AEP OHIO EX. NO._________

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application Seeking Approval of Ohio Power Company's Proposal to Enter into an Affiliate Power Purchase Agreement for Inclusion in the Power Purchase Agreement Rider	)	Case No. 14-1693-EL-RDR
In the Matter of the Application of Ohio Power Company for Approval of Certain Accounting Authority	)	Case No. 14-1694-EL-AAM

DIRECT TESTIMONY OF
KARL R. BLETZACKER
IN SUPPORT OF AEP OHIO'S
AMENDED APPLICATION

Filed on May 15, 2015

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ON BEHALF OF
AEP OHIO

PERSONAL DATA

Q. PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.

A. My name is Karl R. Bletzacker. My position is Director, Fundamental Analysis, American Electric Power Service Corporation ("AEPSC"). AEPSC supplies engineering, financial, accounting, planning and advisory services to the electric operating companies of American Electric Power Company, Inc. ("AEP"), including AEP Ohio. My business address is 1 Riverside Plaza, Columbus, Ohio 43215.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE.

A. I received a BSMEng degree from The Ohio State University in 1980 and have over thirty-five years of energy-industry experience which includes petroleum engineering and the management of the purchasing, interstate transmission and distribution of natural gas and power to both regulated and wholesale customers. I have implemented risk management strategies using New York Mercantile Exchange ("NYMEX") and over-the-counter natural gas futures, swaps, and options since the NYMEX natural gas contract was created in June of 1990. I have purchased short- and long-term natural gas supply from major and independent producers and marketing companies and I have monetized arbitrage opportunities using NYMEX futures contract, local and contract storage, pipeline imbalances and local distribution company banks. As Vice-President and Chief

Operating Officer of National Gas & Oil Company (a publicly-traded Ohio natural gas utility) and Licking Rural Electric Cooperative (an Ohio electric cooperative), I was responsible for the natural gas pricing and risk management policies that ensured reliable delivery and managed customers' exposure to volatile commodity prices. As the North American Manager of Energy Procurement for Honda of America Mfg., Inc., I implemented hedging strategies utilizing NYMEX natural gas futures contracts and operated a natural gas supply pool for the benefit of Honda and its suppliers in North America. I also utilized my hedging expertise while serving as Vice-Chairman of the Industrial Energy Users-Ohio which is an organization of large Ohio energy consumers that spend collectively over $3 billion per year on electricity and natural gas for their plants and facilities and whose members employ over 300,000. I joined AEP in 2005 to focus on the creation of long-term North American power market forecasts primarily to support the resource planning of its operating companies.

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN A REGULATORY PROCEEDING?

A. Yes. I have presented testimony on behalf of AEP operating companies and others in the states of Arkansas, Ohio, Texas, West Virginia and the commonwealths of Kentucky and Virginia.

PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My testimony will explain: 1) that a Long Term North American Energy Market Forecast ("Fundamentals Forecast") has been created and it was provided to AEPSC's Resource Planning Group for use in further analyses, 2) that natural gas prices are the primary driver of on-peak power prices, and the consequences of weather-related natural gas price volatility and low capacity prices will be the norm going forward, and, 3) that wholesale power prices rise more rapidly than they fall due to weather and load deviations from weather-normalized values.

FUNDAMENTALS FORECAST

Q. WHAT IS THE FUNDAMENTALS FORECAST?

A. The Fundamentals Forecast is a long-term, weather-normalized power market forecast. There are many uses for a Fundamentals Forecast, but the Fundamentals Analysis Group at AEPSC primarily develops this forecast for use by all of AEP's regulated operating companies in long-term resource planning. This forecast covers the electricity market within the Eastern Interconnection, the Electric Reliability Council of Texas ("ERCOT") and the Western Electricity Coordinating Council. It includes: 1) monthly and annual locational power prices (in both nominal and real dollars), 2) prices for various qualities of Central Appalachian ("CAPP"), Northern Appalachian ("NAPP"), Illinois Basin ("ILB"), Powder River Basin ("PRB") and Colorado coals, 3) monthly and annual locational natural gas prices, including the benchmark Henry Hub prices, 4) uranium fuel prices, 5) SO_2, NO_x (summer and annual) and CO_2 values, 6) locational heat rates, 7) capacity values, 8) renewable energy subsidies and 9) inflation factors.

