

June 8, 2017

Testimony by William Siderewicz, P. E., Founder and President of Clean Energy Future, LLC

Ohio Senate Public Utilities Committee

SB-128 Zero Emissions Nuclear Resource

(ZEN) Legislation

Chairman Beagle and members of the Ohio Senate Public Utilities Committee, I'm Bill Siderewicz, President of Clean Energy Future (CEF). It is an honor and a privilege to be here today to have an opportunity to explain why the **ZEN Bailout program should be REJECTED!**

Rather than simply repeat what I have already presented as House testimony (HB-178) in early May 2017, I have attached my prior testimony here as Exhibit A. Figure 1 of this testimony illustrates most simply why First Energy has economic problems with their nuclear plants. When the ZEN Bailout funds (average of \$ 350 million/yr: 16+yr.) are added to the nuclear plants' existing cost structure, the net result is an electricity cost above 7 cents/kwh. At the same time, non-utility firms can build/operate modern gas-fired power plants in Ohio and make electricity available on a wholesale basis for 3.2¢/kwh. Once electricity retailers add a mark-up, it's available to residential customers for 4-4.2¢/kwh. These economics describe the "fair price" for residential electricity. First Energy's (FE) nuclear costs of power generation are nearly double today's prevailing fair market value!

Corporate Welfare: First Energy's nuclear bailout costing over \$5.6 Billion to ratepayers is nothing more than corporate welfare. During a recent meeting with the editorial board of the Cleveland Plain Dealer, I provided them (Exhibit B, here) a simple summary table to illustrate the lopsided relationship between OPPONENTS to ZEN and SUPPORTERS of ZEN, as

experienced in the House testimony process. The only supporters of ZEN are the recipients of the welfare funds. However, those parties who would be stuck with payment of the welfare tab represent a significant list of opponents. This table more than mimics the results of numerous Ohio voter polls showing that by 7 to 1 margins, the public wants no part of utility power plant bailouts.

First Energy Wants to Use Someone Else's Money: Exhibit C (herein) shows that First Energy has historically handed out \$800-900 million/year of cash to its investors, as annual dividends. Most recently, that annual dividend has been about \$600 million/year. It is obvious that FE generates more than enough profits in any given year to solve their own \$350 million/year nuclear mess, but instead FE prefers to seek handouts from their rate payers in northern Ohio. It is interesting to note that in 2011, First Energy doubled-down on coal generation, by buying Allegheny Energy (PA). At the same time, the entire non-utility industry (including CEF) was moving forward with the development and construction of modern efficient gas-fired plants, in Ohio. This same graph shows that FE was blind to recognizing that the power generation market was shifting and in effect FE doubled-down on the wrong electricity technology, instead of natural gas technology. Why should ratepayers be asked to now subsidize the consequences of their mis-reading the electricity market place where coal and nuclear technology are both economic dinosaurs ? The simple answer is that they shouldn't be asking to be bailed out for their own errors in judgement and mis-management.

Saving Jobs: First Energy argues that a ZEN Bailout of \$350 million/year (aver. over 16 year) is justified to save 1,200 jobs at two nuclear plants. It seems these jobs are quite special since that would equate to \$ 292,000/job/year. This seems to be significantly different than compensation for any Ohio legislator... or most of Ohio's entire work-force.

The Ohio State University's Dr. Hill: Dr. Hill points out in his economic study (Jan. 2017) that free market power generation/purchasing saves Ohioans \$ 3,000,000,000/yr. versus the previous (pre-2000) monopoly power sales program of: AEP, FE and DP&L. Dr. Hill summarized most clearly in his recent House Testimony what ZEN is and why he believes it is being pursued by First Energy, when he stated :

***"All of the (investor owned utilities) share two goals.***

***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.”*

His summation identifies exactly what ZEN is all about. ZEN is an organized and calculated plan to erase the \$ 3 Billion/year electricity purchase savings that Ohioans now experience through free-market economics. . . called “Customer Choice”.

