Sustainability a key element in choosing materials: exec

CHICAGO – The sustainability of both aluminum and steel from "cradle to cradle" was among the chief features of a discussion on raw material choices for automakers during *AMM*'s 3rd Annual Automotive Metals Conference in Detroit.

Subodh K. Das, chief executive officer of Phinix LLC, a Lexington, Ky.-based company started up last month in order to promote, develop and implement low-carbon-footprint manufacturing technologies and carbon trading, suggested that automakers review their raw material choices, including the alloys used in metals, to see if parts can be designed that are more recyclable from the outset.

The previous approach to the use of raw materials was driven by the desired performance of the end product, with limited consideration given to the end of the product's life and even less consideration for the cost of the carbon footprint created by the extraction, manufacture and processing of materials, Das told conference attendees.

While considerations such as fuel economy, safety and performance of metals-based auto components remain vitally important, he believes automakers are beginning to recognize the impact of recycling.

Das urged greater investment in research and development to create metal products in a way that considers how to dismantle the finished parts at the end of their life cycle that maximizes their value in reuse, and encouraged metallurgists to look for new alloy modifications in order to achieve this goal. "One of the results would be to take less alloy out of the ground," he said.

"We want to design automotive alloys for safety, energy efficiency, consumer tastes and recycling," said Das, "which is important in a commodity-strained world."

He also believes that governments and commodity traders should consider counting recycling as a carbon offset.

Other members of the conference panel–Randall Scheps, director of ground transportation for Alcoa Inc.; Ladd Hall, executive vice president of Nucor Corp.'s Sheet Mill Group; and Markus Weber, director of automotive applications technology and product coordination for ThyssenKrupp Steel USA LLC–discussed the relative merits of steel and aluminum in vehicle manufacturing.

Aluminum use is now second only to steel in automotive applications, recently surpassing iron, as measured by weight per vehicle, Scheps said.

> 'There will always be a place for steel in auto applications. Steel has been reinvented to compete with lightweight materials.'
> —Ladd Hall, Nucor

Aluminum content in passenger cars and light trucks today averages 327 pounds. "Aluminum's advantages include safety, performance, fuel efficiency, carbon dioxide savings and cradle-to-cradle sustainability."

A net 22 pounds of carbon dioxide is saved over the lifetime of a vehicle for every pound of aluminum that replaces steel, according to Scheps. Aluminum's lighter weight has even been shown to prevent accidents, because a lighter car handles better in both acceleration and braking.

Scheps said that 73 percent of all aluminum ever produced–approximately 800 million tons–is still in productive use; and that 55 percent of aluminum in cars today was made from recycled material.

Alcoa is testing aluminum use in buses in China, where 100,000 buses are manufactured each year to meet commuter needs in rapidly growing cities across that country.

"There will always be a place for steel in auto applications," Nucor's Hall said. "Steel has been reinvented to compete with lightweight materials." He conceded that aluminum has certain advantages, "but it won't completely replace steel. Any cost-benefit analysis indicates that high-strength, lightweight steels will remain competitive."

The steel industry's development of technologies like Castrip, which moves hot steel directly from the melt shop to rolling stands, conserves a great deal of energy. He said that Castrip cuts greenhouse gas emissions ten-fold compared with melting, casting, cooling, reheating and then rolling. "The technology will continue to improve and boost cost effectiveness," Hall said.

Weber agreed with Hall's assessment of steel's advantages, saying, "By offering new grades and gauges, steel will remain the dominant material in automotive structures."

He cited ThyssenKrupp's ongoing effort to reduce weight in the BMW 3 series over the past 26 years, noting that the weight of the steel used in this line of cars dropped by a third between 1982 and 2005.

There are many other cost savings and efficiencies realized by ThyssenKrupp over the years, aided by technology improvements. Weber said his company's tailored blanks are one example, reducing four parts to one. The end product also is environmentally sustainable, he said.

In most cases, weight savings in steel also result in cost savings for the automaker, according to Weber, who emphasized collaboration with all players in the automotive supply chain to realize the best results for the vehicle, for the passenger and for the environment.

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Anglesey set to return to full production

NEW YORK – Anglesey Aluminium Metals Ltd. will return to full production in the fourth quarter, but its future is still very much in doubt as a long-term energy solution has yet to be found, according to executives from part-owner Kaiser Aluminum Corp., Foothill Ranch, Calif.

The plant in Holyhead, Wales, suffered a failure in the rectifier yard June 12 that resulted in a fire in one of the power transformers, forcing the smelter to operate at only one-third of its 145,000-tonne capacity. Kaiser said Wednesday that third-quarter operating results by its primary aluminum division were negatively impacted by approximately $20 million by the Anglesey outage.

Workers at the smelter have spent the past several months steadily increasing production volumes, a job that is nearly finished.

"Anglesey is anticipated to return to full production by the end of the fourth quarter," Daniel J. Rinkenberger, Kaiser's senior vice president and chief financial officer, said in a conference call.

But there is still a great deal of uncertainly over what will become of the plant when the Wylfa nuclear power station, which supplies the plant, closes in 2010.

"While Anglesey continues to pursue affordable power beyond the September 2009 contract expiration, it is also evaluating other strategic alternatives, including other modes of operation, as well as potential closure," Rinkenberger said. "Based on current facts and circumstances, we believe that an impairment charge is not required at this time, but we will continue to review the investment for a possible impairment as the situation unfolds."

Rinkenberger said that Kaiser has no obligation to fund the cost of Anglesey should it close. He added that a closure would have no direct impact on the company's core fabricated products business.

The smelter is owned 49 percent by Kaiser and the remainder by Rio Tinto Plc.

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