Q. WHAT TOOLS DID YOU USE TO DEVELOP THE FORECASTS PROVIDED TO AEPSC?

A. The primary tool the Fundamentals Group uses for developing its long-term, energy-related commodity pricing forecasts is the AuroraXMP Electric Market Model. The AuroraXMP Electric Market Model iteratively generates locational, but not company-specific, long-term capacity expansion plans, annual energy dispatch, fuel burns and emission totals from inputs including fuel, load, emissions and capital costs, among others. AEPSC is also the client of many well-accepted energy consultancies including Cambridge Energy Research Associates, PIRA and WoodMackenzie. Their collective insight on fuels, energy and emissions (supply/demand and resultant price) is a key component of AEPSC's long-term North American forecasts.

Q. HAS A FUNDAMENTALS FORECAST BEEN PREPARED?

A. Yes.

Q. WHEN WAS IT PREPARED AND RELEASED FOR OPERATING COMPANY USE?

A. The fourth quarter of 2013

Q. WHY ARE NATURAL GAS PRICES IMPORTANT IN A FUNDAMENTALS ANALYSIS?

A. Most importantly, natural gas prices will set Ohio's on-peak power prices for the foreseeable future. Natural gas prices are a key component in determining the supply stack, or merit order, for the dispatch of generating units. Generating units with the lowest variable operating cost are the first to dispatch and plants with incrementally higher variable operating cost are called upon sequentially as electricity demand increases. A $1 per mmBtu swing in gas prices would result in a $7 to $8 per MWh swing in natural gas combined cycle generation cost.

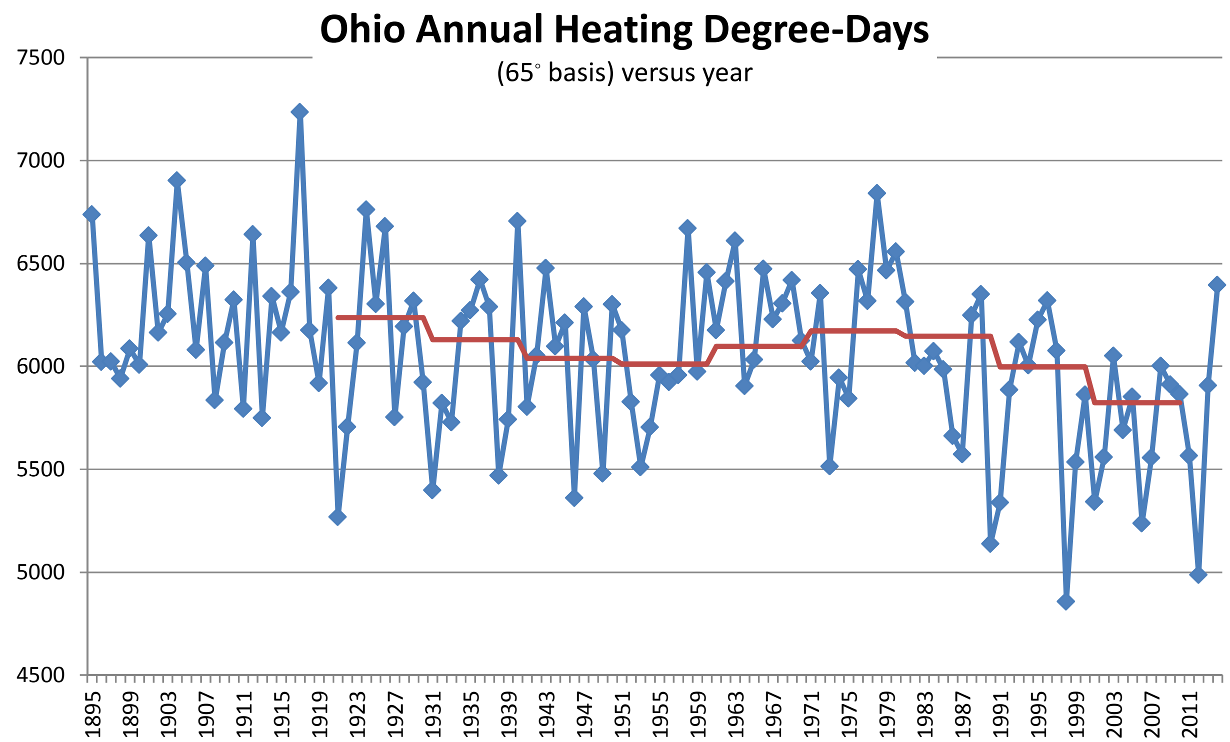
Q. DID THE WINTER WEATHER OF 2013-2014 HAVE AN IMPACT ON THE COMPANIES' VIEW OF ENERGY PRICES?

