



THE OHIO STATE UNIVERSITY

JOHN GLENN COLLEGE OF PUBLIC AFFAIRS

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Of the
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Representative Bill Seitz, Chairman

Testimony of
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The findings, conclusions, and recommendations expressed in this testimony are mine and do not represent the views of either The Ohio State University and the John Glenn College of Public Affairs.

Good afternoon Chairman Seitz and members of the House Public Utilities Committee. Thank you for the opportunity to testify against House Bill 178 and its likely effects on First Energy's customers and the market for electricity generation in the state as a whole.

The proposed bill is a bailout for a company that is financial trouble, it will help destroy a competitive market for electricity generation that is providing billions of dollars of savings to Ohioans and their employers, and it will make economic development and job creation more difficult not only in First Ohio's distribution territories but in the state of Ohio as a whole. This is a bill with anti-competitive intent.

My name is Edward [Ned] Hill, and I am a Professor of Public Affairs and City and Regional Planning at The Ohio State University's John Glenn College of Public Affairs. I am also a member of the Ohio Manufacturing Institute. I am an economist, and have worked on economic development policies in general and issues that affect Ohio's manufacturing sector for over thirty years. Additionally, I have been actively engaged in research on Ohio's electricity markets over the past three years both in testimony before the Public Utility Commission of Ohio [PUCO] and in research supported by the Northeast Ohio Northeast Ohio Public Energy Council [NOPEC].

I have never been paid for my testimony before the PUCO. While I have testified on behalf of the Ohio Manufacturers Association I contacted the OMA so that I could have a vehicle for opposing the IOUs proposed monopolistic Power Purchasing Agreements. I did this because I viewed the attempts of Ohio's Investor Owned Utilities [IOUs] to re-monopolize the electric generating industry, re-balkanize an efficient and reliable regional generating market managed by PJM Interconnect, and to pre-monopolize emerging new technologies of electric generating capacity to be antithetical to the operation of free markets and against the best interests of the people of the state of Ohio.

The bill before you does not stand alone. It is the latest in a multi-year series of attempts by Ohio's IOUs to thwart the intent of the state of Ohio to allow competition in the market for electricity generation and provide lower prices for Ohio's electricity users. First came uncompetitive, non-bypassable power purchasing agreements. The non-bypassable PPAs were accompanied and followed by a slew of non-bypassable riders that funneled above-market electricity payments to the state's IOUs. Next in line was a synthetic form of a PPA that rivaled the now infamous Synthetic Collateralized Debt Obligations [CDOs] as marvels of irresponsible financial engineering. And, now the Committee is confronted with legislation to approve *synthetic* Zero-emission nuclear credits, or ZECs, allowing FirstEnergy to recover the cost of these credits from all electricity users in its service territories with a non-bypassable rider.

The Four-part Test

The Committee members have heard that energy markets are complex. And the Committee has been presented with a complex, Rube Goldberg-like financial instrument. My advice to you: Protect your constituents' wallets whenever an issue is advertised as being complex, and the person offering testimony does not try to provide clarity and simplicity.

Yes, there is complexity a sophisticated and competitive electricity market serves as the foundation for a transmission market that is currently a natural monopoly, which, in turn, is the supplier of a distribution system that is also a natural monopoly. However, there is a simple four-part test that should be applied to any issue related to the electricity market:

1. Are prices lower than they would have been without competitive electricity generating markets?
2. Is new investment in generating capacity taking place in the PJM region and is investment taking place in Ohio?
3. Are uncompetitive generating boilers and plants closing down?
4. Has the reliability of the electric generating system improved?

If the concern is truly about carbon reduction in the atmosphere then add one more question:

5. Is the proposal before you the cheapest and most effective way to achieve carbon reduction?

The ZEC Proposal

The financial engineering behind the ZEC proposal is fanciful.

