions in ancillary service charges sought to be passed through by FES
 - Carbo Forge, et al. v. FES (Case No. 14-1610-EL-CSS), etc.

**Judicial Actions—Pertinent Cases Presently on Appeal
from the Commission to the Supreme Court of Ohio**

AEP Ohio:

- *In the Matter of the Application of Ohio Power Company for Approval of a Mechanism to Recover Deferred Fuel Costs Ordered Under Section 4928.144, Ohio Revised Code, Case No. 2012-2008 (Appeal of Case No. 11-4920-EL-RDR, et al.)*
 - **Case Status:** Notice of appeal filed on November 30, 2012; fully briefed on July 1, 2013; oral argument took place on February 3, 2015; decision has not yet been issued.
 - **Brief Synopsis:** Ohio Power contests the Commission’s decision to calculate deferred fuel carrying costs using long-term debt rate instead of weighted average carrying costs (WACC); Industrial Energy Users-Ohio contests the Commission’s decision not to account for accumulated deferred income tax (ADIT) in calculating the deferral; OCC contests the Commission’s decision not to reduce recovery of the fuel charges to refund customers for POLR charges.
- *In the Matter of the Commission Review of the Capacity Charges of Ohio Power Company and Columbus Southern Power Company, Case Nos. 2012-2098 and 2013-228 (Appeal of Case No. 10-2929-EL-UNC)*
 - **Case Status:** Notice of appeal filed on February 11, 2013; fully briefed on October 23, 2013; oral argument has not been scheduled.
 - **Brief Synopsis:** Appellants contest a Commission decision that set the capacity price which AEP Ohio charges competitive retail electric service providers.
- *In the Matter of the Application of Columbus Southern 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. 2013-521 (Appeal of Case No. 11-346-EL-SSO, et al.)*
 - **Case Status:** Notice of appeal filed on April 1, 2013; fully briefed on December 30, 2013; oral argument took place May 19, 2015; decision awaited.

- **Brief Synopsis:** Kroger, OCC, Industrial Energy Users-Ohio, and Ohio Energy Group appealed the Commission’s order establishing AEP Ohio’s second electric security plan.
- *In the Matter of the Application of Ohio Power Company for Approval of an Amendment to its Corporate Separation Plan*, Case No. 2013-1014 (Appeal of Case No. 12-1126-EL-UNC)
 - **Case Status:** Notice of appeal filed on June 24, 2013; fully briefed on December 23, 2013; oral argument not yet scheduled.
 - **Brief Synopsis:** Industrial Energy Users-Ohio challenges the order approving AEP Ohio’s corporate separation plan.

Dayton Power and Light:

- *In the Matter of the Dayton Power and Light Company to Establish a Standard Service Offer in the Form of an Electric Security Plan*, Case No. 2014-1505 (Appeal of Case No. 12-426-EL-SSO)
 - **Case Status:** On October 14, 2014, OCC and IEU-Ohio filed a joint motion for stay of implementation of Rider SSR during the pendency of the appeal; DP&L filed a memorandum contra the joint motion on October 24, 2014. OCC and IEU-Ohio additionally filed a motion to dismiss certain assignments of error raised by DP&L in its cross-appeal on October 31, 2014; DP&L filed a memorandum contra the motion to dismiss on November 10, 2014. Briefs filed; oral argument still has not been scheduled.
 - **Brief Synopsis:** DP&L, IEU-Ohio, and OCC appeal various components of the Commission’s decision regarding DP&L’s ESP.

Duke Energy Ohio:

- *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in its Natural Gas Distribution Rates*, Case No. 2014-328 (Appeal of Case No. 12-1685-EL-AIR, et al.)
 - **Case Status:** On August 13, 2014, OMA, OCC, Kroger, and Ohio Partners for Affordable Energy filed a joint brief addressing the appropriate amount of bond necessary to continue the stay. The brief argues that the bond amount should be zero or a *de minimis* amount. Duke also filed a brief addressing the amount of bond. Duke requested that bond be set at a minimum of \$11,405,825. On November 5, 2014, the Supreme Court of Ohio ordered appellants, including OMA, to post bond in the amount of \$2,506,295 within ten days in order to continue the stay; bond was not posted. On November 20, 2014, OMA, OCC, Kroger, and OPAE filed a motion to expedite the ruling on appeal; that motion was denied by the Supreme Court of Ohio on January 28, 2015.
 - **Brief Synopsis:** OMA, OCC, Kroger, and Ohio Partners for Affordable Energy appeal a Commission order that permitted recovery from

ratepayers for environmental remediation costs associated with two former manufactured gas plant sites.

FirstEnergy:

- *In the Matter of Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company for Authority to Provide for a Standard Service Offer Pursuant to Section 4928.143, Revised Code, in the Form of an Electric Security Plan, Case No. 2013-513 (Appeal of Case No. 12-1230-EL-SSO)*
 - **Case Status:** Notice of appeal filed on March 29, 2013; fully briefed on September 27, 2013; oral argument has not been scheduled. Motion of Northeast Ohio Public Energy Council (NOPEC) to expedite oral argument was denied on October 8, 2014.
 - **Brief Synopsis:** NOPEC and Environmental Law and Policy Center challenge the Commission's order establishing FirstEnergy's third electric security plan.

- *In the Matter of the Review of the Alternative Energy Rider Contained in the Tariffs of Ohio Edison Company, Toledo Edison Company, and The Cleveland Electric Illuminating Company, Case No. 2013-2026 (Appeal of Case No. 11-5201-EL-RDR)*
 - **Case Status:** Notice of appeal filed on December 24, 2013; briefing schedule stayed on March 21, 2014 to consider FirstEnergy's motion to seal confidential information; Court denied FirstEnergy's motion to seal on September 3, 2014. Briefing schedule resumed on September 3, 2014; parties filed second merit briefs on October 23, 2014, third merit briefs on December 4, 2014, and fourth merit briefs on December 24, 2014.
 - **Brief Synopsis:** FirstEnergy and OCC appeal a Commission order that disallowed recovery of FirstEnergy's costs of purchasing renewable energy credits; OCC and Environmental Law and Policy Center challenge the Commission's decision to treat certain information as confidential.

Statewide:

- *In the Matter of the Adoption of Rules for Alternative and Renewable Energy Technology, Resources, and Climate Regulations, and Review of Chapters 4901:5-1, 4901:5-3, 4901:5-5, and 4901:5-7 of the Ohio Administrative Code, Pursuant to Chapter 4928.66, Revised Code, as Amended by Substitute Senate Bill No. 221, Case No. 2013-1472 (Appeal of Case No. 08-888-EL-ORD)*
 - **Case Status:** Notice of appeal filed on September 16, 2013; fully briefed on February 21, 2014; oral argument has not been scheduled.
 - **Brief Synopsis:** FirstEnergy challenges the Commission's adoption of various rules regarding how electric distribution utilities meet Ohio's statutory renewable energy and energy efficiency benchmarks.

- *In the Matter of the Commission's Review of Chapter 4901:1-10, Ohio Administrative Code, Regarding Electric Companies, Case No. 2014-1633 (Appeal of Case No. 12-2050-EL-ORD)*
 - **Case Status:** FirstEnergy filed a notice of appeal on September 22, 2014; journal has been transmitted. Parties filed joint motion to stay the briefing schedule, which was subsequently granted on November 21, 2014, extended again on January 29, 2015, and extended yet again on March 27, 2015.
 - **Brief Synopsis:** FirstEnergy challenges the Commission's adoption of various rules governing net metering and compensation for the same.

1325-001.624461

April 2015

Proposed NEXUS Gas Transmission Project

DTE Energy
Spectra Energy



DTE and Spectra – *Best in Class*



- Spectra Energy is considered best in class for project execution.
 - Since 2007, Spectra Energy has placed more than 65 projects in-service on schedule, with a total capital expenditure of approximately \$8.5 billion.
 - This level of project execution success is a result of an unwavering commitment to safety, environmental stewardship and diligent consultation and collaboration with all affected stakeholders.
- DTE Energy and Spectra Energy are the lead developers of the proposed NEXUS Gas Transmission project.
- Spectra Energy has operated in Ohio since 1947
- DTE Energy has provided safe and reliable natural gas service to Michigan consumers for over 115 years
 - DTE safely operates more than 21,000 miles of transmission and distribution pipeline in Michigan

NEXUS Project – Overview

The NEXUS Project will provide reliable, cost effective supplies of natural gas to serve local markets in Ohio, Michigan, Chicago and Ontario.

NEXUS is designed to deliver 1.5 billion cubic feet of natural gas per day (Bcf/d).

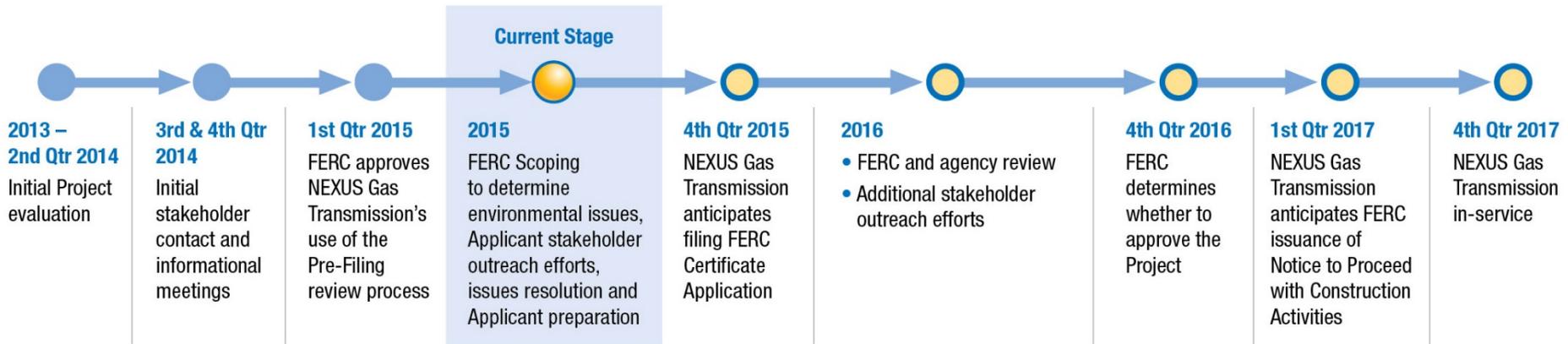
The proposed path of the NEXUS project will consist of a newly-constructed greenfield pipeline that will extend approximately 250 miles from receipt points in eastern Ohio to interconnects with the existing pipeline grid in southeastern Michigan.

Over 85% of the proposed new pipeline route is in agricultural areas and follows existing utility corridors in Ohio and Michigan, thereby limiting the number of affected residential landowners and reducing environmental impacts.



NEXUS Project - Schedule

NEXUS Timeline



NEXUS will be transparent with the affected local communities throughout the entire project and welcomes community involvement at all stages.

Federal and State Agencies – *Rigorous Reviews*

Participating Federal Agencies

- Federal Energy Regulatory Commission
- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service

Participating Ohio Agencies

- Ohio Environmental Protection Agency
- Department of Natural Resources
- Ohio State Historic Preservation Office

Layers of Safety

- Safety is our license to operate.
 - Design Phase
 - Optimize routing
 - Utilize pipe manufactured from high strength alloyed steel
 - Construction Phase
 - All welds will be ultrasonically or X-ray inspected
 - Pipe and welds are sealed with protective coatings
 - Install cathodic protection
 - Test pipeline prior to placing in-service
 - Operations Phase
 - Pipeline will be monitored 24 hours a day, 7 days a week
 - Gas through pipeline can be shut off immediately with remote control shut-off valves
 - NEXUS will utilize One-Call (811, Call before you dig) & the Right-of-Way will be monitored
 - The Pipeline and Hazardous Materials Safety Administration (PHMSA), a branch of the US Department of Transportation, will regularly inspect the pipeline
 - NEXUS will also conduct direct assessments of the pipeline
 - NEXUS will facilitate local first responder training, ongoing coordination, and liaison meetings

Protecting the Environment – *Good Stewards of the Land*

- NEXUS employs full-time environmental inspection staff during construction to ensure regulatory compliance
- Prior to construction, environmental training will be required for all NEXUS and contractor personnel whose activities may impact the environment during construction
- NEXUS will work directly with affected landowners to mitigate site-specific concerns
- NEXUS will conduct post-construction restoration and monitoring that will meet or exceed all federal, state and local permitting requirements

Local Economic Development - *Opportunities*

- NEXUS will provide low-cost, safe and reliable energy for Ohio consumers
- NEXUS is currently working with multiple local distribution companies, power generators and manufacturers in Ohio to provide access to clean, domestically abundant natural gas
- NEXUS is eager to meet with other prospective Ohio customers along the proposed route:
 - Industrial parks
 - Manufacturers
 - Local distribution companies
 - Any other large user of natural gas
- NEXUS is engaging communities in an effort to support local economic development opportunities

NEXUS will provide a foundation for growth in the region for decades to come

Project Update

- Hosted 10 Open Houses along the proposed study corridor in February
 - Approximately 150 stakeholders attended the meeting at Stark State Community College
- Submitted Draft Environmental Reports 1 & 10 in January 2015
 - Draft Environmental Report 1 provides general project background that includes among other things a preliminary description of the facilities associated with the project, compliance with regulations and codes, and permits that must be obtained.
 - Draft Environmental Report 10 describes initial alternatives to the project and compares the environmental impacts of such alternatives to those of the proposal.
 - Draft environmental reports are submitted early during the Pre-filing process to give stakeholders, agencies and the FERC an opportunity to review the information and provide comments prior to our formal application submittal in Q4 2015. This is a normal part of the FERC pre-filing process, designed to ensure that the formal application for the proposed project is thorough and complete.
- Revised drafts of Environmental Reports 1 & 10 along with additional draft environmental reports will be filed in Q2 or Q3 of 2015.
 - The draft environmental reports will be available for public comment and will address many common questions.

Project Update Continued

- NEXUS has determined that it can meet the objectives of its proposed Project by using 36-inch diameter pipe
 - The use of 36-inch pipe for the greenfield portion of the Project will not result in any other changes to the Project and will still allow NEXUS to provide 1.5 billion standard cubic feet per day of natural gas to various markets in the U.S. Midwest and Canada.
- Executed a Memorandum of Understanding with Erie County to install a tap and spur to provide natural gas to the high-tech industrial park located near the NASA Plum Brook Research Station in Milan Township.

Q&A

NEXUSSM
GAS TRANSMISSION



SE
LISTED
NYSE



Recognized by:



NEXUS Gas Transmission

Quick Facts:

Proposal:	New “greenfield” natural gas pipeline designed to deliver 1.5 billion cubic feet per day (Bcf/d)
Location:	Ohio and Michigan
Length:	Approximately 250 miles
Partner Companies:	DTE Energy and Spectra Energy are the lead developers for the project
Targeted Completion:	4 th Quarter of 2017

Project Need

The upper U.S. Midwest and eastern Canadian regions require additional pipeline infrastructure to support the growing demand for clean-burning natural gas. This additional pipeline infrastructure is also crucial in helping to offset the impact of the decline in traditional western Canadian supplies available to serve these markets. The NEXUS project will increase energy diversity, security and reliability to the Ohio, Michigan, Chicago and Dawn Ontario markets by delivering 1.5 billion cubic feet per day (Bcf/d) of natural gas. The new natural gas pipeline study corridor under review originates in Ohio and extends into Michigan.

Project Overview:

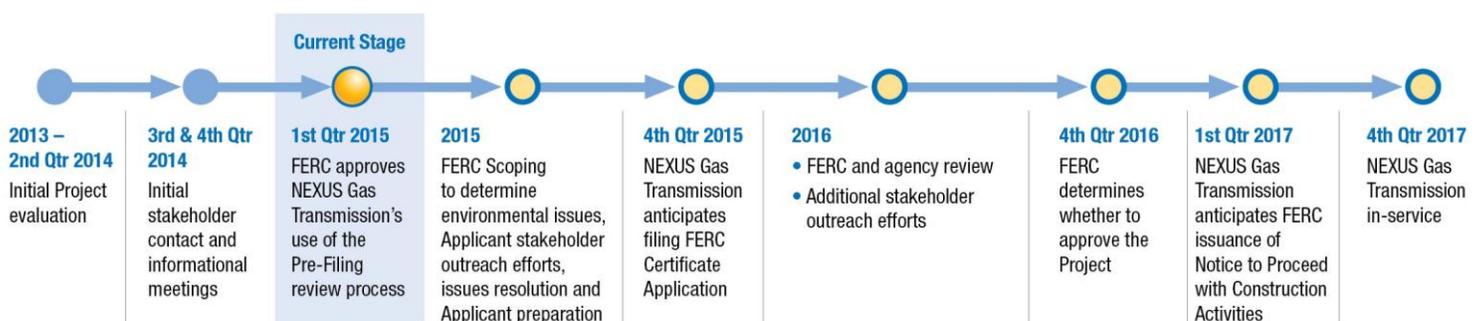
The NEXUS project will increase access to Marcellus and Utica shale gas by providing safe, cost effective supplies of natural gas to serve local distribution companies, natural gas fired power generators, and industrial users such as manufacturers. The proposed path for the NEXUS project will consist of a newly-constructed, greenfield pipeline that will extend approximately 250 miles from receipt points in eastern Ohio to interconnects with the existing pipeline grid in southeastern Michigan. The new greenfield pipeline route will utilize existing corridors and infrastructure for most of its length, in order to minimize environmental and local impacts. As proposed, the path will also utilize both existing and expansion capacity on

the Texas Eastern system, the DTE Gas system, and the Vector Pipeline (Vector) system to access markets in Ohio, Michigan, Chicago and the Dawn Hub. The project is estimated to begin construction during the first quarter of 2017 and be completed and in-service by winter of that same year, subject to final market demand and receipt of the necessary regulatory approvals.

The project’s total investment is currently estimated to be approximately \$2 billion, depending on final market demand and project scope. The NEXUS project will provide economic stimulus in the form of increased tax revenue and local jobs. The project will create a significant number of jobs during the construction phase, ongoing jobs at various facilities along the route and tax revenue for state and local governments.

