Ohio Partners for Affordable Energy

231 West Lima Street
P.O. Box 1793
Findlay OH 45839-1793
419. 425.8860
Fax 419 425.8862
www.ohiopartners.org

HB 302

OPPONENT TESTIMONY

David C. Rinebolt
Executive Director and Counsel

Stacia Harper
Director of Regulatory Affairs

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Introduction

Chairman Stautberg and members of the Committee, on behalf of the nonprofit organizations that make up Ohio Partners for Affordable Energy ("OPAE"), I want to thank you for the opportunity to testify today regarding HB 58. OPAE's 60 members are community-based anti-poverty organizations. These locally-controlled nonprofits provide a wide array of services: economic development and job training; health care services including medical and dental clinics; housing services including weatherization and bill payment assistance; early childhood education including Head Start; nutrition programs including meals on wheels and food pantries; financial literacy and other income management programs; and, a host of others. OPAE provides three services to this network: advocating before the Public Utilities Commission of Ohio ("PUCO"), the General Assembly, and at the Federal level to keep residential and small commercial utility rates as low as practicable and to ensure adequate funding for low income assistance programs; managing weatherization programs for all the major and several of the smaller utilities in Ohio; and, overseeing the operation of five utility fuel funds which provide bill payment assistance to vulnerable customers.

From our perspective, implementation of the existing energy efficiency and renewable energy provisions of SB 221 has been a success. It has not been perfect, though the problems have had more to do with the need to create the bureaucracy necessary to implement such complex legislation. Given the enormity of the task, the Public Utilities Commission of Ohio and its staff have performed admirably.

The following testimony focuses on the regulatory and market systems which determine the prices paid by utility customers, and the positive impact the energy efficiency and renewable targets created by SB 221 have in reducing customer bills.

Regulation in the Public Interest

Regulated utilities are imbued with the public interest. Legal precedent, such as the decision in *Munn v. Illinois* issued by the United States Supreme Court in 1871, and other cases confirm this view. Policies adopted by states to promote the public interest are not 'artificial'; they are consistent with the purposes of utility regulation which has long promoted new technologies and economic development activities to achieve outcomes the market will not produce in a timely manner.

Sec. 4928.02 establishes the regulatory policy of Ohio regarding electric utilities, effectively defining the public interest. The primary mission is to provide consumers with "adequate, reliable, safe, efficient, nondiscriminatory, and reasonably priced retail electric service." In order to achieve this goal, the policy includes promotion of cost-effective supply- and demand-side resources, as well as competition in the supply of generation services. State policy mandates that consumers be protected against unreasonable sales practices, market deficiencies, and market power, and that at-risk populations – lower income families – are protected. The General Assembly has also determined that the public interest is best served by facilitating the state's effectiveness in the global economy.

The General Assembly and the Public Utilities Commission of Ohio (PUCO) have taken a number of steps to implement these policies. The energy efficiency and advanced energy benchmarks are only two of these steps. The General Assembly has also seen fit to promote Combined Heat and Power ("CHP"), waste heat recovery, and smart grid systems. The PUCO is following the direction of the legislature, developing strategies to provide market access for CHP and pushing the rollout of smart grid systems. There are bill payments assistance programs for low income families and

special low rates for industrial and mercantile customers. And, the PUCO works hard to ensure that utilities are financially viable. These regulatory actions implement the policy decisions as determined by the General Assembly.

Ohio's Regulatory Structure

Ohio's utilities are no longer vertically integrated as were the monopolies that existed prior to the passage of SB 3 in 1998. All of Ohio's investor-owned utilities have spun off their transmission facilities into separate corporate units. These assets are regulated by the Federal Energy Regulatory Commission ("FERC") and the cost of maintaining and upgrading the high voltage transmission system is recovered at rates set by tariffs approved by the FERC. The costs are recovered through two mechanisms: fixed system costs are paid for by charges approved by the PUCO and variable costs – volumetric charges – are recovered through generation rates. FERC is charged in statute with regulating in the public interest.

Generation is deregulated. The utilities have spun these assets off, or soon will, into unregulated subsidiaries. The wholesale market is the basis for retail price offerings by competitive retail electric suppliers ("'CRES" or "marketers") and increasingly in setting the price for the standard service. Generation in Ohio has theoretically been deregulated since 1999, but it took a recession which created a surplus in the wholesale generation market, to allow marketers to access wholesale power at prices that could undercut the incumbent utilities. The PUCO is aggressively moving to use the competitive market to set all prices. Marketers provide individual and group pricing, with varying terms and conditions. Governmental aggregations negotiate on behalf of groups of small customers aggregated to provide leverage in the market. And, the standard

service offer uses a bulk purchasing approach to harness competition to provide reasonable prices to smaller customers. FERC and the PUCO regulate the wholesale and retail markets, but do not set prices.

