

Testimony of

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Introduction:

Chairman White, Chairman Musto, distinguished members of the Senate Environmental Resources and Energy Committee, good morning and thank you for the opportunity to speak here today. My name is Mike Ewall; and I am the founder of the Energy Justice Network, representing environmental and community organizations and individuals committed to promoting clean alternatives to dirty energy technologies. Our work in promoting a clean and effective Renewable Portfolio Standard (RPS) in Pennsylvania is supported by the largest coalition of environmental groups in the state on this issue.

For over 12 years, I've worked with community environmental organizations in all corners of Pennsylvania on waste, toxics and energy issues, including landfills, incinerators and power plants of various sorts. In representing the views of over 30 state-wide and local environmental organizations, I bring perspectives from many communities who have had to face the local consequences of dirty energy technologies.

New vs. Existing Renewables

The prime objective of any RPS is to promote the development of *new* renewable resources, not simply benefit existing generation. Just because only 2-3% of Pennsylvania's electricity currently comes from renewables, new resources would not necessarily fill the remainder of an RPS requirement, since out-of-state renewables can be imported to meet the RPS obligation.

If SB 1030 were passed as currently worded, it's theoretically possible that the bill's requirements could be met without a single new wind or solar facility being built. The demand created by a 10% RPS requirement in 15 years is considerable, yet the existing generation from wind, waste coal, landfill gas and hydroelectric power in our PJM grid is enough to fill 70% of that requirement... and this is if you assume that only 10% of the hydroelectric power would qualify as "low-impact" – a term which is undefined in all proposed legislation. Should the PUC construe "low-impact" hydro more loosely, the entire RPS goal could be met using existing resources within PJM.

Good RPS legislation must focus on *new* resources. The Texas RPS, signed into law by then-governor George W. Bush, allows the use of existing renewables without enabling them to overrun the RPS. Because of its focus on new generation, Texas has become the nation's second largest wind power state in only a few short years. The proposed RPS in Delaware is another good model; it would cap existing renewables at a quarter of one percent, ensuring that the remainder is from *new* renewables. Given Pennsylvania's existing renewable resources, an appropriate cap in this state would be around 2-3%.

Fuel Mix Diversity

Fuel mix diversity is another critical aspect of any RPS. It's important that the RPS legislation not favor only one or two technologies. Putting a wide range of technologies on a level economic playing field will do this. New and clean technologies will tend to lose out to existing

and dirty technologies if they are made to compete directly with one another. Solar simply can't compete without additional incentives. Cheap technologies like the burning of toxic landfill gases or the use of existing hydropower and waste coal will tend to overrun the RPS. It's important to put a cap on the use of existing, cheap and dirty technologies, while providing extra incentives for new, truly clean technologies like solar.

There are a few mechanisms available for ensuring fuel-mix diversity.

- Tier-System / Caps

If any polluting technologies are included in the RPS, a 2-tier approach would be appropriate. Large hydroelectric power and any technology that involves burning anything should be relegated to a second tier, so that these technologies are limited to no more than 30% of the RPS requirements.

- Solar Share

Solar power is currently quite costly, but the historical trend is that costs are coming down steadily as the solar market grows. An important goal of an RPS should be to create the market for solar that will attract solar production industries to the state and lower the cost of production through economies of scale. Some states have what is known as a solar share, which is essentially a requirement that solar play a role in the RPS. The New Jersey law is the best model for Pennsylvania, since it favors small-scale, distributed generation, offering increased reliability and security for the grid. Solar power advocates are recommending a solar share of a quarter of one percent of our energy coming from solar by the end of a 10-year time frame.

- Extra Credit / Credit Multipliers

To balance the playing field, some state RPS laws contain extra credit multipliers for certain technologies. Arizona, Maryland and New Mexico's laws provide extra credits for solar, allowing solar power to qualify for double or triple credits. Maryland also offers credit multipliers for wind.

