Testimony of Michael Jensen
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Before the Pennsylvania Senate Environmental Resources and Energy Committee
Concerning the Beneficial Use of Landfill Gas

Good morning. My name is Michael Jensen, and I serve as Senior Counsel & Director of Regulatory Affairs at WM, previously known as Waste Management, the leading provider of comprehensive environmental solutions in North America. WM's profile includes over 48,000 employees operating a network of 263 operating landfills, 102 recycling centers, 49 organics processing facilities, and over 136 renewable energy projects. These assets enable WM to offer a full range of environmental services to around 22 million residential, industrial, municipal, and commercial customers. With over 18,000 collection vehicles, WM also has the largest trucking fleet in the waste industry and the largest heavy-duty fleet of natural gas vehicles of its kind in the United States and Canada. **In Pennsylvania, WM has almost 3,000 employees and provides waste collection, recycling, and disposal services at nearly 100 facilities throughout the Commonwealth.**

Most people do not give much thought about the waste they generate; they take their trash to the curb and then the garbage truck comes and takes it away. As a society, we generate a significant amount of waste at a pace that shows no signs of slowing down. In fact, the World Bank projects solid waste generation to increase nearly 70% by 2050. The United States now generates almost 300 million tons of municipal solid waste in a year, which is the equivalent of 4.9 pounds generated per person per day or nearly 1,800 pounds of waste per person per year. Although a portion of this waste is reused, recycled, composted, or recovered, the majority of waste generated in the United States is sent to landfills.

The protections afforded by modern landfills have come a long way in the last few decades, due in large part to updated federal and state regulations and a better understanding of the science of waste management. Landfills are subject to extensive and evolving federal, state, and local environmental protection, health, safety, land use, zoning, transportation, and other related laws and regulations. Regulators regularly examine our operations to monitor compliance with these requirements and have the power to enforce compliance with stringent design, operation, and closure requirements established under the Resource Conservation and Recovery Act, Clean Air Act, and Clean Water Act. As a result, modern landfills have evolved into sophisticated engineered structures that contribute to environmental safety and sustainability, as they are located, designed, operated, and monitored to protect the environment from contaminants that may be present in the waste stream.

Relevant to this conversation is the recognition that landfills emit biogas, which is composed of roughly 50% methane and 50% carbon dioxide. This is because waste undergoes a transformation in the absence of oxygen within landfills where bacteria decompose the waste

and generate these waste streams. Instead of escaping into the air, however, landfill operations extract the biogas using a series of wells and blower systems that direct the collected gas to a central point where it can be processed or treated. From this point, the biogas can be flared or converted and used as an energy resource, helping to reduce odors and preventing methane from migrating into the atmosphere.

Fortunately, there are many options available for converting landfill gas into energy, including through the buildout of electricity generation and renewable natural gas facilities. Renewable natural gas, or RNG, is a term used to describe biogas—such as landfill gas or biogas captured from livestock farms or wastewater treatment facilities—that has been upgraded for use in lieu of conventional natural gas. RNG has many uses: it can be transported in existing pipeline networks and ultimately used as a reliable and cost-effective energy source for vehicle fleets and industrial and heating applications. RNG also is important as a feedstock to produce sustainable aviation fuel and clean hydrogen.

At WM, we intend to expand our infrastructure investments to capture more landfill gas that can be converted to RNG and used in WM's heavy-duty natural gas collection fleet. We see this strategy as enabling the circular economy by increasing our investment in RNG infrastructure at our landfills while operating a portion of our fleet of natural gas vehicles on the RNG that we produce. It is our hope that the Committee appreciates the benefits of stimulating demand for RNG through sound public policy. Although certain climate solutions, such as widespread electrification, will take time and intense investment, the infrastructure for RNG exists today. RNG therefore will play a critical long-term role in the decarbonization of hard-to-abate sectors that have certain reliability requirements or that have operations that are not suitable for electrification.

In conclusion, WM strongly believes in RNG as a business-friendly climate solution, as it takes a product that is negatively impacting the environment–i.e., waste–and creates a clean and reliable energy resource that is fully compatible with our current infrastructure. Society will always produce waste. We can and should capture the resulting biogas emissions from our waste streams and prevent them from entering the atmosphere. I look forward to working with Committee staff on a proposal that would allow Pennsylvania to take full advantage of the opportunities that RNG presents. Thank you for the opportunity to testify here today,

Conceptual Design Cross-Section of a Municipal Solid Waste Landfill