FAQ's

What is hydropower and discuss the main characteristics of the same?

Hydropower or **water power** ispower derived from the energy of falling water or fast running water, which may be harnessed for useful purposes. Since ancient times, hydropower from many kinds of watermills has been used as a renewable energy source for irrigation.
Since the early 20th century, the term has been used almost exclusively in conjunction with the modern development of hydroelectric power. International institutions such as the World Bank view hydropower as a means for economic development without adding substantial amounts of carbon to the atmosphere, but dams can have significant negative social and environmental impacts.

Hydropower is used primarily to generate electricity. Broad categories include:

- Conventional hydroelectric, referring to hydroelectric dams.
- Run-of-the-river hydroelectricity, which captures the kinetic energy in rivers or streams, without a large reservoir and sometimes without the use of dams.
- Small hydro projects are 10 megawatts or less and often have no artificial reservoirs.
- Micro hydro projects provide a few kilowatts to a few hundred kilowatts to isolated homes, villages, or small industries.
- Conduit hydroelectricity projects utilize water which has already been diverted for use elsewhere; in a municipal water system, for example.
- Pumped-storage hydroelectricity stores water pumped uphill into reservoirs during periods of low demand to be released for generation when demand is high or system generation is low.

What are the disadvantages of using non-renewable forms of energy?

Disadvantages of Non-Renewable Energy

It indicates that once sources of non-renewable energies are gone they can't be replaced or revitalized.

The mining of non-renewable energy and the by-products they leave behind causes damage to the environment. There is little doubt that fossil fuels contribute to global warming. When fossil fuels are burned, nitrous oxides causes' photochemical pollution, sulphur dioxide creates acid rain, and greenhouse gases are emitted.

A major disadvantage of non-renewable energy is the challenge of breaking humans of their habit of leaning on it. The Union of Concerned Scientists reports it's an uphill battle to sway consumers that the so-called "public goods" of renewable energy, such as reducing pollution for everyone, may not be enough to convince them to pay more for cleaner energy.

What are the disadvantages of hydrogen energy?

List of Disadvantages of Hydrogen Fuel Cells

1. It is expensive.

While widely available, hydrogen is expensive. A good reason for this is that it takes a lot of time to separate the element from others. If the process were really simple, then a lot would have been doing it with relative ease, but it's not.

Although, hydrogen cells are now being used to power hybrid cars, it's still not a feasible source of fuel for everyone. Until technology is developed that can make

the whole process a lot more simpler, then hydrogen energy will continue to be an expensive option.

2. **It is difficult to store.**

   Hydrogen is very hard to move around. When speaking about oil, that element can be sent though pipelines. When discussing coal, that can be easily carried off on the back of trucks. When talking about hydrogen, just moving even small amounts is a very expensive matter. For that reason alone, the transport and storage of such a substance is deemed impractical.

3. **It is not easy to replace existing infrastructure.**

   Gasoline is still being widely used to this day. And as of the moment, there just isn't any infrastructure that can support hydrogen as fuel. This is why it becomes highly expensive to just think about replacing gasoline. Also, cars need to be refitted in order to accommodate hydrogen as fuel.

4. **It is highly flammable.**

   Since it is a very powerful source of fuel, hydrogen can be very flammable. In fact, it is on the news frequently for its many number of risks. Hydrogen gas burns in air at very wide concentrations – between 4 and 75 percent.

5. **It is dependent on fossil fuels.**

   Although hydrogen energy is renewable and has minimal environmental impact, other non-renewable sources such as coal, oil and natural gas are needed to separate it from oxygen. While the point of switching to hydrogen is to get rid of using fossil fuels, they are still needed to produce hydrogen fuel.

Define the following: a) Desertification
b) Land Degradation

a) **Desertification** is a type of land degradation in which a relatively dry land region becomes increasingly arid, typically losing its bodies of water as well as vegetation and wildlife. It is caused by a variety of factors, such as climate change and human activities. Desertification is a significant global ecological and environmental problem.Desertification has been neatly defined in the text of the United Nations Convention to Combat Desertification (UNCCD) as "land degradation in arid, semi-arid and dry sub-humid regions resulting from various factors, including climatic variations and human activities.

b) **Land degradation** is a process in which the value of the biophysical environment is affected by a combination of human-induced processes acting upon the land. It is viewed as any change or disturbance to the land perceived to be deleterious or undesirable.Natural hazards are excluded as a cause; however human activities can indirectly affect phenomena such as floods and bush fires.

This is considered to be an important topic of the 21st century due to the implications land degradation has upon agronomic productivity, the environment, and its effects on food security.