



IMA News

October 9, 2013

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Below are articles and summaries of **magnesium** related stories. IMA Member companies are asked to distribute the update to their employees and if their employees wish to receive the monthly IMA News issues, please send their email addresses to the IMA World Headquarters. The IMA appreciates all member company press releases and announcements for inclusion in the monthly IMA News issues.

INDUSTRY CALENDAR

IMA Events

October 28 – 29, 2013

[IMA North American Applications Seminar](#)

BuhlerPrince, Inc.
Holland, Michigan, USA

December 5, 2013

[IMA European Health & Safety Seminar](#)

Leonardo Hotel Köln
Cologne, Germany

June 1 – 3, 2014

[IMA 71st Annual World Magnesium Conference](#)

Munich, Germany

Industry Events

October 6 – 8, 2013

[5th Asian Symposium on Magnesium Alloys](#)

Toki Messe
Niigata, Japan

November 10 – 12, 2013

[FASA Congress](#)

Barcelona, Spain

February 6 – 10, 2014

[TMS 2014 143rd Annual Meeting & Exhibition](#)

San Diego Convention Center
San Diego, California, USA

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ASSOCIATION NEWS

IMA North America Magnesium Applications Seminar & Exhibits

- [Registration Open!](#)
- [Last Change Exhibitor Opportunities!](#)
- [NEW – Updated Program Schedule](#)

IMA European Environment Health & Safety Seminar – [Online Registration Open!](#)

IMA Announces Life Cycle Assessment of Magnesium Components in Vehicle Construction – [Full Study Report Now Available!](#)

Join U.S. for the 71st Annual World Magnesium Conference in Munich, Germany – [Call For Papers Coming Soon!](#)

IMA Launches Newly Designed Website

IMA Members Only: Email Address Request for IMA News

[Articles follow below](#)

INDUSTRY NEWS

October Magnesium Review from Metal-Pages

McPhy Energy Premieres World's First Industrial System Coupling Electrolysis and Solid Hydrogen Storage

Seawater Magnesium Process Promises Cheaper Lightweight Metals

CU Scores \$3.6M to Produce Magnesium for Auto Parts

Georg Fischer Grants Iron Alloy License to Riken Corporation and Concludes Geographical Partnership

BMW's New X5 SUV Targets Mercedes to Defend Luxury Crown

[Articles follows below](#)

EDITOR'S NOTE: IMA makes every possible effort to substantiate the articles which appear in the Update. However, as this is not always possible IMA does not warrant the details nor accuracy of any given article. Please keep in mind that materials are attained through press releases, outside articles from numerous sources and publications. Such materials often contain opinions which are not that of the association nor should they be construed as such. We realize that in the case of some materials, the translations might often lead to less than perfect grammar, etc. It is our position however to print as submitted rather than take upon ourselves the editing of such materials which would entail potential changes unwanted by any given author.

ASSOCIATION NEWS

IMA North America Magnesium Applications Seminar & Exhibits ***Registration Open!***

The International Magnesium Association (IMA) and its North America Committee Chair, Mr. Tom Heider, are pleased to announce that it will again offer its Magnesium Applications Seminar & Exhibits to be held on Tuesday, October 29, 2012 at the facilities of long-time IMA member, BuhlerPrince, Inc., in Holland, Michigan, USA. There will also be an optional BuhlerPrince, Inc., plant tour on Monday, October 28. Please save the dates on your calendar!

The Magnesium Applications Seminar was established to educate participants about the versatility of this lightweight alloy. This year's agenda offers a global perspective of **magnesium's** application within multiple industries, along with an analysis of current research and trends. At the event, there will also be opportunity to collaborate with professionals in the industry, and visit the exhibit hall to speak directly with recyclers, foundries, and fabricators of **magnesium** products.

This seminar is FREE to attend. **Magnesium** keynote speakers include:

- Dan Tworag, North America Die Casting Association
- Rick Delorme, Magnesium Elektron Powders

On behalf of Tom Heider and the IMA North America Committee, we hope you are able to take advantage of this comprehensive and FREE opportunity! Additional details regarding [attending](#) and [exhibiting](#) are available at www.IMAseminar.org.

