Solid Oxide Fuel Cell prototype from Nissan moves toward eco-friendly transport

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A prototype of Nissan's ethanol-reforming FCV

Nissan's Solid-Oxide Fuel Cell vehicle is making news. The company revealed what they say -the Solid Oxide Fuel-Cell (SOFC)-powered prototype vehicle runs on bio-ethanol electric power.

How the technology works was discussed in *HybridCars.com*:

"The e-Bio Fuel Cell generates electricity by using the solid-oxide fuel-cell, with the bio-ethanol stored in the vehicle's tank providing the fuel source. The e-Bio Fuel-Cell uses hydrogen transformed from the fuel through a reformer as well as atmospheric oxygen, with the following electric and chemical reaction producing the electricity that's used to power the prototype."

Earlier this month in Rio de Janeiro, Nissan unveiled two new vehicle prototypes the Nissan BladeGlider, a 100 percent electric sports car, and the Solid Oxide Fuel-Cell (SOFC)-powered prototype, as reported in a news release carried in *Automotive World*.

A small amount of CO2 is produced when ethanol is reformed into hydrogen. But the CO2 emissions are neutralized with the process of growing these plants allowing for a carbon neutral cycle. Nissan has been talking in terms of goals toward realizing a "zero emission and zero fatality society."

Electric vehicles will have a cruising range of more than 600km and some of the strong points also include silence and brisk acceleration.

Commonly produced from surgarcane, corn or soy, this form of fuel is said to be widely available in North America and South America.

"We expect our e-Bio Fuel-Cell technology to be ready as early as 2020." Nissan aims to commercialize the fuel cell vehicle (FCV) as a commercial vehicle in about 2020 in Brazil, where bioethanol is in circulation, and other countries, said Masaya Sato in *Nikkei Technology* on Monday.

"In Brazil, bioethanols derived from sugarcane and corn are in wide circulation as fuels," said Sato.

Andrew Krok, Roadshow by CNET, commented that "it's good to see automakers coming up with unique ways to handle the next generation of vehicle propulsion."

Joel Stocksdale in *Autoblog* discussed some plus points too, quoting Nissan's Carlos Ghosn.

"The advantage of this technology is that a full hydrogen infrastructure isn't needed to get hydrogen fuel-cell vehicles on the road. Instead, these vehicles can refuel at any gas station that offers ethanol. In fact, it doesn't even have to be 100-percent ethanol. It can be an ethanol-water blend that Renault-Nissan CEO Carlos Ghosn said 'is easier and safer to handle than most other fuels.'"

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