ZEN is only Step 1: ZEN has nothing to do with environmental superiority of nuclear power, because it has none. ZEN has everything to do with ratepayers bailing out FE’s self-inflicted financial mess, which can most efficiently be resolved with Chap. 7 or 11 proceedings for First Energy Solutions. ZEN is a valueless and unnecessary Bailout, it’s that plain and simple. ZEN represents step 1 in a multi-step upcoming legislative onslaught designed to carry out the disruptive utility objectives articulated by Dr. Hill of OSU.

The following is a partial list of what the non-utility business community (including CEF) and the consumer sector sees as the list of upcoming legislative bailouts/subsidies sought by Ohio’s utilities:

- Nuclear bailout (ZEN)
- Bailout of OVEC, two ineffective coal plants in Ohio and Indiana
- New utility-built rate based renewables projects (re-regulation)
- New utility-built rate based gas-fired projects (re-regulation)

All these utility-backed programs are designed to do exactly what Dr. Hill has described, with such utility plans being : anti-competition, anti-customer and anti-Ohio and should be rejected in total.

Ohio is in a unique strategic position of sitting on top of 100’s of years of supply of natural gas that also happens to be the lowest cost gas in the world ! Ohio is on the verge of being the low-cost energy hub of the U.S., thus leading to job and economic prosperity. Competition and free market economics will take Ohio into this leadership position, and the State should not be dragged back into the economic “Dark Ages” as suggested by First Energy, AEP and DP&L.

**Exhibit A**

**HB - 178 Testimony**

**of**

**W. Siderewicz**



**May 9, 2017**

**Testimony by William Siderewicz, P.E., Founder/President Clean Energy Future**

**Ohio House Public Utilities Committee**

**HB 178: Zero-Emissions Nuclear Resource (ZEN) Legislation**

Chairman Seitz and members of the Ohio House Public Utilities Committee, I'm Bill Siderewicz, President of Clean Energy Future (CEF). It is an honor and a pleasure to be here today to share with you my 37 years of experience in developing, financing and building private sector electricity generation facilities. To date, I have been involved in developing 35 such non-utility plants, virtually all being gas-fired facilities. Today, 10 modern gas-fired plants are in progress in Ohio and 15 more will be needed.

By the end of 2017, I will have delivered \$4.5 billion of new private investment in modern gas-fired generation to Ohio via five (5) projects, all located in FirstEnergy's territory. We bring the following, as a direct result:

- 8,000,000 man hours of construction labor (4,000 jobs)
- 125 new full time on-site jobs
- New state sales and income tax, local property tax, local salary tax, local income tax, and purchase of municipal services (such as water and wastewater services)
- \$70 billion in positive economic "ripple effect" in Ohio over next 40 years
- Construction of a new soccer field, running track and previously idle indoor pool at Lordstown High School.
- Support of local charitable and community benefit programs (United Way, 4-H, Boy Scouts, and Inspiring Minds, as a few examples)

I am happy to report that a CEF full-scholarship recipient will be traveling for the first time outside of Toledo for her first professional job with Fluor Corporation in Virginia. CEF restarted Megan's previously abandoned college education effort and she is now off to a summer internship as an electrical engineer. This is quite a change from a series of pre-college local waitressing jobs. She will graduate from the University of Toledo in 2019 as an engineer, to complete a simply amazing success story. Similarly, Coach Tressel, President of Youngstown State University, is helping us with similar private sector-college student cooperative partnerships in Mahoning and Trumbull Counties. CEF, like other IPP developers building new generation in Ohio, care deeply about the people in the communities in which they are located.

Also, unlike monopoly utilities, we expend our own income, and not ratepayer funds, to support local causes.

Thanks to the wisdom and foresight of the Ohio legislature in 1999, with Senate Bill 3, there is now a highly successful cost-saving competitive market for power generation and purchasing in Ohio.

