



11.4 MWe – LANDFILL GAS FUEL SIMPLE CYCLE POWER PLANT Charlotte Motor Speedway Landfill

OWNER/OPERATOR
Fortistar

END USER
Concord Energy LLC

PROJECT ENGINEERING
SCS Engineers

CONSTRUCTION MANAGEMENT
McCarthy & Smith, Inc.

PRODUCT
**Two (2) 5.7 MWe Taurus 60 Gas Turbine
Generator Sets**

CUSTOMER VALUE
**High Availability and Local Renewable Energy
Supply**

The Concord Energy facility at the Charlotte Motor Speedway Landfill in North Carolina helps fulfill a regional need for reliable renewable energy. Fortistar built, manages and operates the facility, where two (2) 5.7 MWe Taurus™ 60 gas turbine generator sets deliver 11.4 MWe of continuous base load power to the Duke Energy grid under a 20-year supply agreement. The facility runs around the clock on landfill gas, which has significant advantages over conventional fuels. The low-emission turbines destroy landfill methane, a potent greenhouse gas. Over the course of one year, the energy produced at the facility creates less carbon dioxide — some 36,000 metric tons less — compared with using traditional fossil fuels to generate the same energy. Methane withdrawn from gas wells in the landfill is compressed and supplied to the turbines. Gas treatment systems protect the turbines against fuel impurities.

Solar® Turbines
A Caterpillar Company

11.4 MWe Simple Cycle Power Plant



PLANT DATA

Two (2) 5.7 MWe Taurus 60 Gas Turbine Generator Sets

Two (2) Gas Compressors

Landfill Gas Treatment Systems

Advanced SCADA Controls



OUR PRODUCTS AND SERVICES

Gas Turbine Generator Set Packages and Auxiliary Equipment

Startup and Commissioning

Operation and Maintenance Training

SUSTAINABLE COMMUNITY PLANNING

OPERATIONAL EXCELLENCE

REDUCES GREENHOUSE GASES

IMPROVES PUBLIC WELFARE AND SAFETY

MAXIMUM AVAILABILITY

The facility is designed to capture and process the gas from the landfill, delivering it to the two (2) Taurus 60 turbines, creating renewable electricity delivered to nearly 8,000 regional customers. Using landfill gas for electricity generation significantly improves the environment because it reduces emissions of methane reduction and hazardous air pollutants, and it avoids the use of limited non-renewable resources, such as coal and oil, that are significantly more polluting. The Concord Energy system uses advanced data collection to help operators optimize performance and output, enabling predictive, planned maintenance rather than reactive maintenance. Operators have remote access to the control system by using computers and mobile devices.

A sound-insulated engine room houses the single-shaft turbines. The control room, with a SCADA workstation and a direct view of the engine room, houses medium-voltage switchgear, low-voltage distribution panels, 480-volt motor control center, IT and communication systems, uninterruptible power supply and other electrical equipment. To allow for growth, the generating facility is designed to accommodate a third turbine generator and gas compressor/treatment unit.

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