



Switching to Clean Energy: A Milestone for Energy Security and Economic Advantage for Nepal

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Research Highlights

Nepal faced frequently repeated energy blockades by India. In past, India imposed four times economic blockades over Nepal. Nepal's petroleum import is totally relied over India due to its landlockness. India's frequent blockades shows Nepal is highly energy insecure country. On the other hand, Nepal's trade deficit specially with India has been skyrocketing. The increasing graph of petroleum import shows Nepal's increasing economic burden on petroleum imports (Ranjit, 2017). Exponential growth in use of fossil fuel and associated impacts compelled to search for alternative energy sources. Nepal is rich enough country for renewable energy sources. This paper attempts how the shift to clean energy from fossil fuel energy would contribute for energy security and economic advantages for Nepal. It is an endeavor to scrutinize and understand the green energy potentiality of the country. Findings of the study conclude that, renewable energy utilization contributes for reducing energy insecurity and economic burden.

Research Objectives

The board objective of the study is to assess the substitution of fossil fuel by utilizing huge domestic green energy resources and to make the economy self-dependent in energy. The specific objectives are to:

1. Make a study of the framework under which the urgency of policy and planning for the green energy shift.
2. Address the problem of terrifying economic burden and energy insecurity that the country has been facing from over dependency on imported fossil fuel.

Since, Nepal has no its own source, it is heavily relied on imported fossil fuel. Petroleum imports include petrol, diesel, kerosene, aviation fuel and Liquefied Petroleum Gas. Imported fuels mainly used in public and private transportation. Due to increase in public and private vehicles, fuel import is skyrocketing nowadays (Rijal, 2018). Increasing import of petroleum products has been creating a huge trade deficit which has been a big tension of economic burden for the country. Moreover, since Nepal's energy import solely depends on India, the dependency and energy insecurity is also a major concern. The paper aims at understanding the need urgency of environment friendly domestically owned green energy sources. Also, paper targets to access the outcome to draw lessons for the further researches.





Methodology

The study largely depends on descriptive analysis. Number of micro level studies and survey had been conducted to understand the need and urgency of substitution of imported fossil fuel by domestic renewable green energy sources such as resources hydroelectricity, solar power, wind power and biogas. Different set of structured questionnaire had been prepared for personal interview with the stakeholders. Focus group discussion was conducted with academicians, experts, government officials, renewable energy engineers, and electric vehicle users and sellers. Convenient sampling had been carried out with the intention of interviewing with households, vehicle users, electric vehicle sellers and environmental activists from Kathmandu valley, Sindhupalchok, Kavreplanchok and Nuwakot for data collection. Most of the questions were designed on five points Likert Scale measurement such as Strongly Agree = 1, Agree = 2, Don't Know = 3, Disagree = 4 and Strongly Disagree = 5. Few questions were designed with the options "Yes" or "No". Secondary data have been collected from Nepal Oil Corporation (NOC), Department of Customs (DoC), Central Bureau of Statistics (CBS) and Nepal Rastra Bank (NRB). Descriptive statistical tools and judgmental analysis were used to analyze the data.

Results

In order to achieve predetermined objectives, a descriptive analysis over primary and secondary data had been employed. The result is summarized as follows:

During 2016-17, Nepal imported 407 million liters of gasoline, 1.32 billion liters of diesel, 19 million liters of kerosene, 184 million liters of aviation fuel, 36 thousand liters of furnace oil and a large amount of LPG (NOC, 2018). Current macroeconomic data of nine months reveals that import of petroleum products amounts to NPR 116.8 billion (NRB, 2018). Similarly according to NRB, current gross exports earning amounts to NPR 73.05 billion, gross import expenditure amounts to NPR 990.11 billion and trade deficit equals to NPR – 917.06 billion. The current year data shows that, the expenditure on the import of fossil fuel exceeds far over the total revenue that Nepal generates from total exports.

Nepal is heavily dependent on India for petroleum import. Due to difficult topographical structure, import from China is not feasible as from India. But, India has imposed four economic blockades by Jabaharlal Neharu, Indira Gandhi, Rajib Gandhi and Narendra Modi





led governments in 2019, 2027, 2045 and 2072 respectively (Ayer, 2018) . This shows that, people in Nepal frequently suffered from fuel crisis.

Findings

Nepal's large portion of deficit balance of trade is occupied by petroleum import. Since, Nepal has no its own source, dependency on petroleum products and excessive economic burden has been increasing every year.

India has shown its dominant behavior time and again and imposed blockades without any genuine reasons and makes fuel crisis in Nepal. Due to no confident on smooth supply of petroleum products, households and vehicle owners keep extra stock in their home.

Switching into green energy reduces Nepal's reliance over India and reduces economic burden on petroleum import and thereby leads to greater energy independence and secured.

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