The House Bill requires that ZEC credits be assigned to one-third of end-user consumption in FirstEnergy's service territory over the most recent two-year period. However, the Ohio Legislative Service Commission [LSC] Fiscal Note states (p. 5) "the limitation seems unlikely to be reached when recent trends in nuclear generation are compared against recent trends in energy consumption within the FirstEnergy service territory." John Seryak of Runnerstone, LLC, writes that the output of FirstEnergy's two nuclear plants is 15.8 million Megawatts per year, and over the past five years average output is 16.7 million Megawatts, while the one-third requirement is approximately 18 million Megawatts per year. Northeast Ohioans can expect to pay \$21.5 million a year to subsidize out-of-state nuclear electricity production.

A second concern is wording that amends state policy to extend long-term "environmental and other benefits" to the region. The word "region" is not defined. This wording coupled with the purchase requirement opens a very wide door for Northeast Ohio's ratepayers subsidizing FirstEnergy's Beaver Valley plant in Pennsylvania. LSC notes that AEP's Donald C. Cook plant in Michigan may also receive subsidies from Ohioans. The Chairman of FirstEnergy downplayed this possibility before the committee in his remarks before this committee on April 25, 2017, but noted the possibility in a transcript of an earnings call that took place three days later on April 2. These comments are cited by the Ohio Legislative Service Commission in its Fiscal Note and Local Impact Statement, p. 6).

The LSC Fiscal Note reflects the uncertainty of the fiscal impact on Northeast Ohio's electricity users. In all cases the charges are large. LSC, FirstEnergy and the Ohio Consumers Counsel all agree that the *minimum* cost of the non-bypassable rider to subsidize the nuclear plants is near \$300 million a year and totaling nearly \$5.25 billion

over 16 years. The LSC Fiscal Note states that If the gap in nuclear power production is filled with power from out-of-state plants, then the subsidy can grow to nearly \$11.2 billion.

The environmental air quality benefits are also fanciful.

The air quality benefits from the nuclear plants are compared to a hypothetical power plant. The bill requires that the air emissions from the nuclear plant be compared to the emissions from a hypothetical power plant fueled by “the predominant electric generating source” at the same location as the nuclear plant. The result is to simulate the impact on air quality of replacing the nuclear plant with a 30 to 40-year old coal-fired plant with the same generating capacity as the existing nuclear plant. The result will be an increase in emissions in a region that is a non-attainment region.

This argument is arithmetic nonsense. If the nuclear plants are closed electricity will be replaced with a combination of out-of-state generated power, new investment in lower-emitting gas fired continuous cycle power plants, energy efficiency investments, and renewable energy. The alternative power production will be located within the PJM transmission grid and throughout eastern Ohio. Further movement toward air quality attainment can be reached by having PJM create a market for carbon and sulfur dioxide emissions.

What is the end game?

FirstEnergy has been consistent. It is looking for subsidies for its non-competitive power generation units, and it looks to Ohio’s Statehouse as the source of subsidy for its loss-making Ohio and Pennsylvania power plants.

All of the IOUs share two goals. The first is to use the power of either the PUCO or the Ohio Legislature to mandate the purchase of expensive existing Ohio power plants first and to ensure that competitive market forces do not force them to either write down the asset-value of their generating assets, protecting their stock values, or to close the

plants. The second is to upend, circumvent, and destroy the competitive electricity generating market managed by PJM Interconnect.

Competitive markets work by having the cheapest sources of electric power being purchased first and the most expensive sources of power being purchased last—or rationed out of the market. Competitive markets work by having new sources of investment displace older, less efficient, more expensive technologies.

I end by going back to answering the four-part test and the fifth environmental question:

Q: Are prices lower than they would have been without competitive electricity generating markets?

A: Competitive electric generating markets will save Ohioans \$2.8 billion a year and resulted in \$15 billion in savings from 2011 to 2015. Merchant purchasers of electricity saw their generating costs drop by between 30 and 40 percent when competition entered their regional markets. Retail consumers experienced savings 16.4%. Some of these savings have been clawed back by non-bypassable riders.