A. Yes. The energy prices resulting from the 2013-2014 winter's colder-than-normal weather served as confirmation of the Companies' previous testimony presented to many regulatory authorities. Specifically, nearer-term natural gas prices will remain volatile as they are primarily affected by weather's deviation from normal (known as "heating degree-day departure") which then results in deficit or surplus levels of natural gas storage inventory. It is likely, in the event of a colder-than-normal heating season, that natural gas spot prices could exceed $8/mmBtu. In fact, they exceeded $30/mmBtu in many locations that winter. The Fundamentals Forecast provides a weather-normalized view that is not materially affected by weather volatility because it is prepared under the assumption of average weather. However, market-based energy purchasers can expect to be subjected to the volatile consequences of abnormal weather's effect on energy prices.

Q. WHAT DO YOU MEAN BY THE "VOLATILE CONSEQUENCES OF ABNORMAL WEATHER'S EFFECT ON ENERGY PRICES"?

A. Illustrated below in Figure 1 is a chart of Ohio's annual heating degree-days from 1895 through 2014. Additionally, the rolling "30-year average", or "normal", is represented by the red line. It is reasonable to conclude that Ohio's volatile winter weather is rarely near "normal". In fact, yearly averages quite often significantly depart from normal.

Figure 1

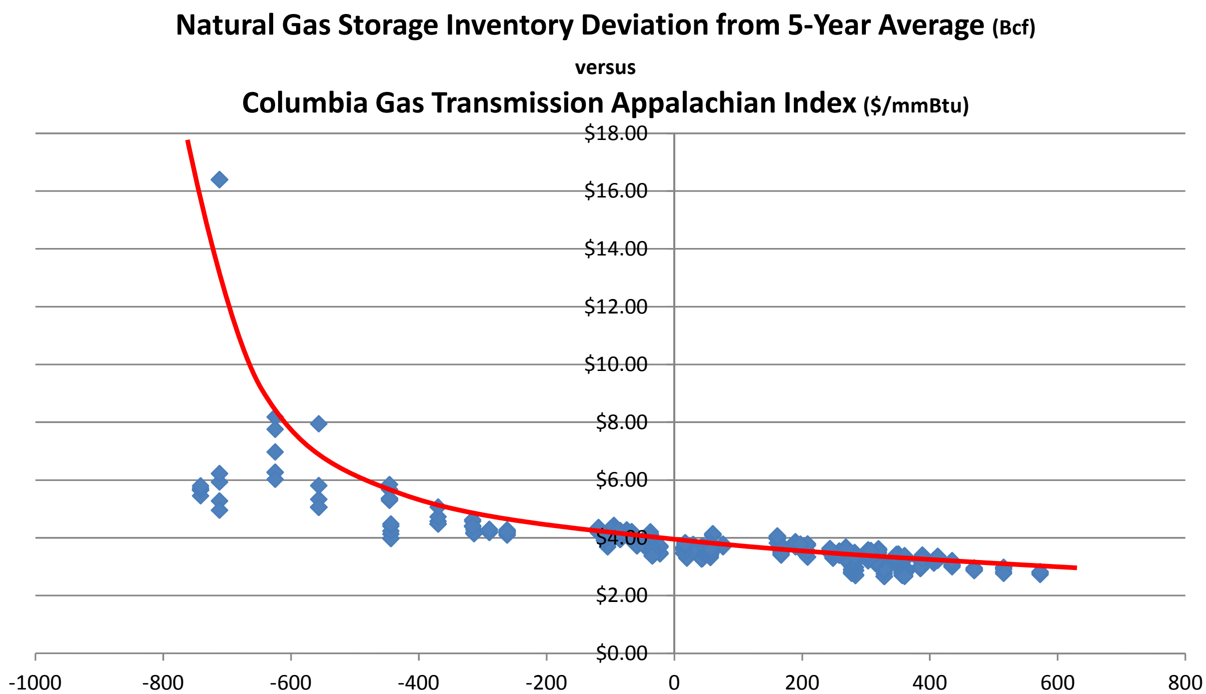


Additionally, it is well-established that there is a linear relationship between heating degree-days and natural gas usage. Mathematically, it is expressed as:

