

**BEFORE THE
PUBLIC UTILITIES COMMITTEE
OF THE OHIO SENATE**

SEN. BILL SEITZ, CHAIRMAN

**Substitute Senate Bill 58 Hearing
November 6, 2013**

**TESTIMONY OF
OHIO MANUFACTURERS' ASSOCIATION
BY**

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Chairman Seitz, Vice Chair LaRose, Ranking Minority Member Gentile, and members of the Committee:

I thank you for the opportunity to testify today on behalf of The Ohio Manufacturers' Association (OMA).

In addition to working with OMA as a technical consultant, I am also the CEO of Go Sustainable Energy, an independent energy-efficiency consulting firm I founded in 2006. I have a Masters' Degree in Mechanical Engineering with a concentration in thermo and fluid dynamics from the University of Dayton. I am a licensed Professional Engineer in Ohio, and a pumping systems' energy expert for the US Department of Energy. I have been working with manufacturers for over 12 years on matters of energy-efficiency, personally working with over 125 manufacturing facilities, and publishing 25 academic papers on energy-efficiency.

It is my opinion that under SB 58, Ohio's efficiency standards will deliver little to no value to ratepayers, while creating unprecedented new costs.

In my testimony, I focus on the following topics:

1. What should count as energy-efficiency?
2. How do SB 58's provisions regarding "what counts" impact the efficiency resource standards?
3. Do the efficiency resource standards benefit Ohio's manufacturers?

1. What should count as energy-efficiency?

I suggest we look to PJM, the Regional Transmission Organization (RTO) that is charged with maintaining reliability for all of Ohio. Without central planning for generation, PJM has instituted auctions to procure capacity in future years based on their load forecasts. It is worth noting that PJM uses the terms capacity, and reliability, interchangeably.

To maintain system reliability, PJM counts several types of capacity resources while also planning transmission:

- Traditional generation – Coal and gas fired power plants, nuclear plants
- Renewable and advanced energy generation – Wind, solar, hydropower, fuel cells
- Demand response
- Energy efficiency

PJM considers capacity from energy efficiency equal to that of any other resource. In fact, these resources compete against each other to the benefit of consumers. PJM states that their model has "...reduced costs by fostering competition". And, they give energy efficiency special mention, saying the market has produced a

"Generally level playing field [that] has reduced costs by attracting investments in low-cost supplies from demand response, efficiency and uprates"¹

To maintain reliability PJM has rules on "what counts" as energy-efficiency. This is to prevent "double dipping" on energy savings that are essentially already factored in to load forecasts; to ensure that savings claimed are realized, and persist; in other words, to let the markets work, and produce energy-efficiency that wouldn't have otherwise

¹ Slide 11, http://www.caiso.com/Documents/Presentation-AndyOtt_PJM.pdf

happened. As PJM defines energy efficiency, it is “exceeding building codes, appliance standards, or other relevant standards...”²

Energy efficiency which moves the markets should count, and PJM counts it.

We do need some flexibility in our programs for new sources of energy efficiency. However, to foster competition and reduce costs, PJM should not be ignored.

As I will show, SB 58 unfortunately does the opposite, in expanding “what counts” to types of efficiency that will never count, and simultaneously limiting the abilities of ratepayers to participate in the markets.

2. How do SB 58’s provisions regarding “what counts” impact the efficiency resource standards?

Counting kWh as Btu – SB 58 orders the commission to “count energy savings...on a British thermal unit (Btu) equivalent basis”. Electrical energy is always counted in terms of kWh, and never in terms of Btu. The units of measurement “watt” and its derivatives, like kWh, were adopted for international use in 1960. SB 58 deviates from a 50-year-old internationally accepted standard, with no clear technical or regulatory need for this change.

However, it is clear to a practiced engineer how counting electricity in terms of Btu would affect the energy-efficiency resource standards. It would automatically cut the efficiency benchmarks by 2/3.

This is because the “equivalent basis” is 3,412 Btu/kWh which would replace the 9,952 Btu/kWh heat rate³ normally used to correlate end use electricity consumption with supply-side fuel consumption.