Last Chance Exhibitor Opportunities!

Don't miss this once-a-year opportunity, open to all IMA members and non-members, to exhibit at IMA's Magnesium Applications Seminar North America in Holland, Michigan, USA. This seminar, now in its 22nd year, provides an opportunity like no other to reach a targeted audience of engineers and designers, including structural design engineers.

Exhibitors will have the opportunity to meet with attendees during a continental breakfast time, a morning break, lunch, an afternoon break and at the end of the day. This set up will also give exhibitors the opportunity to attend the seminar sessions with the convenience of sitting right at their booth!

The IMA Thanks our 2013 Magnesium Applications Seminar Exhibitors!



**Chicago
White Metal
Casting, Inc.**



**prototype
casting inc.**

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NEW – Updated Program Schedule

The Program Schedule for the IMA North America Magnesium Applications Seminar and Exhibition is now available. The updated Program Schedule as well as all attendee, exhibitor, and hotel and lodging information is available on the [newly designed IMA website](#). You can also access the updated Program Schedule on the website here:

http://intlomag.org/pdfs/2013Conferences/NA_Mg_Applications_Seminar_Schedule-2013.pdf.

IMA European Environment Health & Safety Seminar – *Online Registration Open!*

Online registration is now open for the IMA European Environment Health & Safety Seminar including an Environmental educational session. It will be held on December 5, 2013 in Cologne, Germany. Please visit the [newly redesigned IMA website](#) to register.

This Seminar is specially intended for:

- Foundry Managers
- Safety Staff
- Planning Engineers
- Steel & Chemical Industry Managers
- Consultants
- Production Managers
- Foundry Foremen
- Fire Fighters
- Magnesium Recycling Managers & Staff
- Automotive OEM Staff

It will offer an excellent opportunity to learn from recognized industry experts the safe handling of Magnesium and Magnesium Alloys, to exchange experiences in practical matters as well as discuss means and measures for the implantation of safety standards. It will, for the first time, have a presentation related to the environment, showing the benefit of using magnesium versus aluminum in the transportation industry in term of carbon footprint.

Please visit the European seminar website at http://intlomag.org/about/auto_eu.cfm for more information about the program, hotel and lodging, and travel information. You can also print the registration form to fax or mail it to IMA World Headquarters.

IMA Announces Life Cycle Assessment of Magnesium Components in Vehicle Construction – *Full Study Report Now Available!*

The IMA's Life Cycle Assessment of Magnesium Components in Vehicle Construction is now available in the [Members Only](#) section of the new IMA website. The full study is a 102 page two part document:

PART I: Analysis of Primary **Magnesium** Production, **Magnesium** Processing and Recycling of Post-Consumer Scrap

1. Introduction
2. Goal and Scope Definition
3. Analysis of Primary **Magnesium** Production
4. Analysis of **Magnesium** Parts Manufacturing
5. Analysis of End of Life and Recycling
6. Conclusions

PART II: Life Cycle Performance of **Magnesium** in Transport Applications in terms of Global Warming Potential

1. Introduction
2. Goal and Scope Definition
3. Analysis of Use Stage and Life Cycle of a Steering Wheel
4. Analysis of Use Stage and Life Cycle of Components for Aircraft
5. Conclusions

The study intends to provide up-to-date and reliable data and results on **magnesium** production, processing and the end-of-life of **magnesium** car components. In general, for the core processes of **magnesium** production, processing and end-of-life, primary data from various sources has been used.

If you need the new Members Only user name and/or password, please email Ann Scheible at info@intlomag.org or call ++1-847-526-2010.

Join U.S. for the 71st Annual World Magnesium Conference in Munich, Germany – [Call For Papers Coming Soon!](#)

The 2014 Call For Papers will be sent to the IMA worldwide distribution list the week of October 14. Please watch for the announcement and share the news with your colleagues.