*Consumption (mmBtu) = coefficient "m" (mmbtu/HDD) * HDDs + "b" (mmBtu),*

Where; "m" represents the natural gas intensity of residential, commercial or industrial natural gas load and "b" represents the non-weather-related (baseload) portion. Simply stated; the colder the weather, the greater the natural gas consumption. And, the more prolonged the cold weather, the lower the natural gas storage inventory levels. Illustrated below in Figure 2 is a chart of natural gas storage inventory deviation from the 5-year average, in Bcf, versus the Columbia Gas Transmission Appalachian Index price, in $/mmBtu, for the period from July, 2012 through February, 2014.

Figure 2



It is well-established that, as storage inventories deviate from average or "normal", Ohio's natural gas prices vary significantly – particularly in colder-than-normal years as competition for flowing natural gas supply intensifies. Additionally, the recent Polar Vortex showed that when gas-fired electric generators did not secure firm transportation rights and underutilized pipeline space was not available for use during a winter peak, their delivered gas cost was extremely volatile. Consequently, Ohioans can expect to contend with the "volatile consequences of abnormal weather's effect on energy prices".

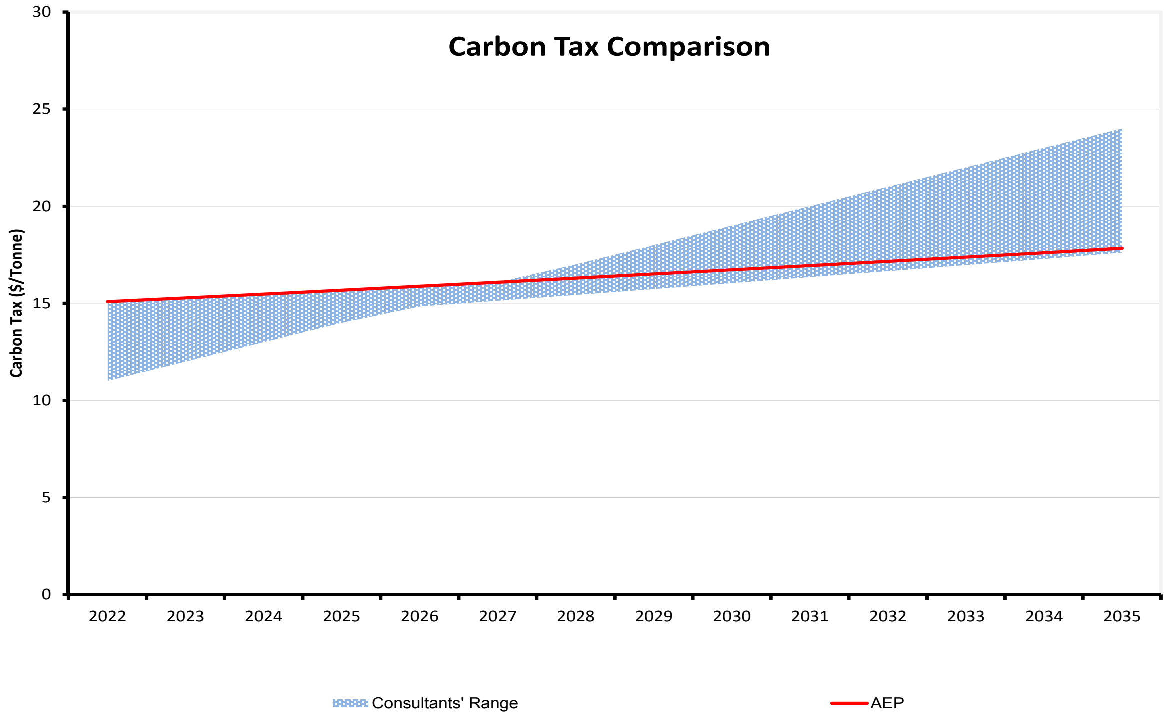
Q. WHAT IS NECESSARY FOR NATURAL GAS TO BE DELIVERED ON A FIRM BASIS TO AN ELECTRIC GENERATING UNIT?