Distribution companies are the last vestige of the vertically-integrated utility in Ohio. They remain monopolies and are regulated by the PUCO in the public interest as defined by this General Assembly. The bulk of state policies address the 'wires company'. Distribution rates have been increased to finance infrastructure replacements and upgrades. Distribution rates have been increased as utilities are tapped to fund economic development and job retention through cut rate contracts with the largest industrial and mercantile customers. And, distribution rates have been increased to insure the financial stability of the utilities which have been put at risk by markets and competition. Ratepayers pay for everything: the investments; the subsidies; utility profits; and, utility taxes. Residential and small commercial customers pay the bulk of these costs, roughly 70%.

Energy efficiency is another state policy being implemented through distribution utilities. The General Assembly has established benchmarks for increasing amounts of efficiency, along with a waiver process that can be used if the lack of cost-effective options prevents achieving the targets. The distribution system is the logical place for energy efficiency programs. Reducing energy consumption makes the system more reliable. Limiting demand for generation reduces prices and effectively replaces the need to build new plants as older plants are retired. It supports a competitive market by diversifying the resources available to serve customers and ensuring capital flows to the most economically efficient investments. It also reduces demand and prices on the

margin. The public interest is served by the promotion of reliability and economic efficiency resulting from the implementation of energy efficiency technologies.

There are impediments to competition. The utility industry has undergone a significant consolidation. Most Ohioans are served by three of the largest utility holding companies in the country – AEP, Duke and FirstEnergy – which operate in multiple states. These holding companies still own the generation, transmission, and distribution systems used in deregulated states, and remain vertically integrated in states where traditional regulation is still used. Corporate separation rules are designed to prevent activity that undermines competition, but nothing can stop the CEO of a holding company from seeking to maximize the profits of company assets. Holding companies with generation assets want high energy and capacity prices. Holding companies that own transmission want the incentive rates approved by FERC.

The latest trend among holding companies is to focus on maximizing the returns on regulated investments, the transmission and distribution systems. FirstEnergy and AEP are making huge investments in transmission, more than $2 billion and $11 billion respectively. The holding companies are making these investments because competition is squeezing down prices in the wholesale generation markets. Competition is good for consumers, at least right now, but the savings benefitting customers has to come from somewhere and right now it is coming from lower generation prices which reduce holding company profits.

The Role of Regulation in Energy Markets

Utility regulation is, for the most part, economic regulation. The electricity market is by definition a natural monopoly, and thus requires the hand of regulation to provide

adequate incentives and mandates for continued improvement in providing reliable service at reasonable rates.

Traditional regulation has provided utilities an incentive to promote greater energy consumption because a utility's profits usually increase with higher sales. In most industries this is a logical and desirable tendency. However, as consumption of electricity increases, the need for generating capacity and transmission lines also increases. When the cost of new assets are higher than the average cost of existing assets, this causes rates to rise.

As noted above, distribution and transmission remain regulated by states and the federal government, respectively. FERC oversees the structure of wholesale generation markets while the PUCO oversees retail markets. As a result there is always a risk of excessive influence on regulators. Dr. George Stigler, Nobel Prize winner in economics in 1982, is best known for developing the *Economic Theory of Regulation*, also known as regulatory capture. Regulatory capture occurs when a regulatory agency, created to act in the public interest, instead advances the commercial or special concerns of interest groups that dominate the industry or sector it is charged with regulating. Regulatory capture is a form of government failure, as it says that interest groups and other political participants will use the regulatory and coercive powers of government in a way that is beneficial to them. This theory is a component of the public choice field of economics.

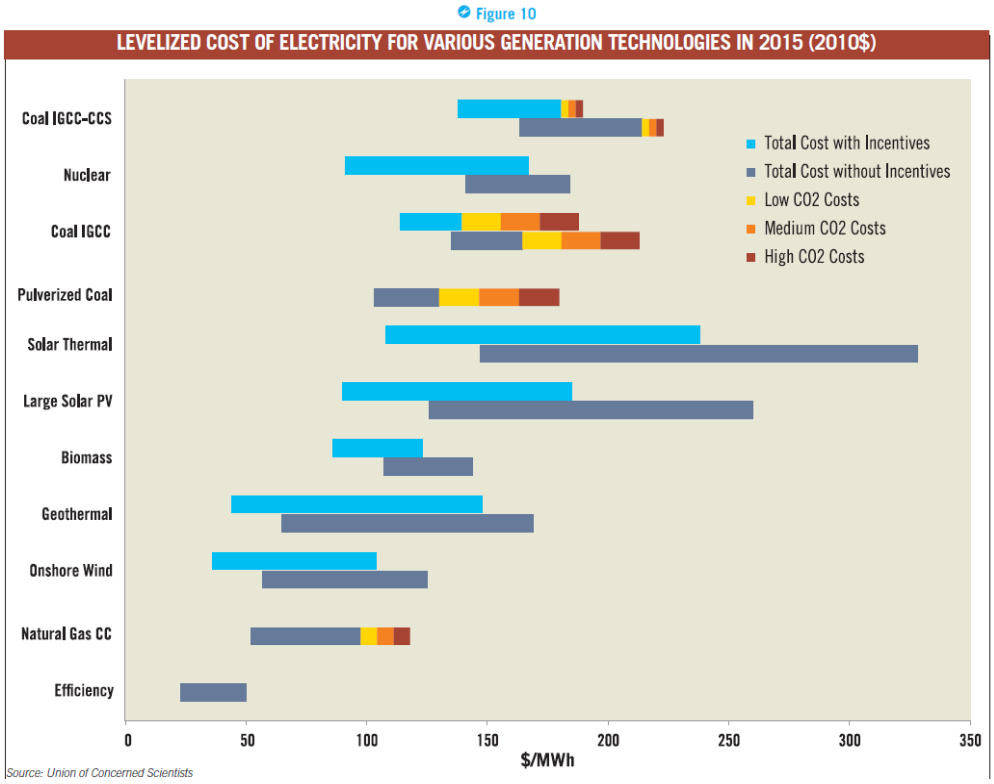
It is critical that the General Assembly carefully monitor utility regulation to ensure the interests of customers and utilities are appropriately balanced.