Where We Are Now:

The proposed NEXUS Project is years away from the anticipated construction start date. NEXUS recently initiated the Federal Energy Regulatory Commission’s (FERC) Pre-file process. The proposed project was assigned docket number PF15-10-000. The FERC Pre-filing process provides landowners, government agencies and other interested stakeholders an early opportunity to review project information and to identify issues or concerns before a formal Certificate Application is filed with the FERC or other permit



applications are made. NEXUS will continue to engage landowners to obtain information that will assist in the development of the project. NEXUS will also continue to engage federal, state and local officials to inform them of the activities in the study corridor areas.

The project's experienced development team is committed to a comprehensive consultation and ongoing communications process with stakeholders to develop a viable pipeline route that mitigates impacts to landowners and the environment, and meets or exceeds customer needs, constructability requirements and safety regulations. Landowners and stakeholders can contact the toll-free hotline at any time with questions or concerns at 1-844-589-3655.

The Permitting Process:

NEXUS is in the preliminary phase of project development, in which the focus is educating local stakeholders on details of the project and working with landowners to identify the best route prior to engaging regulatory agencies. The NEXUS Project will obtain necessary regulatory authorizations from the Federal Energy Regulatory Commission (FERC), the federal agency with primary jurisdiction over U.S. interstate natural gas pipeline projects. NEXUS engaged FERC during the fourth quarter of 2014 to initiate the pre-filing process and was assigned docket number PF15-10-000. The docket can be accessed through the FERC website, www.ferc.gov, using the "eLibrary" link and entering the project's docket number. All other pertinent environmental agency consultations will commence during the first quarter of 2015.

The FERC process and the permitting processes of other federal and state agencies will allow interested stakeholders multiple opportunities to comment on the proposed pipeline project.

Safety:

Underground interstate transmission pipelines are the safest mode of natural gas transportation.

NEXUS is dedicated to the safety of the public, its employees and the environment as well as the safe and reliable operation of its state-of-the-art facilities.

Once the facilities are placed into service, operation procedures will be implemented to monitor the pipeline 24 hours a day, 7 days a week.

The U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) oversees the safety of interstate natural gas pipelines and maintains minimum requirements, from the design and construction to testing, operations, maintenance and emergency response. The new pipeline will operate in strict accordance with all state and federal safety requirements. Additional information on our safety protocols is available on the NEXUS website at www.nexusgastransmission.com.

May 18, 2015

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, D.C. 20426

RE: FERC Docket No. PF15-10-000 – NEXUS Gas Transmission Pipeline

Dear Secretary Bose,

The Ohio Manufacturers' Association would like to take this opportunity to comment on the proposed NEXUS Gas Transmission Pipeline project that is currently being studied here in Ohio.

Access to reliable, affordable energy is a competitive issue for Ohio manufacturers. Combined with electricity, the price of energy has a significant impact on manufacturers' bottom lines. While Ohio manufacturers have made many investments to use energy efficiently, natural gas is a major cost for energy intensive manufacturers. It has also proven to be the most volatile. Before shale gas increased the domestic supply of natural gas, there were moments where the high price of natural gas threatened the survival of some businesses.

The OMA represents over 1,400 manufacturing companies across the state. Ohio manufacturers produce every product you can think of ranging from automotive components to medical equipment to pizza rolls. In aggregate, Ohio ranks among the top states for manufacturing. The economic output from manufacturing in 2013 reached \$100 billion up from \$87 billion in 2012. Investments in new production are underway that will drive that figure even higher in subsequent years.

As for employment, in 2013, Ohio again ranked 3rd nationally in manufacturing employment, with 5.5% of manufacturing jobs nationwide. 663,000 Ohioans are employed in the state's manufacturing sector. Manufacturing leads all industry sectors in payroll (over \$36 billion in 2012) paying an average annual wage of \$55,525. The men and women who work in Ohio manufacturing are among the most skilled and most productive anywhere on the globe.

Manufacturing productivity is a competitive advantage to Ohio's economy. Manufacturers in Ohio excel in both product and process innovation. Investments underway in plants across the state will improve productivity while saving energy, minimizing waste, and reducing environmental emissions.

Ohio competes with other states for manufacturing investment. Energy policy and energy infrastructure are both important considerations when companies make investment decisions.

The OMA believes energy policy can enhance – or hinder – Ohio's ability to attract business investment, stimulate economic growth and spur job creation, especially in manufacturing. State and federal energy policies must (a) ensure access to reliable, economical sources of energy, (b) support the development of a diverse energy resource mix, and (c) conserve energy to preserve our natural resources while lowering cost.

The OMA has a long-standing position of support for a modernized energy infrastructure to maximize energy supplies and stabilize energy pricing and reliability. Additionally, the construction of a natural gas pipeline from the Marcellus and Utica shale formations will increase access to gas as a feedstock. Gas is not just a source of energy – it is also a raw material utilized in many manufacturing processes such as chemicals, polymers and fertilizer. Finally, construction and operation of a pipeline will afford manufacturers from the region with expanded market opportunity to bid to supply needed parts, materials and technologies. These will all serve to protect and grow Ohio manufacturing.

The NEXUS Pipeline stands to benefit manufacturing in Ohio and throughout the Midwest. Therefore, the OMA encourages the Federal Energy Regulatory Commission to approve the NEXUS Pipeline project.

Sincerely,

A handwritten signature in blue ink, appearing to read "Ryan Augsburger". The signature is fluid and cursive, with a long horizontal stroke at the end.

Ryan Augsburger
Managing Director, OMA Public Policy Services



Rover Pipeline Fast Facts

- Rover Pipeline is an approximately **\$4.2 billion dollar** investment directly impacting the local, regional and national labor force by creating up to 10,000 construction jobs.
This includes between 4,500—6,500 positions in Ohio.
- Additionally, approximately 30-40 permanent positions will be created throughout Ohio, Michigan, Pennsylvania and West Virginia.
- Ohio is the 8th largest consumer of natural gas in the United States according to the U.S. Energy Information Administration’s 2013 report on natural gas consumption.
- Rover Pipeline will contribute nearly **\$1 billion** in direct spending to the United States economy as 76 percent of the pipe will be manufactured in the United States, along with all compression assembly and packaging. The majority of the remaining major materials will be purchased, manufactured or assembled in the United States, including Ariel compressors which are manufactured in Mount Vernon, Ohio.
- More than **\$124 million** will be paid in direct payments to landowners for easements and approximately \$1 billion will be paid for labor to the various contractors working on the project.

The Rover Pipeline is a 711-mile pipeline designed to transport 3.25 billion cubic feet per day of domestically produced natural gas from the rapidly expanding Marcellus and Utica shale production areas to markets across the U.S. as well as into the Union Gas Dawn Storage Hub in Ontario, Canada for redistribution back into the U.S. or into the Canadian market.

The approximate \$4.2 billion pipeline will transport gas from processing plants in West Virginia, eastern Ohio and western Pennsylvania for delivery to pipeline interconnects in West Virginia and eastern Ohio as well as the Midwest Hub near Defiance, Ohio, where up to 68 percent of the gas will be delivered for distribution to markets across the United States.

The remaining 32 percent of the natural gas will be delivered to markets in Michigan via an interconnect near Livingston County, Michigan with the existing Vector pipeline, which has established delivery points to local distribution companies and the vast Michigan storage fields throughout the state. Additionally, Vector will transport natural gas that is not delivered to Michigan markets on to the Dawn Hub in Ontario, Canada.

Economic Impact

Approximate Projected Ad Valorem Taxes:

Ohio	\$ 135 million
Total Project	\$ 147 million

Property taxes are estimated to be approximately \$147 million during the first year of service.

The tax figures listed above are calculated according to the state tax code based on an estimated capital spend for Rover. The state will allocate Rover’s taxable value based on a distribution of cost per taxing jurisdiction and counties will disperse funds to townships/districts in accordance with local taxing jurisdiction rates. These figures are estimates and should not be used for tax jurisdiction planning purposes since they are subject to change.

The Rover pipeline will be providing a public utility service in Ohio. Property used directly in the rendition of a public utility service is not subject to sales/use tax in Ohio.

Restoration

Rover has contracted with Land Stewards, LLC to serve as an independent agricultural auditor to review agriculture mitigation plans and advise on complete restoration. Land Stewards, LLC is a leading agronomic and environmental services group located in Marion, Ohio.

The company assists public and private landowners and managers, government, agribusiness, nonprofit organizations, and commodity groups with issues and services related to agricultural production and environmental protection.

Project Timeline

June 2014

Submit FERC Pre-Filing Request

November 2015

FERC Issues Construction Certificate

December 2016

In-service Seneca Plant to Midwest Hub

February 2015

File FERC Certificate Application

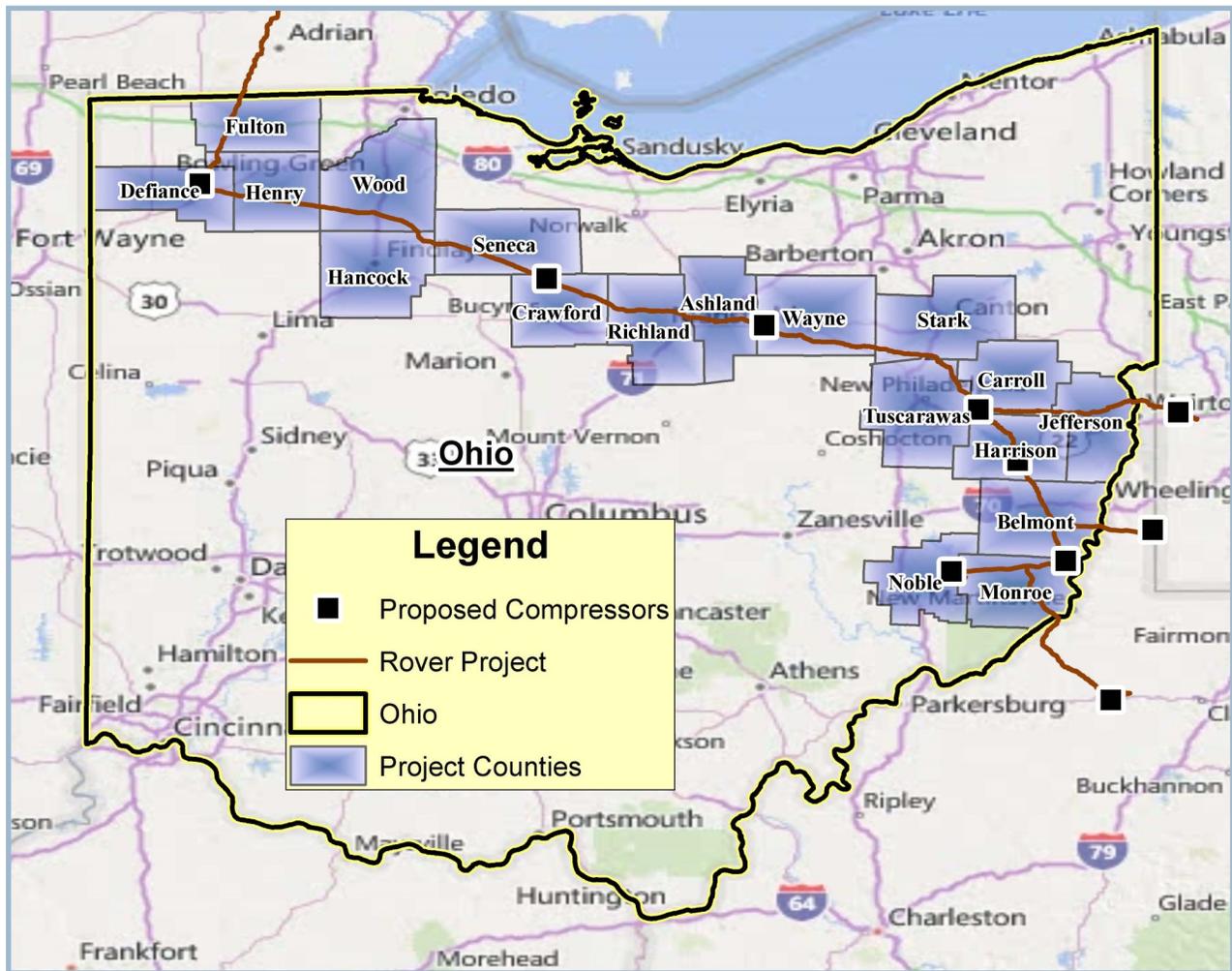
January 2016

Construction Starts

June 2017

In-service Midwest Hub to Union Gas Hub

Rover Pipeline Project Ohio Map



Miles of Pipeline Per County

Ashland County: 33.03

Milton	8.92
Mohican	8.68
Montgomery	0.66
Perry	2.04
Vermillion	12.72

Belmont County 34.99

Mead	5.00
Pultney	1.75
Richland	7.39
Smith	8.52
Washington	4.92
Wheeling	4.66
York	2.75

Carroll County: 26.23

Loudon	5.29
Orange	14.48
Perry	6.46

Crawford County: 35.40

Auburn	2.18
Chatfield	11.74
Cranberry	10.13
Lykens	4.59
Vernon	6.76

Defiance County: 14.88

Adams	3.26
Richland	7.17
Tiffin	4.45

Fulton County: 17.09

Chesterfield	5.33
Dover	0.19
Franklin	3.88
German	7.68

Hancock County: 11.16

Washington	11.16
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Harrison County: 44.72

Athens	5.05
Cadiz	13.05
Monroe	9.96
North	4.46
Stock	12.20

Henry County: 42.38

Flatrock	12.15
Monroe	12.44
Richfield	12.63
Ridgeville	5.15

Jefferson 20.06

Island Creek	4.30
Knox	5.12
Salem	6.49
Springfield	4.16

Monroe County 46.29

Adams	4.78
Center	0.76
Franklin	0.92
Green	5.65
Lee	6.43
Malaga	3.39
Seneca	3.86
Summit	5.47
Sunsbury	8.85
Switzerland	6.18

Noble County 3.27

Marion	3.27
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Richland County: 35.03

Franklin	8.22
Jackson	8.19
Sharon	9.65
Weller	8.97

Seneca County: 46.97

Bloom	6.84
Eden	13.90
Hopewell	7.08
Loudon	12.72
Seneca	6.43

Stark County: 28.60

Bethlehem	12.75
Pike	4.65
Sugar Creek	11.20

Tuscarawas County: 29.09

Fairfield	1.29
Sandy	13.89
Warren	13.91

Wayne County: 55.78

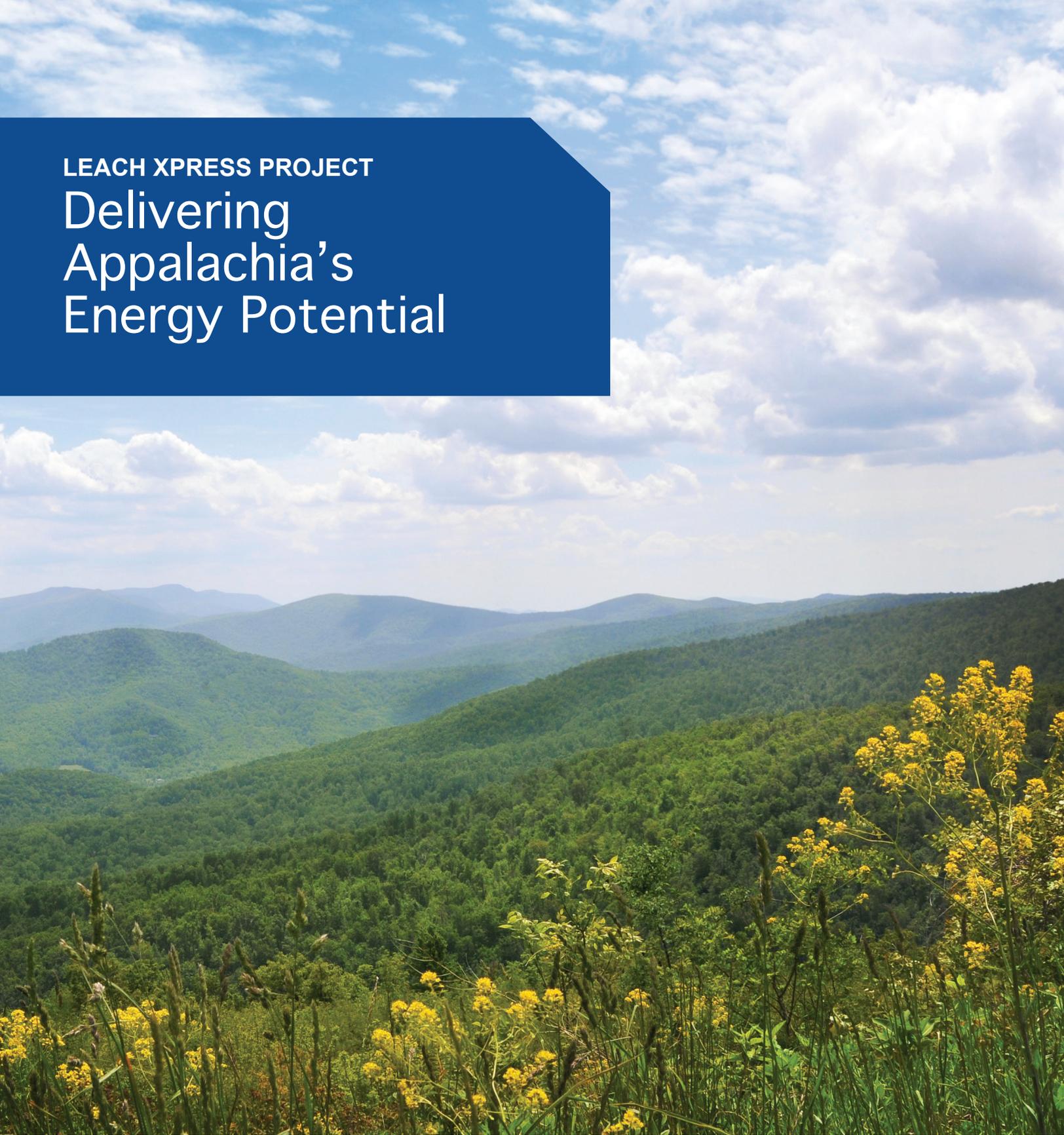
Franklin	8.44
Paint	12.87
Plain	16.80
Salt Creek	12.08
Wooster City	1.83
Wooster twsp	3.77

Wood County: 45.26

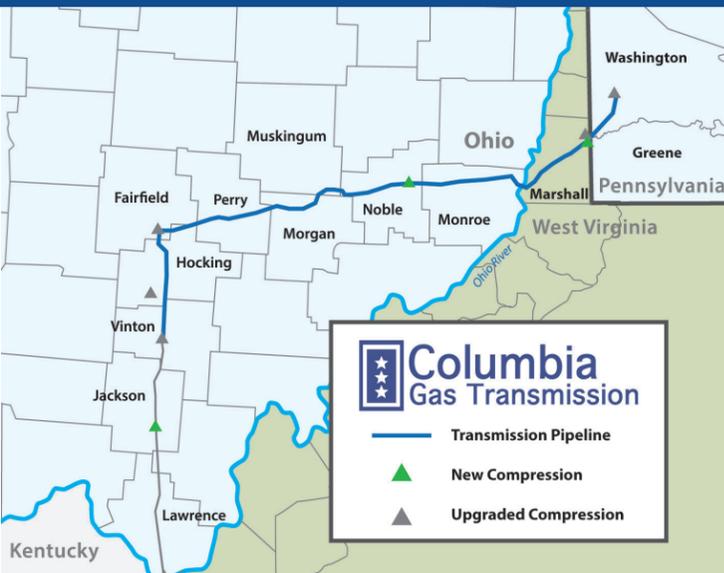
Bloom	13.19
Henry	12.62
Jackson	4.51
Milton	8.02
Perry	6.92

LEACH XPRESS PROJECT

Delivering Appalachia's Energy Potential



Welcome to the Leach XPress



IMPROVEMENTS AT A GLANCE

- Installation of more than 160 miles of new 30-inch and 36-inch-diameter pipeline
- Construction of three new state-of-the-art compressor stations near:
 - Majorsville, West Virginia
 - Summerfield, Ohio
 - Oak Hill, Ohio



UNLOCKING THE ENERGY POTENTIAL OF THE APPALACHIAN BASIN

Energy exploration and development in Ohio, Pennsylvania and West Virginia has unlocked an abundance of natural gas — a clean, domestic energy resource that will fuel the nation and create local jobs and opportunity.