Chairman Seitz, Vice-chair Larose, members of the committee, this single, seemingly innocuous provision ignores over 50 years of international agreement, while

² Slide 27, <http://www.pjm.com/~media/training/core-curriculum/ip-lse-202/reliability-pricing-model.ashx>

³ Hedman, B., “Fuel and CO2 Emissions Savings Calculation Methodology for Combined Heat and Power (CHP) Systems”, ASHRAE Transactions, 2011

surreptitiously shrinking the efficiency standards by 2/3. This would significantly reduce the amount of efficiency we achieve, and with it the cost savings to consumers.

Appliance standards & building codes – Under SB 58, energy savings that result from federal appliance standards and building codes would count toward utility compliance with their efficiency benchmarks. These are energy savings that already occur. PJM explicitly rejects them. The benefits are already factored in to business and consumer decisions and wholesale energy and capacity markets.

ACEEE and the Appliance Standards Awareness Project quantified the impact of this provision on Ohio's efficiency resource standards. For example, in some years appliance standards could result in 800-900 GWh of savings. Though, in 2014 alone, including appliance standards and building codes could account for an estimated 2,650 GWh of savings in Ohio. This is more than double the state's probable annual benchmark of about 1,300 GWh.

With this provision, utilities could meet their annual benchmark requirement with little effort. In doing so, they would provide no value to ratepayers, but they would be allowed to take profit. Additionally, they could substantially increase their lost revenue recovery, with no precedent, and outside of the proposed cost cap. This would raise electricity costs to consumers.

Energy Intensity – SB 58 provides a broad definition of energy intensity, and counts improvements in intensity as both advanced energy and energy efficiency. This overly broad definition would include energy intensity per unit of production, sales, economic output, and any other “measure of service” or “end-use...functionality”. As a reference point, Ohio's kWh/\$ GDP reduced on average about 1.9% from 2001 to 2010. SB 58 would allow cherry-picking only businesses with improvements in energy intensity, and thus savings would be much greater than the state average.

I personally, and with OMA, have advocated for including a carefully tailored, fair, normalized method of quantifying energy savings from productivity improvements. This is not what SB 58 has put forward.

Instead, SB 58's provisions and definitions would allow utilities to collect profit and lost revenue on improvements businesses make to their own processes, with no value-added from the utility. For the majority of the improvements, there would be no direct or indirect savings to ratepayers.

These provisions and definitions would raise electricity costs on consumers.

Power Plant Upgrades – SB 58 counts as efficiency heat rate and energy intensity improvements made to electric generating plants. These upgrades have a marginal impact on wholesale prices, and would displace consumer energy-efficiency which has large impacts on prices. The benefits of these upgrades would accrue to generation company shareholders, not consumers. Moreover, while these improvements are excluded from cost recovery, it would allow the distribution utility to make a payment to its unregulated subsidiary. As we established SB 58 allows for higher rates of profit, from which the regulated distribution utility could make this payment to its unregulated subsidiary.

This provision would displace consumer efficiency projects, raising electricity costs on consumers.

3. Do the efficiency resource standards benefit Ohio's manufacturers, and how does SB 58 impact this?

As the committee has heard, OMA commissioned a study by ACEEE and Synapse Energy Economics to investigate the costs and benefits of the efficiency resource standards to Ohio's ratepayers. We extended this analysis to determine the financial impact on individual manufacturers. We found that for the all-benefits to all-costs snapshot we selected, that all manufacturers small, medium, and large in all utility territories receive higher benefits than costs.

Conclusion

In conclusion, the provisions of SB 58 would result in Ohio's efficiency resource standards delivering little to no direct savings and universal benefits to ratepayers.

However, it would expand the types of projects a utility could collect profit on without precedence. Lost revenue collections would also increase substantially without precedence, and outside the cost cap.

For these reasons, SB 58 significantly worsens the benefits to cost ratio of Ohio's efficiency resource standards for Ohio consumers.

PJM's chief economist, Dr. Paul Sotkiewicz, wrote that the

“Capacity Market monetizes the value of demand response and energy efficiency...[the] value in the energy market is in the form of avoided energy costs”⁴

Thank you for your time today, and I am happy to answer any questions at the end of our presentation.

⁴ “Demand Response Opportunities Facilitated by Smart Grid Technologies in PJM”, Paul Sotkiewicz, Ph.D.