

Car Industry Needs to Look Further Down the Road

The car industry had a lot on its mind as IESE's 23rd Annual Meeting of the Automotive Industry kicked off at the Barcelona campus on Nov. 12. The ailing U.S. car industry was lobbying the government for some of the \$700 billion bailout fund originally earmarked for banks, and Goldman Sachs forecast a 15 percent slump in car sales in Europe in 2009.



Yoshimi Inaba



Toby Procter and Hugo Spowers



Juan A. Fernández de Sevilla and José M. Machado

It is difficult to focus on long-term strategy when sales are dropping like a stone, financing is increasingly scarce and all the while, the car industry is under constant pressure to reduce energy consumption and carbon emissions. But some of the expert speakers at IESE's 23rd Annual Meeting of the Automotive Industry urged participants to concentrate on the bigger challenge ahead, while fighting the fires sparked by the current downturn.

As pointed out by Toby Procter, the director of **Trend Tracker**, an industry research body, oil reserves are forecast to run out in 40 years. "That means we've got less than 40 years to get this right," he said, referring to the challenge of establishing a new business model for the automotive industry.

Most industry experts believe that the electric car will replace the gasoline-powered vehicles we use today. But Procter stressed that the switch will bring "more damaging changes than when we gave up the horse and buggy."

While Procter recognized that the technology behind electric car batteries still has to mature, he questioned the viability of the electric vehicles available today. "It is hard to imagine that much of the U.S. population will be happy to drive a vehicle with a maximum range of 65 km.," he said. "The electric car does not offer a lot of autonomy," he added.

He also questioned the assumption that drivers will be able to charge their car overnight in their garage, given that many use

on-street parking. Then there is the challenge of recharging the vehicle's battery. In the United Kingdom, a single gas station currently services as many as 3,000 cars. In Japan, the authorities plan to install 150 charging points for 3,000 electric vehicles.

London's local authority is currently installing 60 charging points at a cost of €9,000 each. But to get enough juice in its engine, an electric car needs to sit there for three or four hours. Procter believes that, to be feasible, charging has to become three times as efficient and costs have to come down by a third.

Hydrogen fuel cell outruns electric

Hugo Spowers, an engineer, MBA graduate and a former racing car driver, agreed that

"You can't convince a fuel-cell engine to behave like a combustion engine... You need to take a whole system approach."



Prof. Pedro Nuevo and José M. Alapont

the gasoline-powered vehicle will soon be a relic of the past, but he believes that the hydrogen fuel cell is a stronger alternative energy source. "The electric car will run into the buffers sooner than the hydrogen fuel-cell car," he said.

Spowers heads up **RiverSimple**, a consortium that built the Morgan LIFECar to prove that hydrogen fuel-cell vehicles can be built using existing technology. Two of the challenges facing hydrogen fuel-cell vehicles, according to Spowers, are the cost and power density. "You need to reduce those things by a factor of four and we've done that in the LIFECar," he said.

The result is a sleek roadster with a range of 400 km and at top speed of 135 km/h. Now that it has proven its point, the con-

sortium is working on a two-seater vehicle for urban use with a top speed of 80 km/h and a range of about 480 km. The consortium is made up of **Morgan Motor Company, Oxford and Cranfield Universities, Linde and QinetiQ.**

Just as car drivers need to get used to the magnitude of the behavioral changes that need to be made, Spowers believes the car industry needs to undergo a paradigm shift. "The barriers to bringing a lightweight fuel-cell car to market are not technological; they're commercial," he said.

"You can't convince a fuel-cell engine to behave like a combustion engine," he said, referring to what he believes is the industry's inadequate attempt to adapt the technology. "You need to take a whole system

approach. This is a synthesis of existing technology," he said.

And if that's not enough to turn the car industry's existing business model on its ear, the head of **RiverSimple** plans to lease, not sell, the urban two-seater. Because, as the world's resources diminish, Spowers believes that "there is no chance of a sustainable industrial society based on the sale of products."

Prof. Pedro Nuevo coordinated the event, which included a range of top-level speakers including Yoshimi Inaba, board member of **Toyota Motor Corporation**; the President of **Renault** Spain, Juan A. Fernández; the President of **Ford** Spain, José M. Machado and José M. Alapont, president and CEO of **Federal Mogul.**