

House Energy and Natural Resources Subcommittee on Energy Generation
Chair Dick Stein and Chair Michael O'Brien
Opponent Testimony on House Bill 6
Gary A. Swanson, PE
President, Energy Management Solutions, Inc.

April 23, 2019

Chair Stein, Chair O'Brien, and Members of the Energy and Natural Resources Subcommittee on Energy Generation, my name is Gary A. Swanson, President of Energy Management Solutions, thank you for the opportunity to speak to you today as an opponent to Ohio House Bill 6.

First and foremost, I want to state that I oppose this bill. It is not fair to give one company a subsidy for a poor investment and at the same time hurt everyone in the state. All costs will increase and this effort may not even save the Nuclear plants. It is great to look at options to reduce the state's carbon foot print but options and costs need to be explored.

My testimony will show how overall costs will increase but also offer suggestions to contain these increased costs while still allowing companies, in the state, to compete in the market.

Plan A – Don't approve this bill.

- Energy Efficiency is the most cost-effective form of generation (Berkley Study 2014 and EIA)
 - EE Program cost **\$9/MWh**. (Second best in the USA - Ohio) (Chart 1.0)
 - Nuclear **\$96/MWh** (Chart 2.0 and 2.1)
 - Solar, Wind, CHP and Natural gas around **\$50/MWh**
- Capacity Costs will increase by an estimated 15%. (As a result of utilities not submitting kW savings, to PJM, from the rebate programs)
- Wholesale Power costs will increase according to PJM testimony and EIA. (Estimated at 10%+) Nuclear costs are twice as high as alternative forms of generation.
- Actual overall costs will increase. (Clean Air Rider cost + Increased Costs – EE/Renewable Rider)
 - Increased Monthly Costs**
 - Res - \$.38
 - Com - \$107.03
 - Ind (250 kW) - \$164.65
 - Ind (3000 kW) - \$5,806.50
 - Ind (10,000 kW) - \$14,768.32
- EE Program can save 17,000 GWh (Existing Program through 2027 – Statutory Rules)
 - Same as Nuclear plants production
- Lose 5,000 plus jobs in EE industrial alone

- EE programs have been very successful, already saved 6,000 GWh
- Industrial customers can't compete with neighboring states that have EE programs
- Opt-in option, in HB 6, will not work for rebates. Cost too high to run a program for just a few customers

Plan B – Just Eliminate the Renewable and keep the EE portion.

- Capacity Costs will not increase
- Keep lowest form of energy (EE Program)
- Low hanging fruit still exists for EE projects. Based on visiting over 500 Sites in Ohio
- Customers can save more money with EE than increased Clean Air Bill rider

Monthly Savings with EE Projects

- Res - \$17.25
- Com - \$229.95
- Ind (250 kW) - \$3,500.25
- Ind (3000 kW) - \$17,082
- Ind (10,000 kW) - \$52,560
- Much more important to save energy then to pay for higher Nuclear costs and Subsidies
- Industrial customers need to compete with neighboring states
- Examples (Industrials)
 - **Company A** - 12 MW (Ohio)
 - Saved 57,000,000 in past EE projects
 - Building a new plant to save another 42,000,000 kWh
 - Creating 100 new jobs
 - Future projects estimated at saving 75,000,000 kWh more
 - Total Savings 174,000,000 kWh
 - **Company B** - 32 MW (Ohio)
 - Saved 48,000,000 kWh in past EE projects
 - Building a new plant to save another 72,000,000 kWh
 - Creating 75 New Jobs
 - Future projects estimated at saving 125,000,000 kWh
 - Total 245,000,000 kWh
 - **Company C** - Three Plants totally 24 MW (Ohio)
 - Saved 220,000,000 kWh
 - Potential to save 171,000,000 More
 - Total Savings 391,000,000 kWh
 - Three companies alone can save 814 GWh or 5% of the Nuclear plants' load
- CHP has already saved an estimated 180 GWh in Ohio as well
- **All CHP and EE projects need the incentives to help justify the projects. But with the incentives, they are still the lowest form of generation**

Plan C – Existing HB 6 with Changes

- Allow EE projects to qualify for Zero Emission Credits. These are better than nuclear zero emissions. (10 Times better)
 - Carve out \$100,000,000 for this class of zero free credits
- This will help reduce the need for future nuclear plants and allow for a phase out
- Allow all projects submitted to EE programs in 2019 to complete rebates. Companies have planned for rebates 2 + years in advance. They have spent money on planning, engineering and equipment. Not fair to pull this from them.
- Allow for CHP projects to qualify for credits too (All sizes). Without this, the state's push for CHP and improved grid reliability will be killed
- Allow individual generation to qualify as well (all sizes). Critical to stabilizing the grid.