The Future of Generation Supply and Prices in Ohio

Seventy percent of Ohio's powerplants and utility infrastructure is 30 years old or more. Ohio regulators are incenting investment in updated distribution systems and FERC is doing the same for transmission. Ohio's deregulated generation plants also require significant investment both because they are old and because they must comply with regulations designed to protect public health.

Ohio's situation is not uncharacteristic of other coal dependent states, but unlike most of these states, Ohio has deregulated generation so utilities cannot count on ratepayers to pay for rebuilding the plants. New coal and nuclear power plants are expensive to build and it is clear they will not be built unless ratepayers guarantee payment. Only natural gas-fired powerplants and renewable energy generation is being built and that's because private entities can afford to pay for it without using utility customers as guarantors. The PJM capacity market has not promoted development of new baseload generation because it was not designed for that purpose. The following chart provides a view of the level of subsidies and the levelized cost of investment for new plants.[1] As you can see, EE is by far, the least expensive energy source.

[1] Dan Bakal, Risk Mitigation Benefits of Energy Efficiency, 2013 ACEEE Conference on Energy Efficiency as a Resource, Presented Sept 24, 2013, Nashville, TN, at 10). Binz, R., Sedano, R., Furey, D., Mullen, D. Practicing Risk-Aware Electricity Regulation: What Every State Regulator Needs to Know. A Ceres Report, April 201, at 28.



The Benefits of a Diversified Portfolio

One of the greatest concerns in the electric industry is the ability to provide reliable service at affordable rates. This means determining what is the best strategy to ensure that the lights stay on. Similar to retirement investments, the safest play is a diversified portfolio that spreads risks between low-growth, low risk investments such as bonds, and higher-growth, greater risk investments such as sector focused mutual funds or individual stocks.

To mitigate risk in the power generation sector, a diversified generation fleet is necessary. PUCO Chairman Todd Snitchler recognized the need for diversification in recent testimony before this Committee. “Ohio needs a balanced approach where coal and natural gas, along with other cost-effective resources, peacefully coexist so that we

do not become overly reliant on any one fuel source. An unbalanced dependence could leave us vulnerable to rapid price fluctuations due to changes in commodity prices."

An efficient capacity mix is expected to include baseload units, intermediate units, and peaking units to meet electrical loads which vary over time, with intermittent periods of peak demands. Baseload units are typically nuclear or coal-fired with high-fixed costs and low-operating costs. Peaking units are typically oil- or gas-fired combustion turbines with low-fixed costs and high-operating costs. Intermediate units are typically natural-gas-fired combined-cycle units or older, smaller coal units. A capacity mix may be sub-optimal if there is too much or too little of one type of plant.

Demand side management ("DSM") changes the consumption patterns of electricity. There are two primary types of DSM: energy efficiency and demand response. Targets for both have been established in Ohio law. The point of energy efficiency is self-evident, while demand response shifts reduces energy use at times of peak usage. Demand response permits a more efficient use of the system and reduces the capital needed for capacity additions.

DSM is essential in protecting Ohio and it's ratepayers from excessive price shocks. Demand for electricity has not yet returned to the 2007 levels. Though natural gas prices are forecast to remain low throughout 2020, there are still risks that pose a threat to the adequate supply of affordable and reliable power: 1) imposition of carbon regulations; risks associated with other new regulations; fuel and operating cost risks; risks associated with construction costs; capital shock risk; planning risk (inaccurate load forecasts); and, risks resulting from limited water supplies.