Also, please be sure to save the dates for the 71st Annual World Magnesium Conference which will be held from June 1 – 3, 2014 in Munich, Germany. This event is the premier international **magnesium** industry conference that highlights the latest technological advances, innovative applications, and emerging developments in the global marketplace. The conference combines informative technical sessions, exhibits, networking and social opportunities for a well-rounded industry experience.

- Industry Updates
- Technical Program, provides a wealth of information for **magnesium** industry professionals and addresses topics ranging from an overview of the current state of the **magnesium** industry to **magnesium** process breakthroughs, applications, and business management issues.
- Social Program and Spouse Program
- Exhibit Showcase and Sponsorship Opportunities
- Awards of Excellence, IMA's competition recognizing outstanding **magnesium** products and innovative manufacturing technologies
- International Environmental Responsibility Awards
- IMA Annual Membership Meeting

Munich is, "a city of contradictions that somehow create an intriguing blend of old and new; Lederhosen and the latest designer outfits, traditional beer gardens and stylish clubs, historical buildings and the most modern architecture - all stand proudly side by side."

But Munich is not only the capital of Bavaria, it is home to the world's largest festival "Oktoberfest," Bayern Munich and BMW. Discover this pulsing city, and beyond, offering treats such as:

- A city of culture, Munich offers about 40 theatres or smaller stages, 50 museums and collections, different opera houses, old buildings like the 500-year old church "Frauenkirche", the Marienplace with the new Neo-Gothic Town Hall and famous parks like the English Garden and the Olympic Park.
- Outside Munich, on the way to the Alps, there are plenty of beautiful lakes and castles just waiting to be discovered, among them the fairytale castle "Neuschwanstein."
- Find out more about the medieval cities of Nuremberg and Augsburg, Roman architectural ruins in Regensburg and Passau, the salt mines in Berchtesgaden and the majesty of the Zugspitze, Germany's highest peak near Garmisch-Partenkirchen.

Munich is unique in combining modernity with tradition. Please mark your calendar and watch for upcoming details at www.IMAworldconference.org!

IMA Launches Newly Designed Website

The IMA is pleased to announce that the newly redesigned website was launched on October 4, 2013. The new website includes updated **magnesium**-specific information relevant to the industry and end-users, as well as website enhancements, including an improved *Buyers' Guide* section with expanded member detail. In addition, the website features a more appealing design with easy-to-use navigation providing a better overall user experience.



As part of the redesign, we have updated the website with images showcasing the uses and advantages of **magnesium**.

If your company has any images that showcase the uses and advantages of **magnesium** which you are willing and able to have posted on the IMA website, please let U.S.know. We will give your company credit on the website for photo use. The categories for which we need images include:

- **Magnesium** Raw Materials
- **Magnesium** Alloys
- **Magnesium** Applications
- Sustainability
- **Magnesium** Primary Production
- **Magnesium** Fabrication & Finishing
- **Magnesium** Projects

If you have not visited the new website yet, the IMA invites you to do so. You can access it at www.intlmag.org. Please be sure to refresh the web page on your browser and reset your bookmarks.

IMA Members Only: Email Address Request

The IMA needs your help! Are any of your IMA member coworkers or colleagues not receiving the members only IMA News or “Did You Know?” publications? We are looking to increase readership of our members only publications.

The IMA strives to be indispensable to our members. If you know of a colleague(s) who is (are) not receiving the members only publications, please let us know right away so we can add their email address(es) to the distribution list.

As always, if any IMA member would like to submit a press release or article for inclusion in the IMA News and/or “Did You Know?” publications, please contact Ann Scheible at info@intlmag.org or at ++1-847-526-2010.

INDUSTRY NEWS

October Magnesium Review from Metal-Pages

Towards the end of September the US **magnesium** price edged higher as demand slowly flickered to life and near-by stocks remained tight, according to trade sources. Business activity on the spot market has picked up over the past couple of weeks as some consumers make enquiries for fourth quarter material.