For the energy economies of Ohio, Pennsylvania and West Virginia to grow to their full potential, Columbia Gas Transmission has proposed the Leach XPress — a new pipeline project to safely and efficiently transport this resource to market.

The Leach XPress pipeline is designed to provide up to 1.5 billion cubic feet per day of new transportation capacity through the heart of Marcellus and Utica production areas in Ohio, Pennsylvania and West Virginia. The pipeline will link local energy supplies with regional markets and provide natural gas users with a reliable and affordable new gas supply.

Project Review and Approval

As an interstate pipeline, the primary regulatory body overseeing the Leach XPress project will be the Federal Energy Regulatory Commission (FERC). The FERC will conduct a comprehensive and transparent environmental review of the project, which will include working closely with landowners, local officials and communities.

Pending FERC approval of the Leach XPress, Columbia anticipates construction to begin in fall 2016 to meet an in-service date of fall 2017.

You are invited to follow the project through the FERC process by visiting the agency’s “electronic library” at ferc.gov/docs-filing/elibrary.asp and searching for docket number PF14-23.

A DIFFERENT KIND OF PIPELINE COMPANY

Columbia Gas Transmission is a well-known, established energy company in Ohio, Pennsylvania and West Virginia. Unlike other energy companies who have recently begun operating in this area, Columbia and its employees have been safely and reliably serving the region for decades – and we plan to continue that service for decades to come.



We have been a part of Ohio, Pennsylvania and West Virginia for more than 100 years. This new investment reaffirms our commitment to this important region.



Fueling Economic Development

The Leach XPress project is expected to create or support nearly 5,700 jobs through 2017 and generate close to \$2.3 billion in economic benefits. Additionally, the project is expected to generate significant new revenue for local services, particularly public education.

Unwavering Commitment to Safety

We believe our primary responsibility is to ensure public safety through responsible operations. From design to construction to maintenance, we apply stringent industry standards, research-based company policies and regulatory mandates to every aspect of an infrastructure project. This commitment has resulted in the development of one of the safest and most reliable energy transportation networks. Our motto - Safe by Choice, Not by Chance - drives our employees to prioritize safety above all else.

Partnering with Landowners

Building positive working relationships with landowners near the project area is important to us. As a landowner, we consider you a partner in this project. You can count on us to protect your privacy, respect your land and make safety and environmental responsibility our top priorities. We pledge to be transparent, fair and flexible in all of our communications.

Environmental Responsibility

Our projects are designed and constructed to minimize land use and impact to natural resources. Before launching an infrastructure project, we conduct extensive engineering, environmental and archaeological surveys of the project landscape to ensure that we avoid sensitive natural and cultural areas. We believe that conducting our operations in an environmentally sound manner is the right thing to do.

Investing in Communities

Columbia has been a part of Ohio, Pennsylvania and West Virginia for more than 100 years. We are committed to the growth and vitality of the communities in which we operate. This long-term commitment includes supporting local nonprofit and civic organizations, sponsoring community events, volunteering and keeping local officials and residents informed about our operations. Page 64 of 104



YOUR SOURCE FOR PROJECT INFORMATION

Columbia's project team is available to answer your questions and understand your concerns.

Zane Daniels
Community & Stakeholder Relations
(614) 460-7103
zdaniels@nisource.com

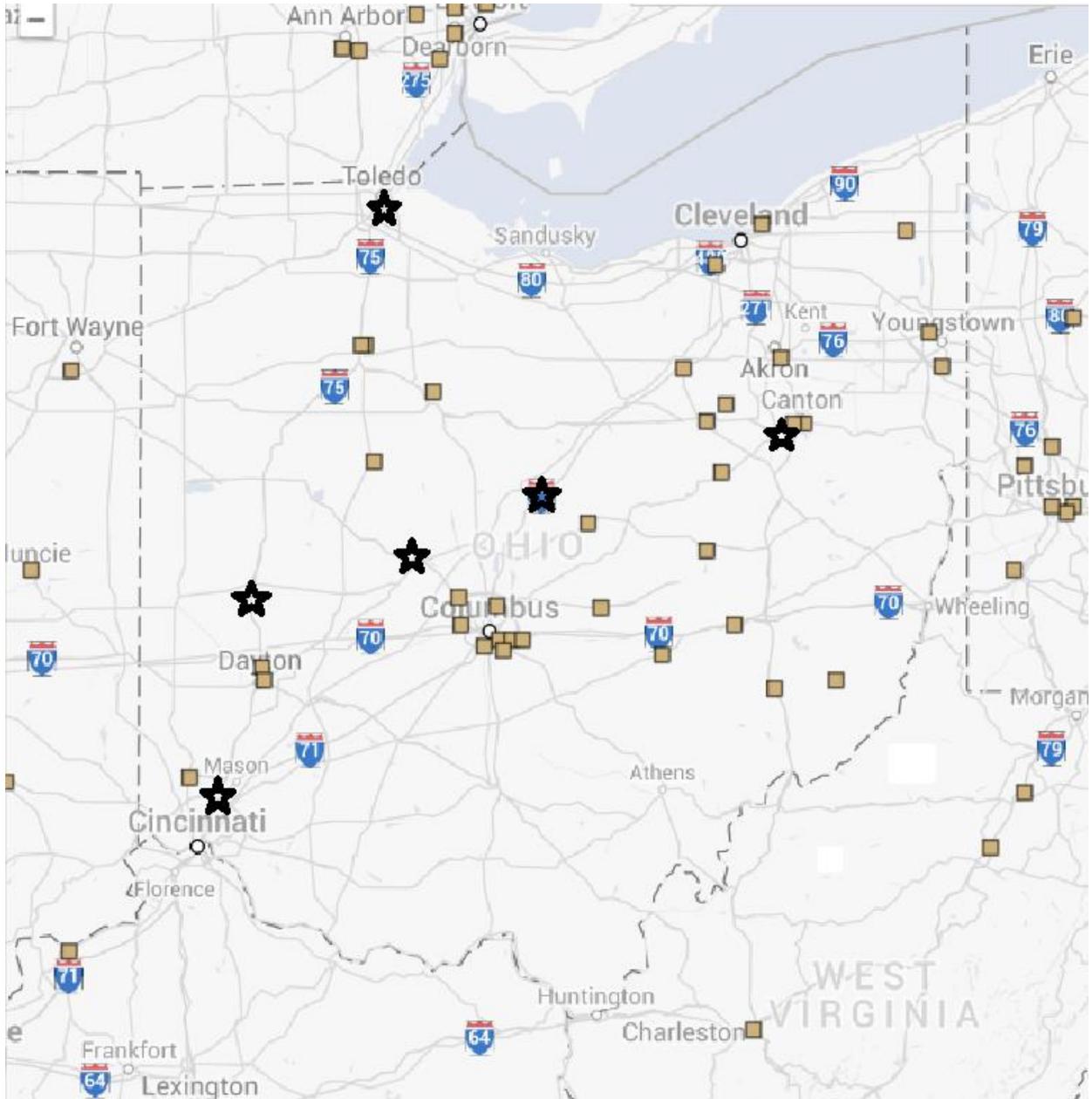
Nena Honaker
Landowner Relations
(859) 556-1761
nhonaker@nisource.com



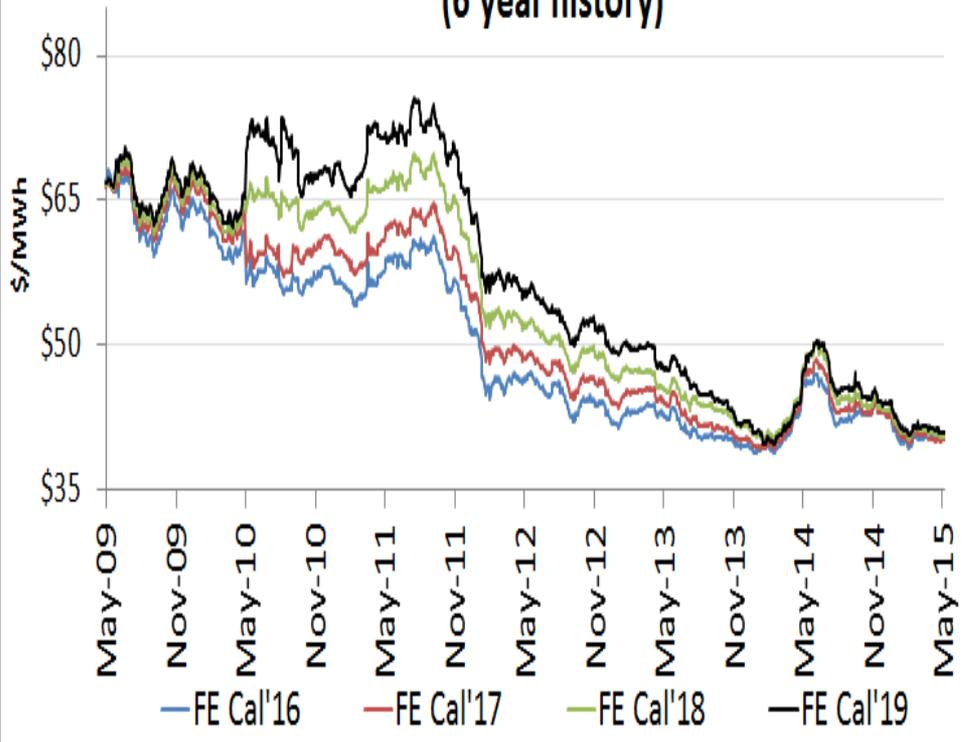
www.columbiapipelinegroup.com

Ohio CNG Map

Current CNG stations are squares. CNG stations under construction are stars.

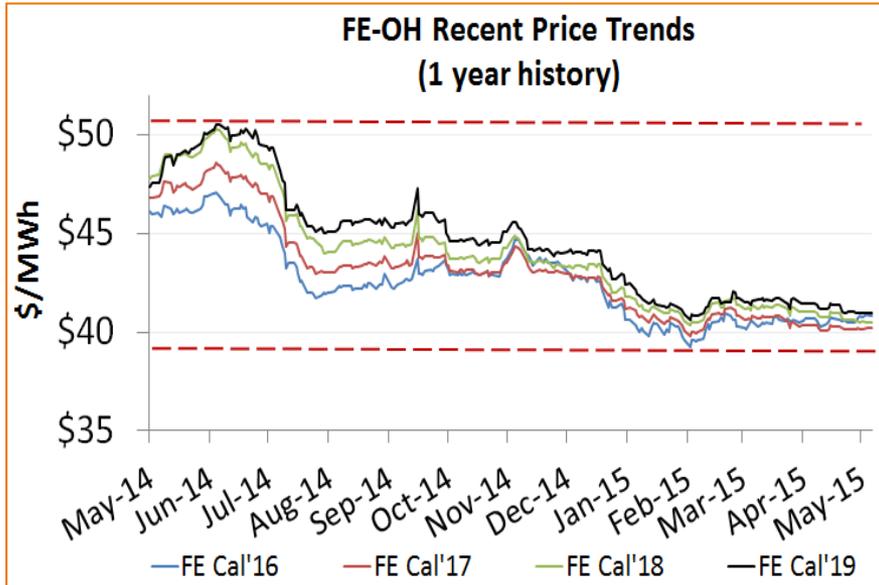


FE-OH RTC Forward Price Trends (6 year history)



Year	Current vs All-time Max	Current vs All-time Low	Y-t-D	M-o-M
2016	-57%	5%	0%	0%
2017	-58%	2%	-2%	0%
2018	-58%	1%	-3%	-1%
2019	-57%	3%	-3%	-1%

FE-OH Recent Price Trends (1 year history)



Customer Takeaway: Forward power prices have had a hard time moving lower this spring and calendar strip prices are now consolidating ahead of summer. With forward prices still at or near 12-month lows, now is a great time to lock-in value before summer cooling demand begins to influence prices.

Source: Constellation





PRICE TREND ANALYSIS

Transaction Point: **PJM ATSI ATC**

Data Range

From:	8/9/2011	8/9/2011	8/9/2011	8/9/2011	8/9/2011	2/9/2012	11/15/2012	12/20/2013
To:	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015

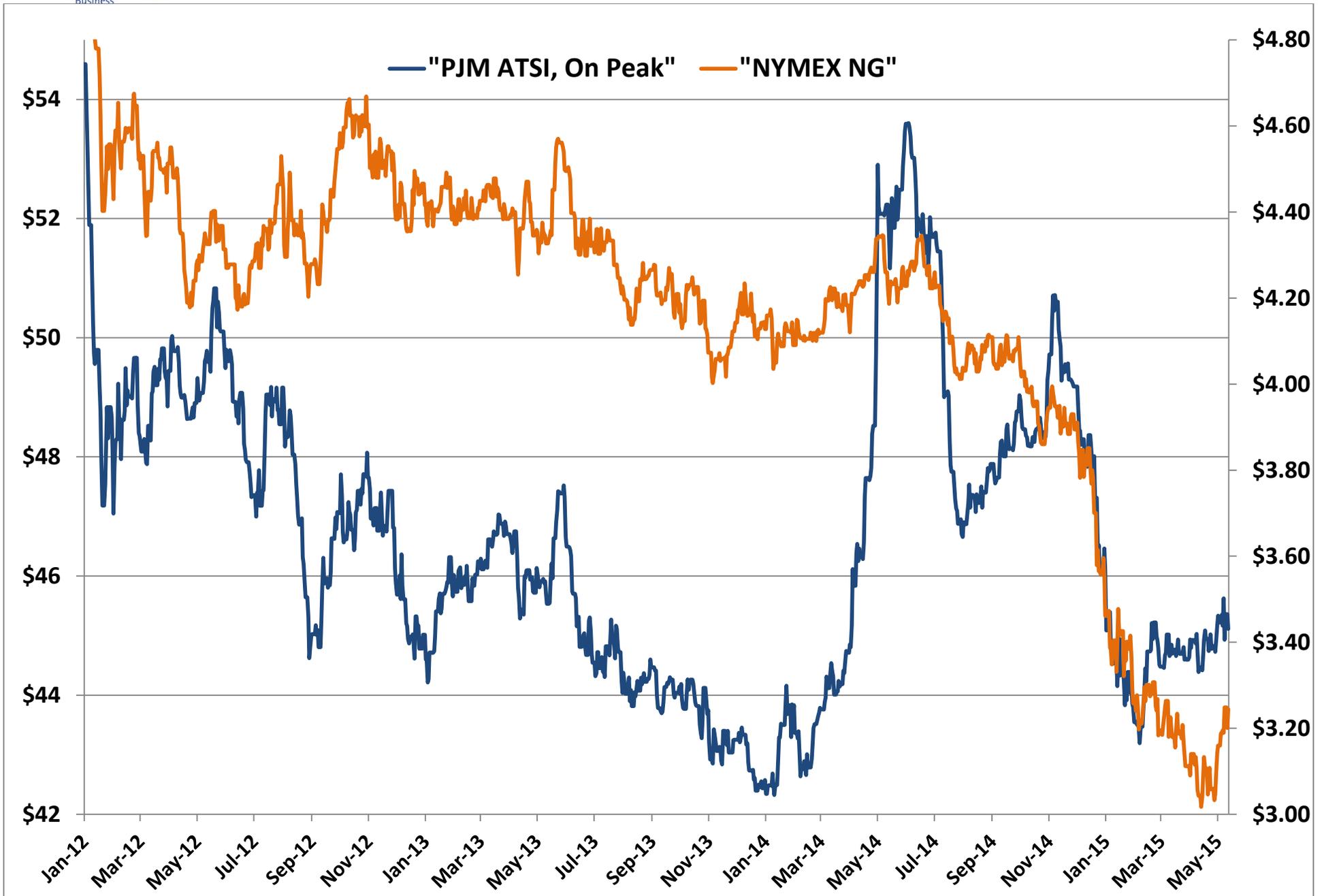
	Q3 - 15	Q4 - 15	Q1 - 16	Q2 - 16	2016	2017	2018	2019
Current Price	\$40.62	\$35.03	\$45.62	\$33.94	\$37.97	\$37.24	\$37.69	\$38.25
Current Percentile	35.9%	37.6%	68.8%	13.3%	28.3%	7.7%	7.5%	8.8%
Minimum Price	\$37.85	\$31.17	\$36.42	\$30.66	\$35.79	\$36.15	\$36.39	\$37.00
Date of Minimum	1/23/15	2/13/14	12/18/13	2/8/14	2/13/14	2/7/14	2/7/14	2/7/14
Maximum Price	\$56.59	\$52.19	\$59.76	\$55.65	\$57.84	\$45.96	\$47.43	\$48.88
Date of Maximum	9/7/11	9/7/11	9/8/11	9/8/11	9/7/11	6/4/14	6/4/14	6/4/14
25th Percentile	\$40.15	\$34.22	\$40.23	\$35.33	\$37.75	\$38.51	\$38.68	\$38.66
50th Percentile	\$41.23	\$35.75	\$43.91	\$37.10	\$39.81	\$40.40	\$40.75	\$41.09
75th Percentile	\$42.96	\$38.13	\$47.04	\$39.94	\$42.60	\$42.35	\$41.90	\$43.13

All prices are \$ per MWh and represent wholesale price component only.

