

MERIDIAN GAS NORTH AMERICA

Lowering the environmental impact of
magnesium production for automotive parts
through technological innovation



By integrating a range of sustainability measures into its operations, such as ceasing the use of environmentally degrading sulfur hexafluoride, this project reduces emissions and increases the sustainability of two Meridian Magnesium Productions factories that manufacture automotive parts in Canada and the United States.

The Context

Magnesium is important in car manufacturing as it is lighter than other metals. Meridian is the world's largest producer of magnesium components, and supplies most of the world's largest automakers. However, producing and casting magnesium into automotive parts requires the use of a protective cover gas called sulfur hexafluoride (SF_6) – a greenhouse gas over 22,000 times more potent than carbon dioxide.

The Project

This project involves switching the protective cover gas used by Meridian's magnesium production from SF_6 to a combination of sulphur dioxide and Novec-612; a patented gas manufactured by 3M that has never before been used commercially in the US. The gas switch is accompanied by the installation of a robust new ISO 140001 system to help manage environmental performance. This switch was the best environmental solution available to the company, but it was also the most expensive so the sale of carbon credits is used to fund this investment and its ongoing operational costs.

The Benefits

This project has seen Meridian lower its carbon emissions per tonne of magnesium by 72 percent at its North American facilities. This is a hugely significant reduction in greenhouse gas emissions, which shows how commitment to new technological innovations can make historically environmentally taxing processes like magnesium production significantly less impactful.

In recognition of its leadership in this area, Meridian won the 2011 International Environmental Responsibility Award from the International Magnesium Association



Novec-612

this newly patented gas has allowed for more environmentally-friendly, innovative magnesium production



333,583 tCO₂e

mitigated on average each year by avoiding the emission of harmful greenhouse gases

For more information on the UN Sustainable Development Goals, please visit: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

Official name: Conversion of SF_6 to an Alternative Cover Gas in Magnesium Production in Eaton Rapids, MI and Strathroy, ON

UNFCCC/markit/VCS link: http://www.vcsprojectdatabase.org/#/project_details/618 | **UNFCCC/markit/VCS ID:** 618