

## Energy Producer Maintains 24/7 Operation

DTE Biomass Energy is a wholly owned subsidiary of DTE Energy, and has been providing communities with safe, environmentally sound energy since 1988. The company helps limit greenhouse gas emissions by operating landfill gas recovery systems that capture the gas and put it to productive use. Such recovery systems eliminate harmful air emissions by preventing methane from migrating off-site and becoming a safety or odor problem. Landfill gas recovery systems



also provide a renewable source of energy that can generate steam, electricity, fuel for industrial processes or pipeline quality gas.

The process of landfill gas recovery involves asset-intensive equipment that must be properly maintained. DTE relies on the availability of this equipment in their 24/7 operations. Failure of a major piece of equipment valued in excess of \$1.5 million and the downtime associated with it means operational efficiencies are compromised and production suffers.


### Daily Maintenance Management

To ensure their primary equipment assets and associated components are maintained on a routine basis, DTE schedules and manages all maintenance activity in a maintenance software system called Benchmark. Four DTE locations use Benchmark every day including:

- Fresh Kills Purification Plant, Staten Island, NY
- Westside Gas Producers, Three Rivers, MI
- Pinnacle Gas Producers, Dayton, OH
- DTE Methane Resources, Thompsonville, IL

Each facility site manager schedules preventive maintenance (PM) based on a frequency according to equipment manufacturer specifications. Work order assignments for PM's are tagged as routine or scheduled and take into account the time interval frequency on a weekly, monthly, quarterly or annual basis. Weekly work normally includes basic maintenance for lubrication, oil and grease needs. Monthly preventive maintenance work involves rotating equipment and blowers while quarterly includes alignment checks. Annual PM's involve instrumentation calibration work.

The site facility managers are able to review their PM schedules in Benchmark and make assignments to operators and mechanics for work to be performed. Maintenance work routinely involves refrigeration equipment, pumps, vessels, exchangers, control valves, centrifugal blowers, piston rings, bearings and similar components critical to the performance of the high dollar compressor and gas engine assets. In fact, more than 500 pieces of equipment are maintained on a regular basis. Mechanics at each site location are responsible for entering job data for their work assignment and for attaching any related documentation. These documents provide equipment maintenance procedures, wear pattern readings or visual aids of a piece of equipment and are attached in Benchmark for easy reference.

The DTE Energy logo consists of a blue square containing a white sunburst icon and the text 'DTE Energy' and 'DTE Biomass Energy'.

— At A Glance

- ▶ Nation's leader in landfill gas recovery
- ▶ 32 operating sites in 14 states
- ▶ Extract nearly 90 million cubic feet per day of landfill gas
- ▶ Wholly owned subsidiary of DTE Energy



All work scheduled and performed is captured in Benchmark which provides the facility site manager an easy way to review completed or outstanding work orders for both large and small tasks. When work orders are closed out, Benchmark maintains a complete history of that work related to the specific equipment, component part or location where the maintenance work was performed.

"Prior to using the Benchmark system, our maintenance tracking and management was handled manually," says James Pena, director of pipeline and quality products at DTE Biomass Energy. "Having Benchmark helps us focus on jobs that must be done. Because they're scheduled in the system, we cannot ignore them – and that provides accountability that we need to be better organized and more efficient."

### **All Work Captured in One System**

Not only does Benchmark track work performed by maintenance personnel, but also routine maintenance procedures that operators perform such as greasing and oiling. Any work conducted by outside contractors is also captured in Benchmark. For DTE Biomass Energy, contractors are typically brought in during shutdowns for compressor overhaul maintenance work. Everything – including overhaul work, calibration reports and routine maintenance is entered in Benchmark to provide a complete history on any equipment.

Because all maintenance work is planned and scheduled using Benchmark, the system serves as a central reference point that indicates when work is to be done regardless of the timing. This is a tremendous help to DTE Biomass Energy where safety valve maintenance is performed every two years. When maintenance work on the valves is completed within the 24 month cycle, certification documentation is attached in Benchmark for reference purposes and it provides an important audit trail for the required maintenance of the safety valves.

When it comes to spare parts tracking, Benchmark assists with cost control and purchasing decisions. Min/max and reorder points for spare parts are indicated within the system to streamline and manage the purchasing process. Having this type of data available at any time removes the guesswork and estimating process related to spare parts inventory management.

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***"Benchmark will do anything we need it to do as a maintenance system," says Jim Good, facility manager at the DTE Biomass Energy Fresh Kills purification plant at Staten Island, New York. "We can easily track maintenance work, parts used, man hours expended, review scheduled work, histories and reports all within Benchmark. It's an easy system to use and the best tool I've ever used to generate weekly work schedules."***

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Monthly reports provide facility managers and other management personnel with key data related to all maintenance work. Completed work order reports indicate materials used for jobs, who performed the work and when it was done. And, these reports are supplied to the New York Department of Sanitation for their review since DTE operates this location for them.

Beyond maintenance, Benchmark is providing additional value to DTE Biomass Energy. As the company's quality program continues to be developed, Benchmark will be included to account for issues related to safety and compliance. For DTE Biomass Energy, the future of providing naturally occurring energy looks bright. The company will continue to be counted on as a key energy resource that improves the environment. ■