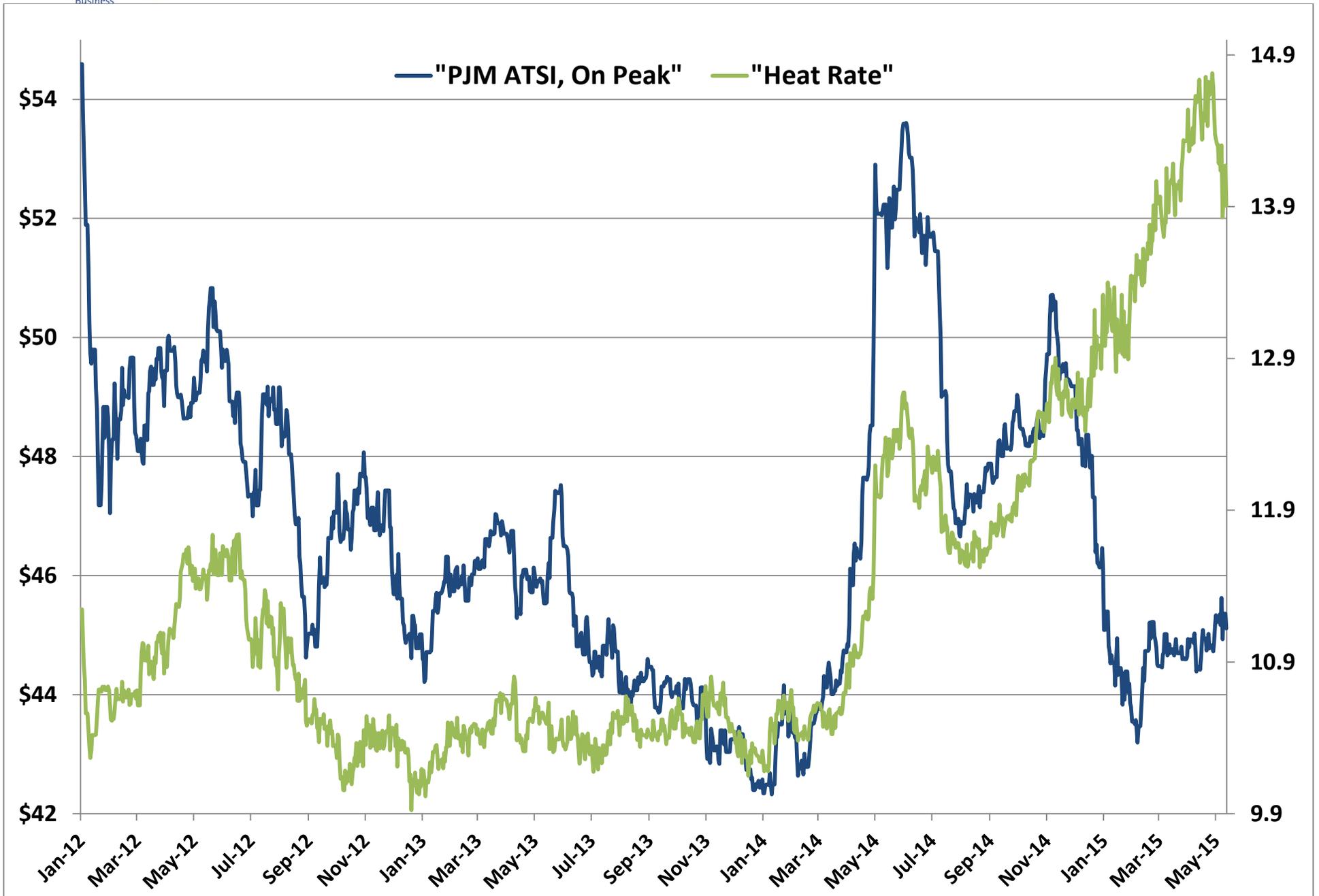
The Current Percentile represents the percentage of days during the reference period in which the market price has been below the current price.

The information presented above was gathered and compiled by Direct Energy Business for the convenience of its employees, clients, and potential customers and is for informational purposes only. Direct Energy Business makes no representation or warranty regarding the accuracy, reliability, comprehensiveness, or currency of the aforementioned data. This information is being provided as a courtesy and should not be construed as an offer to sell, a solicitation of an offer to buy any exchange-traded futures, options contracts or any energy commodity, or advice regarding the purchase or sale of exchange-traded futures or options contracts. Past performance is not necessarily indicative of future results. Reliance upon this information is at the sole risk of the reader.

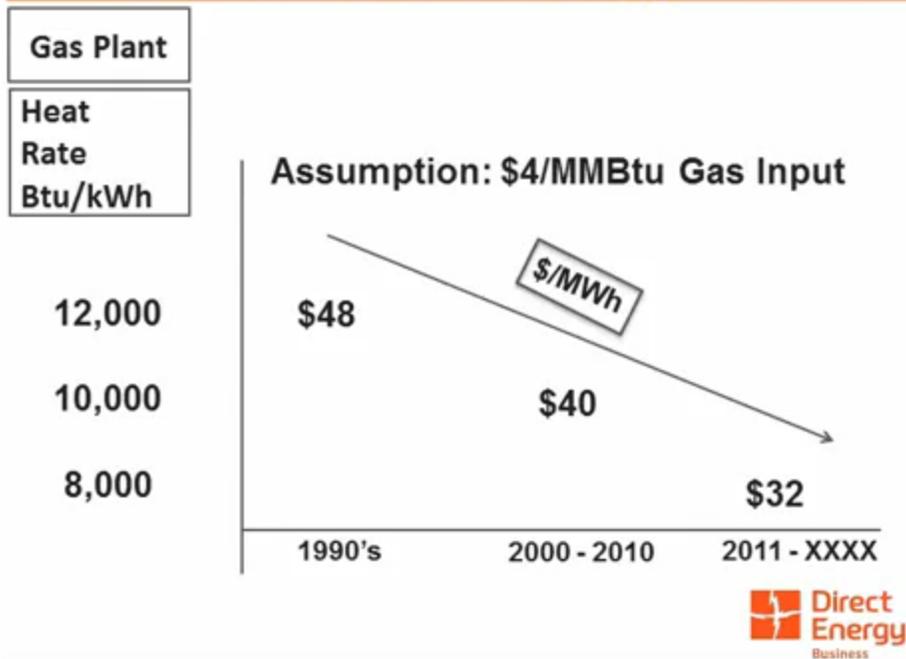
PJM ATSI vs NYMEX Natural Gas, Calendar 2016



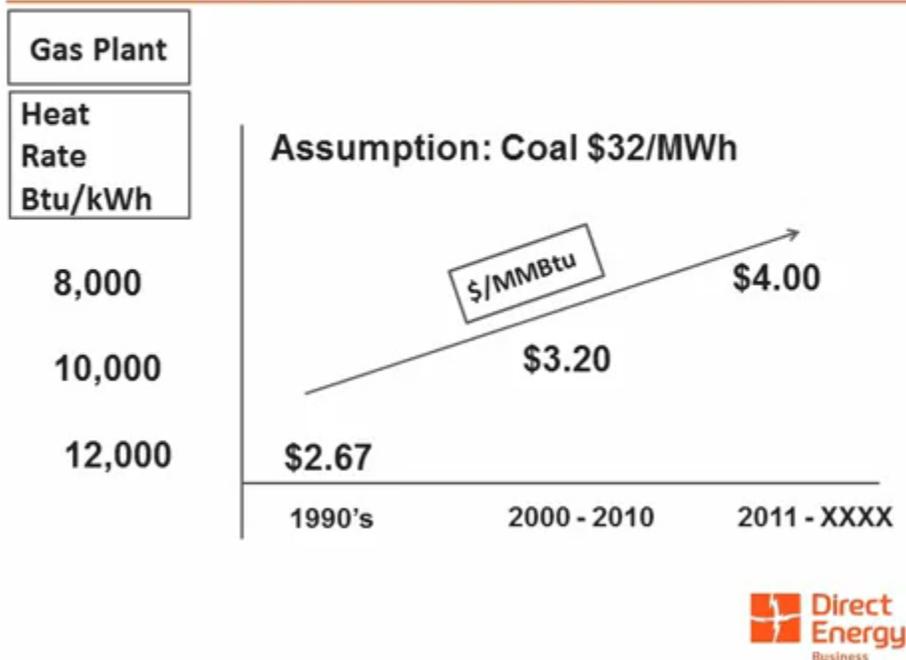
PJM ATSI vs Heat Rate, Calendar 2016



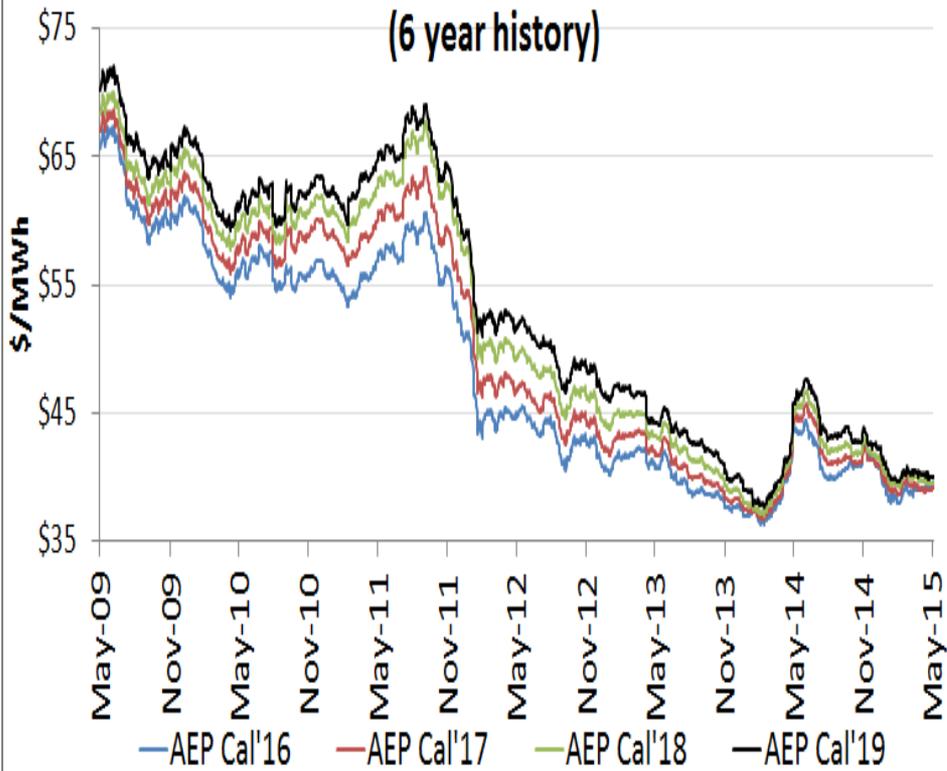
New NG Power Plant Efficiency Lowers Electric Energy Prices



New NG Power Plant Efficiency Raises Coal to Gas Floor

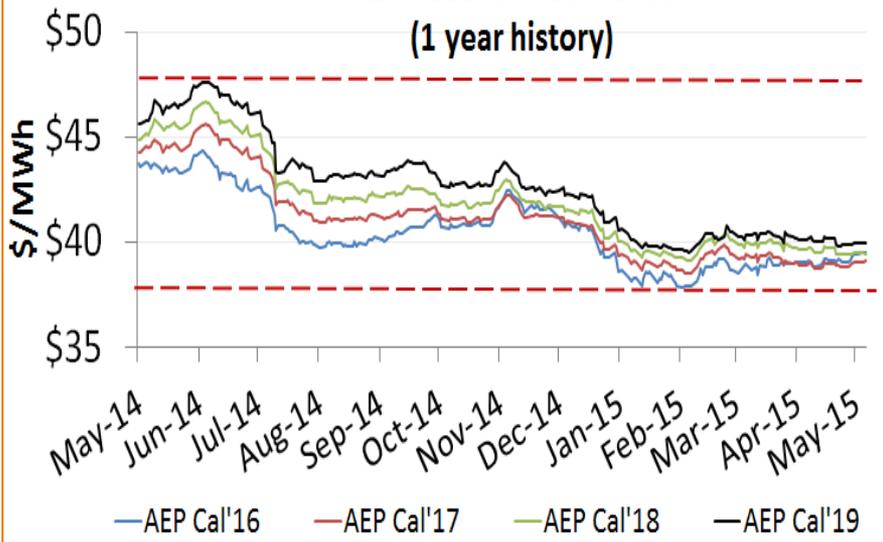


AEP Historical RTC Forward Price Trends
(6 year history)



Year	Current vs All-time Max	Current vs All-time Low	Y-t-D	M-o-M
2016	-48%	9%	2%	1%
2017	-50%	7%	-1%	0%
2018	-51%	7%	-1%	0%
2019	-52%	7%	-2%	0%

AEP Recent Price Trends
(1 year history)



Customer Takeaway: Forward power prices have had a hard time moving lower this spring and calendar strip prices are now consolidating ahead of summer. With forward prices still at or near 12-month lows, now is a great time to lock-in value before summer cooling demand begins to influence prices.

Source: Constellation





PRICE TREND ANALYSIS

Transaction Point: **PJM AEP ATC**

Data Range

From:	1/10/2011	1/10/2011	1/10/2011	1/11/2011	1/11/2011	2/9/2012	11/15/2012	8/9/2013
To:	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015	5/12/2015

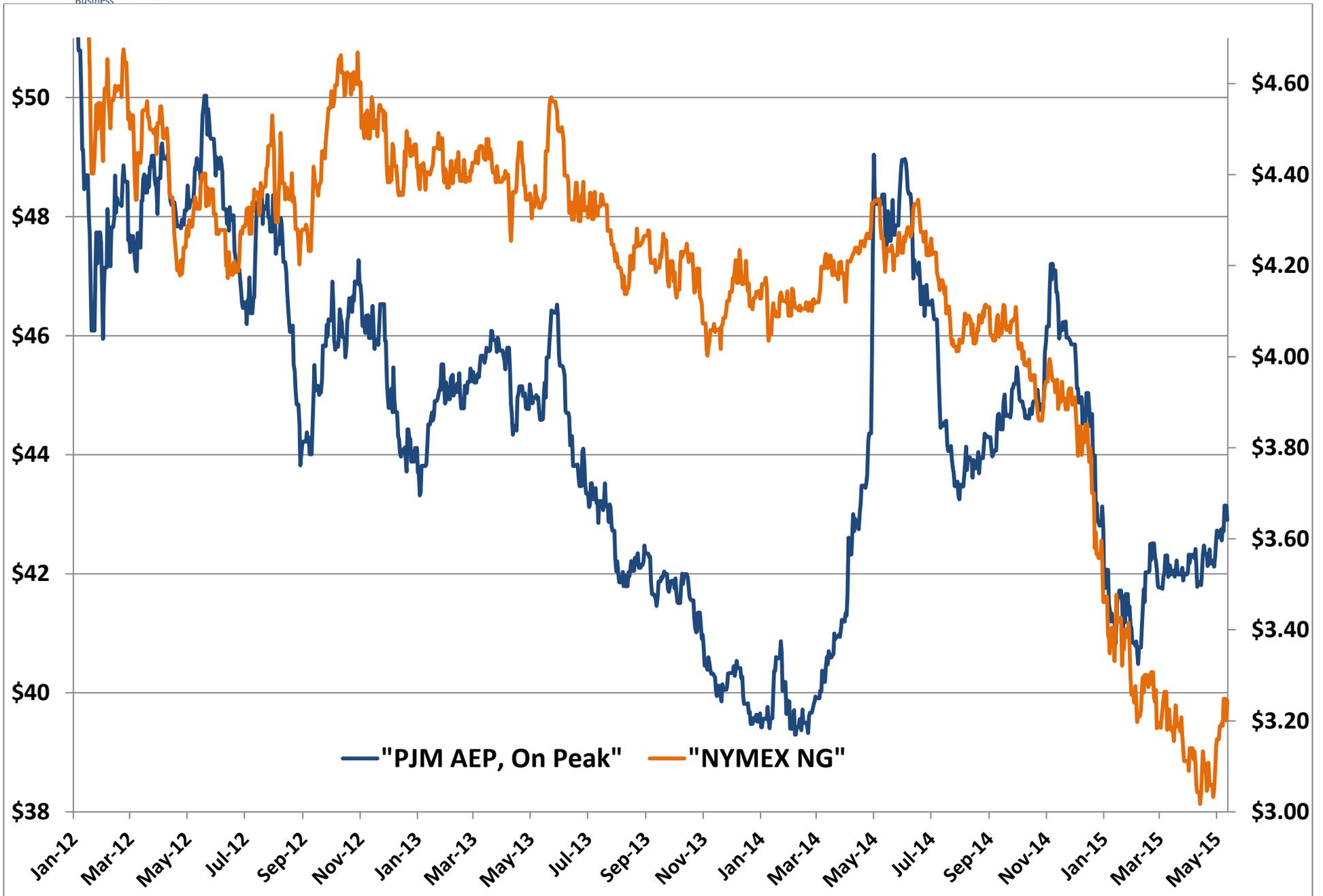
	Q3 - 15	Q4 - 15	Q1 - 16	Q2 - 16	2016	2017	2018	2019
Current Price	\$37.80	\$34.68	\$43.63	\$33.62	\$36.72	\$36.08	\$36.44	\$36.80
Current Percentile	33.4%	42.7%	57.4%	19.6%	26.2%	18.7%	16.7%	26.8%
Minimum Price	\$34.12	\$29.95	\$35.13	\$29.26	\$33.34	\$33.46	\$33.56	\$32.59
Date of Minimum	2/6/15	2/26/14	12/18/13	2/8/14	2/6/14	2/6/14	2/6/14	2/6/14
Maximum Price	\$55.59	\$51.12	\$59.60	\$54.57	\$57.06	\$44.89	\$44.17	\$45.42
Date of Maximum	7/19/11	9/7/11	7/19/11	9/8/11	7/19/11	5/19/12	6/4/14	6/4/14
25th Percentile	\$37.05	\$33.35	\$39.40	\$34.10	\$36.52	\$36.58	\$36.88	\$36.73
50th Percentile	\$39.59	\$35.43	\$43.05	\$36.80	\$38.91	\$38.55	\$38.85	\$37.81
75th Percentile	\$42.57	\$38.23	\$48.33	\$40.61	\$42.42	\$41.11	\$40.41	\$40.22

All prices are \$ per MWh and represent wholesale price component only.

