

1-2-2018

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### Recommended Citation

Manimegalai, M Ph.D. and Seethalakshmi, S. Ph.D. (2018) "A Panoramic View On Rural Energy Consumption," *International Review of Business and Economics*: Vol. 1: Iss. 3, Article 23.  
Available at: <https://digitalcommons.du.edu/irbe/vol1/iss3/23>

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## 34. A PANORAMIC VIEW ON RURAL ENERGY CONSUMPTION

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### ABSTRACT

**E**nergy consumption is an index of economic development energy is essential to ensure adequate and sustained supply for energy sector of the economy. The rural energy consumption pattern is divided into agricultural operation domestic activities, living and industry. Rural energy consumption influences the standard of living of the people in rural areas. India is the largest energy consumer in the world. In India, out of 121crs of populations, 80crs of people living rural areas and affordability are vitally our country keep its pace of development.

### INTRODUCTION

The Indian economy is growing steadily and every Indian is proud of that. This is because of the most important resources required to maintain or accelerate this growth in energy. Now a days energy is the very basic needs of life, insufficiency of energy will bring economic stagnation by lowering optimum productivity. The world's population has now exceeded 6 billion people. More than half of the world's population lives in rural areas and vast majority of these, some 2.8 billion people countries. There are rural areas in developing countries. There people without access to adequate, affordable and convenient sources.

Lack of access of affordable energy is an important factor contributing to the relatively poor quality of life in rural areas of developing countries. The potential market of are the rural poor are characterized by a high demand for purposes such as lighting, cooking, space heating in the domestic sector; water lifting and transportation in agriculture; and small medium enterprises.

### ENERGY CONSUMPTION - INDIAN SCENARIO

The energy sector holds the key in accelerating the economic growth of India. But the development of Indian energy sector has seen constrained by capital, technology, environment and security issues. Future economic growth crucially depends on the long term availability of sources that are affordable, accessible and environment friendly. India ranks sixth in the world in total energy consumption, accounts for global energy consumption. India is rich in coal and renewable energy sources (solar, wind, hydro and bio-energy sources) but it has very less

hydrocarbon reserve (0.4% of world's reserve). India is a net importer of energy. More than 25% of primary energy needs is met through imports mainly in form of crude oil and natural gas. Heavy dependence on non renewable sources of energy like coal, petroleum, natural gas is to meet the demand. During the pre reform period, the commercial energy sector was totally regulated by the government. The economic reform and liberalization, in post 90's, has opened the doors for private sector participation in coal, oil, gas and electricity sector.

### PATTERN OF ENERGY CONSUMPTION IN RURAL AREAS

There are three main ways to consume energy in rural areas are follows:

1. Domestic Consumption
  - Cooking
  - Lightening
2. Industrial consumption
  - Micro small and medium enterprises
  - Big industry
3. Agricultural consumption

### SOURCES OF ENERGY IN RURAL INDIA

#### 1. Firewood

Firewood gathered from forested commons is an important source of domestic energy in rural areas of many poor counties. It has been estimated that more than 2.4 billion people rely directly on traditional biomass fuels for their cooking and heating, and in poor countries biomass use represents over half of residential energy consumption.

#### 2. Electricity

Electricity the flow of electrical power is a secondary energy source generated by the conversion of primary sources of energy like fossil, nuclear, wind or solar.

#### 3. LPG

LPG is used worldwide cooking and heating, especially in areas without connection to piped natural gas. It is a clean fuel. The largest rural energy access survey of India which was conducted last year by the council on Energy, Environment and Water (CEEW) and the Department of Political Science at Columbia University, shows that as many as 95 per cent of LPG deprived households cite their inability to pay as a barrier to their adopting LPG. Thus, the scheme is well targeted to pay as a barrier

to their adopting LPG. Thus, the scheme is well targeted to pay as a barrier to their adopting high upfront cost, which has limited the transition towards LPG use in poorer households. While the move is appreciable, other challenges that limit the use of this clean in India must be resolved simultaneously.

#### 4. Kerosene

Kerosene, a liquid, does not as a consequence burn as cleanly as gaseous fuels. It nonetheless is considerably cleaner than the biomass used in traditional stoves. One of kerosene's main advantages is that it is far easier to transport and distribute than gaseous fuels and, unlike LPG, can be purchased in any quantity. For households with cash constraints, are more expensive than wood stoves.