The following chart provides a breakout of the risk factors associated with various types of generating plants:[2]

RELATIVE RISK EXPOSURE OF NEW GENERATION RESOURCES							
Resource	Initial Cost Risk	Fuel, O&M Cost Risk	New Regulation Risk	Carbon Price Risk	Water Constraint Risk	Capital Shock Risk	Planning Risk
Biomass	Medium	Medium	Medium	Medium	High	Medium	Medium
Biomass w/ incentives	Medium	Medium	Medium	Medium	High	Low	Medium
Biomass Co-firing	Low	Low	Medium	Low	High	Low	Low
Coal IGCC	High	Medium	Medium	Medium	High	Medium	Medium
Coal IGCC w/ incentives	High	Medium	Medium	Medium	High	Low	Medium
Coal IGCC-CCS	High	Medium	Medium	Low	High	High	High
Coal IGCC-CCS w/ incentives	High	Medium	Medium	Low	High	Medium	High
Efficiency	Low	None	Low	None	None	Low	None
Geothermal	Medium	None	Medium	None	High	Medium	Medium
Geothermal w/ incentives	Medium	None	Medium	None	High	Low	Medium
Large Solar PV	Low	None	Low	None	None	Medium	Low
Large Solar PV w/ incentives	Low	None	Low	None	None	Low	Low
Natural Gas CC	Medium	High	Medium	Medium	Medium	Medium	Medium
Natural Gas CC-CCS	High	Medium	Medium	Low	High	High	Medium
Nuclear	Very High	Medium	High	None	High	Very High	High
Nuclear w/ incentives	Very High	Medium	High	None	High	High	Medium
Onshore Wind	Low	None	Low	None	None	Low	Low
Onshore Wind w/ incentives	Low	None	Low	None	None	None	Low
Pulverized Coal	Medium	Medium	High	Very High	High	Medium	Medium
Solar - Distributed	Low	None	Low	None	None	Low	Low
Solar Thermal	Medium	None	Low	None	High	Medium	Medium
Solar Thermal w/ incentives	Medium	None	Low	None	High	Low	Medium

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The Role of Renewables

The interest in investing in renewable technologies was spurred by the significant rise in natural gas prices. Due to the high cost of natural gas in 2007 and 2008, and the lack of understating that hydraulic fracturing would have on the domestic supply of natural gas, investors saw an opportunity for renewable technologies as a cost

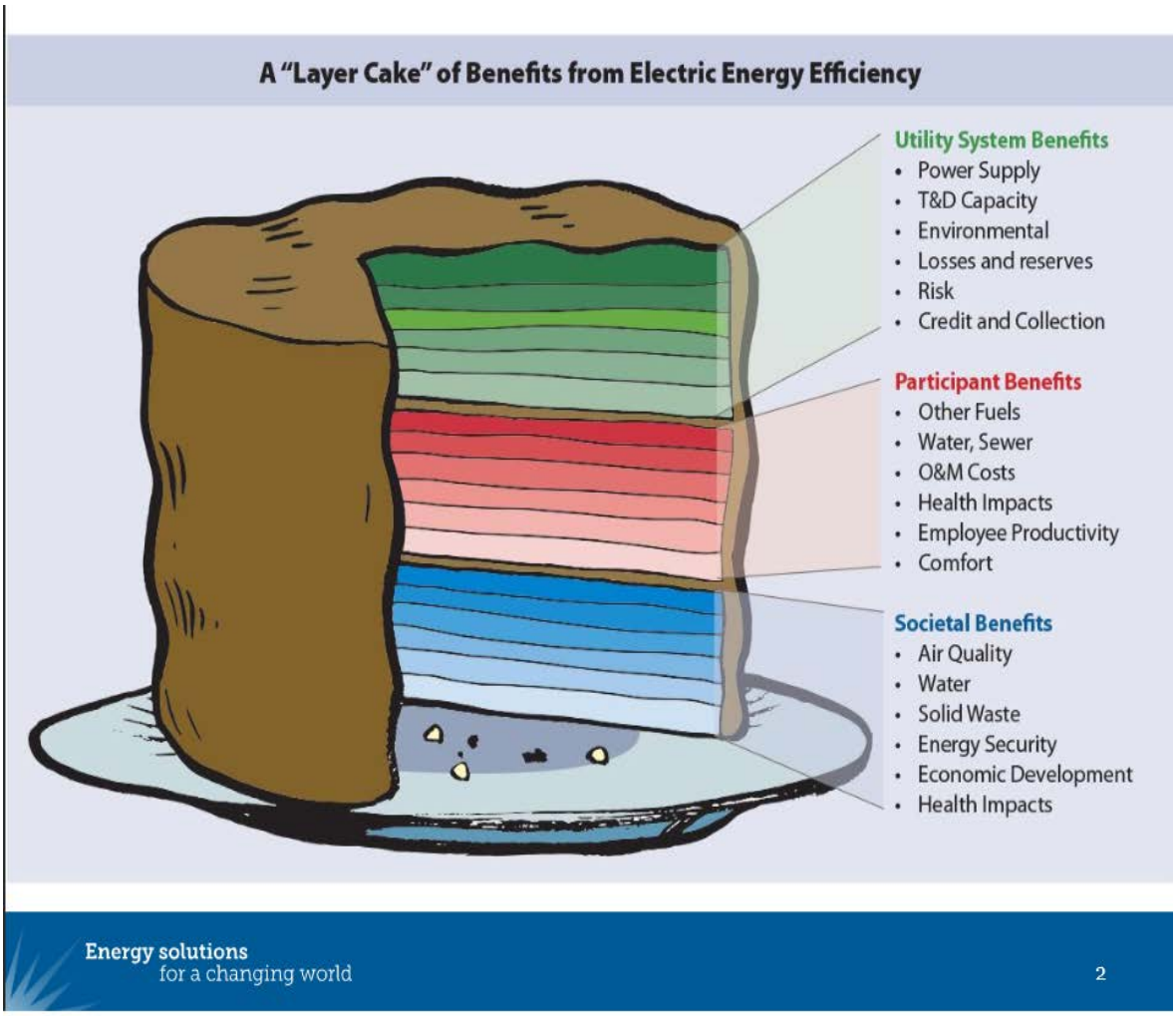
[2] Id.