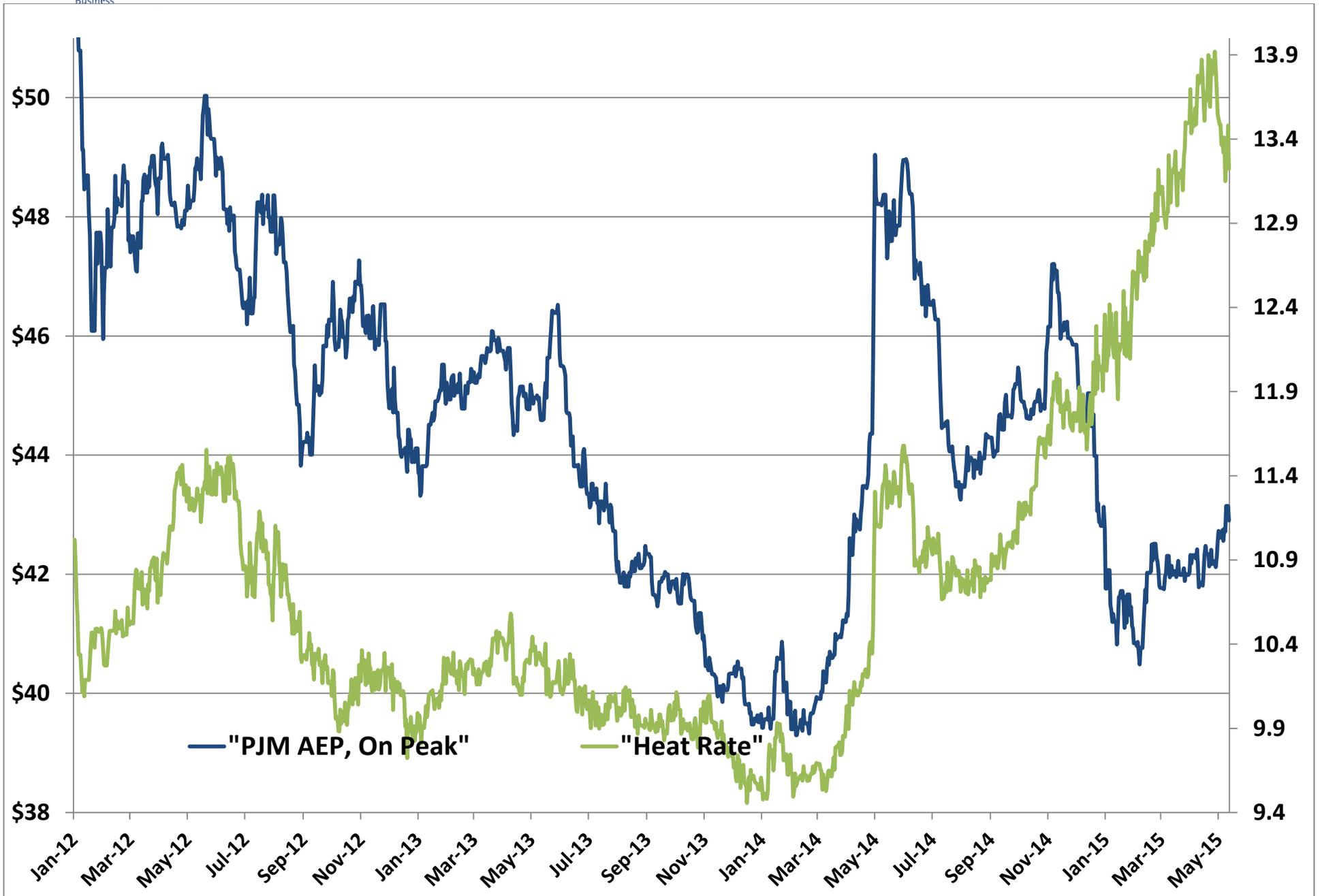
The Current Percentile represents the percentage of days during the reference period in which the market price has been below the current price.

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PJM AEP vs NYMEX Natural Gas, Calendar 2016

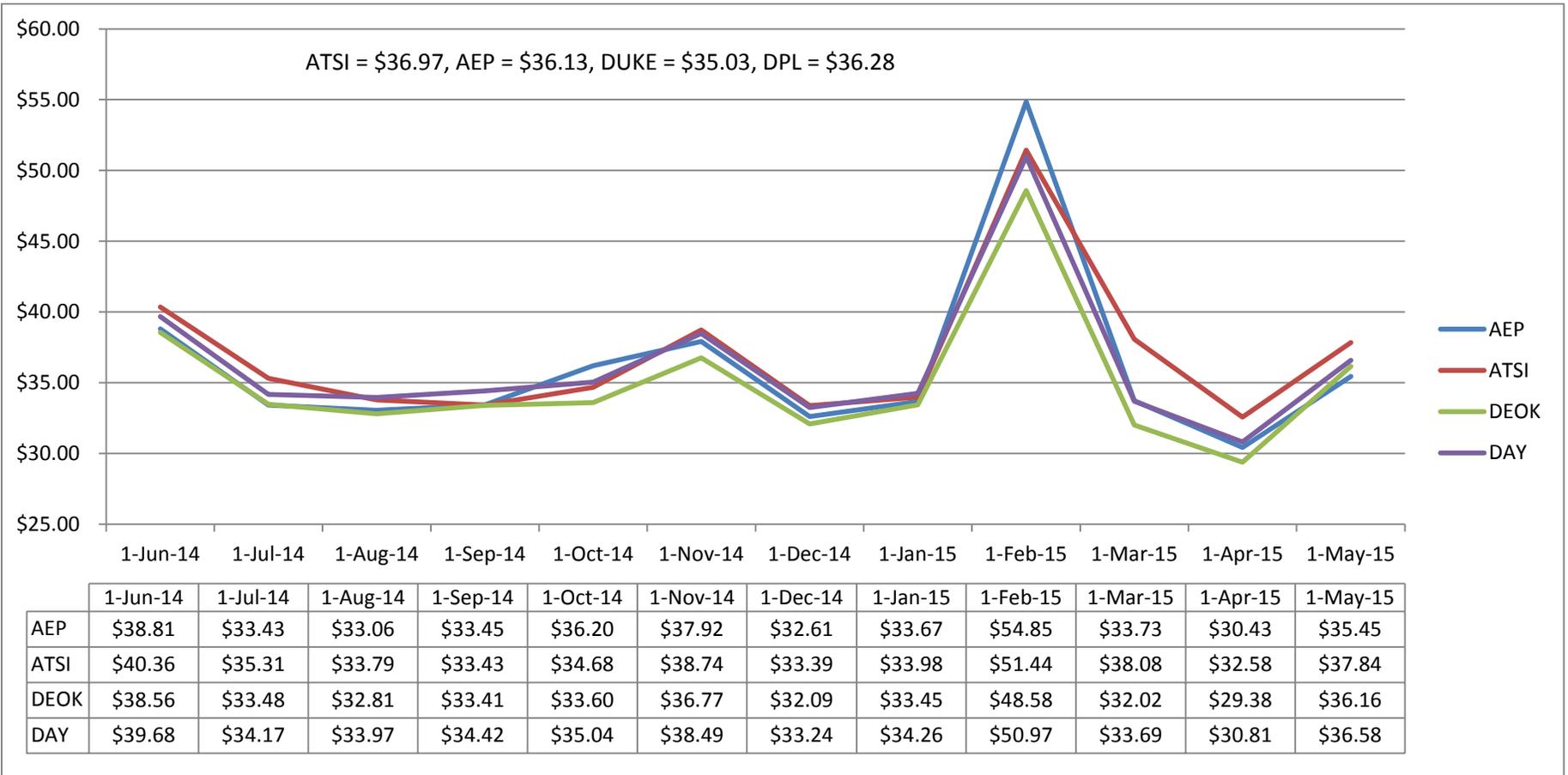


PJM AEP vs Heat Rate, Calendar 2016





Monthly Average Day Ahead Prices

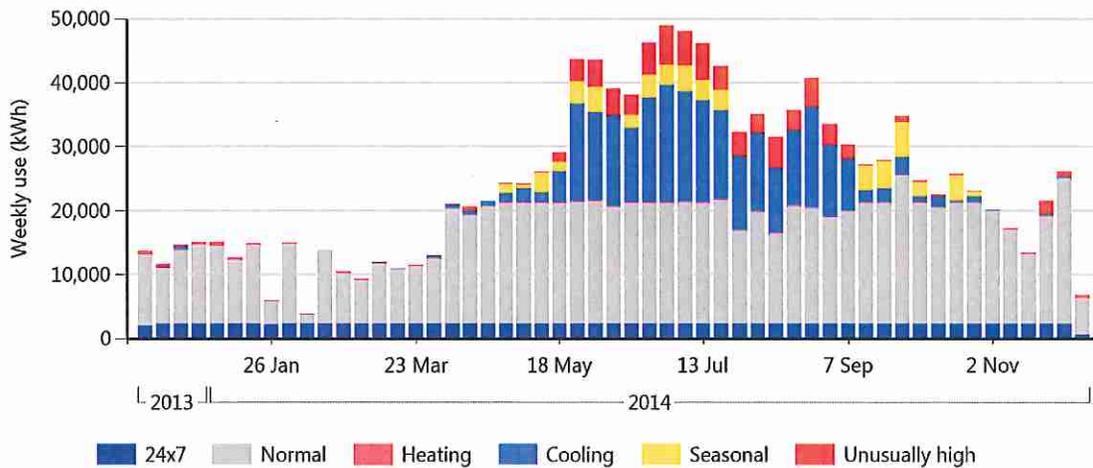




Load Analysis for Sample Company

Commodity: **Electricity**
 Analysis Period: **9 December 2013 - 8 December 2014**
 Prepared for: **Scioto Energy**
 Report Date: **21 January 2015**

Electricity use over the analysis period. Each bar is the use for one week:



Potential Savings Opportunities

- \$5,130** Electricity use was higher than expected for 1,160 hours over the analysis period. Eliminating the excess use would have saved an estimated \$5,130. Much of this high use occurred during early morning hours (1am – 5am) when the load did not drop as expected.
- \$4,510** There are 12 “on” hours per day for most Sundays-Saturdays. These are consecutive hours when electricity use is much higher than during “off” hours. Reducing the number of “on” hours by one hour per day on Sundays-Saturdays would have saved about \$4,510 over the analysis period.
- \$3,260** 19% of all electricity use is driven by warm weather. Actions described later in the report would have saved about \$3,260.
- \$784** 9% of all electricity use appears to be “24x7” load - from equipment which is almost never turned off. Reducing this continuous demand by 10% (1.37 kW) would save about \$784 per year.

In combination, these actions would have the following impacts:



Avoided use:
206,000 kWh



Cost savings:
\$13,700



Avoided CO₂ emissions:
312,000 lb

Load Components

The preceding chart shows electricity use divided into six components:

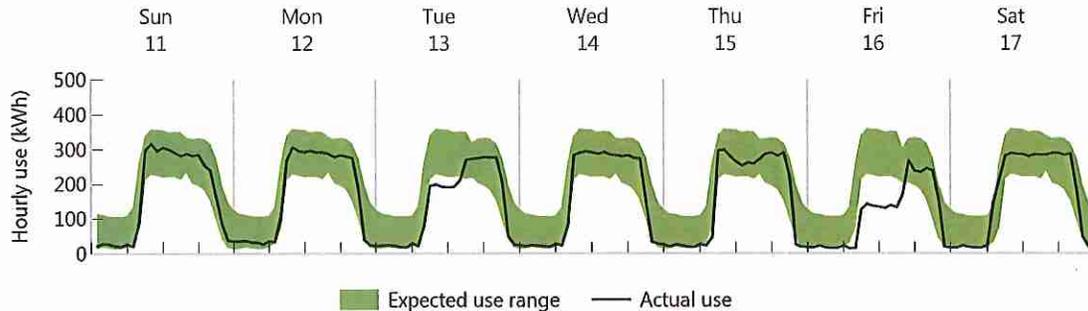
- 24x7** Load may be from equipment which is almost never turned off. It comprises 9% of total electricity use at an estimated cost of \$7,820.
- Normal** Electricity use above the 24x7 level but within the expected range for this load. It comprises 62% of total use at an estimated cost of \$52,500.
- Heating** Electricity use is not affected by cold weather.
- Cooling** Electricity use increases with warm weather, totalling 19% of all use. This added an estimated \$16,100 to the electricity bill.
- Seasonal** There are two seasonal increases in electricity use, one peaking in early summer and the other in early fall. They account for 4% of the total use, at an estimated cost of \$3,630.
- Unusually high** Electricity use was higher than expected for 1158 hours during the analysis period. This is 6% of the total use, with an estimated cost of \$5,130.

The following sections of this report provide more details about each load component.

Typical Load Profiles

Energy use does not vary by day of week. There is no regular pattern of "off" vs. "on" days such as weekend vs. weekday.

The week beginning Sunday, 11 May 2014 is typical:



There are 12 "on" hours per day for most Sundays-Saturdays. These are consecutive hours when electricity use is much higher than during "off" hours. Reducing the number of "on" hours by one hour per day on Sundays-Saturdays over the analysis period would have the following impacts:



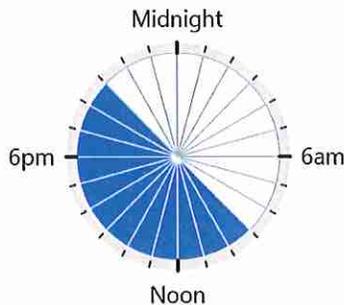
Avoided use:
68,800 kWh



Cost savings:
\$4,510



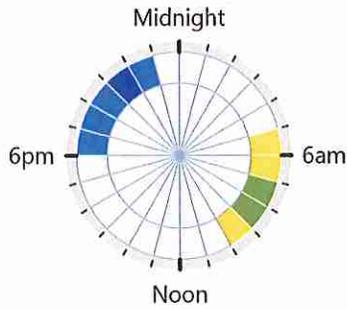
Avoided CO₂ emissions:
104,000 lb



There are 12 "on" hours per day for most Sundays-Saturdays, starting at 9am and ending at 9pm. They are shown on the left, shaded blue.

Some days of the week follow a common pattern throughout the analysis period. They rise and fall at about the same time of day, and peaks and minimums tend to occur at about the same time. The most common characteristics are listed below:

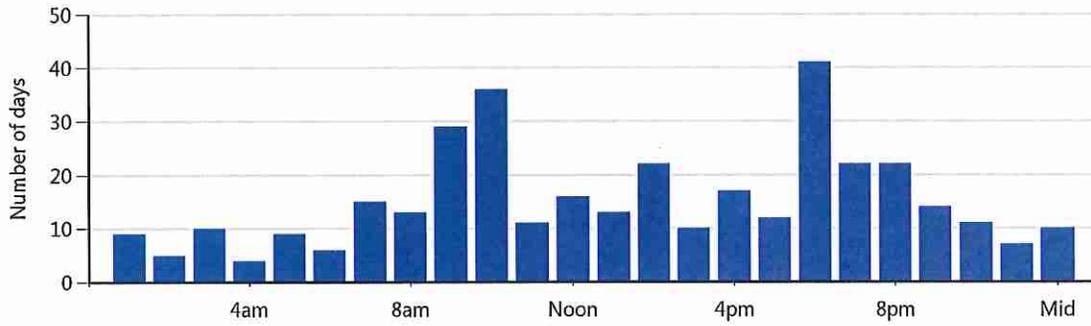
Sundays-Saturdays



- 5am to 10am - load rises, most steeply from 7am to 9am (57% of Sundays-Saturdays).
- 6pm to 11pm - load drops, most steeply from 9pm to 10pm (58%).

Inner hours: ■ Daily low ■ Daily peak
 Outer hours: ■ Drop ■ Steep drop ■ Flat ■ Rise ■ Steep rise

The following chart shows when the daily peak occurs for all Sundays-Saturdays. A 3pm peak means that the highest reading for the day is between 2:30pm – 3:30pm.



24x7 Load

- 9%** Percentage of total electricity use from equipment which is almost always on.
- 13.7 kW** Lowest average hourly demand to which this load drops during "off" hours.
- \$7,820** Estimated cost for this "24x7" load.