I am often asked "How does the average citizen and Ohio business benefit from what CEF and other non-utility companies are building?" The answer is quite simple and most positive. Ohio's Appalachian Basin natural gas is the third largest supply in the world and lowest cost in the world. When low cost gas is coupled with the most efficient technology, electricity costs are at all-time lows. Via a free market purchasing system called "Customer Choice" everyone can bypass their local high-cost monopoly utility (FirstEnergy, AEP, Duke Energy, and DP&L) and buy the lowest cost power in Ohio. The State's website: [www.energychoice.ohio.gov](http://www.energychoice.ohio.gov) is the free site that enables customer access to these savings. The Ohio State University study of January 2017 has shown that Customer Choice vs. the pre de-regulation monopoly utility system saves Ohioans \$3,000,000,000 per year! The attached Figure 1 illustrates why power supplies from IPP plants like ours are the engines that drive customer savings through Customer Choice.

Non-utility gas projects can make electricity for 3.2¢/kwh, on a wholesale basis, marketers add on an administrative margin and retail it for 4.0-4.2¢/kwh, via Customer Choice. At the opposite end of the spectrum, Ohio utilities remain invested in obsolete and uneconomical coal and nuclear plants. As a result FirstEnergy charges its residential customers 5.2-5.4¢/kwh. As you can see, costs for coal-based generation and nuclear generation are likewise uneconomical.

This figure illustrates how these Ohio utilities are grossly "out of market" with their obsolete generation resources. These market dynamics bring us to the problem at hand. If a utility company is not competitive within the Ohio market, do we (a) subsidize or bailout the utilities to keep them competitive or (b) allow utilities to retire uneconomical assets?

We are here today to describe why the House should summarily reject any form of ZEN as proposed by FirstEnergy. It is nothing more than a valueless bailout, subsidy or tax!

FirstEnergy's CEO has told us why he needs a \$5.6 billion bailout, called ZEN (\$350 +mm/yr x 16yr.), we don't have to guess or postulate. First, Mr. Jones told his investors he will sell or close both Ohio nuclear plants in 2018. Second, within page 1 (item 3) of his ZEN testimony he states FirstEnergy's "nuclear power plants in Ohio are losing money." If any plant is losing money, it can't be sold unless there is a major write-down of debt or reduction in operation and maintenance costs or increase in revenues (which ZEN is). If the nuclear plants are to be closed, then \$100's of millions are needed for the multi-year decommissioning process. It is obvious to all of us in the private sector that ZEN has only one objective ... provide bailout funds for FirstEnergy, their senior management, their investors and some potential out-of-state buyer of the nuclear plants (if they're sold) or for decommissioning.

FirstEnergy vastly exaggerates the so-call environment attributes of its nuclear facilities. The Ohio EPA's records and permits show that fossil fuel back-up generators at nuclear plants are

allowed to emit tons of emissions per year. Nuclear plants use 300% more water than a modern gas-fired plant of equal size. Of course, nuclear plants are toxic nuclear waste storage sites, since nuclear fuel is stored on-site. FirstEnergy will soon be experiencing the multi-decade costs of assuring that on-site nuclear waste does not become a "melt down" problem, via decommissioning. ZEN has nothing to do with claimed environmental superiority of nuclear power.

Some might argue that 1,200 nuclear plant jobs are worth a bailout price of more than \$350 million per year. That's \$292,000 per job, per year. Such a notion is outrageous. CEF is building a new gas-fired plant in Lordstown, Ohio. With just a two week notice, Mayor Arno Hill (R-Lordstown) was informed by General Motors that 1,100 jobs would be cut in January 2017. Lordstown is a village with a 3,300 population. Why isn't Lordstown provided a state subsidy of more than \$350 million per year, like FirstEnergy? What about every other Ohio town and city that loses an employer? Lordstown doesn't have 17 lobbyists and endless lobbying funds to even ask for such a subsidy, but FirstEnergy does. I have lost my job in the past via Chapter 11 Bankruptcy, and many of you may have as well. A change in business climate is not a good reason to demand compensation from your neighbors. Instead, it's a signal to "move on."