competitive option. The energy market is fundamentally a boom and bust market driven by fuel costs plants. Renewables will not replace all fossil fuel-based generating plants, but are a critical part of the mix to achieve price stability, providing risk mitigation at a cost of $6/Mbtu. Gas is currently priced at around $4/Mbtu. Is it bad policy to continue to support their investment when gas prices are below this price? Absolutely, not! We cannot see the future, but history tells us there will be another boom and bust cycle associated with the price of natural gas. Prices have ranged as high as $12/Mbtu in recent years. Together with the known risks inherent with energy development, it's better to be prepared by maintaining a diversified mix of energy sources.

The Role of Demand Side Management

The purpose of having a statewide energy efficiency standard is to encourage the more efficient use of resources as part of a risk mitigation strategy intent on protecting Ohioans from higher than necessary costs. Energy efficiency is cheaper than building new generation and mitigate potential price shock. The following chart is an interesting visual showing the "layer cake" of benefits:[3]

[3] Jim Lazar, Recognizing the Full Value of Energy Efficiency, Presented at the 2013 ACEEE National Conference on Energy Efficiency as a Resource, Sept. 24, 2013, at 2



The PJM Wholesale Energy Markets

Wholesale energy prices in PJM, which include both the day-ahead and real-time markets use a uniform (or single) clearing price auction in which electricity generators place bids for the hours and amount of power they are willing supply. PJM takes this "bid stack" and then dispatches the generators from lowest to highest bids until all power demand is met for each hour of the day. Each generator that is dispatched is paid the same price as the bid of the last generation plant unit needed to meet total demand for electricity. For example, say I bid an old coal plant in to provide power for the 11 AM

hour at $20/MWh. Based on the demand, a plant that bid $40/MWh is the last plant that is dispatched to meet demand. Both plants will be paid $40. When generation owners make their plants more efficient, they are compensated through this market.

The following chart highlights the specific components in the PJM wholesale energy price, known as the locational marginal price ("LMP"). The largest components of the wholesale price are energy and the capacity components. Customers in Ohio are directly responsible for paying the capacity price, so actions taken to reduce the overall capacity requirements translate into bill savings for everyone in Ohio. The contrast in prices from 2011 and 2012, make this clear.

PJM LMP Price Components $/MWh	2011 (Jan-Jun)	2012 (Jan-Jun)
Load Weighted Energy	$ 48.47	$ 31.21
Capacity	$ 12.95	$ 7.22
Transmission Service Charges	$ 4.46	$ 4.89
Operating Reserves (Uplift)	$ 0.80	$ 0.65
Reactive	$ 0.41	$ 0.47
PJM Administrative Fees	$ 0.38	$ 0.44
Transmission Enhancement Cost Recovery	$ 0.30	$ 0.30
Regulation	$ 0.33	$ 0.20
Transmssion Owner (Schedule 1A)	$ 0.09	$ 0.08
Synchronized Reserves	$ 0.11	$ 0.03
Day Ahead Scheduling Reserve (DASR)	$ 0.03	$ 0.03
Black Start	$ 0.02	$ 0.02
NERC/RFC	$ 0.02	$ 0.02
RTO Startup and Expansion	$ 0.01	$ 0.01
Load Response	$ 0.01	$ 0.01
Transmission Facility Charges	$ -	$ -
Total	$ 68.39	$ 45.61

Source: Indepdendent Market Monitor. Quarterly State of the Market Report for PJM: January through June 2012, Table I-7 page 15 (August 16, 2012). Available at: http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2012/2012q2-som-pjm.pdf

The PJM Capacity Market

The PJM capacity market is designed to ensure that adequate resources are available to meet demand and is separate from the energy market. The capacity market is equivalent to an insurance policy; it guarantees that the need for energy can be met. Resources that participate in the capacity market can also participate in the energy market. However, resources that are in the capacity market function on an "on-call" basis for all hours of the year, or in the case of efficiency are "on" all year.[4]

The PJM capacity market is designed to ensure powerplants make money and the system remains reliable. Ohio's marketers, whether providing the standard service offer, serving governmental aggregations, or providing power to individual customers, must have the right to enough capacity to provide those services in an amount equal to average of the historical system peak loads for its customers plus an additional reserve margin. The capacity market is not an efficient mechanism for retaining older capacity near retirement. The expected equilibrium price in the capacity market is the three year forward price for one year to recover the full cost of new capacity, gross cost less net revenues, and not a price based on the marginal cost of existing capacity.