A 10% reduction in this load for a full year would have the following impacts:



Avoided use:
12,000 kWh



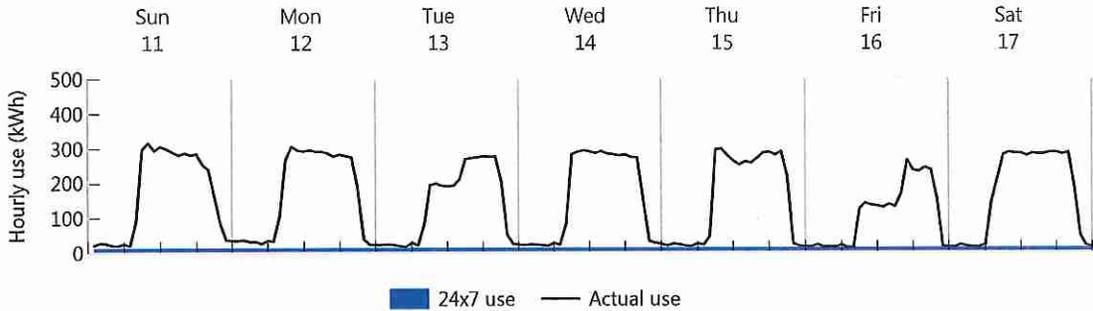
Cost savings:
\$784



Avoided CO₂ emissions:
18,100 lb

The 24x7 load is usually created by equipment that is almost never turned off. Some of this load is unavoidable, like data centers, safety equipment, and security systems. But other continuous loads like circulating pumps can be reduced with controls. Standby, or "phantom" power from computers and appliances when they are supposedly off may also be a significant source of 24x7 load.

The 24x7 demand for this load is 13.7 kW. The week beginning Sunday, 11 May 2014 illustrates the percentage of total electricity use at or below the 24x7 demand:



The load drops to or below the 24x7 demand for 140 hours over the analysis period (2%). Most of these are early morning hours (1am – 5am).

Weather Impact

\$16,100 Estimated cost of electricity use driven by warm weather. This is 19% of total electricity use over the analysis period.

46°F Electricity use increases when the average daily outdoor temperature rises above 46°F. Warm weather adds \$8.2 per day for each °F above 46°F. If the average outdoor temperature is 56°F, daily costs increase by about \$82.3.

The actions detailed below will reduce the impact of weather on electricity use, and would have provided the following savings over the analysis period:



Avoided use:
48,800 kWh

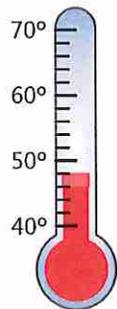


Cost savings:
\$3,260

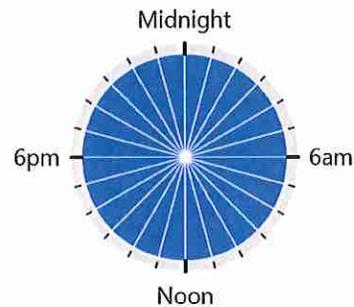


Avoided CO₂ emissions:
73,800 lb

Actions to reduce the impact of weather



Raise cooling balance point for Sundays-Saturdays from 46°F to 48°F.



The hours when cooling occurs for Sundays-Saturdays are shaded blue. There are no setback hours when cooling is usually off.

Raise cooling balance point

- Sundays-Saturdays - the cooling balance point is 46°F. This is very low. Raise it by 2°F to 48°F.

Reduce cooling cost per degree

- Sundays-Saturdays - the cooling cost per degree is \$8.2. A 10% improvement in cooling efficiency from the actions described below is readily achievable in many facilities. Lower the cooling cost per degree by 10% to \$7.4.

Setback schedule

- Sundays-Saturdays have 0 cooling setback hours.

Examples of operational and other facility changes which reduce the impact of weather on electricity use include the following:

Cooling balance point

Electricity use increases when the daily average outdoor temperature rises above the "cooling balance point". Actions which lower your cooling balance point reduce energy use from warm weather. These include

- Raising the cooling setpoint on thermostats
- Increasing the insulation levels in ceilings, walls, and floors
- Replacing windows with more energy-efficient models

Cooling cost per degree

A simple way to describe the overall efficiency of a cooling system is "cooling cost per degree". This is the additional cost per day for each degree that the daily average outdoor temperature is above the cooling balance point. For example, if the cooling cost per degree is \$10, and its cooling balance point is 60°F, then \$100 is added to the electricity bill on a day whose daily average outdoor temperature is 70°F. Actions which lower your cost per degree reduce energy use from warm weather. These include

- Regular maintenance of the cooling systems, such as replacing filters, fan and pump motor maintenance, etc.
- Sealing and insulating ducts and pipes
- Replacing old cooling systems with more efficient equipment
- Increasing the insulation levels in ceilings, walls, and floors

Cooling setback schedule

Cooling should only occur when the facility is in use. Setback controls or thermostats reduce cooling during unoccupied hours of the day and week. Applying setbacks whenever possible will reduce energy use from warm weather.

Unusually High Use

1,160 hours Number of hours over the analysis period in which electricity use was higher than expected.

6% Percentage of total electricity use from this unusually high use.

Early morning 57% of the high use occurred during early morning hours (1am – 5am) when the load did not drop as expected.

If electricity use had not exceeded the expected range over the analysis period, the following savings would have been realized:



Avoided use:
76,800 kWh

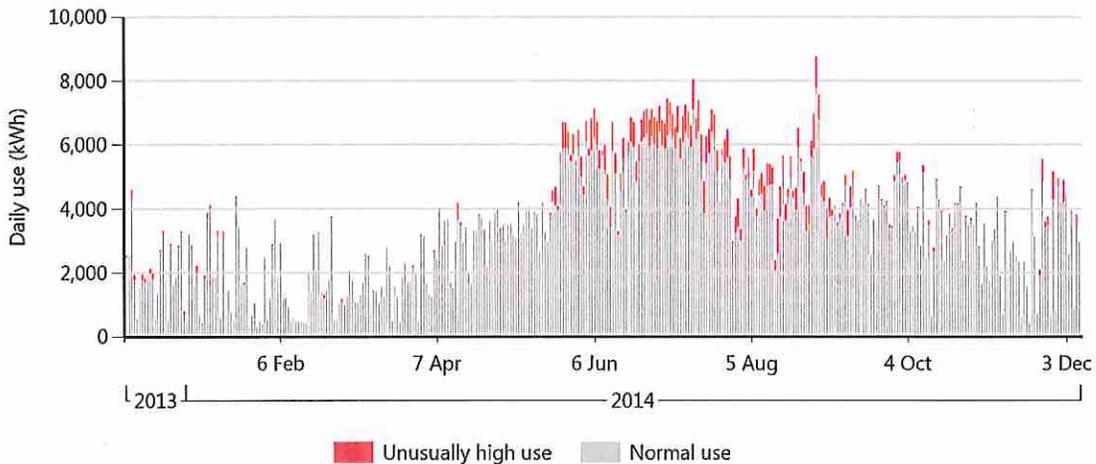


Cost savings:
\$5,130



Avoided CO₂ emissions:
116,000 lb

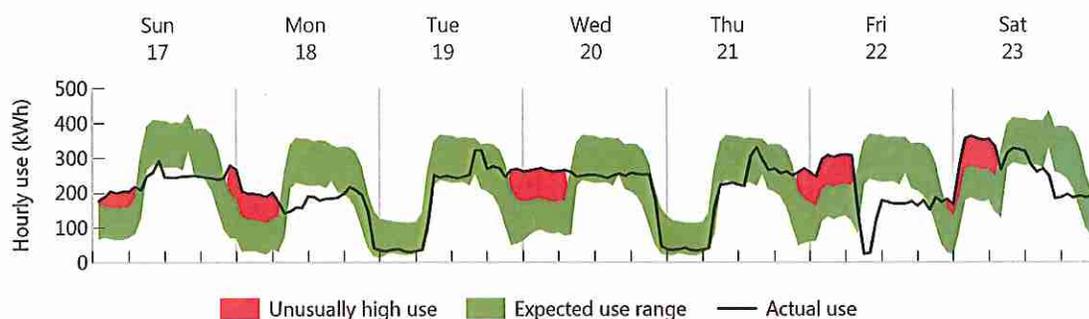
Electricity use over the analysis period. Each bar is the use for one day:



Unusually high use occurs when actual use exceeds the expected range for one or more hours in a day. This can happen when the load rises instead of remaining flat or falling, suggesting that equipment was turned on at unusual times. It can also happen when load stays flat instead of dropping as expected, as when office lights are not turned off at the end of the work day.

A detailed analysis of unusually high usage patterns can distinguish between "equipment turned on" and "equipment not turned off":

64% Percentage of the excess use caused by the load not dropping as expected ("equipment not turned off"). An example is the 10 hour period beginning at 10pm on Tuesday, 19 August 2014:



Much of the excess use occurred at similar times during the analysis period:

Early morning 86% of the high use occurred during early morning hours (1am – 5am).

All instances of unusually high use are shown in the Load Calendar at the end of this report. The largest events are listed below:

Start and end times	Length (hours)	High use (kWh)	Cost of high use (\$)
10pm 17 Jun - 7am 18 Jun 2014	10	1,590	108
9pm 5 Jun - 7am 6 Jun 2014	11	1,240	83.8
10pm 15 Aug - 7am 16 Aug 2014	10	1,180	79.0
6pm 28 Aug - 7am 29 Aug 2014	14	1,170	78.2
10pm 3 Jul - 8am 4 Jul 2014	11	1,100	75.2
9pm 29 Aug - 8am 30 Aug 2014	12	1,060	70.5
9pm 30 Aug - 8am 31 Aug 2014	12	1,060	70.5
10pm 14 Aug - 8am 15 Aug 2014	11	1,050	69.8
9pm 16 Jul - 7am 17 Jul 2014	11	1,000	68.3
10pm 17 Jul - 7am 18 Jul 2014	10	959	65.5

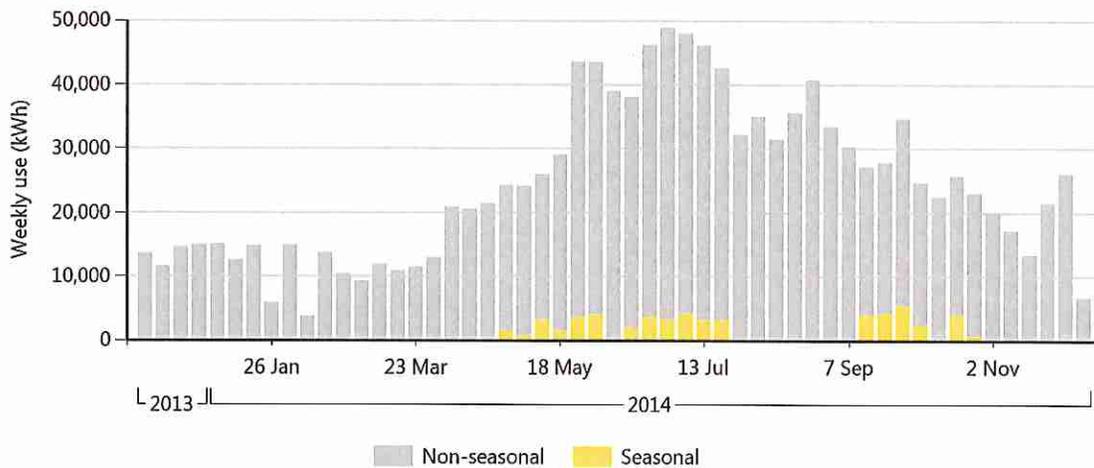
Seasonal Load

Early summer, early fall There were two major seasonal increases in electricity use, peaking in early summer and early fall.

4% Percentage of total electricity use from these seasonal increases.

\$3,630 Estimated cost of the seasonal increases.

Electricity use over the analysis period. Each bar is the use for one week:



The seasonal increases span 33 weeks over the analysis period. Seasonal use is not affected by weather.

Time span	Peak	Length (weeks)	% of use	Increased use (kWh)	Increased cost (\$)
early Mar - early Aug	late Jun	23	3	34,200	2,280
late Aug - late Oct	early Oct	10	2	20,800	1,350

CUSTOMER USAGE INFORMATION AUTHORIZATION

I hereby authorize my electric utility to act in my behalf for the purpose of obtaining information about my historical energy usage and billing information and consent to the release of same so that the Company named herein may evaluate my energy usage patterns and make me an offer to supply energy. The utility considers all customer usage information to be confidential.

This authorization in no way binds me to the purchase of any service or product from the Company named herein and is to be used for the sole purpose of determining my offer price of electricity service or the provision of other energy-related services.

Supplier/Consultant Information (please print):

_____ representing _____
(Individual) (Company)

Address _____

Email Address _____ Phone Number () _____

Type of Data Requested (select one):

Sixty (60) minute interval data (if available) provided in ASCII text file

Monthly billing information (will be provided if 60 minute interval data is unavailable)

NOTE: Billing information will typically cover the most recent twelve-month period.

Operating Company Information (please print):

My Utility _____

Company Name _____

Address _____

City _____ State _____ Zip _____

Business Contact Name _____ Telephone Number () _____

Party other than customer to be Billed, if allowed by your utility: _____

Business Representative's Signature _____

Date _____

This authorization is valid for 90 days from the above date, unless otherwise indicated.
I wish to have this authorization valid until _____(date & initial).

Service Delivery Identifier Number

Each utility has specific rules for releasing information, and this service may be subject to a charge by the utility.



**Standard Letter of Authorization for the Request of Historical Usage
To be completed by AEP Ohio customer**

Customer Name: _____
Customer Address: _____
City, State, Zip: _____
Phone Number: _____
Authorized person: _____ Title: _____

I, as the authorized representative for the above named customer, authorize the release of 12 months of usage information, if available, for release to:

Broker/CRES (I agree to a \$50 charge, if applicable)

Name: _____
Company: _____
Address: _____
Phone Number: _____
Email Address: _____ (usage will be sent to this address)
SDI Number(s) _____

For multiple SDI Numbers, please attach spreadsheet in Microsoft Excel format containing the SDI(s) for which you are requesting usage.

I realize that under the rules and regulations of the Public Utilities Commission of Ohio, I may refuse to allow AEP Ohio to release the information set forth above. By my signature, I freely give AEP Ohio permission to release the information designated above.

(Authorized Customer Signature) (Printed Name)

(Date)

**This authorization will expire one year from the date of execution.
Note: The customer hereby releases AEP Ohio, its employees, officers and agents from any and all liability associated with the third party use and/or dissemination of account information or other data that AEP Ohio provides in accordance with this authorization.**

Natural Gas Update

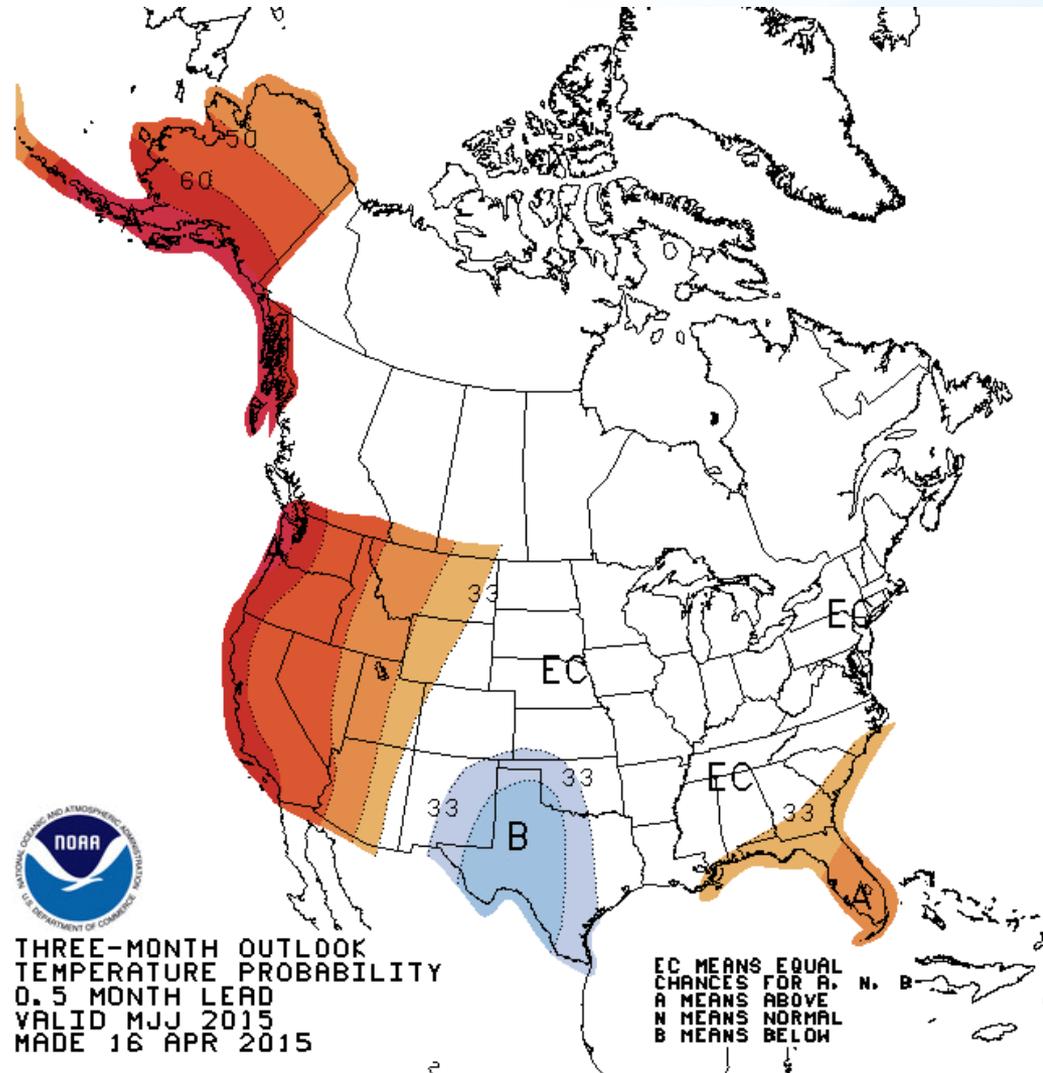
OMA Energy Committee

Richard Ricks
NiSource
May 21, 2015

Agenda

- Weather
 - National Outlook
 - Ohio Degree Days
 - Winter of 14/15 Summary
- National Storage
- Gas Pricing
 - NYMEX Prompt Month History
 - NYMEX Gas Futures
 - NYMEX Strip Pricing
- Drilling Rig Counts & Production
- LNG Update