The bottom line is that there are many other options better for Ohio than what is being proposed. It is important to look at what is best for everyone in Ohio.

I appreciate your time and consideration today. I would be happy to answer any questions. If you would like supporting documentation, I would be happy to provide as well.

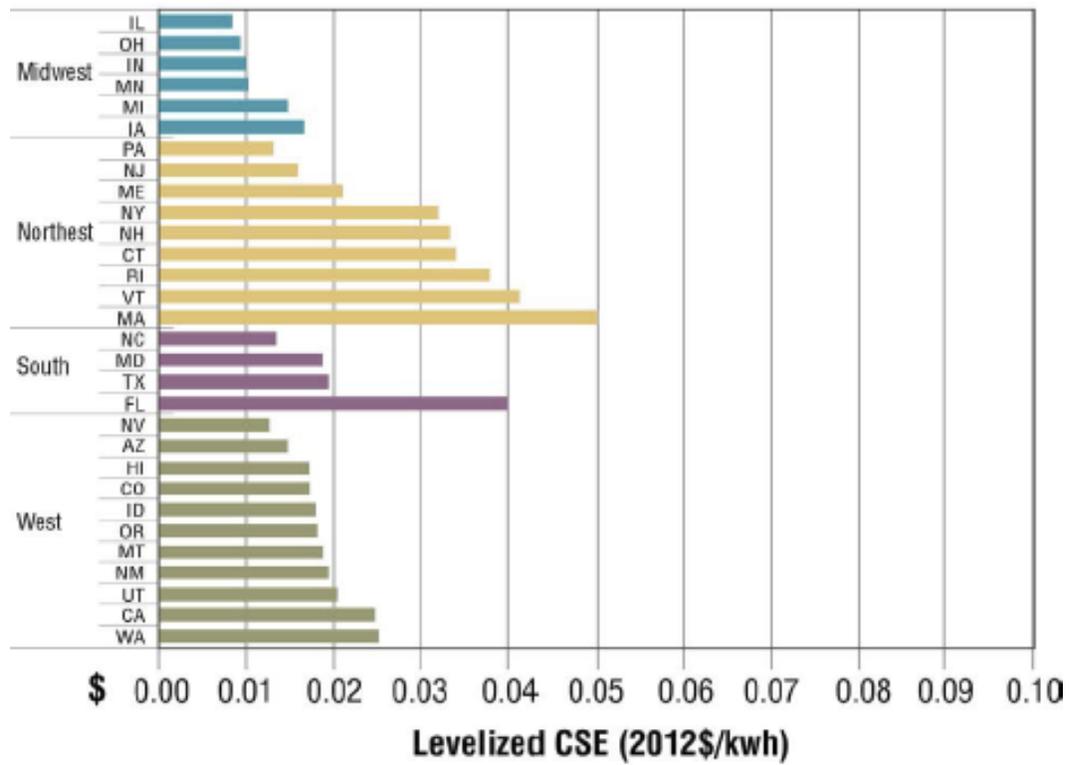
Gary A. Swanson, PE

Energy Management Solution

gswanson@EMSEnergy.com

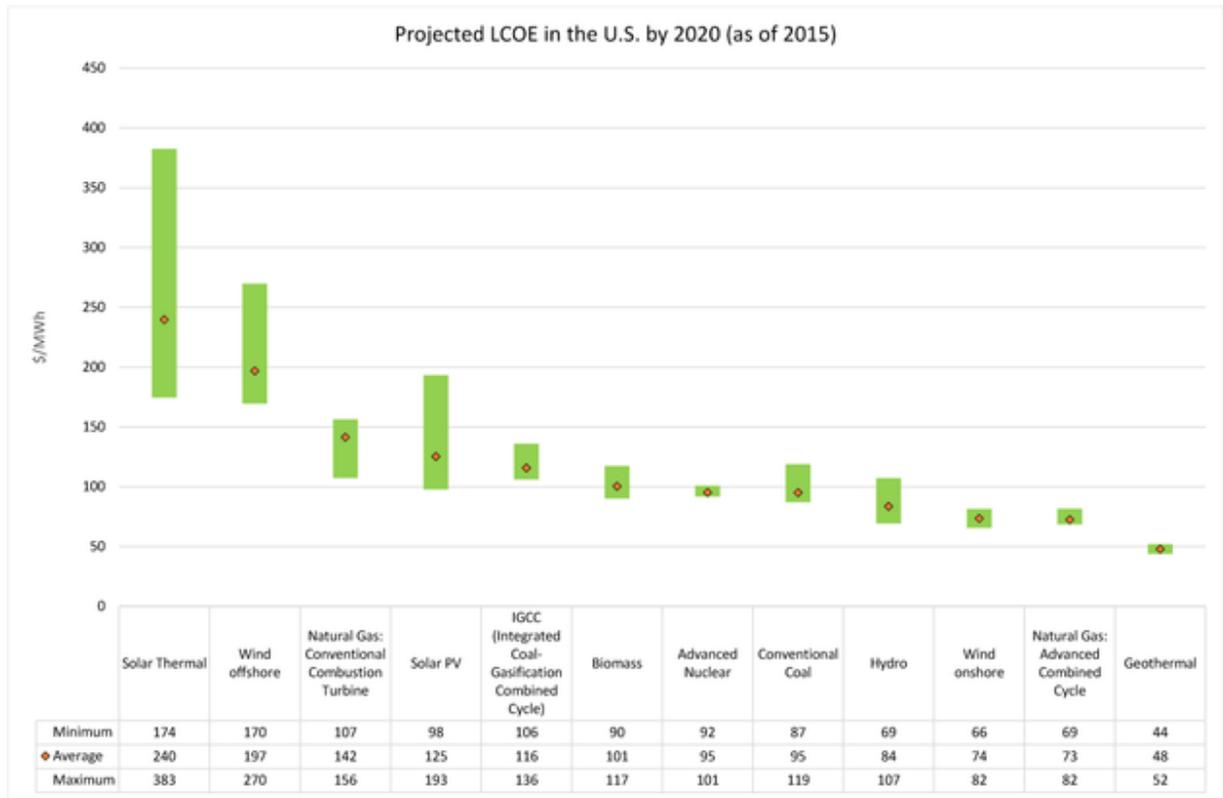
(612) 819-7975

Chart 1.0 - Cost of Energy Efficiency programs in the US.



*Study Berkeley National Laboratory 2014.

Chart 2.0 – Future Cost of Generation



- EIA Data

Chart 2.1 Historical summary of EIA's LCOE projections (2010–2019)

Estimate in \$/MWh			Coal convent 'l	Nat. Gas combined cycle		Nuclear advance d	Wind		Solar	
of yea r	re f	for yea r		convent 'l	advance d		onshor e	offshor e	PV	CSP
2010	[61]	2016	100.4	83.1	79.3	119.0	149.3	191.1	396.1	256.6
2011	[62]	2016	95.1	65.1	62.2	114.0	96.1	243.7	211.0	312.2
2012	[63]	2017	97.7	66.1	63.1	111.4	96.0	N/A	152.4	242.0
2013	[64]	2018	100.1	67.1	65.6	108.4	86.6	221.5	144.3	261.5
2014	[65]	2019	95.6	66.3	64.4	96.1	80.3	204.1	130.0	243.1