A. Every transporter ("Shipper") of natural gas on the interstate pipeline system must pay for reserved capacity through demand ("Reservation") charges as provided by the pipeline's FERC-approved tariff. These Reservation charges allow the pipeline to recover the fixed charges necessary to provide firm transportation rights to the Shipper. In addition, the Shipper will be charged exclusively for any new construction necessary to provide service to the electric generating units' specific location. Typically, a 15-year Firm Transportation contract is required to allow for cost recovery. Unfortunately, these long-term contractual obligations for firm transportation services are not economically justified by gas-fired electric generators while the current PJM RPM capacity market provides no parallel assurance of capacity revenue.

Q. WHAT IS THE PROJECTED VALUE OF CO_2 EMISSIONS IN THE FUNDAMENTALS FORECAST?

A. Illustrated below in Figure 3 is a comparison of the Companies' projection of a potential CO_2 tax to a range of values provided by energy consultancies engaged by the Companies including WoodMackenzie, Cambridge Energy Research Associates, and others. The Companies' projection remains at approximately $15/metric tonne beginning in 2022 and rises in value at the rate of inflation.

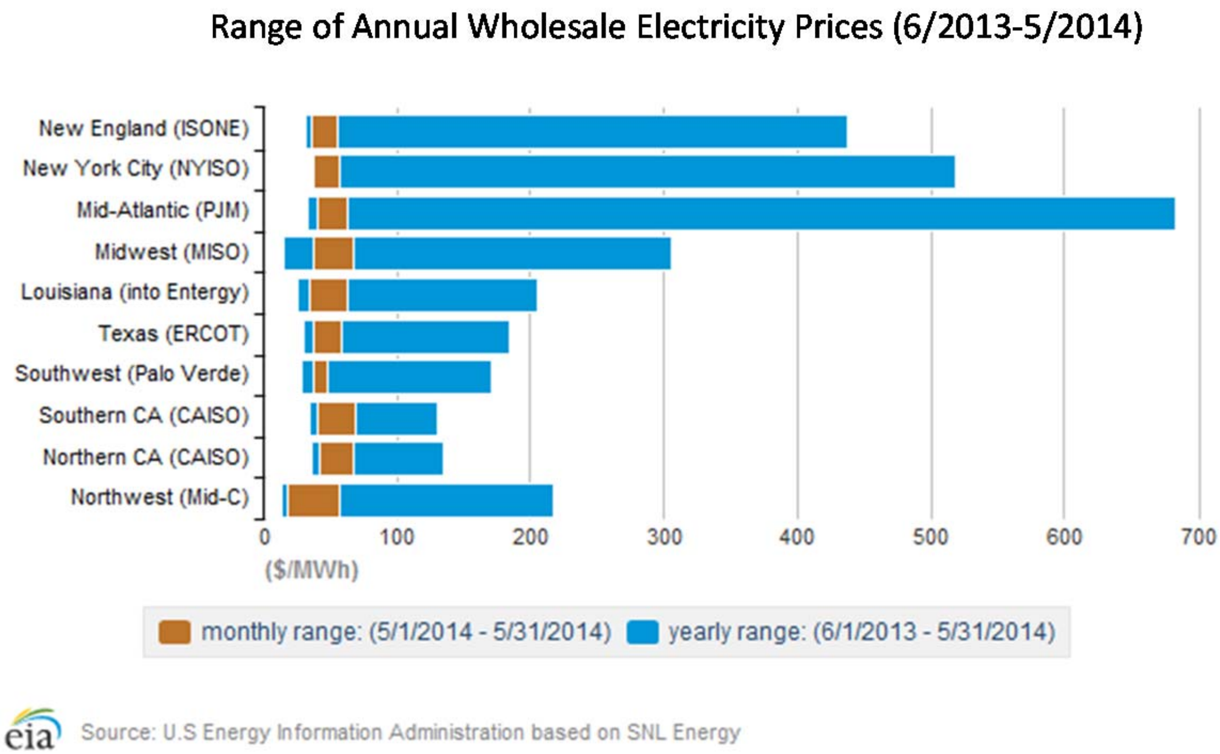
Figure 3



Q. HOW DO WHOLESALE POWER PRICES REACT TO WEATHER AND LOAD THAT IS ABOVE OR BELOW A WEATHER-NORMALIZED FORECAST?

A. The wholesale power price reaction is asymmetrical. Wholesale power prices rise more rapidly than they fall due to weather and load deviations from weather-normalized values. In Figure 4, the Energy Information Administration has shown PJM to have the widest range of on-peak daily wholesale electricity prices out of ten RTO's and trading hubs throughout the U.S. Load associated with weather and related fuel prices (primarily natural gas) are the key drivers to PJM's wide range of wholesale electricity prices. May's price range (a "shoulder month") was in a narrow band near the bottom of the yearly price ranges indicating upside price volatility in non-shoulder months.

Figure 4



As a supplement to the weather-normalized Fundamentals Forecast, the PJM merit-order stack was examined to quantify the asymmetry of PJM power prices as load deviates from average. This was done under the conservative assumption that all inputs (including fuel prices) remain unchanged except load. Figures 5 and 6 illustrate the effects of a 5% deviation in load to on- and off-peak wholesale power prices within PJM. From 2015 through 2030, a sustained 5% load increase results in an 18.5% around-the-clock ("ATC") wholesale power price increase, whereas a sustained 5% load decrease results in a 7.9% ATC wholesale power price decrease. It is clear that the shape of the merit-order stack alone, with all other inputs unchanged, results in an asymmetric reaction to weather and load deviations from weather-normalized values.

