

## Re: Hydrogen

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**From:** Fred Kasner ([fkasner\\_at\\_enteract.com](mailto:fkasner_at_enteract.com))

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Jed Checketts wrote:

> Fred Kasner <[fkasner@enteract.com](mailto:fkasner@enteract.com)> wrote in message news:<28tnd.20829\$

>

>>You've got to be joking. The unchallengeable facts are that none of those  
>>portions of the "mixture" that you want to employ come any where even  
>>close to being adequate. Solar is totally hopeless at the latitudes of  
>>the some of the biggest cities in the US.

>

>

> I live 50 miles from the solar plant at Kramer Junction, California  
> which produces 150 MW of power.. That is 150,000 KW. And it is on an  
> incredibly small piece of land compared to the vast California desert  
> out here near Ridgecrest, California. That is more than enough power  
> to power every home in the city of Ridgecrest, California. Hence, the  
> reason the power is transmitted to Los Angeles via the grid. It is  
> becoming abundantly clear that technology does not stand in the way of  
> US independence from oil.

>

And of course the insolation in most of the major metropolitan areas of  
the USA and of Europe are equal to and even exceed those of southern CA.  
You have once again demonstrated that you are a deluded fool, Jed. You  
just can't use solar energy from PV cells or even solar ovens to produce  
any considerable amount of energy directly or indirectly.

>

> And in Europe the latitudes

>

>>are even higher and the insolation totally inadequate. Sure nuclear and  
>>coal have problems, but if the petroleum and gas runs out it is all we  
>>would have. Get used to it. There is no technologically viable solution  
>>on the horizon that will produce the energy we need by any process that  
>>>would not be more energetically expensive than the energy produces by  
>>>running it.

>

Shall we ask people in Boston or London, or Paris, or Stockholm to  
subsist on the energy derived from insolation using PV or furnaces? You  
have to be totally jesting. And would you care to debate the real cost

per kilowatt hour for that electricity including equipment costs, depreciation costs, and costs of money just to name a few? Get real this won't work. Solar is like your weird belief in hydrides to drive engines a niche project. In places where small amounts of energy are desperately needed but fuel importation is prohibitively expensive some use could be made of this. But as a general solution you must be out of your mind if you think any significant amount of solar energy would be available to feed the electric grid in most places in the USA.

- >
- >
- > *Your pessimism does not assure failure for renewable energy. Kramer*
- > *Junction is proof positive that it can happen.*
- >

Assuming you are not lying about the output of that plant I still insist that it is a fiscal sinkhole. The costs associated with it far exceed the value of the electricity produced.

- > *..snip..*
- >
- > *Your original statement required making an aluminum*
- >
- >>*compound from some source of energy to later produce hydrogen to use the*
- >>*H2 to get back the energy. Why not use the original energy to produce*
- >>*electricity why go twice around the barn to get to the side of it? You*
- >>*are becoming a hopeless fool, Jed.*
- >
- >
- > *You have asked this question in many ways over the years. The answer*
- > *remains the same: \*\*\*Storage\*\*\*. Running an extension cord from one*
- > *side of a barn to the other might work. Running an extension cord to*
- > *your car, coffee cart, or portable computer, however, doesn't work.*
- > *Energy Storage. Energy Storage. Energy Storage. Print it on a 3 by 5*
- > *card and read it back to yourself and maybe someday you will remember*
- > *that an extension cord from one side of the barn to the other doesn't*
- > *work for every application gramps.*
- >

But your big argument was that the plant your adore feeds the grid. You can't have it both ways. The storage problem with electricity is associated with the grid of electric companies. You can always send electricity a few hundred miles away to supply some other areas need. Rarely does a power plant close down because there is insufficient market for its power. One of the factors very much in evidence in planning a new power plant is need for the power and the ability to get extra when needed and sell when extra capacity is suddenly not needed. You seem to have almost no idea of the nature of the economics of energy in the world.

- >
- >

>>

>>>>>>*And the anode is what? And you have found a way to make an air motot a  
>>>>>>high density energy device by what magical method? If you have found a  
>>>>>>way to make Al from bauxite in a molten cryolite solution without a  
>>>>>>carbon anode hide the secret carefully. The Al producers of the world  
>>>>>>will pay you multit–millions of dollars and Euros for that secret. What a  
>>>>>>fool you have become.*

>>>

>>>

>>>*Comments like the above really date you, grampa Fred. Many aluminum  
>>>producers have been using alternatives to carbon electrodes for years.*

>>>

It is you who appears to be without a clue as to what is usually used in an electrolysis cell for producing aluminum. No metal is as cheap as carbon anodes. The cost of operation of an aluminum plant is so high any cheapness that can be achieved is achieved. And the anodes (consumable in this case) is made from carbon. Some metals can be used but the replacement costs (after some use) is usually much too high to compete with carbon anodes. If you believe otherwise you live in a true dream state. Only if there were a huge penalty for large scale CO<sub>2</sub> production would other anodes be economically viable.

>>

>>*Why then are the Al producers the world's largest consumers of carbon to  
>>this day?*

>

>

> *Wanna put your money where your mouth is Fred? They aren't even in  
> the top 5. Check Kirk–Othmer Encyclopedia of Chemical Technology.*

>

Try the discussions of aluminum extraction in the EB, generally a very reliable source. You have stumbled over stuff in the KO before.

