

## Ford turns paint fumes into electricity to help power truck plant

**F**ord's Fumes-to-Fuel system at the Michigan Truck Plant generates 55 kilowatt-hours of electric power every hour—enough for an average city block. Ultimately, the system could power one-third of the plant's paint shop. The technology works by pulling volatile organic compounds (VOCs) from the paint air emissions by using fluidized carbon beads. The cleansed air emissions are then sent back into the environment. The scrubbed VOCs are sent to a generator where they are transformed into electricity.

For years, Ford, like other automakers, had been siphoning off the fumes from its paint booths and incinerating them in natural gas-fired furnaces at temperatures of up to 1400 degrees Fahrenheit. Incinerators, which cost millions of dollars to build and install, consume an enormous amount of energy—about 350 kilowatt-hours per hour.

The Fumes-to-Fuel system costs less to install and maintain than existing furnaces, it virtually eliminates carbon dioxide emissions and it enables the use of higher-quality, solvent-based paint. Fumes-to-Fuel technology could be used by any business that produces light hydrocarbon emissions, such as furniture and electronics industries.

Mark Wherrett, one of the designers of Fumes-to-Fuel technology, has spent his entire Ford career helping assembly plants meet environmental regulations. "I have worked on other Ford projects where the team helped change legislation in other countries that benefited the environment," said Wherrett. "However, to take something that used to be considered waste and turn it into fuel that makes electricity and really moves the environmental needle, that is extremely rewarding."

The Fumes-to-Fuel technology, developed in conjunction with DTE Energy, won an Environmental Protection Agency "Clean Air Excellence Award" in 2004. Fumes-to-Fuel technology will be implemented in other plants as equipment is updated and replaced. ■



Fumes-to-Fuel could save one-third to one-half the cost of traditional incineration of volatile organic compounds (VOCs).



Fumes-to-Fuel technology is available for licensing by other industries.