Figure 5

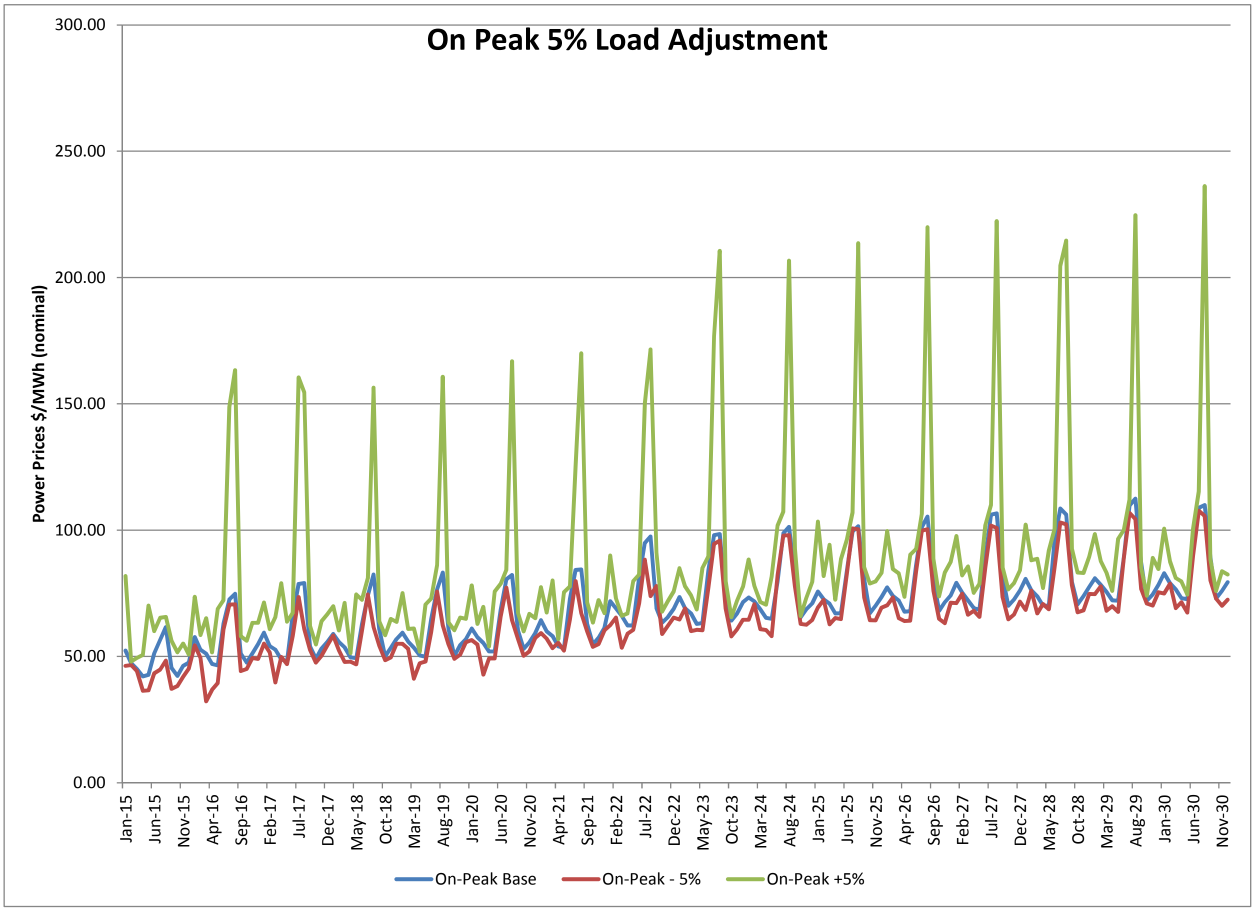
