As part of its ongoing commitment to creating cleaner, greener communities, Republic Services has pioneered a technology that allows landfills to increase their overall energy output. This innovative technology is now being made available to landfills nationwide through Carlisle Energy Services.

With this unique solar energy cover, an integrated geomembrane/solar panel system enables landfills to produce clean, sustainable energy and offers a cost-effective, environmentally sound system for managing landfill closure.

The nation’s first landfill solar energy cover was installed at Republic’s Tessman Road Landfill in San Antonio in 2009. Work is underway to install a second solar energy cover at the Company’s Hickory Ridge Landfill outside of Atlanta.

Closed areas of active landfills are ideal locations for providing clean, renewable solar energy. Closed landfills are typically large, unobstructed areas with no pedestrian or vehicle traffic that are already regulated and monitored by state and federal agencies. The solar energy cover system uses flexible photovoltaic solar collection strips that can be directly adhered to a plastic liner used to contain, cover and close the landfill. A small number of landfills nationwide have installed rigid solar panels, which are bulky, obtrusive and frequently cost-prohibitive to install and maintain. In contrast to these rigid solar systems, the laminate solar panels used in these projects are flexible strips less than ¼-inch thick, or roughly the height of two nickels stacked one on top of another.

Each solar collection strip is approximately 15 inches wide by 18 feet long. The strips can be applied side-by-side or end-to-end, which allows greater freedom in designing grid layouts that maximize solar collection while adapting to a landfill’s natural contours. The large arrays are typically located on the landfill’s southern and western facing slopes to maximize the hours of sunlight exposure throughout the year. The resulting solar system, which can be designed to cover 10 to 20 acres or more on the site, is sleek, flexible, aesthetically pleasing, efficient and economical.
The system is engineered to provide superior containment, stability and protection for the natural environment and is uniquely designed to meet landfill closure requirements.

The liner system provides the most stable surface on which to mount the flexible solar panels for commercial-scale renewable electricity generation.

LANDFILLS and GREEN ENERGY
A solar energy cover can complement landfill gas technology to increase overall energy output or it can be installed as a standalone system.

For decades, Republic Services has tapped the gas produced naturally through the decomposition of waste as a renewable energy source. The Company currently operates gas-to-energy projects at more than one-third of its landfills nationwide, with plans to bring more online in the near future. These facilities generate enough electricity to meet the needs of nearly 200,000 homes and gas to heat another 201,000. Using this renewable energy source reduces emissions equivalent to taking more than 4 million cars off the road or planting more than 4.5 million acres of pine or fir trees.

REPUBLIC SERVICES, INC.
Republic Services is the second largest provider of services in the domestic non-hazardous solid waste industry. We provide non-hazardous solid waste collection services to approximately 13 million commercial, industrial, municipal and residential customers through collection companies, transfer stations, recycling facilities and landfills in 40 states and Puerto Rico.

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