May, June, July 2015 Temperature Outlook



THREE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
0.5 MONTH LEAD
VALID MJJ 2015
MADE 16 APR 2015

14/15 Degree Days – A Cold February

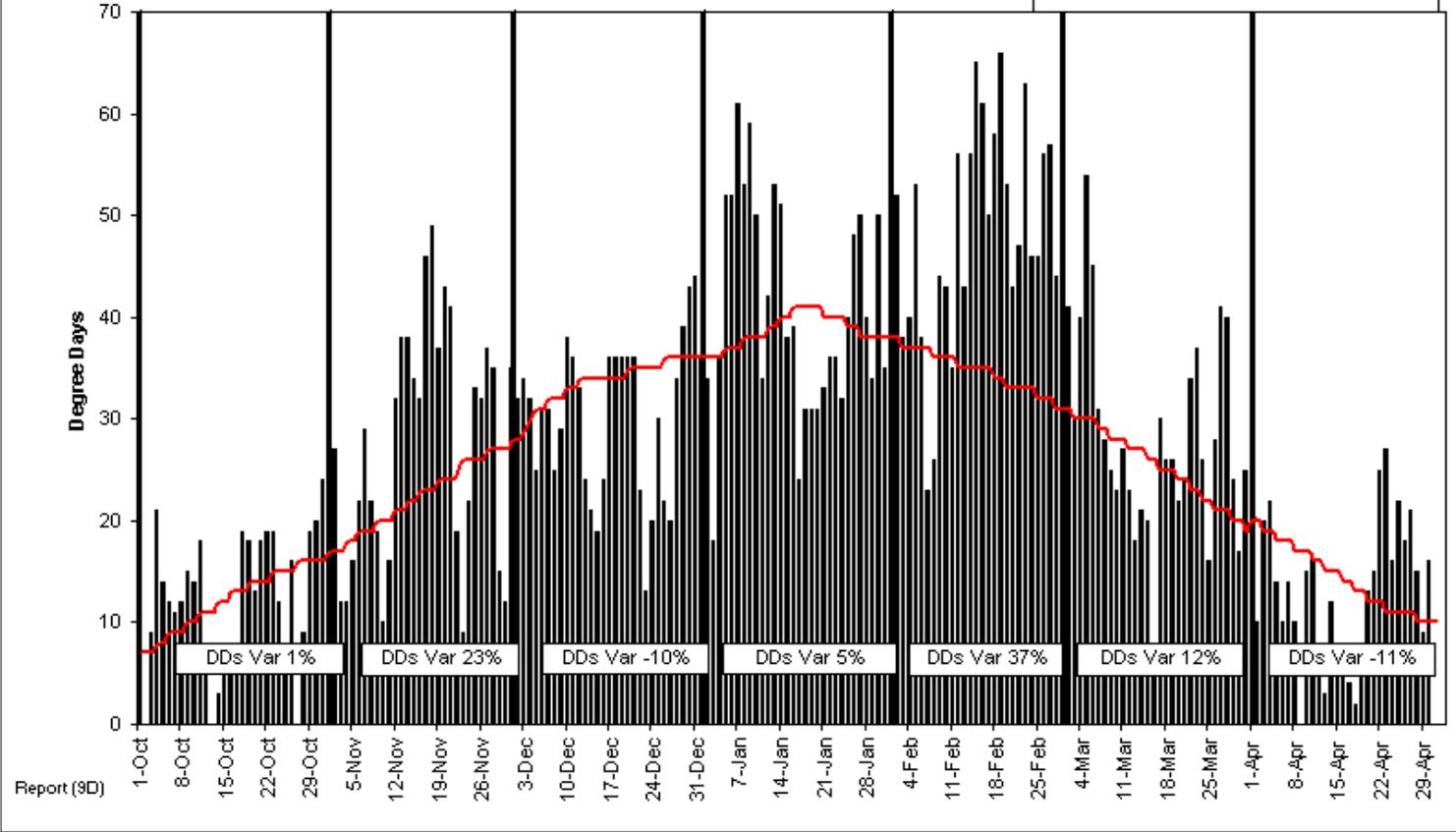
COLUMBIA GAS OF OHIO, INC.

Created 5/17/2015 12:05:03 PM

Winter Season 2014/2015 Normal vs. Actual Heating Degree Days

Balance Temperature = 65

Oct-Apr Winter-To-Date Variance: 10%
Nov-Mar Winter-To-Date Variance: 12%



14/15 Winter Data Comparison – It was Cold

Columbia Distribution Companies

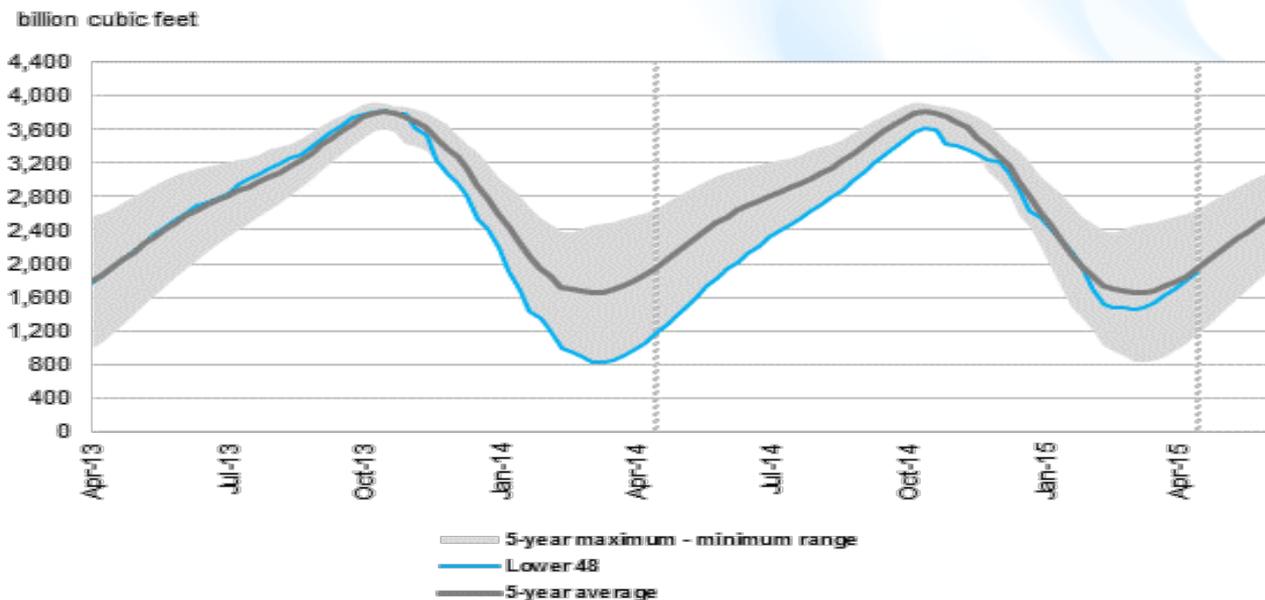
Winter 2014 / 2015 Weather						
Basis for Degree Days is 65° F						
	CKY	CMD	COH	CPA	CGV	CMA
Season (November Through March)						
Number of Winters in history	66	66	66	66	66	54
Season Degree Day Rank (Coldest to Warmest)	6 of 66	21 of 66	6 of 66	5 of 66	8 of 66	3 of 54
Season Compared to Normal (Average 1976 -2005)	11% Colder	10% Colder	12% Colder	12% Colder	11% Colder	9% Colder
Season 2014 / 2015 Compared to 2013 / 2014	2% Colder	3% Warmer	0% Colder	1% Colder	1% Colder	5% Colder
Monthly						
November 2014 Compared to Normal	29% Colder	12% Colder	23% Colder	17% Colder	23% Colder	8% Colder
December 2014 Compared to Normal	7% Warmer	9% Warmer	10% Warmer	8% Warmer	7% Warmer	12% Warmer
January 2015 Compared to Normal	0% Colder	4% Colder	5% Colder	5% Colder	2% Colder	5% Colder
February 2015 Compared to Normal	39% Colder	34% Colder	37% Colder	36% Colder	36% Colder	34% Colder
March 2015 Compared to Normal	5% Colder	11% Colder	12% Colder	17% Colder	11% Colder	18% Colder
Rank of February						
February 2015	2 of 66	2 of 66	2 of 66	2 of 66	3 of 66	1 of 54
Latest Colder February	1978	1978	1978	1979	1979	

National Storage Summary

Summary

Working gas in storage was 1,897 Bcf as of Friday, May 8, 2015, according to EIA estimates. This represents a net increase of 111 Bcf from the previous week. Stocks were 752 Bcf higher than last year at this time and 38 Bcf below the 5-year average of 1,935 Bcf. In the East Region, stocks were 150 Bcf below the 5-year average following net injections of 59 Bcf. Stocks in the Producing Region were 45 Bcf above the 5-year average of 789 Bcf after a net injection of 44 Bcf. Stocks in the West Region were 68 Bcf above the 5-year average after a net addition of 8 Bcf. At 1,897 Bcf, total working gas is within the 5-year historical range.

Working gas in underground storage compared with the 5-year maximum and minimum

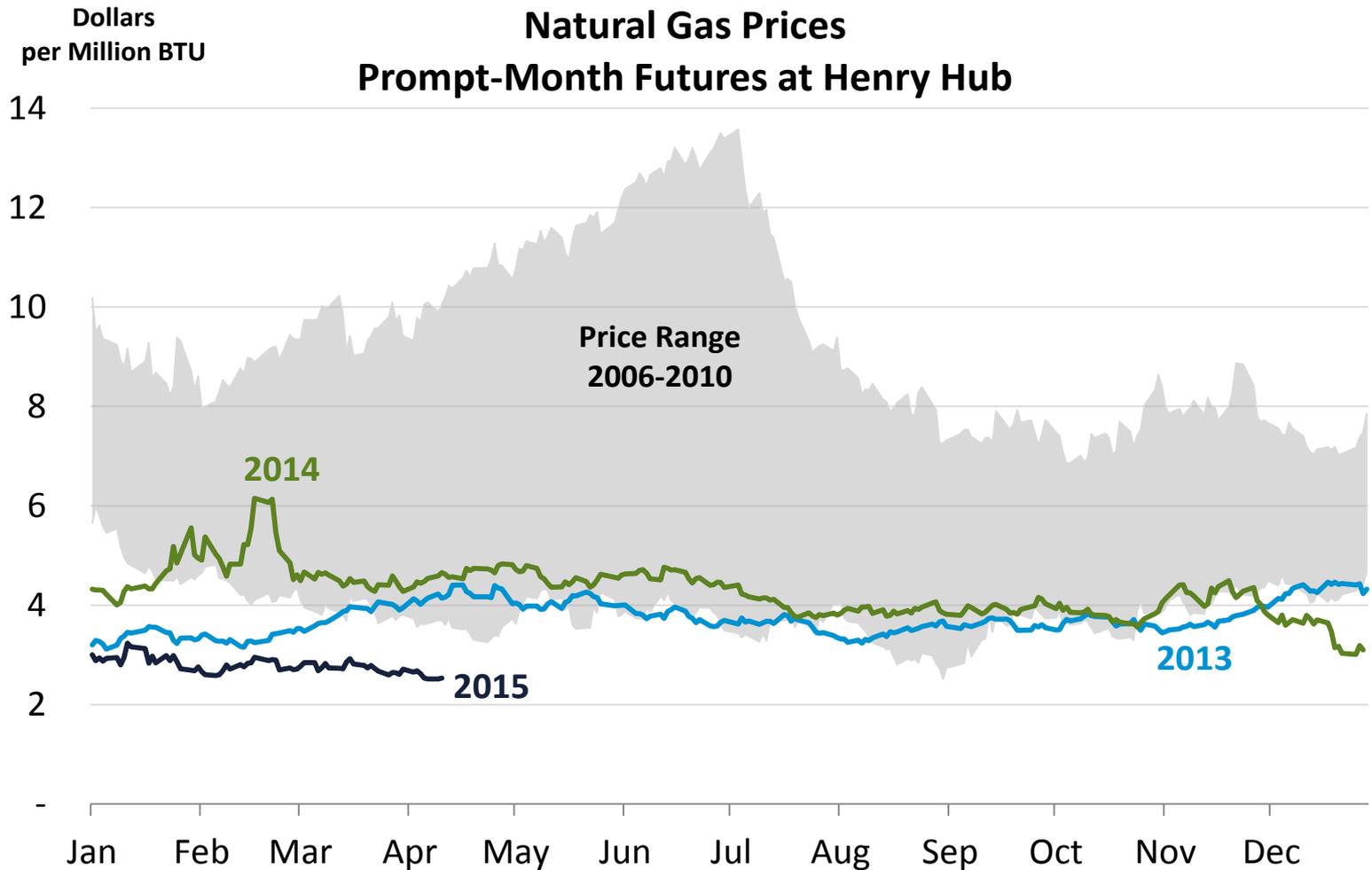


Source: U.S. Energy Information Administration

Note: The shaded area indicates the range between the historical minimum and maximum values for the weekly series from 2010 through 2014.

Source: Form EI-91, "Weekly Underground Natural Gas Storage Report." The dashed vertical lines indicate current and year-ago weekly periods

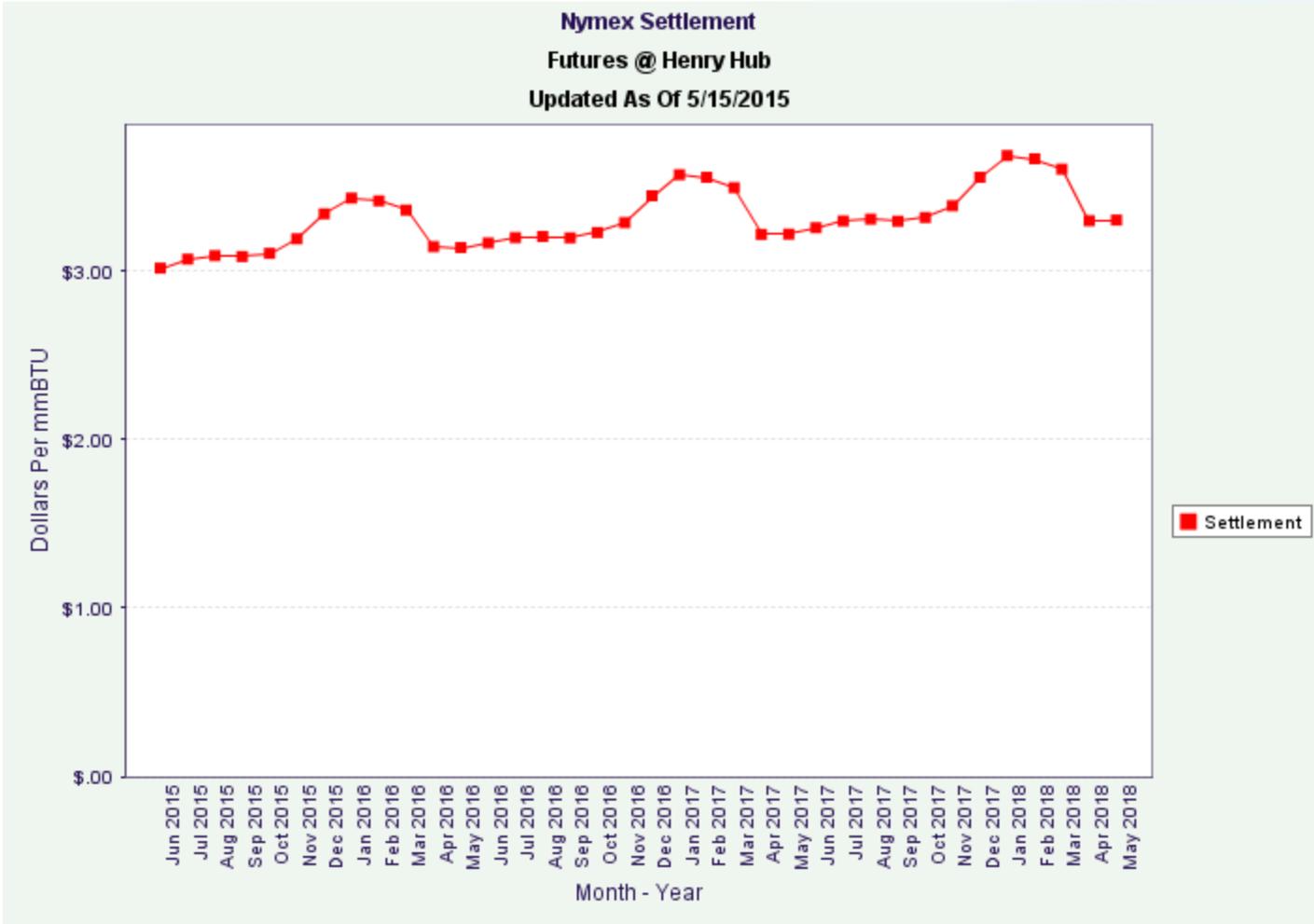
NYMEX Prompt Month Settlement



Source: Energy Information Administration

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NYMEX Futures



NYMEX Strip Pricing

<u>Term</u>	<u>Price</u>
3 Month	\$3.06
6 Month	\$3.09
12 Month	\$3.20
18 Month	\$3.20

Pricing remains relatively flat

Various Pricing Points

<u>Location</u>	<u>Feb 19</u>	<u>May 18</u>
Henry Hub	\$2.92	\$2.96
TCO Pool	\$3.01	\$2.91
Chicago CG	\$11.59	\$2.93
TETCO M-3	\$20.66	\$1.50
NY CG	\$35.50	\$2.62
TGP Zone 4	\$NA	\$1.31
MichCon CG	\$9.25	\$3.10

