

# Re: End of the Road for Hydrogen

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- *From:* "Bob Eld" <[nsmontassoc@xxxxxxxxxx](mailto:nsmontassoc@xxxxxxxxxx)>
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"Pluto" <[pluto7@xxxxxxxxxx](mailto:pluto7@xxxxxxxxxx)> wrote in message  
[news:epbeqi\\$ubc\\$1@xx](mailto:news:epbeqi$ubc$1@xx)

End of the Road for Hydrogen

With climate change on everyone's mind and rumours of an energy crisis,  
what could be

better than a car which doesn't run on fossil fuels and has no emissions  
except water?

BMW's new Hydrogen 7 fits the bill. This is the V-12 BMW 7 modified to run  
on hydrogen.

It has a petrol tank as well; it also runs on petrol, which is handy if  
you are far from

the UK's only hydrogen filling station – one of only six in the world. Of  
course, if

hydrogen catches on there will be filling stations all over the country,  
won't there?

Hydrogen cars sound ideal, but there are practical problems. First, the  
hydrogen tank

takes eight minutes to fill and it takes up most of the boot space. Even  
then, the

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hydrogen tank provides a range of only 125 miles. To get enough hydrogen into the fuel

tank it has to be chilled and liquefied. Gradually it warms up and boils away, so if you

don't use the car over the weekend you'll find less in the tank. Park up at the airport

while you take your three-week holiday and when you get back it'll be nearly empty.

The fact that the hydrogen has to boil off for safety reasons may be why hydrogen

vehicles are illegal in France. Even over here you are advised not to park the vehicle

in an enclosed car park. You cannot see hydrogen, you cannot smell it and it burns with

an invisible flame. Like petrol vapour, when mixed with air it is highly explosive. At

least you can smell petrol!

Where does hydrogen come from? It is either extracted from natural gas or electrolysed

by passing a current through water. Extracting hydrogen from natural gas leaves carbon

dioxide, which must be captured – otherwise the process produces as much CO2 emissions

as if you had just burnt the gas. Electrolysis produces no CO2, but it does produce a

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lot of waste heat so the energy content of the hydrogen is significantly less than the

energy of the electricity used. Electricity itself comes from coal, gas or nuclear, and

the electricity produced is also much less than the fuel put into the generation

process. Producing hydrogen this way is very inefficient.

All these factors make it very doubtful that hydrogen will be the fuel of the future. As

we approach Peak Oil and petrol becomes more and more expensive, economies and cutting

back on our travel will be the only solution.

How will you change your lifestyle when petrol costs £5/litre? (That's

\$36.95 per US

gallon.)

Anthony Day

[http://www.planetsave.com/ps\\_mambo/The\\_News/Feature\\_Articles/End\\_of\\_the\\_Road\\_for\\_Hydrogen\\_200701258387/](http://www.planetsave.com/ps_mambo/The_News/Feature_Articles/End_of_the_Road_for_Hydrogen_200701258387/)

Now you are catching on. The above points out a few of hydrogen's many negatives but there are others including some that are even larger show stoppers. Notably it takes about FIVE times the infrastructure in tankage, pipelines, trucks, compressors and other accouterments to handle, store and deliver hydrogen than it does equivalent liquid fuels like ethanol. Who's going to pay for that? and why should they? This problem is due to hydrogen's low volumetric energy density and the necessity of high pressures or cryogenic equipment to handle it. Much has been made of hydrogen's flammability but an even greater safety issue is with proposed very high pressures, up to 15,000PSI in some cases. Imagine what a burst tank could do! Hydrogen is destined to ALWAYS be the "fuel of the future!"