A PROJECT ON

STUDY OF ENERGY CONSUMPTION PATTERNS IN THE

NEIGHBOURHOOD.



TRINITY INTERNATIONAL COLLEGE

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XI , Science

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**CERTIFICATION**

**This is to certify that the project entiltled “Study of energy consumption patterns in the**

**neighbourhooh.” Submitted by Sarbocha Pandey of class 11 in partial fulfillment for the**

**project in ‘PHYSICS’ is an authentic work carried out by me under Jivan Pant and**

**Kishor Malla supervision and guidance.**

**............................................**

**(Signature)**

**DECLARATION**

**I Sarbocha Pandey student of Trinity International College is doing Physics project entitled ‘study of energy consumption patterns in the neighbourhood’ being submitted to Jivan pant and Kishor Malla is an original work done by me.**

**............................................**

**(Signature)**

ACKNOWLEDGEMENT

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**Objective**

STUDY THE ENERGY CONSUMPTION PATTERNS IN THE NEIGHBOURHOOD.

**INTRODUCTION**

ENERGY

Scientists define energy as the ability to do work. Modern civilization is possible because people have learned how to change energy from one form to another and then use it to do work. People use energy to walk and bicycle, to move cars along roads and boats through water, to cook food on stoves, to make ice in freezers, to light our homes and offices, to manufacture products, and to send astronauts into space.

There are many different forms of energy, including:

* Heat
* Light
* Motion
* Electrical
* Chemical
* Gravitational

These froms of energy can be grouped into two general types of energy for doing work:

* Potential or stored energy
* Kinetic or working energy

Energy can be converted from one form to another. For example, the food a person eats contains chemical energy, and a person's body stores this energy until he or she uses it as kinetic energy during work or play. The stored chemical energy in coal or natural gas and the kinetic energy of water flowing in rivers can be converted to electrical energy, which in turn can be converted to light and heat.

**Theory**

**TYPES OF ENERGY**

**Thermal (Heat) Energy**

Thermal energy is created from the vibration of atoms and molecules within substances. The faster they move, the more energy they possess and the hotter they become. Thermal energy is also called *heat* energy.

**Chemical Energy**

Chemical energy is stored in the bonds of atoms and molecules – it is the energy that holds these particles together. Stored chemical energy is found in food, biomass, petroleum, and natural gas.

**Nuclear Energy**

Nuclear energy is stored in the nucleus of atoms. This energy is released when the nuclei are combined (fusion) or split apart (fission). Nuclear power plants split the nuclei of uranium atoms to produce electricity.

**Electrical Energy**

Electrical energy is the movement of electrons (the tiny particles that makeup atoms, along with protons and neutrons). Electrons that move through a wire are called electricity. Lightning is another example of electrical energy.

**Radiant Energy**

Also known as light energy or electromagnetic energy, radiant energy is a type of kinetic energy that travels in waves. Examples include the energy from the sun, x-rays, and radio waves.

**Light Energy**

Light energy is a form of electromagnetic radiation. Light consists of photons, which are produced when an object's atoms heat up. Light travels in waves and is the only form of energy visible to the human eye.

**Motion Energy**

Motion energy – or mechanical energy – is the energy stored in objects; as objects move faster, more energy is stored. Examples of motion energy include wind, a flowing river, a moving car, or a person running.

**Sound Energy**

Sound energy is the movement of energy through substances. It moves in waves and is produced when a force makes an object or substance vibrate. There is usually much less energy in sound than in other forms of energy.

**Elastic Energy**

Elastic energy is a form of potential energy that is stored in an elastic object - such as a coiled spring or a stretched elastic band. Elastic objects store elastic energy when a force causes them to be stretched or squashed.

**Gravitational Energy**

Gravitational energy is a form of potential energy. It is an energy associated with gravity or gravitational force – in other words, the energy held by an object when it is in a high position compared to a lower position.

**Observation**

Nepal's total energy consumption in 2010 was about 428 PJ (10,220 ktoe). New renewable energy sources (excluding large hydropower) such as biogas, micro-hydro and solar energy contributed about 0.7% to the national balance in 2008/09 altogether. Although the share is still small, it has increased by 40 % since 2005.

The use of primary energy sources is distributed as follows:

|  |  |
| --- | --- |
| Biomass | 85 % |
| Petroleum products | 9 % |
| Coal | 3 % |
| Hydro Electricity | 2 % |
| Renewables | 1 % |

Between 2001 and 2009, the total energy consumption was growing at a rate of 2.4 % per year on average. Although there is a considerable lack of efficiency in energy use, Nepal accounts for relatively low CO2 emissions compared to other countries in the region. The reason is the high proportion of renewable energy sources (biomass and hydropower) in primary energy consumption. 43.6 % (2009) of Nepalese population has access to electricity; 81.0 % (2012) depend on traditional fuels (wholly or partially).

Energy consumption in economic sectors (2010)

|  |  |
| --- | --- |
| Residential | 87% |
| Transport | 6% |
| Industry | 5% |
| Commercial (services) | 1% |
| Agriculture | 1% |

**Conclusion**

This project shows the brief study of energy consumption patterns in the neighbourhood. The proje-

ct is done on the basis of general description of the topic and collection of the data from different sources.