

## Putting Vector 1800MT™ Units to the Test

# Maines Paper & Food Service Pilots Program Proving Effectiveness of Electric Transport Refrigeration Units

One of the top independent food service distributors in the country, Maines Paper & Food Service, is playing a leadership role in identifying new technologies and methods to save energy and reduce exhaust emissions through a demonstration project backed by the U.S. EPA and the State of New York.

The project is the first of its kind to supply grid power to electric hybrid trailer refrigeration units, or eTRUs. And Vector 1800MT™ multi-temperature units from Carrier Transicold are playing a key role, potentially saving thousands of gallons of fuel per year for Maines. By its conclusion, the study may ultimately lead to a transformation of how food distribution centers and others manage the loading process for perishable products.

The project is being implemented at Maines' flagship distribution center in Conklin, N.Y., a facility located near Binghamton along the Susquehanna River in south central New York, just north of the Pennsylvania line. It is being put together with co-funding assistance from the U.S. EPA and the New York State Energy Research and Development Authority (NYSERDA).

When the installation is complete later this summer, Maines will be able to start documenting its ability to reduce air pollution, noise and diesel fuel use for NYSERDA and the EPA, agencies that support a variety of trucking industry-related initiatives aimed at meeting current and future environmental and energy needs.

The project brings together numerous leaders in the transport industry working cooperatively on Maines' behalf:

Shurepower LLC serving as general contractor; New West Technologies LLC for engineering and consulting services; New York State Electric & Gas Corp. providing three-phase power to the site; Great Dane supplying the trailers, and Carrier Transicold.

"It's all about partnerships," explained John Penizotto, Carrier's regional sales manager on the project.

### From Loading Docks to Ship Docks

From nine distribution centers Maines supports restaurants, healthcare and educational facilities and other food service customers in 35 contiguous states throughout the Northeast, Mid-Atlantic, Gulf States and the Midwest. The Conklin facility, which is also headquarters for Maines, is a major provider to the cruise ship industry operating out of the ports in Boston, New York, New Jersey and Philadelphia.

In Conklin, Maines is upgrading and installing electrified loading docks and 10 parking spaces for eTRUs as part of the demonstration project. Ten Vector 1800MT units are being added to the Maines fleet, installed on Great Dane trailers based at the facility.





Claude Boisson, vice president of operations for Maines, has high expectations for the project. He sees it especially helping with the cruise ship work, which “doesn’t fall into the mold of regular business.”

Trailers destined for ocean liners start loading early in the week for weekend delivery to the ports. “There is a lot of attention to detail,” Boisson explained, “double checking and triple checking for accuracy.” And all throughout that time, the trailer refrigeration systems need to run to protect the cargo. Without electrification, that means burning diesel.

### Vector Technology Makes it Possible

The Vector 1800MT unit is Carrier’s new hybrid diesel-electric system for the North American marketplace. It does away with conventional mechanical components such as belts, pulleys and clutches and instead uses electricity from a high-performance generator to run the compressor, evaporator and condenser fans and the heating system.

Because the Vector 1800MT unit is electric, it can be plugged into an AC power supply when the trailer is parked, and the diesel motor that drives the generator can be shut

down, totally eliminating fuel consumption and emissions from the refrigeration system. A 460-volt power supply and proper connections are all that are required.

That’s where Shurepower comes into the project, according to Joe Licari, director of Eastern Operations for Shurepower, a company known for its shore-power truck electrified parking system that provides long-haul drivers with grid-based electricity, cable TV and Internet connections so they eliminate idling and save fuel during mandated rest periods – a similar concept.

Maines already had some existing electrical connections, but they needed to be modernized and upgraded for a higher amperage load. Additionally, cabling needed to be run from the Vector units to the back of the trailers so that the units can be plugged into receptacles when backed into the loading docks. Carrier Transcold of Upstate New York handled the trailer wiring needs.

### Accountability is Key

For Maines, Shurepower is also setting up a control system to monitor electric consumption and provide third-party verification of emissions reduction.

While fuel savings were a driving force in the rationale for the project, the continued increases in the price of diesel fuel simply strengthen the case.

In laying out the rationale for NYSERDA and the EPA, Shurepower’s feasibility study included an economic analysis of the fuel savings likely to result from the project.\*

According to the report, a single eTRU switching to shore power during mandated 10-hour rest periods will realize a diesel fuel savings of approximately 2,200 gallons per year. Even after the cost of electricity is factored in, a savings of \$3,284 to \$5,489 per year, per truck is estimated. The report also points out that because eTRUs require less maintenance than conventional mechanical refrigeration units, the anticipated maintenance costs will be an estimated 30 percent less, resulting in further savings.

With such potential savings, as well as reducing emissions and sound output from idling trucks, it’s no wonder Boisson said, “We’re eager to start the testing.” ☒

*\*See the full project proposal, including detailed economic analysis, by checking the link at [www.shurepower.com/shureRD.htm](http://www.shurepower.com/shureRD.htm).*



Maines’ flagship distribution center in Conklin, N.Y