**"TO STUDY THE ENERGY CONSUMPTION PATTERN IN NEPAL"**

**A PROJECT WORK SUBMITTED FOR THE PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE GRADE 11 SCIENCE IN PHYSICS**

**By**

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**CERTIFICATE OF APPROVAL**

The project work entitled "STUDY OF ENERGY CONSUMPTION PATTERN IN NEPAL" by Mr. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ under the supervision of Mr. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Of\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , Nepal, is hereby submitted for the partial fulfillment of requirement of Physics in Grade 11. This project work has not been submitted in any other school or institution previously for the award of Grade 11.

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**DECLARATION**

I, ­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ hereby declare that the project work entitled, "STUDY OF ENERGY CONSUMPTION PATTERN IN NEPAL" under the supervision of Mr. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Of\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , Nepal, presented herein is genuine work done originally by me and has not been published or submitted elsewhere for the requirement of any degree program. Any literature, data or works done by others and cited in this project work has been given due acknowledgement and listed in the reference section.

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1. **Introduction To Energy:-**

Nepal has no known major oil, gas, or coal reserves, and its position in the Himalayas makes it hard to reach remote and extremely remote communities. Consequently, most Nepali citizens have historically met their energy needs with biomass, human labor, imported kerosene, and/or traditional water-powered vertical axis mills, yet per capita energy consumption is thus “startlingly low” at one-third the average for Asia as a whole and less than one-fifth the worldwide average. In 2010, Nepal’s electrification rate was only 53 percent (leaving 12.5 million people without electricity) and 76 percent depended on fuelwood for cooking (meaning 20.22 million people placed stress on Nepali forests for their fuel needs). This situation has led some experts to call the country’s energy portfolio “medieval” in the fuels it uses and “precarious” in the load shedding that occurs throughout Kathmandu, due to an imbalance between electricity supply and demand. Nepal, however, has all it needs to escape these problems. Large markets for improved cookstoves, biogas digesters, and solar lanterns exist throughout the country. Independent scientific studies have calculated that the country could meet all if its own energy needs—indeed, even the potential needs of Nepal plus many of its neighbors—if it tapped its solar resources or its hydroelectric resources (and potentially its wind resources). These efforts could be complemented with attempts to strengthen energy efficiency planning, with significant potential for transmission upgrades and retrofits and more efficient lighting practices.

1. **Energy Consumption in Nepal:-**

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.

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

The use of primary energy sources is distributed as follows:

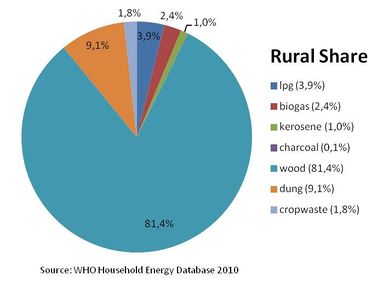
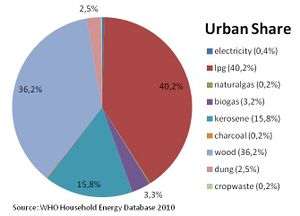
Between 2001 and 2009, the total energy consumption was growing at a rate of 2.4 % per year on average. Although there is a considerable lack of efficiency in energy use, Nepal accounts for relatively low CO2 emissions compared to other countries in the region. The reason is the high proportion of renewable 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% |

1. **Energy Consumption on Household Level:-**

Percentage of energy types used for cooking in rural and urbanareas

[](https://energypedia.info/wiki/File:Nepal_Rural_Share.jpg)[](https://energypedia.info/wiki/File:Nepal_Urban_Share.jpg)

82% of population use solid fuels (charcoal, coal, cropwaste, dung and wood) as cooking energy. In rural areas this percentage goes up to 90%, whereas only 33% of the urban dwellers use solid fuels for cooking. 

There are several activities ongoing to improve the cooking situation in Nepal.

**Impact of Solid Fuel on Health**

Total annual deaths attributable to solid fuel use: 7500 persons;

Percentage of national burden of diseases attributable to solid fuel use: 2,7%.

According to the Global Alliance for Clean Cookstoves, 85 % of the Nepali population use solid fuels for cooking (mostly wood).

1. **Energy Efficiency in Nepal:-**

With about 1 TOE for every $1,000 of GDP, Nepal has the poorest energy intensity among all South Asian countries (IEA, 2012). It thus has very large energy efficiency potential, though the United Nations warns that “energy efficiency efforts in the country are still at its infancy.” The NEA currently pursues a “loss reduction” strategy of rehabilitating 27 feeders and distribution lines, and plans for solar-powered street lamps and replacing incandescent light bulbs with compact fluorescent ones have been discussed, but not fully implemented. Nepal thus has a number of barriers to energy efficiency that it must overcome, including “absence of a legal framework,” “low levels of public awareness,” and “lack of capable human resources.” In this regard, Nepal is in the process of formulating an Energy Efficiency Strategy and establishing an agency to institutionalize energy efficiency.

1. **Conclusion:-**

From this study, we get to know about the energy consumption pattern of Nepal at various levels. From the status of energy consumption pattern of Nepal, we can identify that Nepal is heavily dependent upon non-renewable energy sources of energy which is not good. Thus, Nepal should look forward for the use of alternative sources of energy. This is the main conclusion of this study.

1. **Acknowledgement:-**

I would like to express my special thanks of gratitude to my teacher Mr. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as well as our principal Mr. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ who gave us the golden opportunity to do this wonderful project on the topic “STUDY OF ENERGY CONSUMPTION PATTERN IN NEPAL”, which also helped me in doing a lot of research and I came to know about so many new things I am really thankful to them.

Secondly, I would like to thank my parents and friends who helped me a lot in finalizing this project within the limited time frame.

1. **References:-**

* [www.wikipedia.com](http://www.wikipedia.com)
* [www.energypedia.info](http://www.energypedia.info)