Q: Is new investment in generating capacity taking place in the PJM region and is investment taking place in Ohio?

A: \$9 billion in investments in new gas-fired technology in Ohio that can out-compete older coal-fired and nuclear technologies have either been built, are under construction, or are in the approval process. The investments are a commitment of 9,157 Megawatts of power.

Q: Are uncompetitive generating boilers and plants closing down?

A: 56 coal-fired boilers with 10,00 Megawatts of power have closed in Ohio

Q: Has the reliability of the electric generating system improved?

A: PJM system reliability, or reserve capacity, is at 22.4%. The old regulatory norm was between 12 and 16%. In 2010-2011 before Ohio's IOUs started purchasing power competitively the margin was 16.5%

Q: Is the proposal before you the cheapest and most effective way to achieve carbon reduction?

A: No. Competitive markets for emissions will result in more cost-efficient ways of improving air quality.

Two other myths have become prominent in the continuing debate during the IOUs attempts to re-monopolize the electric generating markets: fuel diversity and importing power.

Fuel diversity in both Ohio generation and the PJM generating market has improved with the advent of competition. In 2010, 82 percent of Ohio's generating capacity was fueled by coal. In 2015, that was down to 59 percent. Yes, nuclear accounted for 23 percent of production. However, Ohio has not tried conservation, the benefits of natural gas production are still to be fully realized, and alternative sources of energy produced across the PJM grid are entering Ohio's homes and businesses.

Importing power: Ohio has been a net importer of electricity in all years except 2006 since the 1970s. Most of this power comes from plants that border the Ohio River. The real issue is what is happening to the reliability and cost of power and in both of these measures Ohio has benefited from the competition.

I have appended more of my thoughts of the undesirability of subsidizing nuclear power in the appendix to this testimony. I look forward to answering any questions that you may have.

Thank you.

APPENDIX

Say No to States Bailing out Nuclear Power

The IOUs are attempting to end multi-state electricity generating markets to protect their generating assets and to shift regulation from the FERC to state based PUCOs where they can exercise their political muscle.

- Nuclear power plants, as is true for any power plant, are part of the regional electricity power market. Having states protect significant power sources from competition will disrupt the operation of a competitive market for power.
- Increases in system reliability are due to the expanded geography provided by the regional generation-transmission grids
- Re-monopolizing the electricity generation markets at the level of the states poses a serious public safety threat and the loss in public benefit that would come through re-monopolization should violate the Commerce Clause of the Constitution

Providing subsidies to nuclear power to retain sources of non-carbon power generation should be done by the multi-state power grids

- The problem of carbon reduction is a multi-state public policy issue, not a state issue.
- The benefits from carbon-free electricity generation from a nuclear plant do not stop at any one state's border. The benefits from carbon reduction are enjoyed across the entire air-shed. There is no reason why the cost of subsidy should be borne just by ratepayers in the state or service territory where the generating plant is located.
- If subsidies to nuclear power come from either a state or sub-state EDUs the cost of power will be higher than in competing areas creating an economic development drag.

Is subsidizing existing nuclear plants the most cost efficient and effective way to achieve carbon reduction? The answer is **no**. A market should be established for carbon reduction so that goals are met in the least costly way to electricity users.

- The RTOs can establish markets for reducing carbon emissions from electricity generation. A market adjusted tax or traded permit will give price advantages and investment incentives to low-carbon and no-carbon generating technologies.
- If that solution be nuclear, so be it, as long as the full costs of nuclear power production are covered.
- If the solution is a combination of energy efficiency investments and wind, solar and natural gas production that is fine as well.