Generators participating in the capacity market receive a $/MW-day payment that is just what it sounds – a payment per day for the commitment to provide a certain amount of MW. Capacity charges in Ohio are recovered through the generation charge. Capacity prices are set through a three-year forward auction held in May of every year; the May 2014 auction will set the price for capacity between May 2017 and April 2018.

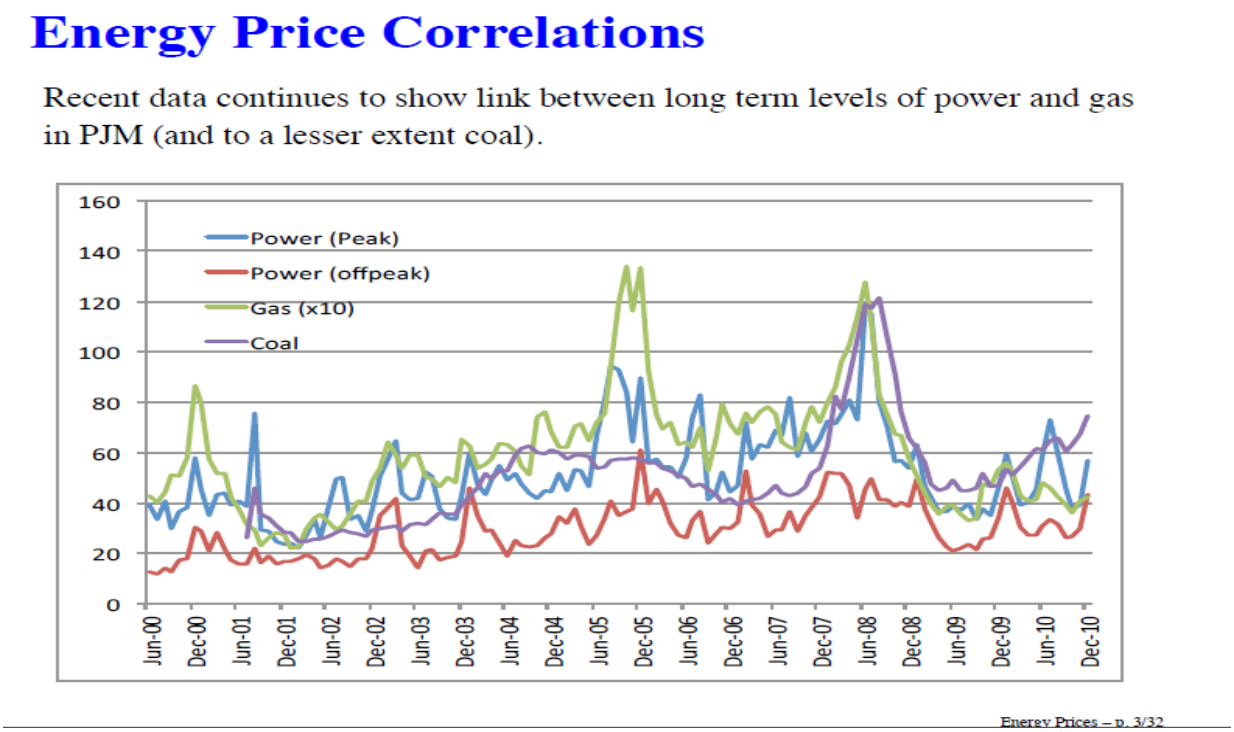
[4] Recently PJM has expanded opportunities to participate in the Capacity market by offering peak season only participation and other time-varying options.

Energy efficiency and demand response compete effectively in the Base Residual Auction ("BRA"). A recent example is relevant. In the PJM BRA auction held in May 2012 for the delivery year 2015-2016, prices in the First Energy territory, also known as the ATSI zone, cleared at a price of $357. The capacity clearing price in the rest of Ohio was $136. This means that a capacity resource in First Energy would receive $357 per MW per day plus the real-time clearing price on event days. So, a 100 MW resource – efficiency, demand response, or powerplant -- in the First Energy territory would receive a guaranteed annual payment of $13 million. If the resource is a powerplant it can also participate in the energy market. The same example in AEP would generate revenues totaling $6 million. Part of the reason that the price in FirstEnergy was so high was because FirstEnergy under-reported the amount of energy efficiency that would be in place in three years and did not bid efficiency into the market. The following year, the 2013 auction for the 2016-2017 delivery year, energy efficiency was properly accounted for and the capacity price in the FirstEnergy territory dropped to $114 per MW day, with the remainder of Ohio priced at $59. Efficiency has a positive impact on capacity prices for consumers.

