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## Mack Molding honored with 2010 Environmental Stewardship award

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Wed Mar 31 2010

Ski boots made from castor oil, paving bricks produced from tires, and solar-powered municipal trash compactors manufactured by Mack Molding (Arlington, VT) were among the latest green innovations recognized at the 2010 Global Plastics Environmental Conference (GPEC) in Florida earlier this month. 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.

"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."

### About the product

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's Involvement

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-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.

### Philadelphia Case Study

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 (annual cost: ~\$2.3 million), the city now collects only five times per week at an annual operating cost of approximately \$720,000 – a 70% savings. Performing 17 collections each week required 33 workers on three shifts; five collections per week under the new program require only nine workers on a single shift. The other workers have been reassigned to other, more productive tasks.

### Highlights of the program include:

- Immediate savings: By entering into a three-year financing arrangement, the city has no up-front capital cost and will realize collection cost savings in the first year of approximately \$850,000.
- Ongoing savings: Philadelphia will save nearly \$13 million in cumulative collection cost savings over the next 10 years, net of the equipment cost.
- Annual operating cost reduction of 70%: Compaction reduces collection demand, which directly reduces operating costs and associated vehicle fuel use and emissions.



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## OUR TROOPS

During the months of January, February and March, Chittenden Bank will be collecting items to send to our Vermont Troops.

**Some commonly requested items include:**  
individual drink mixes • canned tuna, salmon, sardines • gum • baby wipes • beef jerky • batteries (AAA, AA, or C) • store bought chip cookies • card games • CDs and DVDs • easy cheese • potato chips and corn chips • peanuts, mixed nuts • games to play with the kids • candy • instant coffee • single serving boxed cereal • lip balm • energy bars • phone cards • crackers • energy drinks • stationary and greeting cards • toiletries (toothbrush, toothpaste, shaving cream, etc.) • beanie babies • white cotton socks • hand sanitizers • magazines • instant potato mixes • spices

Drop off your items at your local Chittenden branch for donation to the Vermont National Guard.



Award criteria

To be considered for the GPEC 2010 Environmental Stewardship Awards, entries had to:

- Involve plastics
- Contribute to environmental improvement
- Be commercially adopted or accepted in 2009
- Promote leadership in environmental areas
- Make a verifiable environmental contribution
- Facilitate innovation, standards and/or regulations
- Demonstrate leadership in technology, marketing, legislation, education, and/or community
- Demonstrate creativity and originality
- Have significant impact, showing value for its intended purpose.

About Mack Molding

Mack Molding is a leading custom plastics molder and supplier of contract manufacturing services. Mack specializes in plastics design, prototyping, molding, sheet metal fabrication, and medical device manufacturing. Founded in 1920, Mack is a privately owned business that operates 10 facilities throughout the world. Don Kendall is president and CEO. For more news and information about the applications and services of Mack Molding Co., go to [www.mack.com](http://www.mack.com).

About BigBelly Solar

Formerly Seahorse Power Company, BigBelly Solar is changing the concept of waste collection by implementing on-site solar compaction systems. BigBelly, the flagship product, can now be found around the world reducing pollution by minimizing the frequency of trash collection trips and, thus, reducing fossil fuel consumption. To learn more, go to [www.bigbellysolar.com](http://www.bigbellysolar.com).

Source: Mack Molding. 3.31.2010

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