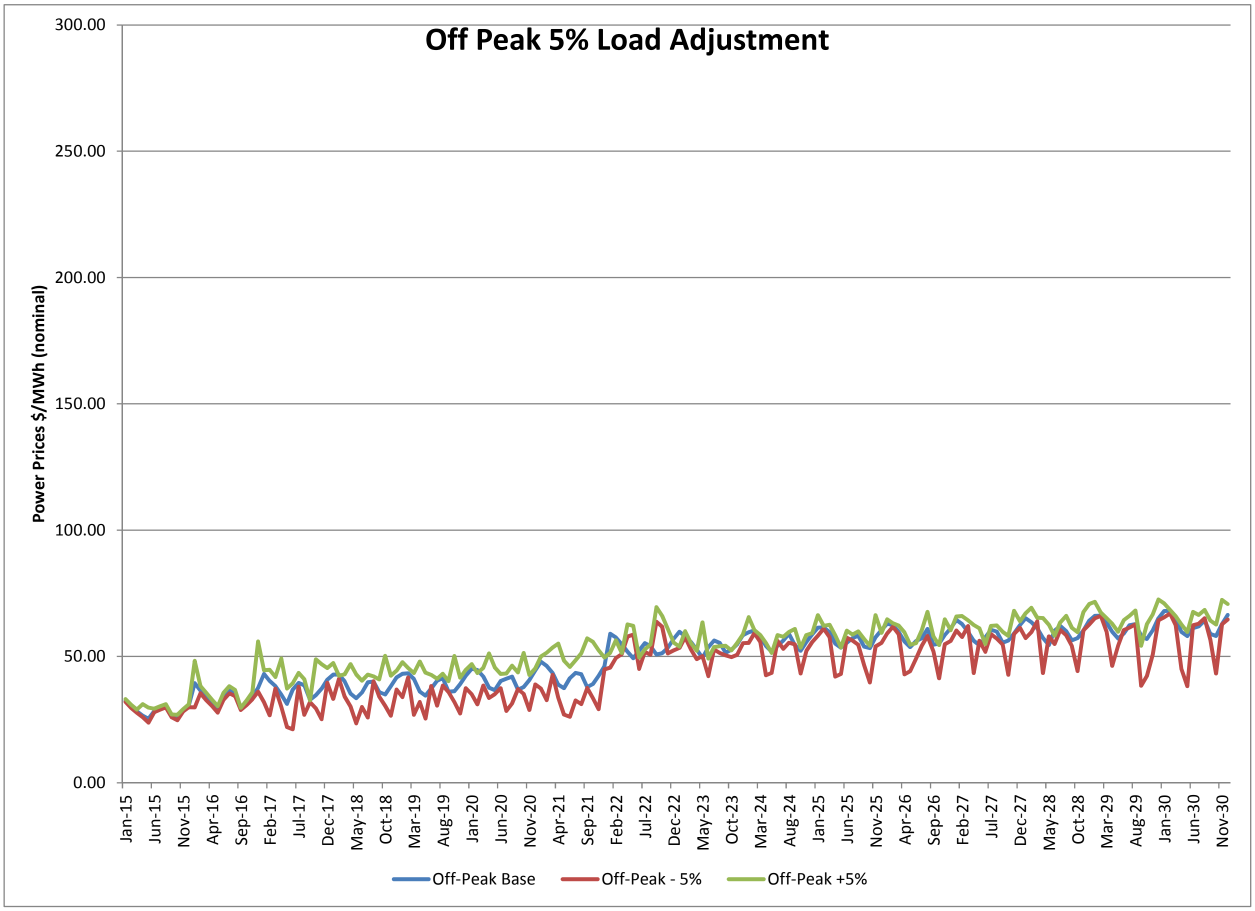

