

Name #

Syed Daniyal Shah

ID #

"15863"

Course Title #

Power Generation

Module #

"2nd"

Q No 1 :-> Pakistan uses different types of energy sources to overcome the energy crisis. Briefly explain these sources and also explain either they are able to meet the demand of consumers?

Ans

No 1 :->

Developing countries like Pakistan need a continuous supply of clean and cheap energy. It is a very common fear in today's world that the fossil fuels will be depleted soon and the cost of energy is increasing day-by-day. Renewable energy sources and technologies have the potential to provide solutions to long-standing energy problems faced by developing countries. Currently, Pakistan is experiencing a critical energy crisis and renewable energy resources such as solar energy, wind energy, and biomass energy combined with fuel cell technology can be

used to overcome the energy, ~~and biomass~~ shortage in Pakistan. Biomass is a promising renewable energy source and is gaining more interest because it produces a similar type of fuel like crude oil and natural gas. Energy from biomass only depends

upon the availability of raw materials therefore, biomass can play an important role to fulfill the energy requirements of the modern age. The use of energy has increased greatly since the last century and almost all human activities have become more dependent on energy. Biomass, being a potential and indigenous candidate, could be a good solution to meet the energy needs of Pakistan. In this review paper, the detailed current energy requirement and solutions from ~~and~~ available energy in Pakistan are explored with a special focus

on the major province of Punjab
and the advantages of biomass
of energy for purposes.

Q No 2 :-> The energy sources is categorized in Conventional and non-Conventional sources. Which type of sources is mostly utilized in Pakistan.

No 2
Ans:->

The energy obtained from non-conventional source is known as non conventional energy.

These sources of energy are not abundant, present in limited quantity.

For example :->

Coal, Petroleum, natural gas. These sources of energy are abundant in nature.

And another example here :->

Solar energy, wind energy, tidal energy, biomass and biogas from etc.

And so the Pakistan mostly utilized oil and gas are by far dominating source with a share of 80% oil is importantly from the Middle East mainly

Saudi Arabia, gas from Iran. In addition,

Pakistan is consuming Liquefied Natural Gas (LNG) Liquefied

Petroleum Gas (LPG) and Coal.

Q No

3 :-> Hydro Power and Solar power is widely used in Pakistan. Which energy source you will prefer write proper arguments either you prefer Hydro Power or Solar Power.

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Ans

No 3 :->

Pakistan despite the enormous potential of its energy resources, remains energy-deficient and has to rely heavily on imports to satisfy its needs. Moreover, a very large part of the rural area does not have the electrification facilities, because they are either too remote and/or too expensive to connect to the national grid. Pakistan obtains its energy sources in energy-supply mix remained during last few years as oil : 43.5% gas : 41.5% LPG : 0.3% coal : 4.5% hydro-electricity : 9.2% and nuclear electricity

1.1%. The electric-power generation included 71.9% thermal, 25.2% hydro and 2.9% nuclear. While there is no prospect for Pakistan to reach self-sufficiency in hydrocarbons, a good option is the exploitation and utilization of the huge coal-reserves of that and the other renewable energy sources. Pakistan has wide spectrum of high potential renewable energy sources, conventional as well as non-conventional, which have not been adequately explored, exploited and developed. Thus, the primary energy supplies today are not enough to meet even the present demand. So Pakistan like other developing countries of the region, is facing a serious challenge of energy deficit. The development of the renewable energy sources can play an important role in meeting this challenge. Present observations,

based on reviewing the geological setup, geographical position, climatological cycles and the agricultural / industrial / urbanization activities reveal that there are bright prospects for the exploitation of various renewable - energy sources which include mega & micro / macro - hydel biomass, biogas, wind, solar, co-generation, city and other solid wastes, utilization of low-head canal levels, sea wave & tide and geothermal energies etc. Technologically, all these renewable - energy sources are viable and consequently suited to efforts for poverty alleviation and cleaner environment in Pakistan. The country can be benefited by harnessing these options of energy generation

As substitute energy in areas where sources will also improve rural life, thereby reducing the urban migration that is taxing the ability of cities to cope with their own environment problems.