IOUs are looking to guarantee the sale of the most expensive, and uncompetitive, sources of electricity first. They are offering to support carbon free electric generating technologies under three conditions. (1) Carbon-free generation that they invest in be subject to a regulatory guaranteed rate of return. (2) Carbon-free generation that is not owned by the IOUs be placed under a regulatory regime. And, (3) natural gas

generation in the state of Ohio that is not owned by the IOUs be placed under a regulatory regime.

- Such actions will deter investment in carbon-reducing generation capacity because these actions will prevent existing high carbon output plants from leaving the market.
- Placing carbon-free and reduced carbon generating plants under regulatory control will not allow markets work to reduce their costs, thereby lowering demand for green energy.
- Re-monopolization will effectively pull the subsidizing state out of the competitive portion of the PJM auction markets resulting in (1) higher electricity prices for consumers, (2) reduce economic activity in the state, and (3) and reduced demand for carbon-free electricity generation and conservation

Keeping expensive and technically obsolete nuclear power plants in subsidized operation will be a barrier to lower-cost, lower-carbon electricity production

- Competitive, or free, markets work by having lower cost producers of a product replace higher cost producers and forcing them out of the market. This is what is happening with nuclear power
- Keeping nuclear power plants operating by reestablishing the states as the regulatory authority and balkanizing the generating market will result in the most expensive power being purchased first and the plant not exiting the supply-side of the market
- With the nuclear generated supply being locked in place the risk of entering the generating market increases and investments in new, lower-cost and more reliable, power will not be made
- I do assume that once the generating market is re-monopolized at the state level market forces will play a much smaller role in power pricing and that non-competitive coal plants will also be protected.

Nuclear power and Ohio

Nuclear power accounted for about 23% of Ohio's electric power consumption in 2015

- Nuclear power reduces carbon load compared to coal-fired and natural gas fired power plants. The slide indicates that the reduction equals
 - 11 million tons of carbon
 - 12,000 tons of nitrogen oxide [NO_x]
 - 18,000 tons of sulfur dioxide [SO₂]
 - There is no reason to accept that subsidizing and operating the nuclear power plant is the most cost-effective way to achieve these reductions
- The claims of economic benefit to GDP, Jobs, and Tax payments made by FirstEnergy are standard outputs from input-output models and the typical assumptions made are that:
 - the plant closes and no economic activity replaces it
 - no competing generating investments are made

- increased electricity costs borne by consumers does not affect sales, employment, tax payments, value added [GDP] from other industries, or site location decisions and expansions decisions.
- Nuclear is recognized as the most expensive power source; nuclear plants have not been bid into capacity auctions due to their prices.

Ohio and the importation of electricity

- Ohio has imported power in all years but one since the early 1990s
- Most of Ohio's "imported" power comes from power plants located along the Ohio River or in other bordering states
- The FirstEnergy document assumes that no new generating capacity will be constructed in Ohio. That offsetting power the power from nuclear will only come from imported electricity or renewable sources of energy.
- Removal of 17MWh of power will be replaced by a combination of non-Ohio power generation, investments in natural gas-fired combined cycle plants in Ohio and Pennsylvania, and a mix of alternative energy and energy conservation as long as a competitive regional electricity generation market exists.
- First Energy assumes that the way to offset the "reductions" in carbon, NO_x, and SO₂ will be from 17MWh of renewable power. A better, and cheaper, solution can come from a multi-state regional electricity generating market that combines a mix of renewable generation, energy conservation, natural gas-fired combined cycle power plants, or reductions that can take place outside of the energy sector through market mechanisms. If there is a market requirement for nuclear power this would be revealed through markets for carbon, NO_x and SO₂ reduction that allows conservation to compete with nuclear.
- FirstEnergy has to incentive to encourage conservation

There are important unanswered questions about the environmental impact of nuclear electricity generation

- Nuclear power generation is heavily subsidized. The most troublesome is its relief from liability insurance
- Long term storage of spent fuel rods has not been resolved and they remain on site
- FirstEnergy's maintenance and safety record is troublesome