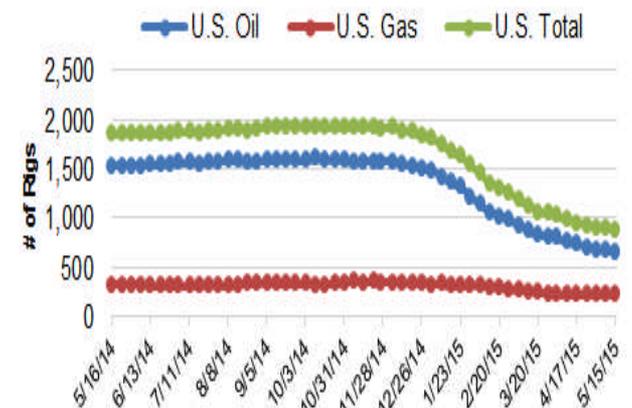
The effects of Marcellus Supply & inadequate infrastructure to get supply to market

U.S. Rig Count

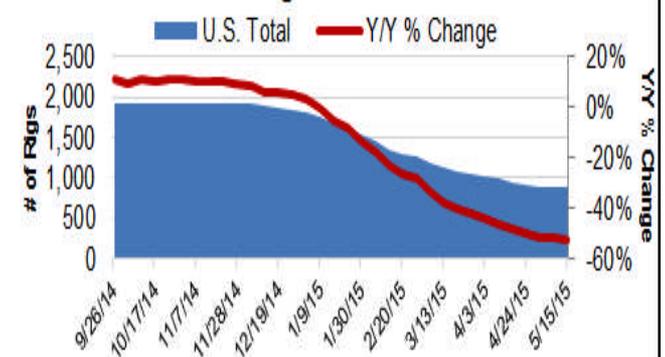
Weekly U.S. Oil & Gas Drilling Rig Summary As Of 5/15/2015

Rig Type	5/15/15	5/8/15	% Change		
			Last Week	5/16/14	Last Year
Oil	660	668	-1%	1,531	-57%
Gas	223	221	1%	326	-32%
Disposal/Other	5	5	0%	4	25%
Land	850	858	-1%	1,791	-53%
Inland/Barges	4	2	100%	13	-69%
Offshore	34	34	0%	57	-40%
Horizontal	685	692	-1%	1,248	-45%
Vertical	114	114	0%	406	-72%
Directional	89	88	1%	207	-57%
TOTAL U.S. DRILLING RIGS	888	894	-1%	1,861	-52%

Trailing 52 Week U.S. Oil & Gas Drilling Rig Count



Total U.S. Rig Count Since 9/26/2014



Source: Baker Hughes, NGI's Daily GPI calculations

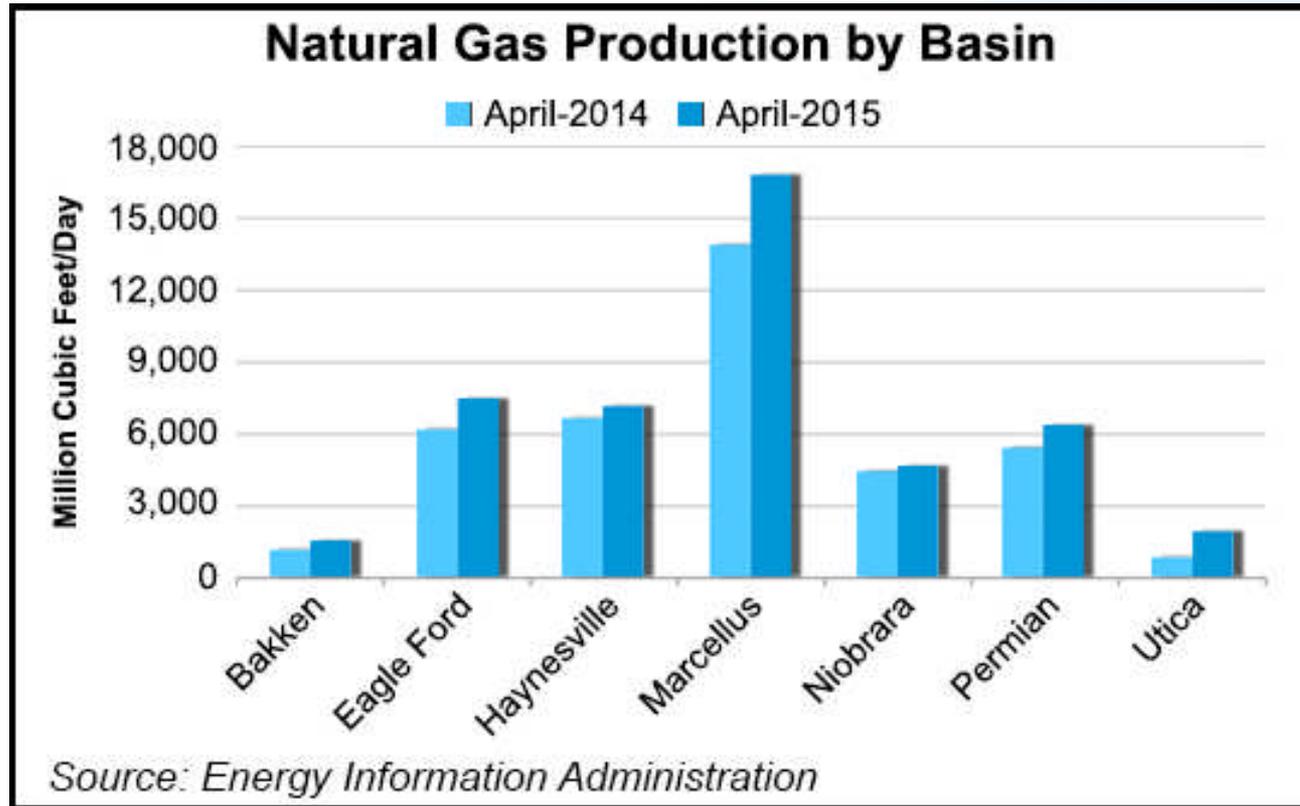
2015 World Wide Rig Count

BAKER HUGHES INCORPORATED

WORLDWIDE RIG COUNT

2015	Latin America	Europe	Africa	Middle East	Asia Pacific	Total Intl.	Canada	U.S.	Total World
Jan	351	128	132	415	232	1258	368	1683	3309
Feb	355	133	132	415	240	1275	363	1348	2986
Mar	351	135	125	407	233	1251	196	1110	2557
Apr	325	119	120	410	228	1202	90	976	2268
May									
Jun									
Jul									
Aug									
Sep									
Oct									
Nov									
Dec									
Avg.	346	129	127	412	233	1247	254	1279	2780

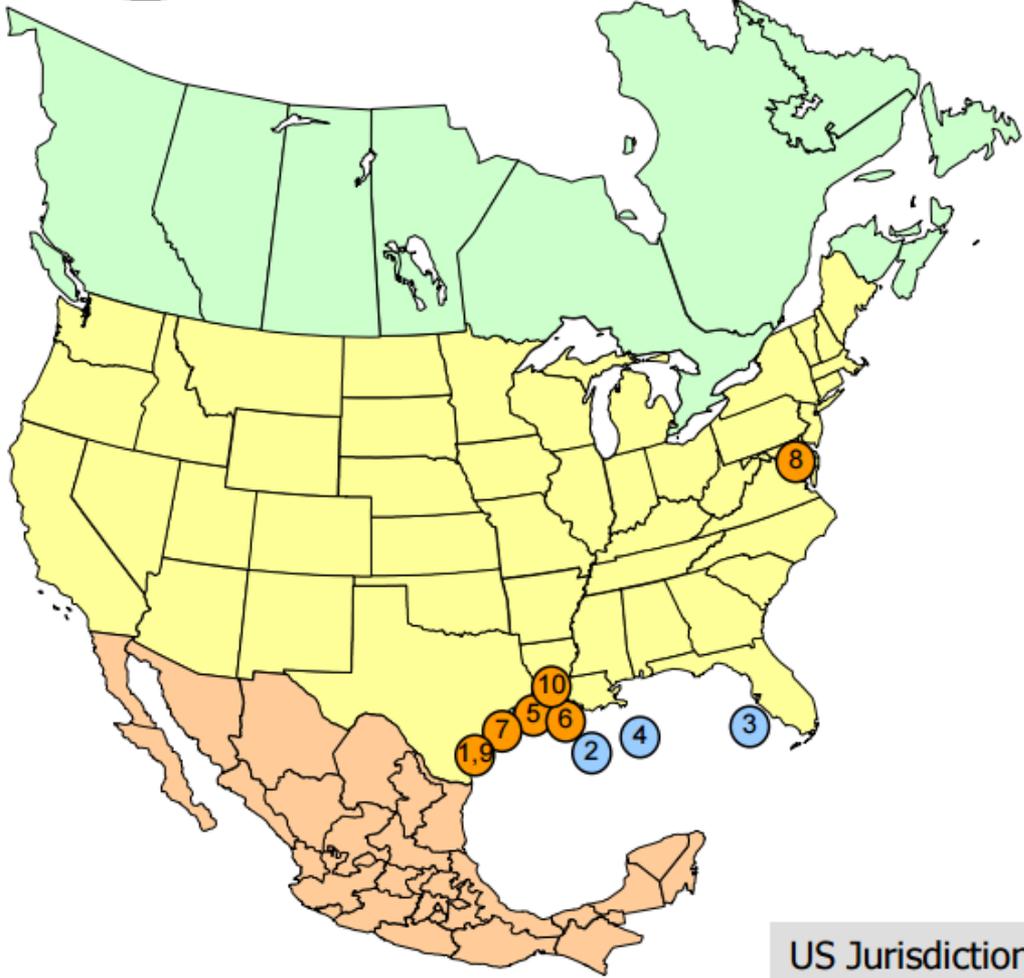
Marcellus: The largest shale play in production





North American LNG Import /Export Terminals

Approved



Import Terminal

APPROVED - UNDER CONSTRUCTION

U.S. - FERC

1. **Corpus Christi, TX:** 0.4 Bcfd (Cheniere – Corpus Christi LNG) (CP12-507)

APPROVED - NOT UNDER CONSTRUCTION

U.S. - MARAD/Coast Guard

2. **Gulf of Mexico:** 1.0 Bcfd (Main Pass McMoRan Exp.)
3. **Offshore Florida:** 1.2 Bcfd (Hoëgh LNG - Port Dolphin Energy)
4. **Gulf of Mexico:** 1.4 Bcfd (TORP Technology-Bienville LNG)

Export Terminal

APPROVED - UNDER CONSTRUCTION

U.S. - FERC

5. **Sabine, LA:** 2.76 Bcfd (Cheniere/Sabine Pass LNG) (CP11-72 & CP14-12)
6. **Hackberry, LA:** 1.7 Bcfd (Sempra – Cameron LNG) (CP13-25)
7. **Freeport, TX:** 1.8 Bcfd (Freeport LNG Dev/Freeport LNG Expansion/FLNG Liquefaction) (CP12-509)
8. **Cove Point, MD:** 0.82 Bcfd (Dominion – Cove Point LNG) (CP13-113)
9. **Corpus Christi, TX:** 2.14 Bcfd (Cheniere - Corpus Christi LNG) (CP12-507)

APPROVED – NOT UNDER CONSTRUCTION

U.S. - FERC

10. **Sabine Pass, LA:** 1.40 Bcfd (Sabine Pass Liquefaction) (CP13-552)

US Jurisdiction

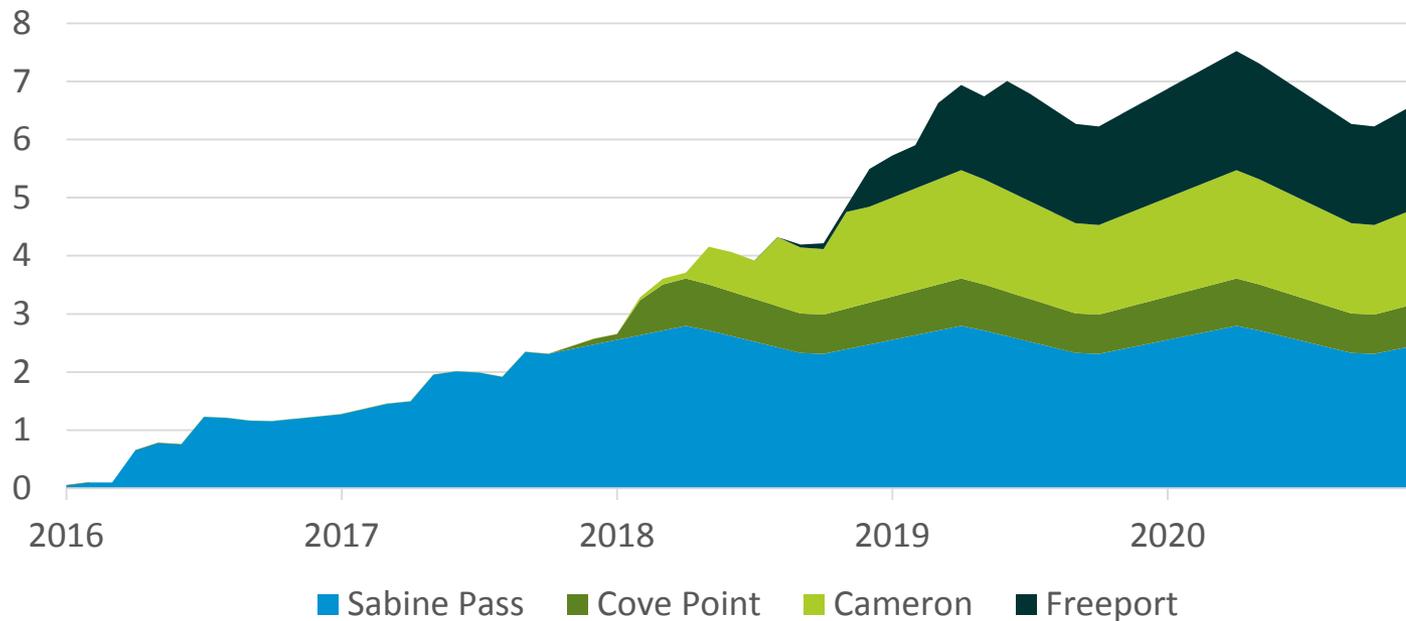
- FERC
- MARAD/USCG

As of April 14, 2015

One view shows LNG export growth to 7 Bcf/day by 2020

Delays and market issues could slow potential

US LNG Exports (Bcfd)

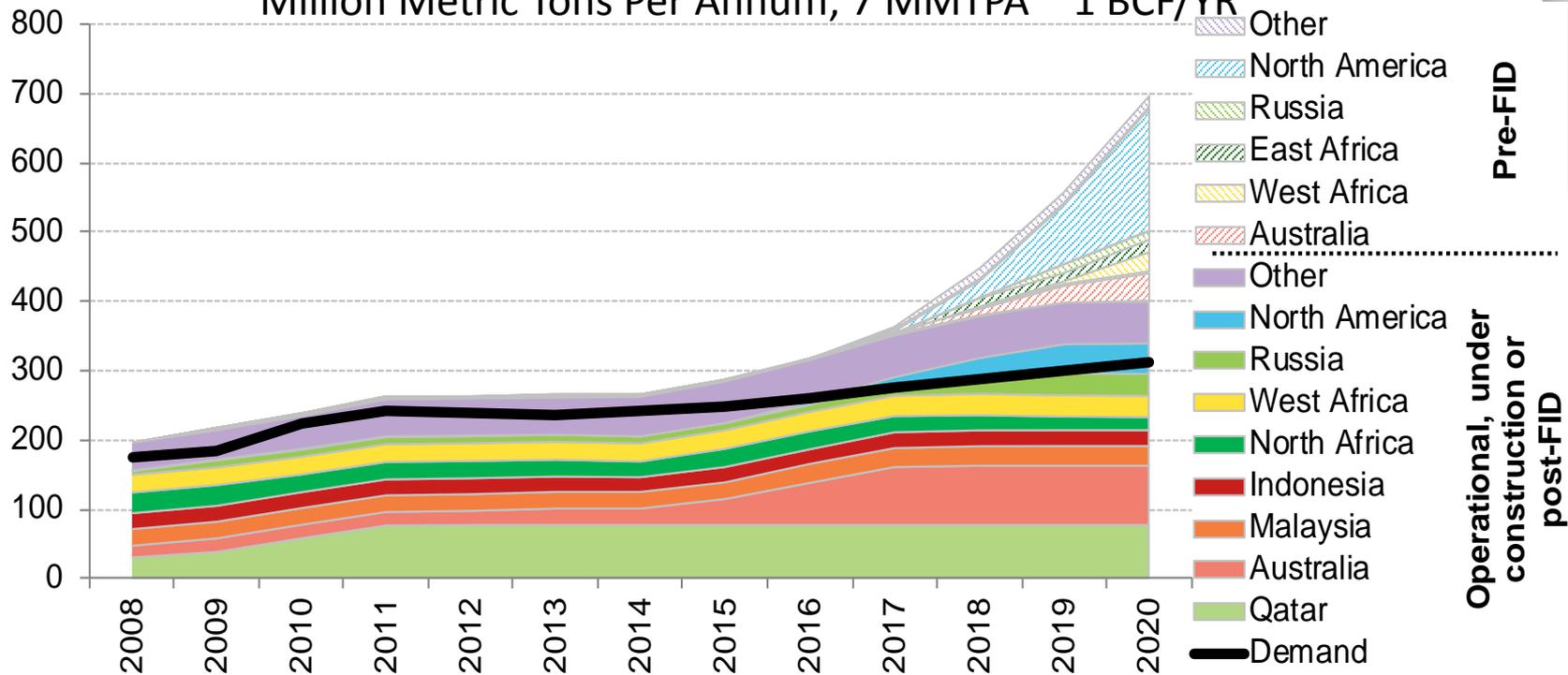


Source: Bloomberg New Energy Finance

How much US LNG can the global market absorb?

Maybe not much

Global LNG Supply and Demand Balance (MMTPA)
 Million Metric Tons Per Annum; 7 MMTPA ~ 1 BCF/YR



Source: Bloomberg New Energy Finance