

GM Brazil Plant Embraces Environment

General Motors' engine plant in Joinville, Brazil, has earned Leadership in Energy and Environmental Design, or LEED, Gold certification from the U.S. Green Building Council.

It's the first automotive plant in South America to become LEED Gold-certified, the result of investments in sustainability when construction began two years ago.

The Joinville facility joins five other GM LEED-certified facilities in China and the United States.

"The environmental performance of this plant has been on our minds since Day One of construction," said Santiago Chamorro, president of General Motors do Brasil.

"This operation embodies GM's outlook on integrating sustainability into every decision we make – from building efficient facilities to designing efficient vehicles."

The facility embraced several environmental processes to reach this point, said GM spokesperson Sharon Basel.

A 350-kilowatt solar array powers plant-floor and office lighting, avoiding 10.5 tons of CO2 – the equivalent of energy consumed by 220 homes in Brazil annually.

The solar power is also used to heat 15,000 liters of water a day, reducing natural gas costs and avoiding 17.6 tons of CO2 emissions annually.

It is the first solar energy system in the Brazilian automotive industry, said Basel.

The plant also uses reverse osmosis – a process that pushes water through a filter to eliminate particles – to filter water from recycled treated wastewater for toilet flushing and industrial uses such as cooling towers.

The plant saves the equivalent of nine Olympic-sized swimming pools – 22.9 million liters a year. It's the first application of its kind at an automotive facility, said Basel.

Helping Joinville earn its certification were tactics like harvesting natural light and using filter-

ing gardens to treat sewage, said Mike Robinson, GM vice president of Sustainability and Global Regulatory Affairs.

"Joinville's environmental activity is aligned with everything we stand for as a company," said Robinson.

"From the use of solar power to water conservation, this is how we want all of our facilities to aspire to operate."

From 2005 to 2013, GM Brazil facilities reduced water consumption per vehicle produced by 58 percent and energy use by 36 percent per vehicle produced, Robinson said.

During the same time period, non-recyclable waste – kilograms

per vehicle produced – was reduced by 76 percent. In 2013, all Brazil sites combined composted more than 1,500 tons of organic waste from facility cafeterias.

The Joinville plant is working to achieve landfill-free status, under which no waste from daily operations would be sent to landfill, Basel said.

When LEED-certified, it would join six other South America facilities and more than 100 total GM global facilities to have earned this designation.

With more landfill-free facilities than any other automaker, the company is well on its way to its commitment of 125 landfill-free facilities by 2020.



Daily operations at GM's Joinville Engine plant help environment.

Chrysler Plant Cuts Energy; Saves \$2M

Chrysler's Brampton (Ontario) Assembly Plant (BAP) is the first automotive assembly plant in Canada to achieve ISO 50001: 2011 "Energy Management" standards certification by TÜV, an international certification organization.

Introduced in 2011, ISO 50001 includes globally recognized requirements for energy management systems, which are an important element of energy performance and greenhouse gas reduction, said Chrysler spokesperson LouAnn Gosselin.

BAP's achievements in energy management range from lighting control projects developed and implemented by plant electricians to investment in an automated heating and ventilation management system and scheduler.

The lighting project resulted in an estimated savings of \$110,000 in annual electricity costs. Automated heating and ventilation meant an estimated savings of almost \$2 million in annual electricity and natural gas costs, and also reduced excess negative exhaust by 1.2 million cubic feet per minute.

BAP served as the pilot plant for ISO 50001 certification among Chrysler's North American automotive assembly plants, Gosselin said. The remaining plants are expected to be certified by the end of 2014.

BAP had previously achieved certification against a number of international standards, among them ISO 9001 for Quality and ISO 14001 for Environmental Management.

"I am extremely proud of the staff at Brampton Assembly Plant who worked tirelessly to help us achieve ISO 50001: 2011 Energy Management standards certification," said Brampton Assembly Plant Manager Dan Omahen.

"This experience has proven that when employees rally together, and work alongside management and agency partners, sustainable solutions can be identified that help us improve energy optimization and reduce greenhouse gas emissions."

Chrysler adopted World Class Manufacturing (WCM) as its operating system in 2009 as part of its alliance with Fiat, Gosselin said.

First implemented by Fiat in 2006, WCM is a methodology that focuses on reducing waste, increasing productivity, and improving quality and safety in a systematic and organized way.

WCM engages the workforce to provide and implement suggestions on how to improve their jobs and their plants.

WCM has become the driving force behind the improvements in all of Chrysler Group's manufacturing plants with four facilities achieving Bronze status, a significant milestone in the WCM process, in 2012.

As part of the WCM Environment activities at BAP, the plant established a cross-functional energy management team that included skilled trades staff and managers, as well as local utility companies who offered suggestions and explored various improvement ideas, Gosselin said.

This team approach to continuous improvement lent itself well to the ISO 50001 Significant Energy User (SEU) concept, which aims to improve the plant's energy performance.



Chrysler's Brampton Assembly Plant is honored for energy management.

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