

Racing into the future with fuel cells.

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Hydrogen fueled racing kart at Formula Zero Challenge.

The Federation Internationale des Automobiles, known as the **FIA**, is the organization that supervises motorsports around the world. In this age of environmental awareness and high gasoline costs, the FIA feels compelled to find ways to make automobile racing more "relevant" to the real world.

Starting in 2010, the FIA has decreed that the contestants in its premier **Formula One** racing series will no longer be allowed to refuel during the race, which puts a higher priority on fuel economy than in the past, although the difference between 1.2 miles per gallon and 1.5 miles per gallon may seem strictly a theoretical exercise to the average race fan. Whether or not this search for "relevancy" leads to increased interest in the sport remains to be seen.

No matter how you look at it, automobile racing consumes a lot of precious resources. Not only do race cars get horrible gas mileage, but they also require an enormous amount of energy to get the cars and the teams to the track and back. No doubt about it. Racing and relevancy are mutually contradictory, which means that real innovation usually comes from below, where the amateurs, tinkerers and dreamers are found.

One such collection of tinkerers and dreamers has organized the **Formula Zero** program in Britain and Europe. It features go-kart like vehicles powered by fuel cells and electric motors. Fuel cells convert hydrogen into electricity and the only waste product is water vapor. Can't get much more eco-friendly than that! Four teams participated this year, one each from England, Holland, Belgium and Spain. One race was held in each country, with

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the final race taking place in Spain on September 3. The organizers are expecting more teams for next year's competition, so get your application in early if you want to compete.

In case you are inclined to look down your nose at electric race cars, you should know that these karts scoot to 60 mph in under 5 seconds and reach top speeds of 75 mph. Which is quite a lot if you are on a tight, twisty track in a vehicle that sits just an inch or so off the ground!

Unlike gasoline engines, which generate their maximum power at high revs, an electric motor does so at zero rpm, which means they accelerate like crazy while the gasoline powered competition is still calling down to the engine room for more power. I have driven an electric go-kart and it is much faster than its gas powered cousins.

So what's the downside? Well, there's none of that ear splitting, smile inducing exhaust roar, so those of us who are used to loud race cars are in for a bit of a shock. Can you imagine going to a drag race where the cars make no sound other than a gentle whirr? Where's the fun in that? Maybe the organizers will equip future cars with sound systems that broadcast

vintage engine noises to the crowd!

The only constant in life is change. In the world of motorsports, that change involves things like fuel cells and electric propulsion. Don't expect electric race cars in NASCAR or Formula One any time soon, but the future of racing is taking shape today, if you know where to look for it. It seems likely, though, that the people who sell ear plugs at car races may one day be looking for a new line of work.



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