The Role of Energy Efficiency and Demand Response in the PJM Capacity Market

Peak load is the most expensive to serve and is used, on average only 100 hours per year. In times of peak, constraints in the system, or a system outage, prices can go to $1000/MW. Energy efficiency and demand response minimize this price exposure risk. Energy efficiency reduces energy use, and thus demand. Demand response can

be called on to reduce energy usage at particular times. The following chart provides a good visual of how prices vary between average off-peak and average on-peak. [5]

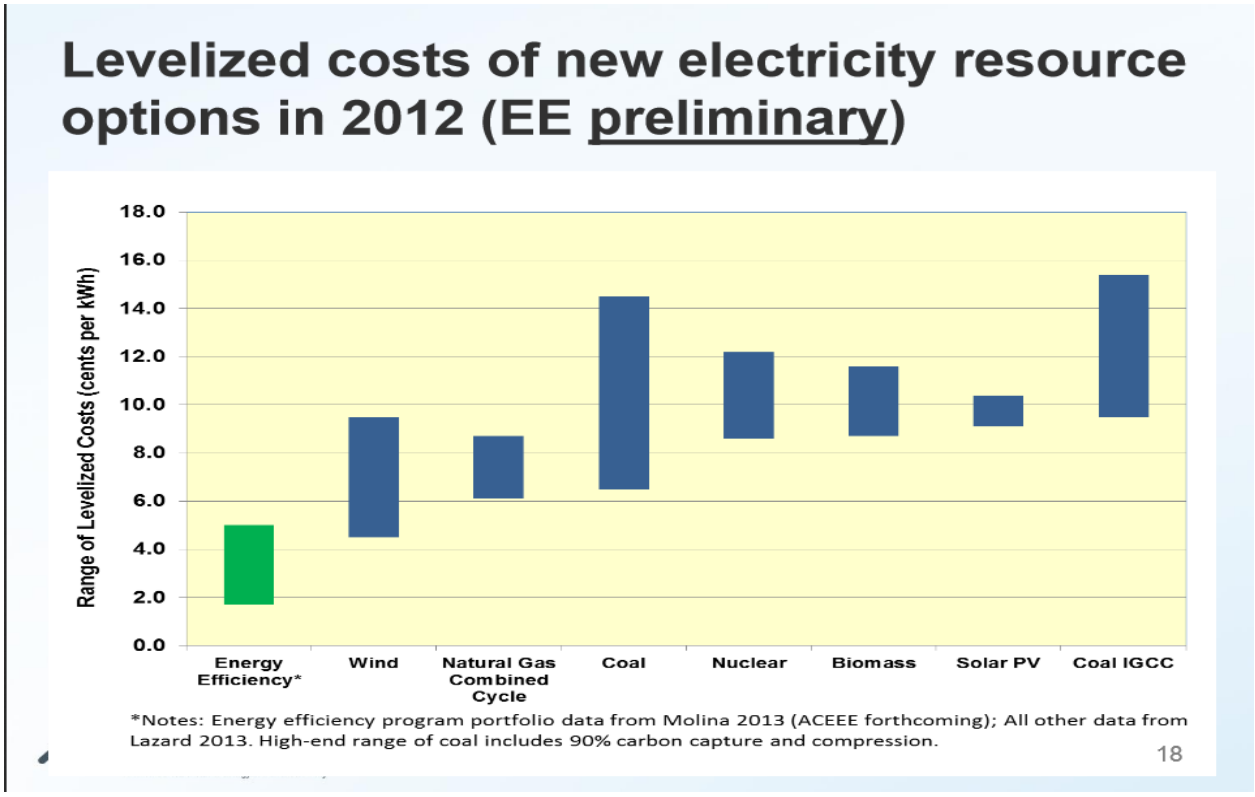


The peaks directly influence the resulting capacity price, which is paid daily but is established annually. The higher the forecast system peak, the greater the cost of capacity. Over the past seven years there has been a general decline in the price of capacity. This is not a market failure, nor is it an example of "price suppression". It is caused by a combination of factors including reduced use by industrial customers, increased energy efficiency standards for appliances and other products, and a host of other factors. PJM's projected 2013 summer peak was 8,295 MW less than its record summer peak.

[5] Coulon, M. The Electricity Bid Stack: Linking Coal, Gas, Power and Emission Prices. Princeton University. (July 7, 2011) at 3. Available at: http://www.math.nyu.edu/~laurence/Wpi/ViennaCoulon.pdf

Efficiency and demand response accounts for 11,175 MW of PJM's current capacity, reducing the need to build new, more expensive, generation. DSM is now the major factor in slowing load growth in PJM. Ohio is directly responsible for providing 40% of the total energy efficiency that was bid in the most recent auction. This energy efficiency directly contributes to system wide reduction in capacity requirements.