- Net Metering

Net metering allows those who set up their own on-site electric generation at a residential or commercial location to sell that power back into the grid. This is an important factor in allowing homeowners, farmers, and others to contribute by developing their own on-site solar or wind facilities.

- Strategic application of Compliance Fees

The strategic application of compliance fees can also help ensure fuel-mix diversity. Compliance fees are fees paid for non-compliance with the RPS. These fees are used to create a Clean Energy Fund that gives grants out for renewable technology development.

Rather than allow these funds to be used for any technology, it's wise to limit the use of the grants to the technologies needing the most support. The Rendell administration's draft as well as the new Maryland RPS limit the use of fees to benefit only Tier 1 renewables. SB 962 goes further and limits it to only solar power, since that is the technology in most need of support.

Keeping Things in the Public Sector

Clean Energy Fund Grants: It's also important to keep things in the public sector where possible. In SB 962, grants made from the Clean Energy Fund are allocated to local governments and school districts, for the implementation of on-site solar power. This not only promotes the technology most in need of support, but it distributes it around the state in small projects that will help offset the electric costs of our struggling school districts and local governments. A grant program structured this way would gain far more political support than the other proposals that would allow grants to go to private industry for polluting technologies like waste coal or landfill gas burners.

Credit Trading System: The management of the credit trading system should also be kept in the public sector. Maryland's new RPS ensures that the state Public Service Commission runs the credit trading system with an open, transparent process that is subject to the state Open Records laws.

Consumer Protections Against Double Counting

Another important set of consumer protections is the protection against double counting. SB 962 ensures that clean energy credits can't be counted twice by also being used to meet other state or federal RPS requirements. It also protects against the double counting of energy that is already being paid for by captive ratepayers in other states. The fourth type of double-counting protection in SB 962 protects the green energy marketplace – a protection that clean energy marketers find critically important. By preventing double-counting with green pricing programs, no universities or other large customers would have to think twice about continuing to pay for something that the marketers would be required by law to provide. This ensures that voluntary purchases of green energy go above and beyond the RPS requirements.

Clean vs. Dirty Technologies

Clean energy: In all four pieces of RPS legislation that have been put forth in this state, there is universal agreement on the clean energy technologies. All of them support wind, solar and geothermal. If you ask any member of the public what they think of when you mention "renewable energy," the technologies which come to mind first, and which share the widest support are wind and solar. It's critical that an RPS be designed so that wind and solar power will receive the most support and not be crowded out by competition with dirtier technologies.

Hydro power: Three of the four pieces of RPS legislation include "low-impact" hydroelectric power as a renewable energy source. Since the term "low-impact" is left undefined in each bill, this risks allowing a substantial amount of existing generating capacity to flood the RPS,

watering down its impact. There is a non-profit organization called the Low-Impact Hydropower Institute, which has developed criteria that can be used to define the term.

Fossil Fuels

Pennsylvania is the only state to even consider placing fossil fuels into a Renewable Portfolio Standard. The purpose of an RPS is to help clean and sustainable renewable energy technologies take hold. No one in the environmental community believes that waste coal burning belongs in an RPS.

EPA data on mercury in waste coal shows that waste coal has 8 to 17 times more mercury than normal coals. Also, waste coal has about half of the BTU value of normal coals. This means that more than twice as much waste coal has to be burned to create the same amount of electricity. As a consequence, far higher levels of mercury and other toxic metals are placed into waste coal burners than into normal coal power plants. Toxic metals cannot be destroyed by burning them. Since waste coal burners have better pollution control equipment than older coal plants, these high levels of toxic metals end up in the ash, which is dumped in communities not far from the waste coal burners. Contrary to industry claims, power plant ash has *not* been proven to be impervious to leaching. As with all forms of combustion, ash has a higher surface area than the raw, unburned material. The dangers of toxic leaching from ash can be expected to be greater than from the unburned waste coal. Just like with coffee, running water over coffee grounds leaches far more coffee out than if you ran water over raw coffee beans. Clearly, burning waste coal is no “environmentally beneficial” solution to the problem of acid drainage from waste coal piles.

