

R.I. Anaerobic Digester Could be Model for Region

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The Blue Sphere anaerobic digester in Johnston, R.I., is close to opening its doors for food scrap from Rhode Island and neighboring states. (Tim Faulkner/ecoRI News photos)

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JOHNSTON, R.I. — Rhode Island’s first commercial-scale anaerobic digester still isn’t ready, but company officials say it’s getting closer to completion. And when it’s operational, New England’s largest digester may be a test case for similar facilities in neighboring states with food-diversion laws.

Rhode Island’s [compost law](#), passed in 2014, requires large institutions such as supermarkets and food makers to divert their organic scrap to a farm, food pantry, compost facility or anaerobic digester, as long as such a facility exists within 15 miles. So far, only a smaller-scale compost facility is operating in Charlestown — [Earth Care Farm](#) has been composting food scrap for 40 years. [The Compost Plant](#) has proposed a facility in Warren.

In recent years, smaller digesters have been built in Massachusetts that service a single facility, like a [Stop & Shop distribution warehouse](#) in Freetown, Mass. In Dartmouth, Mass., a 12-ton-per-day food scrap to biogas anaerobic digestion facility opened in 2014 at the [Crapo Hill Landfill](#). A single digester, or digesters, intended to serve an entire state or region has yet to materialize.

Blue Sphere Corp., an Israeli-based company, is poised to be the first. Planning for its [Johnston facility](#) began in 2012. Construction started in 2014. This summer, the facility on Shun Pike began processing liquid waste such as sewage and manure. Solid food waste was added more recently, to build up the proper bacteria level in one of the two 2.5-million-gallon “digester” tanks.

Each tank acts like a giant stomach, breaking down organic material and generating a methane-based biogas that is burned for electricity. That electricity is one of three revenue streams for the facility. The biogas fuels one of two generators with a total capacity of 3.2 megawatts. The power is purchased by National Grid under a 15-year power-purchase deal. The residual organic material is sold as a soil amendment. A tipping fee is charged based on the weight of organic material when it arrives at the plant.

Blue Sphere has contracts to take organic scrap from food manufactures, and hopes to attract more customers in Rhode Island and Massachusetts, such as seafood processors. The plant looks to be operational as Rhode Island's compost law expands in 2018 to include smaller institutions that produce more than 54 tons of food scrap annually, such as cafeterias and large restaurants. The success of the Johnston operation could inspire other states with compost laws like Massachusetts and Connecticut to follow.

"My sense is there is a wait-and-see attitude on how well [Blue Sphere] does. To see if it's a successful model. I think this is their test case for the Northeast," said Mark Dennen, supervising environmental scientist for the Rhode Island Department of Environmental Management (DEM).

Blue Sphere is acquiring and building digesters in Europe and Israel, and looks poised to establish markets in neighboring states by partnering with other businesses. The company is close to completing a second, slightly larger digester near its U.S. headquarters in Charlotte, N.C. Two more digesters are planned for North Carolina; Blue Sphere owns four digesters in Italy. Three are planned for England, one for Israel and one for the Netherlands.

In Johnston, Blue Sphere shares ownership of the project with National Grid and hedge fund York Capital Management, based in New York City.

Dennen said DEM will help institutions comply with food-diversion regulations once the Johnston facility is operational. Eventually, he expects Rhode Island and the rest of the country to catch up with Europe, where most businesses and residents have bins for food scrap in addition to ones for trash and recycling.

"In the big picture this is technology we want to encourage. However, it needs to be properly managed," Dennen said. "We want this to work, we want it to be successful."

