

Re: Using nuclear power to make renewables and a hydrogen economy cost effective

Source: <http://sci.tech-archive.net/Archive/sci.energy.hydrogen/2004-10/1702.html>

From: Ian St. John (*istjohn_at_noemail.usa*)

Date: 10/27/04

Date: Wed, 27 Oct 2004 13:00:18 -0400

magnulus wrote:

- > *Another alternative would be to skip hydrogen and use biodiesel in*
- > *diesel-electric cars and machinery, and use nuclear, solar, wind, and*
- > *hydroelectric power for industry and domestic use. Both would result*
- > *in closed carbon cycles.*

What makes you think that the 'hydrogen economy' will be exclusively hydrogen based? Do you think that the current 'oil economy' does not have instances of methane digesters, wind power, etc? It is most likely that a hydrogen economy will generate hydrogen to fuel fixed power consumers such as factories, as well as short haul transportation such as commuter and public transit traffic which can be refueled by pressurization. Cars will probably be 'dual fuel' with biodiesel for long haul and hydrogen (tapped from the house supply) for short trips.

- >
- > *I think much of the emphasis on hydrogen fuel cell technology is*
- > *being a red herring for those who do not want fuel efficient vehicles*
- > *in the immediate future- the oil industry and auto manufacturers.*

Certainly. The efficiency of ICE engines fueled by hydrogen is not much different from the current efficiency of PEM fuel cells. The real key to efficiency is the hybrid car, that can conserve energy instead of wasting it. I suspect, though that fuel cells are prominent because they have the *potential* for 80%+ conversion efficiencies while the ICE is limited to a much lower value by thermal laws.

- > *They can keep saying "hydrogen is right around the corner" till the*
- > *cows come home. In the meantime, we have technologies to make cars*
- > *average 55-100 mpg, such as gas-electric and diesel electric hybrids.*
- >
- > *And with biodiesel, it will be a closed carbon cycle.*

Note that there is a process of steam reforming recently announced that can turn vegetable oil into very clean hydrogen. The two are not that far apart. I would include 'cellulose ethanol' from bio waste in that assessment, by the

sci.energy.hydrogen: Re: Using nuclear power to make renewables and a hydrogen economy cost effective way, for portable fuels.