With demand showing signs of life, lower offers for material are drying up and helping to push prices higher. The US price for pure **magnesium** min 99.9% is up to a range of \$2.00-2.25/lb delivered from a previous level of \$1.95-2.20/lb delivered.

The US **magnesium** price spread tightened up earlier this month due to a reduction in cheaper overseas material being brought in from countries like Russia and Kazakhstan. Underlying demand for **magnesium** is largely underpinned by solid volumes into the aluminium alloying sector, which has been supported by an uptick in demand from the automotive and aerospace industries. The beverage can market also remains stable, while the construction industry also shown signs of growth that is helping to support the extrusions sector.

Latest figures show a slight recovery in the construction industry as housing starts increased 0.9% in August to an annual rate of 891,000 units. But building permits, an indicator of future demand, declined 3.8% to a rate of 918,000, missing expectations of 954,000 units. Meanwhile, Ford Motor Co said this week it will invest C\$700 million (\$680 million) in its Oakville Assembly plant in Ontario, Canada, in a bid to meet increasing customer demand in North America and around the world for fuel efficient vehicles.

The Chinese **magnesium** ingot market has seen fewer deals as buyers are leaving for the week-long National Day holiday. Prices of **magnesium** metal 99.9% grade have dropped by RMB200/tonne to RMB15,000-15,500/tonne in the past week due to destocking pressure before the seven-day holiday.

The source reported that transaction prices have been cut to RMB15,000/tonne, down from RMB15,100/tonne early this week.

“A few producers are willing to accept bids lower than RMB15,000/tonne to seize a last chance of a deal before the holiday due to stock pressure before and after the holiday lull,” another producer source from Shaanxi told Metal-Pages. But the source expects that there will be little buying interest in the two days before the holiday, so he is holding offers at RMB15,000/tonne after cutting them by RMB200/tonne in the past week.

An exporter in Shanxi reported trading has remained quite sparse with a few enquiries to test the water in the past month. “I think overseas buyers are waiting for prices to touch rock bottom, and I cannot see any firm orders,” he said. The source is offering \$2,580/tonne FOB but it is still not competitive compared with prices with VAT unpaid, which are \$150/tonne lower.

China’s exports of unwrought **magnesium** metal (Mg 99.8% min) have increased 30.4% yearly to 17,795 tonnes in July, according to official Customs data.

For the latest **magnesium** news and prices visit www.metal-pages.com, and to subscribe at the special IMA membership rate mail U.S.at info@metal-pages.com.

McPhy Energy Premieres World's First Industrial System Coupling Electrolysis and Solid Hydrogen Storage

McPhy Energy, a leading developer and manufacturer of solid state hydrogen storage, presented today the world's first system coupling an industrial-scale hydrogen generator with a 100 kg solid hydrogen storage unit. The demonstration, which showed the results of the first phase of the French PUSHY program, was given at the company's headquarters in La Motte-Fanjas, in the department of the Drome, France. While such systems enable the supply of onsite hydrogen for industry, they also mark a world premiere in the transition to renewable energies, enabling approaches such as “power-to-gas” and hydrogen mobility to become both technical and commercial realities.

The McPhy Energy technology for storing hydrogen in the form of hydrides is a safe, low-pressure, high-density solution.

The generator, which produces hydrogen through the electrolysis of water, is manufactured by McPhy Italy and powered by 60 KW of electricity from the local electrical grid. The demonstrator shown today can produce 12m³ of hydrogen per hour. The gas is then stored in McPhy's HDS 100 system, which is based on **magnesium** hydride technology developed and manufactured by McPhy Energy in La Motte-Fanjas, France.

The system inaugurates the first commercial product line for onsite industrial hydrogen users worldwide. This first model, which has a storage capacity of 100 kg (for an energy content of 3.3 MWh), is the first in a commercial range reaching up to 500 kg of stored hydrogen (16.5 MWh).

It enables traditional hydrogen logistics (high-pressure delivery) to be replaced with production that is located at the point of use and aligned with demand. This ambitious project, funded by BPI France (formerly OSEO/ISI) was developed in an industrial consortium lead by McPhy Energy, with the CEA (the French Atomic & Alternative Energy Agency) and the company WH2.