If there is a genuine interest in using an RPS policy to help clean up the state’s abandoned waste coal piles, this doesn’t need to be done in a manner that involves burning the waste and aggravating the problem. If RPS requirements can be met by methods that don’t produce electricity, such as the energy efficiency and “carbon offset” concepts in SB 1030, it’s reasonable to allow non-burn waste coal cleanup projects to qualify for RPS credits.

Researchers at the Natural Resources Conservation Service found a very cheap and viable alternative to the conventional waste coal pile remediation method of grading, topsoiling, seeding and mulching. They found that beach grass, native to sandy beaches, thrives in waste coal piles and can establish enough plant cover to enable native plants to take root. This method has been shown to bring life back to long-dead waste coal piles for only 6% of the cost of conventional methods. Within a few years, beach grass enabled native plants to take over, allowing organic matter to accumulate around plants, forming a plant layer that stopped erosion, held water, cooled the surface, and looked better.

Waste coal burning is already a mature industry, not in need of subsidies. Rather than use the RPS to promote more unwanted polluting power plants, let us find creative ways to promote genuine solutions to the problems with waste coal piles in our state.

Coal-bed methane: A second fossil fuel considered for inclusion in the RPS is coal-bed methane. Coal-bed methane is natural gas that is trapped in coal seams. Coal-bed methane

extraction is very destructive and is linked with soil and well water contamination, increased risks of mine fires, buildup of explosive gases under buildings and homes, subsidence, noise pollution and decreased property values.

Pennsylvania is the only state to be considering putting fossil fuels like coal-bed methane and waste coal burning in a renewable portfolio standard. Fossil fuels simply do not belong in an RPS and their inclusion will ensure that the legislation will face opposition from environmental and community groups around the state.

Other Combustion Technologies

There are several types of wastes and fuels, which can be burned to produce electricity. All of these involve creating air pollution, and the burning of solid fuels involves producing a toxic ash that must subsequently be disposed of. Technically, most of these combustion technologies are not truly “renewable” and none of them are “clean” or “green.” However, some combustion technologies have been considered renewable and would be permitted in various policies.

With the exception of some of the larger environmental organizations, there is widespread opposition in communities across Pennsylvania to the various combustion technologies that are often touted as “green energy” sources. Allowing smokestack technologies to remain in RPS legislation amounts to a poison pill that could compromise its chances of passage.

There are two forms of gas-based combustion that could be acceptable, if appropriate limitations were placed on them. They are landfill gas and anaerobic digesters.

Landfill gas burning is a mature industry that does not need subsidies. If we are going to provide a significant subsidy to an already mature industry, it would be wise to ask for something in return. Landfill gas is contaminated with many toxic chemicals that ought to be filtered out before the gas is burned. The many communities in Pennsylvania that are dealing with local landfills would benefit from an RPS that only allows landfill gas to be eligible for RPS credits if the toxins are properly filtered and isolated prior to burning.

Anaerobic digesters are used to extract a burnable gas from animal waste or sewage sludge. Small, family farmers in Pennsylvania are vanishing as large industrial corporate factory farms move into the state. Large anaerobic digesters are used to make these factory farms more viable. Consequently, advocates of small family farms and of sustainable agriculture see digesters as a Trojan horse that pretends to solve a waste management problem while enabling factory farms to invade the state. If digesters are to be included in the RPS, it’s important that there be a size limitation and that they not be permitted to process waste from new factory farms.

Solid waste burning: As far as any solid waste streams are concerned, it’s universally accepted, in all four pieces of RPS legislation, that burning solid waste should **not** be permitted. The bills all specifically disallow the burning of solid waste. It’s very important that this language be preserved.

