**Senate Public Utilities Committee**

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and

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Chairman Seitz, Vice Chair LaRose, ranking member Gentile, my name is Alvin Compaan, I am the CEO of Lucintech Inc and Emeritus Distinguished University Professor of Physics, University of Toledo.

Lucintech is a four-year old high tech start-up company located in Toledo which is developing semitransparent photovoltaic coatings for windows and automotive sunroofs, using intellectual property developed at The University of Toledo. Lucintech recently received investment for our technology development from a venture capital firm in Zurich Switzerland.

I have been privileged, since moving to Ohio in 1987, to participate in the exciting development of photovoltaic or "PV" manufacturing in Ohio. I co-wrote the first grant proposal that brought federal funding to Harold McMaster's company, Solar Cells Inc. SCI became First Solar in 1998 and today First Solar alone employs about 1200 in Northwest Ohio. Today First Solar is the largest manufacturer of thin-film PV in the world with manufacturing costs that are well below the East Asian manufacturers of wafer silicon PV.

The success of First Solar in Ohio has either given birth to or stimulated several other Ohio manufacturers in the PV value chain—module manufacturers, inverter manufacturers, concentrator system developers, and racking system suppliers. It has supported system designers and developers, installers, and electricians.

I was proud of the Ohio Senate when it unanimously passed SB221 in 2007. That bold action put Ohio among the states leading the way to implement clean and innovative solutions to protecting our environment for our children and grandchildren, and simultaneously *stabilizing the costs of energy to our homeowners, businesses and industry*.

When SB221 was written, the Senate wisely inserted a 3% cost cap because it was not so clear then that the costs of wind and solar would fall as dramatically as they have in the past five years. In fact all reputable studies have shown that SB221, including its energy efficiency provisions has actually *reduced* the electricity bills of Ohio citizens!

Because of the falling costs of wind and solar and because of Ohioans' enthusiasm for clean and renewable energy in Ohio, SREC Trade reports that enough wind and solar are already installed to satisfy not only SB221's 2014 requirements but 2015 as well! [http://www.srectrade.com/blog/srec/capacity-

summary]  Thus, instituting a freeze would decimate the industry and kill many of the jobs created by the incentives.
So given the huge success of SB221 at retaining, growing, and attracting new high tech business and industry while saving taxpayers money, I was stunned to learn the details of this SB 310.
But I think I know one reason.  I am convinced that some of this is driven by the hyperventilating over the failures of some PV companies receiving loan guarantees in the federal stimulus program, such as Solyndra.

Frankly Solyndra was an embarrassment to all of us in the PV field.  However, I'd like to remind everyone that the loan guarantees were designed to function not unlike venture capital.  As an entrepreneur of a new high tech start-up, I have come to appreciate that VC fund managers expect about 1/3 of their investments to fail, another 1/3 are expected to just about break even, and about 1/3 will be extremely successful multiplying their investment seven times or more.  Sometimes very much more!  In fact the solar loan guarantee program had losses of only about 15%, about half of what was anticipated.

I believe it is also very significant that Solyndra was based in California and First Solar developed its technology in Ohio in the heart of the manufacturing and glass industry.  Ohio knows how to build things, how to innovate, and how to handle glass.

However, in the six years since SB221 was passed, many other states have passed more aggressive renewable portfolio standards.  Today 29 states have RPS statutes.  California is pushing to 33% renewables by 2020, New York to 29% by 2015, and Minnesota to 25% by 2025.  Ohio has a modest 12.5% mandate by 2025, putting it near the bottom of this list

Critics sometimes complain that because the wind doesn't always blow and the sun doesn't always shine, the utility grid cannot support a lot of renewable power.  However, this was convincingly debunked by General Electric Energy Consulting.  PJM commissioned GE to study the intermittency issue and its effect on the grid.  Their report was published just days ago on March 31, 2014.
[http://www.pjm.com/~/media/committees-groups/task-forces/irtf/postings/pris-executive-summary.ashx]
It concluded that the PJM interconnect could readily support up to 30% of its generation from solar and wind.

SB 221 wisely started us toward 12.5% renewables by 2025.  SB310 would freeze us at 2.5% renewables.  Really?  You can't be serious!  This will seriously set back innovation and entrepreneurship in Ohio.  Then in a few years, when cheap gas runs out and when nuclear and clean coal prices soar, renewable businesses from other states will reap the benefits that should have gone to our sons and daughters--all from lack of vision of our legislators in 2014.

Alvin Compaan
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