On Peak 5% Load Adjustment
Power Prices $/MWh (nominal)
300.00
250.00
200.00
150.00
100.00
50.00
0.00
Jan-15
Jun-15
Nov-15
Apr-16
Sep-16
Feb-17
Jul-17
Dec-17
May-18
Oct-18
Mar-19
Aug-19
Jan-20
Jun-20
Nov-20
Apr-21
Sep-21
Feb-22
Jul-22
Dec-22
May-23
Oct-23
Mar-24
Aug-24
Jan-25
Jun-25
Nov-25
Apr-26
Sep-26
Feb-27
Jul-27
Dec-27
May-28
Oct-28
Mar-29
Aug-29
Jan-30
Jun-30
Nov-30
On-Peak Base
On-Peak - 5%
On-Peak +5%

Figure 6



Q. WHAT IMPACT ON ELECTRICITY PRICES CAN YOU EXPECT FROM THE HASTY RETIREMENT OF COAL-FIRED ELECTRIC GENERATING PLANTS?

A. In the long run, retired generation is replaced with new-build generation and/or a transmission solution The resulting effect on wholesale prices is related to the difference between before-and-after fixed and variable costs. New-build generation would most likely be natural gas-fired, but could include certain renewables In the short run, depending upon the length of time new-build generation is put in service and existing units are retired, the elevation and increased volatility of electricity prices will be related to the area's transmission congestion. Given that coal and natural gas prices are not positively correlated (rise and fall in unison) and natural gas prices are more volatile than coal, any coal-to-gas switching would result in more-volatile energy prices.

Q. WHAT COMPARISON CAN YOU MAKE BETWEEN THE COSTS OF NEW-ENTRANT GENERATING UNITS AND THE OPERATING COSTS OF UNITS SUCH AS THOSE OFFERED IN THE PROPOSED POWER PURCHASE AGREEMENT?

A. The Fundamentals Forecast utilizes the AuroraXMP Electric Market Model which uses market economics to determine long-term generating unit expansion and retirement options under varying future conditions. These conditions include the costs of a wide variety of new generating unit options, fuel prices, environmental constraints and future demand projections. Generally, incumbent generating units with little remaining depreciated value are resistant to retirement and have an economic advantage over new entrants because much of their installation costs are sunk. The AuroraXMP Electric Market Model makes capacity expansion a retirement choices based upon optimized economics and does not take into consideration the the willingness of a market participant to accept financial losses over a period of years or the associated benefits to state and local economies in terms of employment, wages and taxes paid.

Q. WOULD LOW GENERATING RESOURCE CAPACITY VALUES CONTRIBUTE TO FUTURE ENERGY PRICE VOLATILITY?

A. Yes. Capacity revenues are necessary to ensure that reliable and adequate generating resources are available to meet the demand for electricity at all times. The combination of capacity and energy revenues, in total, are necessary to justify the resources' existence. Capacity and energy revenues are inextricably linked such that low capacity prices result in elevated energy values especially in periods of peak demand where generating resources are forced to exist on scant energy revenue – or retire. Should low capacity payments continue, available generating resources dwindle and energy values are set at the volatile side of the merit-order stack.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of Ohio Power Company's *Pre-Filed Direct Testimony of Karl R. Bletzacker* have been served upon the below-named counsel and Attorney Examiners by electronic mail to all Parties this 15th day of May, 2015.

/s/ Steven T. Nourse
Steven T. Nourse

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