



## Testimony of CO2 Budget Trading Program Regulation

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My name Maureen Mulligan and I'm Owner of Sustainable Futures Communication, LLC. Our consulting company, with a combined 70 years of energy industry experience, focuses on renewable energy, energy efficiency, wholesale electricity markets and grid reliability.

I hope Pennsylvania is in its final stages to become the 11<sup>th</sup> state to join the Regional Greenhouse Gas Initiative (RGGI). Then Pennsylvania can systematically work toward the goal of reducing greening house gases by 26% by 2025 from the 2005 limits and 80% by 2050. Some emission deductions will come easily through coal plant retirements, particularly in light of Talen Energy's announcement last month to cease coal operations by 2025.

I would like to share how I have seen Pennsylvania's renewable energy and energy efficiency potential steadily expand over almost twenty years of my direct involvement. Participating in RGGI opens a real opportunity for a reliable and affordable clean energy future. I hope you will take the action needed to move the Commonwealth toward that future.

I became directly involved in renewable energy, in particular, solar energy and energy efficiency beginning in 2002 when I formed my government relations and consulting business after 14 years working at the Public Utility Commission.

When I was working at the PUC, there was virtually no solar photovoltaics on the grid in Pennsylvania. In fact, only a handful of under 10kw home solar PV systems were installed at the time and those systems were primarily funded through the Sustainable

Energy Fund PV Grant Program post restructuring of the electricity industry.

In 2004, Pennsylvania passed an Advanced Energy Portfolio Standard Act (AEPS or Act 213 of 2004) with a 0.5% solar goal for the state's electric utilities to meet by 2021. I was intimately involved at the time of its passage as I represented the two major solar trade associations working toward passage of the Act. Subsequent legislation funded many renewable energy and efficiency projects. Now, almost 17 years later, the solar industry has matured beyond recognition with the experience to deliver gigawatts, not kilowatts, into the grid.

At the time of passage of Act 213, many outside the industry questioned whether solar could meet even this small obligation. This skepticism was reflected in the presence of statutory language providing an out for utilities that could legitimately not fulfill the solar requirement. At that time the solar industry assured policy makers that the industry could deliver a trained work force, innovate, and lower costs and was ready. Today, excluding rooftop solar systems, Pennsylvania solar accounts for at least 317 Megawatts of capacity.

Solar is more than ready to provide a significant share of Pennsylvania's electricity needs. As solar plus storage sees massive expansion, it will deliver at costs lower than for nuclear power. In the near future, these costs will also be at parity with natural gas, which is far from a clean energy source.

To frame the feasibility of moving solar further into our core plans, I urge you focus on DEP's "Pennsylvania's Solar Future Plan" (2019) that engaged more than 500 stakeholders over a two and one-half year process outlined pathways to achieving 10% solar. I served as one of the consultant facilitators on this project. I hope you will draw on this valuable resource when examining the most

cost-effective policies and approaches to deploying solar to reduce carbon. One of the fifteen recommended strategies was to set a price on carbon. Setting a carbon price can obviously take different forms, but clearly participating in RGGI is among the best options. The Report goes on to state:

“If Pennsylvania gets 10 percent of electricity from solar, emission reductions over 9.3 percent will be seen in the electricity sector, reducing the state’s total greenhouse gas emissions by 2 - 3 percent.”

Two decades ago when I started in this business, I couldn’t have made the claim that solar could deliver 10% of Pennsylvania’s power and could do it more economically than traditional power. This is incredible progress in twenty years.

. RGGI member states from Maine to the most recent addition, Virginia, are committed to cleaning up their electricity sector by enacting goals of 100% clean energy by 2050. Virginia passed the Clean Economy Act and became the first southern state to commit to 100% decarbonization by 2050. They are accomplishing this through prioritizing energy efficiency, establishing an RPS and investing heavily in offshore wind.

Joining the RGGI regional market-based cap and trade pool will provide the administrative structure and accountability combined with consistent market and policy signals to the renewable energy industry, many of which work across multiple states and regions. This regional trading pool will help reduce business costs as states work under the same framework.

Annual revenue projections from the sale of allowances yield substantial opportunities for Pennsylvania to invest in clean

energy. In RGGI's ten-year history, \$3.2 billion in allowance auction proceeds have been heavily invested in renewable energy and energy efficiency making these states among the leaders in cleaning up our air, investing in clean energy jobs while reducing electricity bills by 5.7%.

Now I would like to turn to the role of energy efficiency in reducing carbon. Keystone Energy Efficiency Alliance (KEEA) is Pennsylvania's trade association for the energy efficiency industry. Membership at the time I was their Policy Director and shortly after co-founding the organization stood at close to 60 energy efficiency businesses ranging from small local firms to large multinational corporations representing 57,000 Pennsylvania jobs. Our motto was "the cheapest form of energy is energy saved".

Extensive utility efficiency programs operate under Pennsylvania's Act 129 of 2008. This Act establishes reporting requirements, independent auditing, enforcement and penalty mechanisms, measurement and verification of energy savings. It provides transparency as well as regulatory certainty that is attractive for business investment and for regulators measuring compliance.

A word about the role of nuclear power as a clean energy source. Trading one dirty source of energy for another is not sound energy policy for the future. Even though it's fair to say that nuclear power production is carbon free or virtually carbon free, the life cycle of nuclear power is far from clean. We will be living here in Central Pennsylvania with the clean-up of TMI for at least the next sixty years.

Pennsylvania's modest emission reduction goal starting with 26% by 2025 can easily be met with resources that are lower costs,

cleaner and safer. States with more aggressive goals may need to rely on nuclear to reach their compliance goals but Pennsylvania does not.

**A report published in Nature Energy** examined three scenarios using 25 years of emissions data from 123 countries. The study found 'countries that invested in nuclear saw little to no emission reductions but countries that invested in renewable energy did. The study also found that countries that invest more in nuclear

This concludes my comments. Thank you.