Fuel diversity and power supply security have been discussed as reasons to support uneconomical coal and nuclear plants. Utility owners seem to be concerned that too much modern gas-fired generation is unhealthy. Figure 2, attached, shows that for multiple decades, utilities supplied about 90% of Ohio's power from coal. When these same utilities were grossly "over-weight" with coal and profiting handsomely, they said nothing about fuel diversity. This is quite the hypocrisy as today's economics now point to low-cost gas as a preferred source of electricity. If electricity security is an issue, then nuclear plants represent the highest risk, not the lowest. One ISIS rocket launched into the side of a nuclear dome or into a 20-story cooling tower would take out a nuke for years. Dare any of us think of the nuclear mess Cleveland, Lake Erie, Buffalo, Toronto, Lake Ontario, and Montreal would have if a nuclear attack were to happen in Ohio?

I have also been asked: "why don't Ohio's utilities do what CEF does?" The simple answer is: They have tried and have failed. First Energy has attempted to develop four (4) gas-fired projects and all FAILED. The PJM web site shows their project (queue) numbers: X1-064, Y1-035, Y1-036, and Z1-030 (1,656 MW). FirstEnergy built a 10-mile, multi-million dollar gas line to serve its West Lorain gas/oil peaker plant, but has no ability to obtain gas (instead burns oil). This is equivalent to building a bridge across a river, where one end of the bridge never meets land. First Energy's CEO, is an engineer, and testified (pg. 4) that nuclear plants ... "are also nearly twice as efficient as natural gas-fired plants." Every freshman engineering student at OSU knows this is an impossibility and therefore is not true. A modern gas-fired plant is 61% efficient. To be twice as efficient, a nuclear plant would have to be 122% efficient, which would defy the laws of physics. In reality, nuclear plants are half as efficient as gas-fired plants.

There is no need for a \$5.6 Billion ZEN Bailout, and it should be rejected. ZEN is equivalent to increasing the previously suggested state sales tax, which was proposed at 0.5%, to an even higher 0.75%. The Ohio House has already rejected such a 0.5% increase for taxpayers when it passed the state budget last week and should reject this equivalent added tax increase as well.

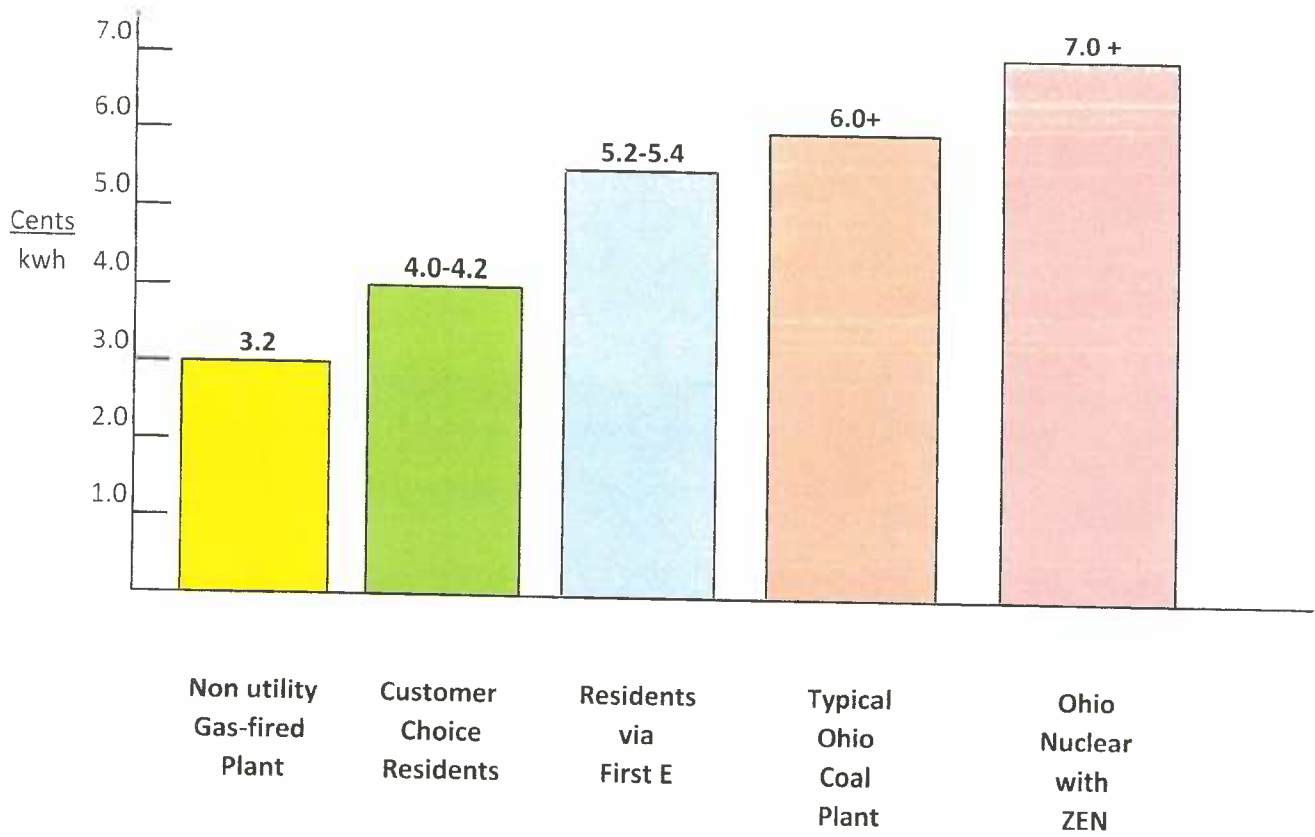
Artificially keeping uneconomical nuclear plants alive through subsidies has a far more damaging impact ... namely, sending false market signals into a free-market PJM system that will deter future investment by non-utility entities like CEF. ZEN also undermines the very essence of electricity cost savings via Customer Choice while simultaneously ignoring the electorate's voice that they reject utility bailouts, by a 7:1 margin.

