MDV-SEIA

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House Economic Matters Committee
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Testimony of David W. Murray
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HB 165: Solar Photovoltaic Recycling
OPPOSE

Thank you for the opportunity to provide testimony on HB 165. My name is David Murray and I serve as Executive Director of MDV-SEIA, the local solar trade association representing over 4,500 solar installers, developers, manufacturers, and other solar workers in Maryland.

MDV-SEIA opposes this legislation as it adds significant, arbitrary costs to deploying solar power without adequate consideration of national practices addressing the issue of photovoltaic recycling. The fiscal note highlights how this bill adds thousands of dollars to the average cost of a rooftop solar installation, placing unnecessary barriers to an industry getting back on its feet since the passage of the Clean Energy Jobs Act. Rather than parse through the burdensome challenges placed upon Maryland's solar industry by this bill, my testimony will provide an overview of existing industry practices and forward-thinking efforts to address end-of-life concerns.

For example, companies like SunPower or First Solar - some of the leading global solar panel manufacturers - a cradle to cradle guarantee is placed on all panels produced. Customers who have purchased modules can call a toll-free number to schedule and coordinate the safe disposal of the modules. This is done at the cost of the company.

Furthermore, the Solar Energy Industries Association (SEIA) has organized a PV Recycling Working Group, which provides members access to PV recycling vendors and service providers, exclusive pricing regardless of size / volume, and engagement in recycling process improvement as waste volume increases and as vendor network grows. The mission of the program is to make the industry landfill-free.

PV-specific panel recycling technologies have been researched and implemented to some extent for the past decade, and have been shown to be able to recover over 95% of PV material (semiconductor) and over 90% of the glass in a PV panel. Most solar panels are over 80% glass and aluminum, which are common building materials that can be easily recycled. The remainder is at least silicon, and primarily polymers and copper. Recyclers will first remove the aluminum frame, separate the glass along a conveyor belt, and process the remainder at a high temperature to allow for the evaporation of small plastic components and cells to be separated. A recycler will then etch away silicon wafers and smelt them into reusable slabs. Notably almost half of the material value in a PV panel is in the few grams of silver contained in almost every PV panel produced today.

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That said, panels can go to an ordinary landfill. In the U.S., end-of-life disposal of solar products is largely governed by the Federal Resource Conservation and Recovery Act (RCRA). RCRA separates waste into hazardous (not accepted at ordinary landfill) and solid waste (generally accepted at ordinary landfill) based on a series of rules. Solar panels sold today are considered solid waste as they have passed stringent hazardous waste tests. The heavy metal concentrations obtained from PV panels and QD thin-film displays when exposed to simulated landfill environments and extreme case leaching scenarios were generally several orders of magnitude lower than the promulgated standards and probably not of major concerns related to end-of-life safe disposal of these commercially available products.

Thank you for your consideration. I have also included a fact sheet from the national trade association, SEIA, to provide further information on the issue.

Additional References:

End‐of‐Life Management of Photovoltaic Panels: Trends in PV Module Recycling Technologies International Energy Agency, January 2018

Health and Safety of Solar Photovoltaics
North Carolina State University, April 2017
Accessible:https://content.ces.ncsu.edu/static/publication/js/pdf_js/web/viewer.html?slug=health-and-safety-impacts-of-solar-photovoltaics

SEIA National PV Recycling Program
Solar Energy Industries Association, 2019
Accessible: https://www.seia.org/initiatives/seia-national-pv-recycling-program