The cost effectiveness of energy efficiency and demand response has been highly contested during consideration of SB 302 and SB 58. Comparing the relative costs of different resources can be difficult, especially when comparing new investments versus the cost of old, fully depreciated baseload powerplants. The best approach is to compare the typical levelized cost of energy is demonstrated by the following chart.[6]



[6] Molina, M. Still the First Fuel: National Review of EE Resource Costs DRAFT Findings, ACEEE EER Conference in Nashville, TN, September 23, 2013, at 18. Available at: http://aceee.org/files/pdf/conferences/eer/2013/4C-Molina.pdf

Why Senate Bill 302 is Unnecessary

The energy efficiency benchmarks established by SB 221 are proving effective in saving customers money, particularly small commercial and residential customers, though all customers large and small benefit from the impact of efficiency on energy and capacity prices. Ohio's distribution utilities have easily met the targets under the law with a just a single exception during a single year when the programs were just starting. Utilities, using cost-effective programs, will easily continue to meet the goals through 2018 and likely beyond. And, as demonstrated by my colleague and noted in other testimony and analyses, efficiency and demand response are reducing customer bills with average projected savings for residential customers of $524 over three years and commercial customers saving and average of $3,231 during the upcoming three years. There are direct benefits to customers that participate and indirect benefits in the form of lower wholesale prices for those that do not take advantage of the programs.

Distribution utilities are making money on the programs. Through a series of settlements and PUCO decisions, a standard program template has been developed. Most of the portfolios delivered by the utilities are the same; over the past thirty years the basic design of cost-effective programs have been developed and adopted by utilities in response to state policies. In Ohio, if utilities meet the savings targets, they can earn an incentive equal to 13% of the savings produced by the programs. This results in 87% of the benefits inuring to customers with the balance going to distribution utilities. Savings in excess of the benchmarks can be banked and used for compliance purposes in future years. The programs are exceeding the targets and coming in under budget. The implementation has been smooth and the programs are a success for both customers and utilities.

HB 302 undermines the public policies this body has adopted. It does so in the following ways:

- It significantly reduces the benefits of energy efficiency to customers;
- It expands the extensive subsidies small consumers provide to large industrial customers;
- It reduces the impact of energy efficiency by grossly expanding what counts, primarily measures that have no impact on market prices;
- It restricts the budget a utility can invest to meet the requirements of SB 221;
- It minimizes the amount of capacity that is bid into the PJM market, artificially inflating wholesale prices and increasing the cost of EE programs; and,
- It increases 'incentives' to the point that utilities will reap 50% of the savings produced by the programs, rendering many of them no longer cost-effective.

Taken together, these provisions will reduce the benefits of EE and increase the costs to small customers. The low income customers served by our agencies will pay more. Small customers, those most vulnerable to the volatility and spikes in wholesale market prices, will likely see their programs eliminated because they will no longer be cost-effective when utilities are gobbling up the value of one-half of the savings. Residential programs will be crowded out as utilities count things they have already done or count a vastly expanded list of industrial and utility activities, investments that do not reduce wholesale market prices. With distribution utilities awash with these 'savings', there is no need to promote efficiency among small customers to achieve the benchmarks.

Advanced Energy Resources

Ohio consumers are fortunate that generation has been declared competitive and they are no longer responsible for paying the high capital costs of new conventional

powerplants. Duke Energy Indiana recently brought a new coal plant online and customer rates increased 15% -- for the next thirty years. Ohio, instead, is adding generation capacity incrementally as a result of the in-state requirement and customers are not on the hook for the capital costs. This requirement is not unconstitutional from my perspective. Unlike coal, which is fungible, where generation is located matters. In-state generation improves reliability and has other localized impacts. I do not believe there is a constitutional impediment to the General Assembly requiring new generation be built in the State of Ohio.

The cost of the renewable energy component of the advanced energy standard is minimal. The investment resulting from the standards has been significant. While Ohio consumers pay as much as $2.84 per month through economic development riders to retain jobs (or increase profits) at manufacturing plants, they are paying around $0.50 per month for the advanced energy standard, which is creating new jobs, increasing investment, and improving system reliability in Ohio. Renewables diversify the state and regional generation base, helping manage risks associated with price volatility and potential environmental standards. It's a good deal for Ohio's small consumers.

Conclusion

It is rational for the General Assembly to review state policies and their implementation and we applaud this Committee for doing so. From the perspective of small customers, the energy efficiency programs have been an unqualified success, enabling families and businesses to secure energy services at prices lower than they could be by overcoming barriers to market penetration by efficient technologies and facilitating the aggregation of small customer savings to bid into the wholesale markets.

Utilities have been compensated at a level above what they earn on their distribution investments. The programs are working.

The advanced energy requirements are producing economic development at a fraction of the price of the direct investment of ratepayer funds in subsidies for the largest industrial customers. Renewables, in particularly, diversify the generation base, reduce wholesale market prices, and match the slow increase in demand while offsetting the need for additional baseload powerplants as older coal-fired plants are retired. This General Assembly and the Kasich Administration are clearly committed to developing the Ohio economy to stop the slide in family incomes. The energy efficiency and advanced energy requirements have proven a successful strategy to achieving these ends.

We look forward to your questions.