



GM Invests \$356 Million in Michigan Factories



General Motors will invest more than \$356 million in a new engine line in Flint and driveline and power train components in Saginaw and Grand Rapids, creating more than 50 jobs and helping to retain nearly 500 positions.

The Michigan investment announcements come on the same day as an amended agreement between GM and the Michigan Strategic Fund under the Michigan Economic Growth Authority (MEGA) tax credit program. As part of the amended agreement, which was approved by the Michigan Strategic Fund, GM will invest \$1 billion in Michigan by 2030. Announced investment of \$356.35 million represents more than one-third of that amount.

Since 2009, GM has made investment commitments in Michigan of more than \$9 billion. During this time period, GM has far exceeded its original investment commitment under the MEGA Agreement. GM's substantial investment in Michigan and the corresponding job growth and retention has contributed Michigan's economic success since 2009.

"The agreement with GM on MEGA credits helps Michigan's budget forecast. And today's announcement that it is investing in Saginaw, Flint and Grand Rapids proves the company wants to retain a strong presence in Michigan," said Gov. Rick Snyder. "The fact that GM is committing to invest \$1 billion by 2030 here is even better news. It's a globally competitive environment, and GM's announcement shows it appreciates that Michigan is a Comeback State with a skilled work force and exciting expansion opportunities."

New Product Applications and Innovations from Foseco for Die Casting

The Non Ferrous metal treatment area will feature the latest generation of Foseco FDU and MTS equipment state of the art technology for the automated treatment of an aluminium melt. This innovative rotary degassing process is controlled by SMARTT, a software which is based on the recently developed Foseco Degassing Model that accurately simulates rotary degassing. The operator simply defines a melt quality level and SMARTT predicts the best treatment practice based on ambient conditions, melt temperature, rotor design and alloy composition. The treatment parameters are automatically transferred into the FDU MTS. In conjunction with innovative rotor designs Foseco guarantees a constant quality level and reliable results.

A new chemical grain refiner in granulated form can be added through the automated Metal Treatment Station. This new grain refiner offers many advantages such as improved melt fluidity during casting, reduced inclusion level and better mechanical properties. The dross remaining after the treatment is low in metal which additionally saves costs. Foseco offers new insulating material for dosing furnaces in Aluminium foundries. The use of energy efficient dosing furnaces in Aluminium foundries is seen by many as the best available technology today. Foseco is now able to supply a new multi-part and highly insulating lining made of INSURAL, which is delivered ready to install and combines energy savings with long service life and resistance to oxide build-up.

China Leads the Global Direct Drive Wind Turbine Market

The global direct drive (gearless) wind turbines market is expected to witness sustained growth in the next decade as plant managers focus on enhancing operational efficiency and reducing maintenance costs.

The adoption of gearless wind turbines will be strongest in Asia Pacific, fueled by increasing installations in China. Globally, China is expected to remain the most lucrative market for direct drive wind turbines.

Direct drive wind turbines are being preferred over geared turbines owing to their advantages, such as lesser downtime, noise-reduction, and longer equipment life. On the other hand, high initial cost and lack of skilled labor are challenges to their widespread adoption.

Direct drive wind turbines can be classified on the basis of mode of operation and capacity.

On the basis of mode of operation, these turbines are categorized into permanent magnet synchronous generator and electrically excited synchronous generator. Among these, demand for permanent synchronous generators is higher, owing to high energy output achieved through them.

On the basis of capacity, the direct drive wind turbine market is segmented into small-sized (less than 1MW), mid-sized (1MW to



3MW), and large-sized (over 3MW).

Region-wise, Asia Pacific and North America are the largest markets, both in terms of installation base and revenues. In Europe, Germany and Spain are expected to witness a spate of installations in the near future. China, India, US, Germany, and Spain collectively account for nearly 50% revenues of the global direct drive wind turbine market.

The key players in the direct drive wind turbine market are Enercon, Siemens Wind Power A/S, Godecke Energy, Goldwind Science & Technology Co. Ltd, Avantis Energy Group, Emergya Wind Technologies B.V, GE Energy, Leitwind AG, and M. Torres Olvega Industrial, S.A.