“The pilot presented today at our manufacturing site in La Motte-Fanjas is the first deliverable of the PUSHY project. In 2014, it will be followed by a demonstration of hydrogen production by hydroelectric energy, for the storage and exploitation of renewable energies in France as in Europe and across the globe,” said Pascal Mauberger, CEO of McPhy Energy. “With the deployment of renewable energies, storage requirements are substantial, and solutions are needed to respond to those needs. That is the objective of this demonstrator model, which marks the beginning of a complete line of groundbreaking products.”

Source: www.mcphy.com (27-Sep-2013)

CU Scores \$3.6M to Produce Magnesium for Auto Parts

A University of Colorado Boulder professor has been awarded a three-year, \$3.6 million grant from the Energy Department's Advanced Research Projects Agency to develop a new process to produce **magnesium** that can be used to make lightweight vehicle parts.

CU-Boulder Professor Alan Weimer and his research team will use the grant to develop a new gasification process that uses concentrated solar power to produce both **magnesium** and synthesis gas, or syngas, a precursor for synthetic gasoline. The procedure includes a novel quenching, or cooling process, to enable a gas-to-solid **magnesium** phase change inside of the reactor.

Weimer, a professor in CU-Boulder's chemical and biological engineering department, said current **magnesium** production is energy intensive and produces substantial carbon emissions. But the new renewable energy-powered approach to **magnesium** production could reduce carbon emissions and lower costs, in addition to creating a synthetic fuel, said Weimer, also executive director of the Colorado Center for Biorefining and Biofuels.

The award was one of 33 "breakthrough" energy projects totaling \$66 million given to government, academia and industry announced today by Cheryl Martin, deputy director of the Advanced Research Projects Agency-Energy, or ARPA-E. The awards were split between two programs — \$32 million to develop cost-effective and energy-efficient manufacturing techniques to process and recycle metals for lightweight vehicles, and \$34 million to develop advanced biocatalyst technologies that can convert natural gas to liquid fuel for transportation.

The 2013 ARPA-E award to CU-Boulder was the largest for light metal research and development and the largest award overall to a single university. "The new ARPA-E projects announced today demonstrate ARPA-E's commitment to providing critical, early-stage funding for innovative energy technologies," said Martin.

The current leading process to produce **magnesium** involves using electricity 24 hours a day, a method that is particularly expensive because of high-energy consumption during daylight hours, said Weimer. "Our plan is to use solar energy to power our reactor in the daytime and use electricity only at night during off-peak hours."

The new process involves the reaction of carbon and **magnesium** oxide, which are heated to high temperatures in a hybrid solar-electrical reactor to produce **magnesium** vapor and carbon monoxide gas, said Weimer. While the **magnesium** vapor is converted into a solid metal, the carbon monoxide is combined with hydrogen produced by using excess heat recovered from the solar-electrical reactor to split water into its component parts of hydrogen and oxygen, resulting in the production of syngas that can be made into diesel fuel or gasoline.

"We are using all of the products here, not only to make **magnesium**, which is a high value product, but also to make fuel," said Weimer, also a faculty member at CU-Boulder's BioFrontiers Institute. "We anticipate that the demand for **magnesium** will increase as industry looks to produce lower weight, higher mileage vehicles."

Magnesium is 75 percent lighter than steel and 33 percent lighter than aluminum. By 2020, **magnesium** parts will allow cars and trucks to weigh 15 percent less, leading to fuel savings of 9 to 12 percent, according to the U.S. Automotive Materials Partnership, an industrial coalition of the Chrysler Group LLC, the Ford Motor Company and the General Motors Co.

Weimer said the ARPA-E grant will provide funding for CU-Boulder postdoctoral researchers, graduate students and undergraduates in the coming years. The Weimer research lab has been engaged in solar-thermal processing for the past 17 years and is the largest academic solar-thermal chemistry research team in the United States.