Ohio is in a unique position of sitting on top of the lowest cost gas in the world, with 100's of years of supply. The current free market system for electricity generation and purchase is on pace to meet Ohio's needs with in-state plants ... while supplying electricity at rock bottom prices. First Energy's ZEN Bailout should not be allowed to de-rail such an important strategic economic system for Ohio's future.

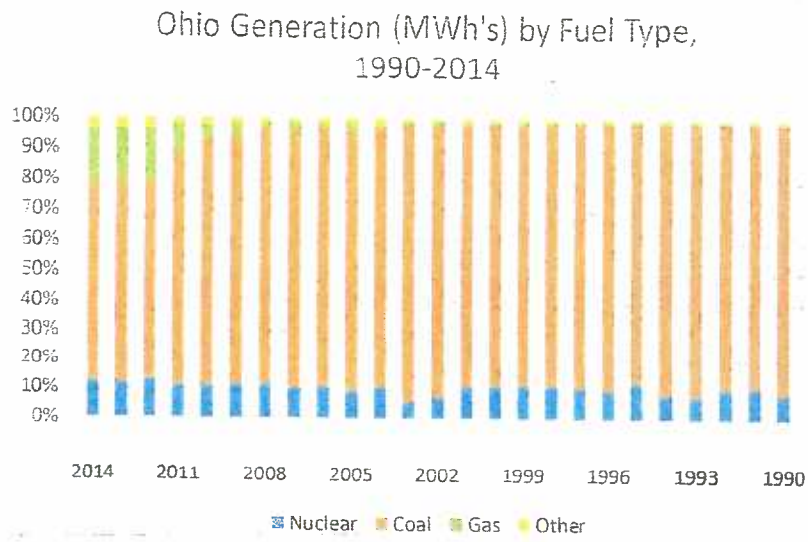
Thank you for the opportunity to be with you today in Columbus.



**Figure 1**  
**Total Generation Cost of Electricity : Ohio**



**Figure 2**  
**Historical Fuel Mix : Ohio**



In testimony provided May 9, 2017, Mr. Siderewicz presented Figure 2 that notes Ohio nuclear plant total generation costs (with ZEN) at 7 cents/kwh. The total generation cost of modern gas-fired generation is approximately 3.2 cents/kwh. When modern wholesale gas-fired generation is "marked-up" for retail sale, the residential rate becomes 4.0-4.2 cents/kwh, available via "Customer Choice".

