



## Mack Molding, customer receive environmental award

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ARLINGTON -- Ski boots made from castor oil, paving bricks produced from tires, and solar-powered municipal trash compactors manufactured by Mack Molding were among the latest green innovations recognized at the 2010 Global Plastics Environmental Conference in Florida recently.

Sponsored by the Plastics Environmental Division of the Society of Plastics Engineers, the awards challenge companies to raise the bar in the areas of sustainability and recycling, and recognize significant achievements in a variety of categories.

For "Enabling Technologies in Processes and Procedures," Mack Molding and customer, BigBelly Solar, of Needham, Mass., took the prize with the BigBelly Solar Compactor, a patented compacting trash receptacle for large scale, low cost municipal waste collection programs that are now being conducted in 45 states and 20 countries.

"As the global cry for alternative energy sources heightens, we are especially proud of the work we did with BigBelly Solar to transform this award-winning, solar-powered product from concept to reality," says Jeff Somple, president of Mack Molding's Northern Operations. "It derives its energy from the sun, significantly reducing fossil fuel consumption and greenhouse gas emissions. It is gaining widespread interest, as waste management is an everyday issue that spans the

globe. And it has done all this while creating 'green' manufacturing jobs right here in Vermont."

Instead of requiring a grid connection, BigBelly gets 100 percent of its energy from the sun and uses less than five watt hours per day. The solar photovoltaic panel turns daylight into electricity, which is stored in a small battery inside the unit, allowing the machine to run at night and during prolonged periods of inclement weather.

Similar in size to an ordinary trash receptacle, its capacity is five times greater (160 gallons) because of compaction. Increased capacity reduces collection trips and can cut fuel use and greenhouse gas emissions by 80 percent. BigBelly can displace four out of five trash pickups, dramatically reducing transportation and labor costs.

When the unit is ready for collection, a wireless monitoring system uses text message technology to signal a web-based database that the unit is full. This allows managers to optimize collection efficiency on a real-time basis.

Optional recycling units can be attached to the compactors to separate trash from recycling. Both units have the same overall design and appearance, but the recycling units are non-compacting with 50-gallon inner bins.

Mack molds the solar bubble of high-impact, UV-resistant polycarbonate resin, which must be perfectly clear to expose the solar panel below to the sun. Mack also fabricates the back panel and door out of metal, procures over 150 unique parts, and totally assembles both the compactor and recycler for direct shipment to BigBelly Solar's customers. Built to order, the product is highly customizable and can include custom paint; silk-

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screened logos or artwork; vinyl wraps with custom artwork, stickers, and advertising panels; cigarette snuff plate; bear latch and hot weather handles; two different fronts (paper or can) for the recycling units, and wireless technology.

Last spring, the city of Philadelphia replaced 700 regular trash receptacles with 500 solar-powered trash compactors and 210 single-stream recycling units. Now, rather than making 17 trips each week to empty 700 receptacles, the city now collects only five times per week, with a 70 percent cost savings.

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