The Colorado Center for Biorefining and Biofuels, or C2B2, is a collaboration of CU-Boulder, the Colorado School of Mines, Colorado State University and the National Renewable Energy Laboratory.

In August, Weimer, CU-Boulder Professor Charles Musgrave and their research team published a paper in Science magazine about the development of a radically new technique to efficiently split water using the power of sunlight. In addition to paving the way for the broad use of hydrogen as a clean, green fuel, the water-splitting technique described in Science has been integrated into the new **magnesium** production process, said Weimer.

Source: www.denverjournal.com (25-Sep-2013)

Seawater Magnesium Process Promises Cheaper Lightweight Metals

A lightweight metal that reduces fuel use in cars and planes could be extracted from the ocean through a process being developed at the US Department of Energy's Pacific Northwest National Laboratory.

The process could ultimately make fuel-efficient transportation more affordable and expand the American **magnesium** market.

PNNL is leading a \$2.7m, three-year project to develop a novel method that removes naturally occurring **magnesium** from seawater. The project was by DOE's Advanced Research Projects Agency-Energy (ARPA-E).

Demand for lightweight metals such as **magnesium** is growing, but it's expensive and energy-intensive to produce them,' said the project's lead researcher, PNNL Laboratory Fellow Pete McGrail. 'We expect our method will be 50 per cent more energy efficient than the United States' current **magnesium** production process. This will also decrease carbon emissions and the cost.'

Magnesium is used in alloys that decrease weight and increase strength of parts used in vehicles, airplanes, power generation equipment, industrial processes and buildings. It is, however, about seven times more expensive to produce than the steel traditionally used in those applications. Furthermore, producing lightweight metals also requires a lot of energy.

A cheaper and more efficient production process is needed to enable the broader use of lightweight metals, leading ARPA-E to announce \$32m in funding for new projects that will develop new processing and recycling methods.

The United States is home to just one bulk **magnesium** plant in Utah, where brine from the Great Salt Lake region is put through electrolysis to extract the metal from a molten salt. About a third of the nation's **magnesium** is imported, and China is the world's largest producer.

'Reinventing the **magnesium** production process so it's more affordable can also help grow the American **magnesium** market and decrease U.S. reliance on foreign-made materials,' McGrail said in a statement.

PNNL says it is developing a new, titanium-based catalyst that regenerates an important chemical used in the **magnesium** extraction process. The catalyst will enable a more efficient process and use less energy as the process will require temperatures of no more than 300 degrees Celsius, considerably lower than the 900 degrees Celsius required by the current U.S. process.

PNNL will draw on its expertise in catalyst development, molecular simulation, powder metallurgy and metal-organic chemistry for the project. Detailed computer modeling and follow-up lab tests will be used to pinpoint the catalyst's specific chemical makeup.

The project team plans to develop a prototype system that uses the new process. Commercial-scale **magnesium** production with the new process is expected to halve the current US production cost. It should cost less than \$1.50 and require only 25 kilowatt-hours of energy per kilogram.

PNNL is partnering with Global Seawater Extraction Technologies and Utah **magnesium** plant owner U.S. Magnesium, LLC. The new production method will use a crystallization process developed by Global Seawater Extraction Technologies and tap electrolysis and practical **magnesium** production experience from U.S. Magnesium.

ARPA-E is providing \$2.4m for the project, while PNNL's project partners will provide the following cost-share matching: \$210,000 from Global Seawater Extraction Technologies and \$60,000 from U.S. Magnesium.

PNNL's project team includes Pete McGrail and his fellow researchers Satish Nune, Phillip Koech, Vassiliki-Alexandra Glezakou, Radha Motkuri, Carlos Fernandez, Sudhir Ramprasad and Leo Fifield.

