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**Home-Assignment-1**

1. My hometown is Ballia in Uttar Pradesh.
2. The major non-renewable source of energy in Ballia is coal. Coal is used to produce electricity in thermal power plants and it is then supplied to various parts of the district. The nearest thermal power stations are Anpara thermal power station and Obra thermal power station, both of which are located in Sonbhadra. For references we can visit the official website of Uttar Pradesh Rajya Vidyut Utpadan Nigam which I have attached below.

<https://uprvunl.org/uprvunl/en/page/introduction> .

The major disadvantage of coal is its negative impact on the environment. Coal-burning energy plants are a major source of air pollution and greenhouse gas emissions. In addition to carbon monoxide and heavy metals like mercury, the use of coal releases sulphur dioxide, a harmful substance linked to acid rain.

1. There is not much use of renewable sources of energy in Ballia. But in recent times the use of solar energy has increased. People have installed solar panels on their roof-tops. There are some hospitals which are powered by solar energy. But still most people depend upon the conventional sources of energy.

The major benefits of using solar energy are: it is completely clean, it produces no air pollution, no water pollution, and no greenhouse gas effects. It is also carbon-free, no harmful emissions are released when electricity is being produced by solar panels. It also reduces the need for finite resources.

1. Solar energy is used as a clean source of energy in Ballia. Apart from that biomass is also used as a clean source of energy especially in rural households. It is used for cooking as well as for heating.

The major benefits of using biomass as a clean source of energy are: it is available locally and to some extent abundantly, it is a relatively clean fuel as compared to fossil fuels and in a way it cleans the environment by trapping carbon dioxide.

1. The alternative source of energy I would recommend in place of using coal is using water energy. Water energy is a renewable and clean source of energy and does not affect the environment in any negative way.

The river Ganga flows through Ballia. Every year we face situations such as floods in areas which are near the river. We can control this as well as harness this energy by constructing dams at suitable locations. The water from the river can be used to produce electricity. It is a feasible solution since the river flows through our city, its water is readily available for use. Using water energy is beneficial for the environment as well, as it will reduce our dependency over fossil fuels.

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5+1+7+7 = 20 -> 2+0 = 2 -> Transport Sector.

1. Oil is mostly used in the transport sector with freight being the largest user (18%), followed by equal shares of public and personal transport (9%) and finally air travel which represents 3% of total oil used in India. The transport sector represents the largest user of oil with a share of 43% of total oil consumption. Diesel and motor gasoline represented 90% of final energy consumed in the transport sector, while jet kerosene represented 8% and electricity 2%. Diesel is the most used form of energy, with a share of 66%, and motor gasoline representing 24%. In the transport sector, the rapid growth in personal vehicle sales indicates strong energy growth in that area. In addition, oil consumption used for freight transport will continue to outpace passenger transport. In recent years natural gas has also been used in transport sector.
2. The benefits of using oil as an energy source in transport sector are:
3. The maintenance cost of vehicles using oil is low.
4. The tax collected by government on oil helps in increasing the revenue of the government and boosting the economy of the country.

The harmful effects of oil as an energy source in transport sector are:

1. The combustion of fuels release toxic gases such as sulphur dioxide and nitrogen oxides which cause air pollution.
2. These gases are also responsible for acid rain.
3. During extraction of oil, methane is released which contributes to greenhouse effect.
4. Oil spills during extraction contaminates groundwater causing water pollution.
5. It can also cause the loss of biodiversity as well as the destruction of the ecosystem.
6. The major alternative clean energy source which should be used in the transport sector is electric power. The number of electric powered vehicles in India is increasing steadily.  Electric vehicles (EVs) are steadily gaining popularity across Indian cities and offer several benefits: improving air pollution and reducing oil import costs. Moreover, renewable energy and electric vehicles are also large scale employment generators of the future – potentially creating 13.8 million clean jobs by 2030. The Indian Government, led by NITI Aayog, has proactively developed strong policy initiatives since 2018 to encourage the development of the EV ecosystem in India.

Here are some steps that can be taken to increase the use of electric vehicles in India:

1. **Making it easier for EV charging providers to procure renewable energy.**
2. **Encourage inter-state trading and transmission of renewable energy especially for powering EVs.**
3. **Provide power banking facility for energy operators.**

Transitioning to electric vehicles in India is a major opportunity for boosting the economy, facilitating job growth, improving air quality, and reducing carbon emissions.

List of references:

1. The data about sources of energy has been taken from the official website of Uttar Pradesh Rajya Vidyut Utpadan Nigam.
2. The data about usage of oil in transport sector has been taken from the energy statistics of the Government of India.