



The Mining Association of Canada | L'association minière du Canada

BACKGROUND:

Climate Change Initiatives and Innovations in the Mining Industry

The Mining Association of Canada (MAC) and its members are committed to ongoing improvement and are continually innovating to protect the environment, improve their energy use and reduce greenhouse gas (GHG) emissions. Over the past two decades, MAC's member companies have improved energy efficiency and reduced emissions at their operations through measures such as MAC's mandatory *Towards Sustainable Mining*[®] (TSM[®]) initiative and through innovations at the mine-site level.

Beyond energy, fuel and process efficiency, member companies are also engaged in numerous projects with local communities that relate to climate change, either directly or indirectly. Examples include projects on issues such as food and energy security.

Below is a broad sample of MAC member projects that support addressing climate change and its impacts, and the communities where they operate:

Renewables:

- The Glencore Raglan Mine's three-megawatt wind turbine is integrated with an energy storage network using an energy management system, the first of its kind in the world. With this [wind power project](#), the Raglan Mine is expected to save approximately 2.4 million litres of diesel and more than 6,000 tonnes of CO₂e annually over the next two decades.
- Rio Tinto's [wind farm](#) at the remote Diavik Diamond Mine in the Northwest Territories, the first large-scale wind farm in the territory, has reduced the operation's diesel consumption by 10% annually.
- Built on Teck's reclaimed Sullivan Mine Concentrator site, [SunMine](#) is a 1MW solar project that is community owned and is British Columbia's largest solar project, Canada's largest solar tracking facility, and the first solar project in the province to sell power to the BC Hydro grid.
- In 2014, IAMGOLD worked alongside five communities and a local workforce of 150 people to construct a large-scale 5-megawatt [solar energy farm](#) near its Rosebel Gold Mine in Suriname—the first in the country. The solar farm has returned a significant amount of power to the national grid, has reduced emissions, and has inspired IAMGOLD to invest in solar-powered community projects. In 2017, IAMGOLD [announced](#) it would also develop solar power capacity for its Essakane Mine in Burkina Faso.
- At the Borden Gold project in Ontario, Goldcorp will replace all of its underground

diesel fleet of trucks with [Battery Electric Vehicles](#), which will make it the first all-electric underground mine in Canada.

Fuel Diversification:

- Stornoway's off-grid diamond mine deployed [natural gas from the outset of production](#), which has demonstrated the increasing viability of natural gas as a substitute for high-emitting diesel fuel.
- ArcelorMittal has launched pilot project to displace Bunker C heavy fuel oil with natural gas in Sept-Îles.
- A number of Teck's coal mines have increased their use of [natural gas in the place of coal](#) over the last decade, reducing more than 250,000 tonnes of CO₂e annually.

Energy Efficiency:

- Agnico Eagle has reduced diesel consumption at its Meadowbank Gold Mine in Nunavut through process innovation.
- At the project development stage, Avalon Advanced Materials has successfully reduced energy use and GHG generation well in advance of construction activities through adopting a hybrid solar-diesel power generation system.
- Goldcorp recently achieved [significant energy consumption and emissions reductions](#) at its Musselwhite Mine, while simultaneously reducing energy costs, through peak load management and technology deployment.
- In 2009, Vale deployed an improved ventilation management system. When initially commissioned and allowed to operate for a one week period, the savings reached 39% and is expected to lead to savings of 35% over the long term.
- Barrick's Hemlo Mine was recognized by Natural Resources Canada for its innovative [ventilation management program](#) that reduced GHG emissions by 24% and lowered energy consumption by 10% between 2013 and 2015.
- In 2014, New Gold's New Afton Mine became the first mine in North America to achieve ISO 50001 certification. This [video](#) describes the benefits New Gold has achieved through its ISO 50001 certification and through its participation in MAC's TSM program.
- Hudbay Minerals has made significant energy, fuel and process efficiency improvements at its Manitoba mines, including adopting ventilation-on-demand and reducing propane consumption for underground heating.
- Dominion Diamond Corporation installed an in-vessel composter at the Ekati Diamond Mine in the Northwest Territories—the first mine in Canada's North to do so. By the end of 2016, more than 67,000 kilograms of organic waste has been diverted, reducing GHG emissions by 210 tonnes CO₂ equivalent and diesel consumption by 74,000 litres. This project was recognized with the [2017 TSM Environmental Excellence Award](#).

Community Food Support:

- Agnico Eagle’s Meadowbank Mine in Western Nunavut supports a new joint venture set up between a major southern-based food distributor and the local co-op in Baker Lake. All of the food purchased for the mine is now routed through the co-op, giving it greater purchasing volumes and allowing for better pricing. This, in turn, is passed on to the community where the cost of food is very high due to the remote location. Additionally, Agnico reinvests its annual co-op dividend back to the co-op so that it can improve its facilities.
- Vale Canada has been supporting a social enterprise called [Project Sucseed](#), developed by students at Memorial University in St. John’s, Newfoundland and Labrador. Project Sucseed focuses on improving food security in northern and remote communities across Canada whose climates make it difficult to grow fresh produce. The students have developed a low cost and energy and water efficient technology for growing high-quality produce locally and affordably. [Project Sucseed’s video](#) explains how the program can help Canada’s remote and northern communities overcome their challenges with food security.
- In the arid climate of Burkina Faso, IAMGOLD supports the vulnerable households in the community near its Essakane Mine with the following supports: two goats and veterinary care for the animals, two bags of agro-industrial goods and two 100-kilogram bags of millet. This program involves the close participation of a local NGO, which assisted in identifying the food supports that would generate the longest-term benefits for these families and continues to review the program’s success. Recent data has shown that the number of vulnerable households has declined by 50% thanks to the initiative. This project was a [finalist for the 2017 TSM Community Engagement Excellence Award](#).