Source: www.theengineer.co.uk.com (20-Sep-2013)

Georg Fischer Grants Iron Alloy License to Riken Corporation and Concludes Geographical Partnership

GF Automotive, a division of Georg Fischer, and the Japanese-based iron casting supplier Riken Corporation have signed a license and partnership agreement in which GF Automotive grants Riken a license to use its successful SiboDur® alloy in Japan and South-East Asia. Both parties have also agreed on a mutually beneficial coverage of each other's customer needs. Riken will manufacture on behalf of GF Automotive in Japan and South-East Asia, and GF Automotive on behalf of Riken in Europe.

SiboDur® is an innovative iron alloy developed by GF Automotive and already in use at key customers. It allows a much lighter construction of chassis parts in iron and competes successfully with aluminum and steel forgings in terms of performance and weight at a lower cost.

Josef Edbauer, Head of GF Automotive, stated: "The agreement increases the penetration of our SiboDur® alloy in the Asian region and enables both our companies to better serve the global needs of our respective customers." The President of the Riken Corporation, Noritada Okano, said: "GF Automotive's SiboDur® enhances Riken's technical capabilities and gives us the possibility to propose light and cost-effective solutions to our customers. Furthermore, the agreement allows each of us to serve our customers wherever they are."

Riken Corporation is a publicly traded company with its headquarters in Tokyo. The company produces a broad spectrum of products, with an emphasis on engine and vehicle components. Riken Corporation has about 3 900 employees worldwide. Casting activities are concentrated in Japan and Indonesia. The corporation's annual revenue is approximately YPY 71 billion (CHF 700 million).

GF Automotive is one of the leading automotive suppliers worldwide and a technologically pioneering development partner and manufacturer for the automotive industry. It manufactures some 600 000 tons of iron, aluminum and **magnesium** at ten production plants in Germany, Austria and China. Sales in 2012 amounted to CHF 1,461 million.

Source: www.georgfischer.com (20-Aug-2013)

BMW's New X5 SUV Targets Mercedes to Defend Luxury Crown

After seeing its biggest SUV outsold by the Mercedes-Benz M class last year, BMW is fighting back with a model it calls "The Boss," a new version of its X5 stuffed with advanced technology.

The \$52,800 SUV can drive itself in traffic jams and features night vision to avoid hitting people or animals in the dark.

The revamped model, introduced this week at the Frankfurt auto show, will reach showrooms in November.

"We want to get back to the top with the X5," said Herbert Diess, development chief for BMW.

SUVs have become a critical battleground in BMW's effort to fend off the Mercedes and Audi brands, which have both vowed to become the No. 1 luxury-car brand by 2020.

With demand for SUVs rising from the United States to China, IHS Automotive expects the global market for the models to grow 41 percent from last year through 2018 to 18.6 million vehicles.

The X5, which is lighter and gets better gas mileage than its predecessor, will surpass the M class next year, IHS predicts.

To fight back, Mercedes is taking aim at the lower end of the luxury SUV market with the new GLA compact. That car will challenge BMW's aging X1 as Daimler seeks to woo younger buyers away from its German rivals.

Lower fuel consumption

The GLA "can be a driver in the growth of the segment," Daimler CEO Dieter Zetsche said at the Frankfurt show.

To fuel its pursuit of BMW, Mercedes plans to roll out 13 all-new models over the next eight years.

BMW has delivered 1.05 million cars worldwide this year, 21,100 more than Audi and 132,000 more than Mercedes.

Adding to the pressure on BMW, Audi will overhaul its full-size Q7 SUV -- currently outsold two-to-one by the X5 -- as early as next year. The VW unit plans to double its SUV lineup to six models by 2020.

"We are not worried about the upcoming Q7," said BMW's Diess. "Competition always spurs us on."

BMW trimmed the X5's weight by as much as 90 kilograms (198 pounds) by using **magnesium** supports for the dashboard and more aluminum components. That helps reduce fuel consumption to about 7.4 liters/100km (31 miles mpg U.S./38 mpg UK) for the six-cylinder diesel version, based on European fuel-economy data, versus about 8 liters/100km (29 mpg U.S./35 mpg UK) for the M class. BMW expects to add a plug-in hybrid X5 in 2015.

Source: www.europe.autonews.com (129-Sep-2013)