

Hydrogen energy – an abundant and pollution free energy

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In our world, the main primary energy source the fossil fuel is enormously decreasing, due to an ever growing, consumption bringing the world closer to the end of fossil fuel. The fuels are convenient to utilize, that is why, they have been used so much. On the other hand they have two major drawback.

- 1) They pollute the atmosphere.
- 2) They are not renewable.

The technical feasibility of replacing petroleum - based fuels with hydrogen is established, considering production, distribution, onboard storage and stability as fuel. In developed Countries efforts are invariably being made to develop such total energy system which is supposed to be pollution free system and it give new idea about fuel which is abundant in nature.

We know that today air pollution increases day to day and its concentration rises high enough to produce measurable effects on man, made chemical elements or compounds capable of being air borne. These substances may exist in the atmosphere as gases, liquid drops, air solids particles.

The air pollution problem mostly in cities can be easily stop as we will use H₂ as fuel then it produce H₂O and give more energy than petrol, diesel etc. The goal of this H₂ energy system, future looking system, clean energy to each of that using sectors depicted on the right hand side of the figure. The H₂ energy system concept is there by comprised of four sequential steps-

- 1) production. 2) transport. 3) storage. 4) use.

Primary energy is used to produce H₂ (and O₂) from water through appropriate water splitting processes. H₂ storage capabilities of widely ranging capacities times can be associated with either or both the transport/transmission step or distribution steps. Distribution of H₂ to consuming devices and system complete the delivery step. Now in front of us, there are two main problems, one is how to abate air, and second is what we will do at time of fossil fuel era? So we must have to investigate new energy system which help us at that time. Customarily air pollution is thought of as phenomenon characteristic only of large urban centers and industrialized region, where in concentration offer reach values several orders of magnitudes greater than ambient background levels. The genesis of air pollution is an emission source. Major emission source are vehicles, electric power generation station, refuse burning and industry process pollutants are detected by human being, animals, plants etc. But the pollution is increasing day to day too highly so it cant be control or detected fully by themselves.

In last two years, 20 billion tones of fossil fuel have been consumed, produced 40 billion tones of dioxides, ash in atmosphere and also polluted water as well as land also and due to that we suffered from greenhouse effect and some times acid rain also. Second thing that the world will use the fossil fuel within century which has taken millions of years to produce. The world natural gas and petroleum products is expected to start decreasing in 10 to 15 years time.

Up to now, human society used wood, coal, petroleum and natural gas as energy sources, because they were readily available and relatively convenient to use. Now with the end of the fossil fuel, time causes to design and build an ideal energy system, new energy infrastructure. Now the problem is not one of finding primary energy source, but new infrastructure, forming the link between the unconventional energy sources and energy user. Such system must satisfy the following condition.

- 1) It must be renewable and non-polluting and compatible with any all of primary energy sources.
- 2) It must be storable and transformable.
- 3) It must be have good combustion characteristic and be convertible to other forms of energy needed by the user, such as mechanical, electrical, and thermal with high efficiencies.

The system which satisfy all these prerequisites is the "Hydrogen energy system". The fact is that it is renewable and compatible with all primary energy sources make it permanent energy system.

The H₂ energy system is capable of providing abundant clean energy forever for the human society to achieve higher qualities of life. It is the only system where energy and environment are not advisories from investigators have proved that H₂ is long term fuel, H₂ can produce from water which is abundant in nature, and also 19.8 lb. H₂ has same energy as 57.2 lb. Gasoline. means at list three times more in energy that 19.8 lb. H₂ we collect from 29.7 lb. Of water. The sources of the H₂ combination of H₂ does not produces CO₂ so there is no problem of pollution, but we have highly one profit that we get clean water, H₂ has certain excellent properties which are as shown below:-

- 1) H₂ is the lightest known element.
- 2) The heat of combustion is two to three times higher than that of other fuels.
- 3) It burns over wide rang of gas mixtures.
- 4) Because water vapor is the by-product of H₂ combustion, the combustion process emits no carbon monoxide or carbon dioxide as by-product.
- 5) H₂ is the part of nonpolluting sustainable energy cycle.

Now as conclusion, we know that air pollution is increases day by day due to fossil fuel also fossil fuel is going to be empty within some years, at that time we must investigate new system which is H₂ system as abundant and pollution free energy. Uptill now , we can prove that H₂ is superior, as any new technology will come regarding H₂ system and it prove the superiority of H₂ system then after, world will never wary about fuel era.