#### NEED FOR RURAL ENERGY POLICY

India is the most populous in the world and has extreme ecological diversity. 70 per cent of the population in India, close to 700 million, still lives in the rural areas. Meeting their energy requirements in a sustainable manner continues to be a major challenge for the country. All most 75 per cent of the total rural energy consumption is in domestic sector. For meeting their cooking energy requirements, villagers depend predominantly on biomass fuels like wood, animal dung and agricultural residues, often burnt inefficient traditional cook stoves. The main fuel for lighting in the rural households is kerosene and electricity. Irrigation is mainly thorough electrical and diesel pump sets, while the industries and the transport sectors rely primarily on animal to some extent on commercial sources of energy like diesel and electricity.

#### RURAL ENERGY PROGRAMMES

1. National Programme on improved Chulhas
2. National project on biogas development
3. Community, institutional and Night Soil based biogas Programme
4. Rural Energy entrepreneurship and institutional Development (REEID)
5. Women and Renewable Energy Development (WRED)
6. Biomass Production, conversion and utilisation Programme
7. Biomass gasification Programme
8. Animal Energy Programme
9. Integrated Rural energy Programme

#### CURRENT ENERGY PROGRAMMES

1. National biogas and manure management Programme
2. Solar thermal applications in rural areas
3. Solar Photovoltaic Programme for rural areas
4. Biomass Gasified Programme for power Generation for meeting unmet demand in electrified villages

5. Biogas based distributed power generation programme

6. Village Energy Security Programme

7. Remote village Electrified Programme

8. Fuel Wood Programme

#### RURAL ENERGY DEVELOPMENT IN INDIA

Rural Development purse has never figured in the stated Energy Policy. Rural electrification is mainly perceived in the context of energy requirements to meet the irrigation needs of agriculture as part of the overall food security policy. Therefore, rural irrigation PRIORITY was to provide assistance for transmitting energy to agricultural pump sets to increase the productivity of land. House electrification came as a secondary or incidental issue. The whole definition of rural energy in the past was to provide on connection to a village which was primarily used to electrify agricultural pump sets. The Government of India changed the definition of village electrification recently to state that a village is considered as electrified if it provides electrification recently to state that village is considered as electrified if it provides electricity/ power to all the habitations in the village. They consider the village as electrified if at least 10 to 20 percent of the inhabitants in the villages are provided with energy for lighting.

#### STRATEGIES AND TECHNOLOGIES USED IN RURAL AREAS

The Fourth Industrial Revolution heralds an exponential pace of technological change, build on the digital revolution to combine technologies, spawn new ones, and transform systems, industries, countries-even society itself. For developing countries, advances in computing power, connectivity, artificial intelligence, biotechnology and GIS, and newer, more capable technologies hold tremendous promise.

Inclusive agriculture, rural growth and structural transformation from agriculture to high-productivity manufacturing and other economic sectors can be accelerated, as technological change transforms individuals' lives and enables developing countries to progress at speeds and on scales previously inconceivable. To realize the positive outcomes of this new industrial revolution, public policymaking must bridge the already widening gap between skilled and unskilled labour. The case of India is salient because, unlike its East and Southeast Asian neighbors', rapid economic growth has not been inclusive enough to reduce the numbers of Indians living in poverty. India contains the largest number of poor people in the world (270 million) according to the World Bank.

The Government of India is confronting these challenges. As more young men are migrating

from rural poverty to urban areas to seek employment, they are contributing to a rapid feminization of agriculture. In 2016 India's Prime Minister Narendra Modi introduced a new national policy to double farmers' incomes by 2022. It targeted poverty reduction, food security reduction and climate change. It is hurting agriculture with rising temperatures, increasingly frequent floods and droughts, and a greater incidence of pests and

### CHARACTERISTICS OF ENERGY IN RURAL INDIA

- Energy can be stored
- Energy can be transferred
- Energy can be transported
- Energy can be preserved
- Energy can be transformed
- Energy can be degraded

### ENERGY AND SUSTAINABLE DEVELOPMENT

Energy economists have opined that energy consumption is an index of economic development. In overall economic development of a nation, energy is essential to ensure adequate and sustained supply for the economy. Efficient infrastructure is a pre-requisite for mobilizing economic development. Modern economists such as Schurr, Baly and Jorgen stated that energy is the fifth factor of production in addition to land, labour, capital and organization. Suggestion

- Government should take steps to introduce solar energy system in rural areas.
- Energy awareness should be created among the rural people.
- Subsidies should be given to use bio-mass and bio gas energy.

### CONCLUSION

In this modern world energy is an important source for Agriculture, Industry and Service sector. And also it will improve the standard of living of the people. Rural energy consumption in India increasing year by year. At the same time, the energy from non- renewable sources showing a declining trend. To rise the quality of life of the people in rural areas and to protect the future generation, consumption of renewable sources of energy should be increased creation of energy from solar, wind, hydro and bio-mass energy will be motivated.

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