FACT SHEET

Office of Compliance Assistance and Pollution Prevention
June 2014

Encouraging Environmental Excellence – Silver Level Award

General Motors LLC - Toledo Plant

In 2013, General Motors LLC - Toledo Plant received an Ohio EPA Encouraging Environmental Excellence Silver Level Award. The silver level recognizes businesses and others that have a good environmental compliance record and have completed environmental stewardship activities. Any business or other type of organization in Ohio may be nominated. The silver level is open to any business, industry, trade association, professional organization or local government of Ohio.

General Motors LLC - Toledo Plant (GM Toledo) is a large manufacturing facility producing six-speed rear wheel drive and front wheel drive automatic transmissions for use in light duty trucks, sport utility vehicles, cross-over vehicles and cars. GM Toledo has been in operation in Toledo since 1916 and at its current location since 1956. The site has produced more than 63 million transmissions in its history.

Production operations have simplified significantly over the past five years, currently consisting of machining, assembly, wastewater pretreatment and powerhouse activities. Production and support activities occupy approximately 2.2 million square feet of building space on 156 acres. GM Toledo currently employs approximately 2,200 employees.

General Motors LLC - Toledo Plant is recognized for:

- Lowering greenhouse gas emissions by more than 30 percent and avoiding nearly 40,000 metric tons of carbon dioxide emissions.
- Burning landfill gas in boilers.
- Installing a solar energy array that generates 600 kilowatts of energy.
- Recycling 94 percent of waste during one year.
- Reducing energy consumption by 54 percent and saving $4 million in related costs.

Commitment to Environmental Stewardship

As part of its Drive-to-Zero program, GM Toledo maintains an energy conservation program. GM Toledo was recognized by U.S. EPA's Energy Star Challenge program in 2011 for efforts to lower greenhouse gas emissions by reducing energy intensity by more than 30 percent from 2009 to 2010. These efforts resulted in an avoidance of 38,425 metric tons of equivalent carbon dioxide (CO_2e).

Energy conservation goals continue and include:

- Increasing use of renewable energy sources
- Reducing energy intensity by 20 percent by 2020 (baseline 2010)
- Reducing carbon intensity by 20 percent by 2020 (baseline 2010)

Key components of the energy conservation program include a partnership with DTE Energy, an electronic energy management system, utilizing Design for the Environment engineers and use of alternative/renewable energy sources. The energy conservation program has resulted in greenhouse gas reductions of 53 percent, energy reductions of 54 percent and savings of $4,000,000 in the past three years.

General Motors LLC - Toledo Plant

Other environmental performance improvements related to the overall Drive-to-Zero program include:

- Decreasing water emissions with the elimination of stand-alone machining operations. Wastewater pretreatment discharges to the POTW have declined by 60 percent since 2009.
- Total routine waste has been reduced by 80 percent since 2009. In 2011, 94 percent of waste generated was recycled and 6 percent was shipped to an energy recovery facility.
- Criteria pollutants have also declined by 67 percent since 2009.

Resource Conservation

DTE Energy provides GM Toledo with an energy conservation engineer to identify and assist with energy conservation initiatives. The plant has an energy conservation committee to implement and monitor progress of these initiatives. An internal Energy Star program is used to monitor the effectiveness of energy shutdowns for each holiday weekend and extended shutdown. A key piece of the energy conservation program is equipment shutdown during non-production periods. Energy consumption profiles are reviewed daily and for extended non-production periods by the operations manager to verify that energy consumption is at the expected level for the shutdown period.

Building equipment, such as air handling equipment, is tied into an electronic energy management system. This system allows equipment to be turned on and off based on programmed settings and also allows remote control of individual equipment. Machine filtration equipment is equipped with a weekend mode that allows the equipment to operate in an energy efficient mode.

Lighting in all renovated areas of the site has been replaced with more energy efficient light fixtures. Conference rooms are equipped with motion sensors so that lights are only on when the rooms are in use, rather than always on during business hours.

Alternative/Renewable Energy Sources

Variable frequency drives (VFDs) were installed on GM Toledo's boilers, which allow the boilers to burn landfill gas without co-firing natural gas. The VFDs also provide tighter control on the amount of fuel burned, resulting in a much lower amount of landfill gas or natural gas combusted during low steam demand periods. Approximately 260 million cubic feet of landfill gas was used in 2011 in lieu of 130 million cubic feet of natural gas (landfill gas has about half the Btu content of natural gas).

Investigation of rooftop solar arrays began in 2010 and installation of a 1.8 MW solar array began in 2011. Phase 1, generating 600 kW, was completed in March 2012 with plans to proceed with Phase 2. Once completed, the solar array will generate enough power at peak production to supply approximately 50 percent of the site's electricity requirements for nonproduction periods.

For More Information

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For more information about Ohio EPA's Encouraging Environmental Excellence program, contact the Office of Compliance Assistance and Pollution Prevention (OCAPP) at 800-329-7518, or visit ***epa.ohio.gov/ocapp/ohioe3.aspx***.