Energy crops: So-called “sustainable biomass energy” or “energy crops” are the idea most commonly thought of when people discuss “biomass.” However, biomass has come to include the burning of all sorts of wastes. Even if solid wastes are excluded, the practice of growing crops or trees with the intention of cutting them down just to be burned for fuel is still included. There are numerous problems with the notion of energy crops. Herbicides and the use of sewage sludge as fertilizer can introduce toxins to the plants that would later be burned, increasing the air pollution risks from energy crop burning. Using agricultural lands to grow fuel for power plants is a poor use of land and water resources. Rather than use prime agricultural land, energy crops like switchgrass or poplar trees are typically grown on highly erodible Conservation Reserve Program lands. The Conservation Reserve Program compensates farmers for taking marginal, highly erodible land *out* of production and planting native grasses and vegetation in the place of the usual production crops, usually in ten-year contracts. It contradicts the purpose of the program to use these fragile lands to grow these so-called energy crops.

Since it’s not economically viable to grow crops just to burn them, government researchers have sought to cut as many corners as possible to justify the creation of an energy crop industry. Some have been working on genetically engineering trees for this purpose, introducing a host of potential problems like genetic drift and increased herbicide use. Others have been working to merge the biomass industry with phytoremediation – the use of trees to suck toxic contaminants like arsenic out of the ground, only to release these toxins back into the environment when the trees are burned as “green” energy. The potential impact to our forests is also a great concern. The RPS proposed in the national energy bill prohibits the use of timber from old growth forests, recognizing this concern, as does Maryland’s new RPS law.

Even if RPS legislation were crafted to eliminate these extreme ideas, the traditional notion of biomass energy crops has some problems. The Chariton Valley Biomass Project in Iowa is one of the nation’s leading research programs into the co-firing of switch grass in coal power plants. In a research paper presented at the Bioenergy 2002 conference, their tests showed that the switch grass had chlorine content a full seven times higher than the coal they were burning it with. This can be expected to cause higher emissions of hydrochloric acid gases and ultra-toxic dioxins when burned.

Energy crops suffer from a fundamental contradiction. If the crops are contaminated in any way, it’s inappropriate to burn them. If they are uncontaminated, the most appropriate thing to do is to compost them.

Fuel cells are only as clean as the source of the hydrogen. Currently, the primary source of hydrogen is from natural gas, a fossil fuel. For this reason, the two bills that include fuel cells limit their eligibility based on the hydrogen source. Pennsylvania can build on its leadership in the fuel cell industry by including clean fuel cells in the RPS.

Energy Conservation and Efficiency: All three bills currently before the Senate include measures for energy efficiency. Efficiency measures are very cost-effective and, like solar power, are a great source of job creation. Energy conservation and efficiency measures should both be included in the RPS, but need to be kept in a second tier, so that they don’t undermine clean power sources like wind.

PUC power to add technologies: SB 1030 includes provisions that allow the Public Utility Commission to add any technology they see fit to be eligible for inclusion in the RPS. This takes power away from the legislature and is asking for trouble. The only foreseeable reason to allow such a clause is to allow dirty, non-renewable technologies to be added to the RPS by PUC regulation.

Carbon Offsets: Finally, two of the RPS proposals allow “carbon offsets” or “carbon sequestration.” The specific methods to be used aren’t defined in either proposal, leaving open a Pandora’s box of possibilities. It would be problematic to promote such schemes as burying wood in landfills or planting monocrop plantations of genetically engineered trees, yet these concepts are on the horizon and could be used to abuse the notion of the RPS. A well-designed RPS *is* a carbon offset, since the new renewable generation would replace expensive natural gas or coal during peak power production times. RPS legislation should not include any carbon offset ideas, since the most effective offset is to promote conservation, efficiency, and clean, renewable energy development.

I look forward to working together with you to bring Pennsylvania a strong, clean and effective RPS.

Thank you.