>

>>>>>>*I certainly hope you realize that bauxite is a mixture of iron oxide  
>>>>>>and aluminum oxide and would never be used in a molten cryolite  
>>>>>>solution to produce aluminum.*

>>>>>

>>>>

>>>>*Bauxite is a hydrated oxide of aluminum.*

>>>

>>>

>>>*Utter hogwash. Bauxite is roughly 50/50 iron oxide and aluminum  
>>>oxide.*

Try EB, the worst ores of Al have about 36% Al<sub>2</sub>O<sub>3</sub> and bauxite is on average about 52% Al<sub>2</sub>O<sub>3</sub> and the impurities are nowhere near all iron oxide.

>>>

>>>*As is so with most ore*

>>>

>>>

>>>>resources it can have impurities in it rather than being a pure mineral.

>>>>Iron oxide is NOT an inherent part of bauxite.

>>>

>>>

>>>Yes it is. It is the very definition of what bauxite is, gramps.

Stupid little boy, bauxite is a name of a varying composition ore. The minerals that are found in it are mostly alumina, some iron oxide, some silica, and some titania. The major ores in use today are Bibbsite and Boehmite. These two have 65% and 85% alumina respectively. The ore processing is thus less of a problem than it used to be when bauxite was the main source of alumina. And your insistence that iron oxide is 50% of bauxite is utter nonsense. Once again try the EB for source about such details.

>>

>>Sonny, you show your callow inability to reason by swallowing data that

>>you never bother to verify. Bauxite is a ore that contains over 52% of

>>Al<sub>2</sub>O<sub>3</sub>, some iron oxide, some silica, and some titania. The last three

>>are minor constituents in bauxite.

>

>

> Fred, give it up already. If the iron oxide in bauxite were a "minor

> constituent" it wouldn't be called bauxite, but rather aluminum oxide.

>

>

>>Iron oxide is a minor constituent in bauxite. Some sources of bauxite

>>type ores

>>have almost no iron oxide in them.

>

>

> Really? Wow, you should tell someone about this mystery location of

> yours. Perhaps they could avoid the trouble of mining the bauxite in

> Australia and then removing the iron oxide to obtain the aluminum

> oxide. Sorry, Fred, you stepped right into this one and you are

> covered with red mud (the slang term for the iron oxide left from

> separating out the Al<sub>2</sub>O<sub>3</sub>).

Bull droppings, Jed. I just reviewed that EB article and you are hopelessly wrong.

>

> ..snip..

>

>

>>Clear it is that this is all a dream. The energy costs to produce an

>>aluminum producing device is very expensive. In point of fact several Al

>>plants in the Pacific northwest were closed down and the electricity

>>formerly being used was more valuable from direct sale to consumers both

>>commercial and noncommercial.

>>

>>FK

>

>

>

> I agree with you on the above. In fact, I pointed this information

> out on the net months ago. As I stated, in 2000 the aluminum

> production in the USA was around 5 million tons per year and it is now

> less than 1 million tons per year, mostly because of lower electricity

> costs in other countries (mostly China). imo, solar energy and wind

> energy in the USA should be developed to increase competition among

> energy producers and lower the cost of energy to help maintain

> American manufacturing competitiveness. This is the way to keep

> manufacturing in the United States of America. Otherwise, energy,

> food, cars, and all manner of manufactured goods will be produced

> outside our borders. This has been an ongoing trend which continues.

> The smoking gun for me is how products are advertised:

>

> Hamburgers: buy more

> Shirts: buy more

> Computers: buy more

> Housing: buy more

> Entertainment: buy more

> Electricity: **\*\*buy less\*\***

>

> In my opinion, until energy is a product handled by the market

> economy, the costs will grow, the government will muck it up (power

> outages, brownouts, rolling blackouts, etc.) and manufacturing will

> continue to be sucked away, followed by lots of other industries which

> rely on manufacturing to exist.

>

> It is like the Phillip Morris ads encouraging people not to smoke.

> And the Southern California Edison ads encouraging people to turn off

> the lights. It is the coyote guarding the henhouse.

The behavior of Californians and California companies is hardly one to hold up as virtuous for all to mimic. So forget the fast and loose stupidities of that western state in regard to electricity.

> It seems like the government does a great job of breaking up

> monopolies, unless of course, it owns the monopoly itself. And you

> may think that the government needs to own and sell electricity

> because of humanitarian reasons.. ie, poor people shouldn't have to

> pay as much for it. However, the reality is that Dupont Corporation

> in Niagara Falls, New York continues to pay around 1 penny per KWH for

> BILLIONS of KWH's of electricity used in salt electrolysis while the

> poor widow next door pays \$.14 per KWH (1400% higher).

>

> We have to fight for the right of small business to exist.

>

sci.energy.hydrogen: Re: Hydrogen

The content of the above two paragraphs seems totally devoid of connection to the issue of the technology of solar to electricity conversion and its economic controlling factors. You seem to be totally hooked on some kind of weird environmentalism without any rational consequences. Even the left of the Democratic party (I'm somewhat less left than they are) seems to be waking up to the fact that you can't invent something from nothing. And you can't pull yourself up by your boot straps. Everything has a price determined by the cost to produce and the cost to produce the things needed to produce it. If that cost is too high then it becomes a joke to claim that you can produce it cheaply enough to replace the present sources of energy.

FK

>

Jed Checketts