2015	[60]	2020	95.1	75.2	72.6	95.2	73.6	196.9	125.3	239.7
2016	[66]	2022	NB	58.1	57.2	102.8	64.5	158.1	84.7	235.9
2017	[67]	2022	NB	58.6	53.8	96.2	55.8	NB	73.7	NB
2018	[68]	2022	NB	48.3	48.1	90.1	48.0	124.6	59.1	NB
2019	[69]	2023	NB	40.8	40.2	NB	42.8	117.9	48.8	NB

Nominal change 2010– 2019	NB	-48%	-49%	NB	-71%	-38%	-88 %	NB
<p>Note: Projected LCOE are adjusted for inflation and calculated on constant dollars based on two years prior to the release year of the estimate. Estimates given without any subsidies. Transmission cost for non-dispatchable sources are on average much higher.</p> <p>NB = "Not built" (No capacity additions are expected.)</p>								

*EIA Data released in 2015

Bio – Gary Swanson

- Worked as energy consultant for 30 years
- Professional Engineer in Ohio
- Office and apartment in New Albany, Ohio
- Presently working with over 250 Industrial sites in Ohio
- Saved nearly 1,000,000,000 kWh for customers in Ohio
- Won dozens of energy efficiency awards in Ohio since 2011
- Completed more rebates than anyone else in Ohio
- Completed more rebates for PJM than any non-utility company
- Audited over 10,000 sites