**Question :** The Committee asked : "How much would the price of delivered gas have to increase such that modern gas-fired costs would equal the 7 cents/kwh cost of a nuclear plant ?"

**Answer :** The gas price would have to increase the cost of generation by 3 cents/kwh to make up the cost difference ( 7 - 4 cents/kwh).

- Today's delivered gas price is \$ 2.45/MMBtu in Lordstown, OH and makes up 1.58 cents/kwh of the 3.2 cents/kwh gas-fired total cost ( $\$ 2.45/\text{MMBtu} \times 6,450 \text{ Btu/kwh} = 1.58 \text{ cents/kwh}$ ). When marked up, the residential rate is 4.0-4.2 cents/kwh.

In order for the gas-fired plant cost to increase by the 3.0 cents/kwh and thus be equal in cost to a nuclear plant, gas prices must increase by \$ 4.65 /MMBtu ( $\$ 4.65/\text{MMBtu} \times 6,450 \text{ Btu/kwh} = 3.0 \text{ cents/kwh}$ ).

- Thus, gas prices would have to increase from today's value of \$ 2.45/MMBtu to \$ 7.10/MMBtu ( $\$ 2.45/\text{MMBtu} + \$ 4.65/\text{MMBtu}$ )
- This gas price increase from \$ 2.45/MMBtu to \$ 7.10/MMBtu represents a **190% increase in gas price**. Only then will new gas-fired pricing equate to ZEN-subsidized nuclear power.
- Now the issue of probability of gas price increase. The Ohio Appalachian shale gas (South Point) in Ohio is the lowest cost gas in the world. It is the 3rd largest gas resource in the world. The U.S. is flush with gas, making supply higher than demand, keeping a lid on gas price escalation, now and decades into the future. South Point gas now trades at a discount to Henry Hub gas costs, the traditional U.S. benchmark of the market price for gas.
- We believe the probability of natural gas prices increasing by 190 % is highly unlikely, and low risk.
- With such a low likelihood of gas price escalation, ZEN represents a POOR insurance mechanism against power price escalation, via modern gas-fired generation.
- The **conclusion** confirms why **ZEN has no power price risk management value and should be completely rejected !!**

**Exhibit B**

**Information Provided**

**to**

**Cleveland Plain Dealer**

**Editorial Board**

**ZEN is Simply a \$ 5.6 + Billion First Energy Welfare Program (or Bailout)**

<p><b>Bailout Features :</b> On average \$ 350 million/yr - 16 years ; with actual payments occurring over 22 yr (residential) , 26 yr (commercial) and 30 yr (industrial)</p> <p><b>All Northern Ohio Pays :</b> Added fee is non-by passable . . . . everyone must pay</p>	
<p>Who is in Favor of ZEN who <b>pays</b> the Welfare Tab ?</p> <p><b>Answer : No one</b></p> <p><b>Opponents :</b></p> <p>Nuclear Inform./Resource Center          Electric Power Supply Assoc.          American Petroleum Instit.          Ohio Mfg. Assoc.          Ohio Consumers' Council          League of Women Voters          Environmental Def. Fund          AARP Ohio          Ohio Citizen Action          Ohio Environmental Council          Oregon Economic Devel. Foundation          Ohio Sierra Club          Bowling Centers Assoc. - Ohio          Clean Energy Future</p>	<p>Who is in favor of ZEN Welfare direct/indirect recipients</p> <p><b>Answer :</b> First Energy and those also obtaining "welfare" benefits</p> <p><b>Proponents :</b></p> <p>First Energy          Unions running nuclear plants          Entities obtaining funds from First Energy</p>

**Notes :** Polls show public **reject** utility **BAILOUTS 7 : 1**  
The Plain Dealer : Sept. 21, 2016  
 Fallon Research (for OMA) : Jan. 24-28, 2017  
 AEP's CEO (Nick Akins) : " My customers will **not pay** ZEN cost "

**Exhibit C**

**First Energy's Annual**

**Cash Dividends**

**vs.**

**ZEN Bailout Cost**

# Cash Dividends Paid Annually to First Energy Investors by First Energy

