

THE NEED OF RENEWABLE ENERGY IN INDIA

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ABSTRACT

Energy is one of the most important building blocks in human development. The demand for energy in India is growing because of population growth and a developing economy. Over half a population lacks access to modern forms of energy. The electricity share in total energy consumption is about 25 per cent. One third of power generated is lost before getting utilized. The growth rate in electricity generation is expected to be -8% in the coming two decades, which means that the installed capacity of 90GW will increase to about 300GW by 2020. It is only country in the world to have an exclusive MINISTRY OF NON- CONVENTIONAL ENERGY SOURCES (MNES), which was later as MNRE (MINISTRY OF NEW AND RENEWABLE ENERGY). An overview gives a picture that the scenario in 2016-17, when twelfth plan ends, will be quite different. The need of the hour is to improve the share of sustainable, new and clean alternative energy source while trying to fill the energy deficit. Everything is essence, is about energy. There is no doubt now that energy is fundamental for our development.

Keywords- fundamental development, growth rate, population, renewable energy, energy intensity,.

Objectives-

1. To analysis the humans are realizing need of renewable energy in India.
2. To emphasize on the use and development of renewable energy.

Data source- This paper deals with secondary data. Data are collected from Energy Statistics, Indian renewable energy development agency limited (IREDA), Ministry of new and renewable energy (MNRE).

INTRODUCTION

Energy is a part of today's modern life. Energy is one of the most important building blocks in human development. It is a basic need for economic development. Energy is an important factor for any development countries. India's energy mix comprises both non-renewable (coal, lignite, petroleum, natural gas) and renewable energy source (wind, solar, small hydro, biomass) etc. Energy is the backbone of technology and economic development. Our energy requirements have increased in the years following the industrial revolution.

In an effort to meet the demands of a developing nation, the Indian energy sector has witnessed a rapid growth. However, the intensity and growth of resources in the energy supply has failed to meet the growing demands of faster urbanization and rolling economy because of rapid increase in population rate. About half a population lacks access to modern forms of energy one third of power generated is lost before getting utilized. This rapid increase in use of energy has created problems of demand and supply. The lacks or shortage of energy has serious impacts on the economy. Hence, serious energy shortage continued to plague India, forcing it to rely heavily on imports. India is suffering from energy crisis. **“The future is green energy, sustainability, renewable energy.” – Arnold Schwarzenegger.** Renewable energy which is regarded as a clean energy option to overcome the challenges of energy demand in India. Energy economists think that energy is an index of economic development.

1. Need for renewable energy-

In the past century, energy consumption is increase day by day. It has been observed that the consumption of non-renewable source of energy has caused more environmental damage than any other human activity still 70 per cent of electric generation depends upon thermal generation. Power generated from fossil fuels as coal and crude oil has led to high concentration of harmful gases in the environment. It has turn led to many problems being today such as ozone depletion and global warming. Vehicular pollution has also been a major problem. For this reason alternative sources of energy become very important and relevant to today's world. These sources, such as the sun and the air, can never finish and so called renewable. They cause fewer emissions and are available locally. They can use, for a large extent to reduce, chemical, radioactive and thermal pollutions, they stand out as a viable source of clean and infinite energy. Most of renewable source of energy is quite non-polluting and is considered to be clean. Solar and wind energy will be major areas witness to foreign investment and acquisition in the near future. With all attractive features and potential stated above. Most of renewable source of energy is quite non- polluting and is considered to be clean.

2. ESTIMATES AND CURRENT COMMITMENT OF THE INDIAN GOVERNMENT-

In Germany, Japan, Spain and a handful of other countries in, ever government commitment to renewable and strong, effective policies to overcome obstacles and made demand industries and run down cost. Thanks to its location and geography India enjoys abundant potential to all of the renewable energies. The largest renewable capacity expansion programmer in the world is being taken up by India. The government is aiming to increase share of clean energy through massive thrust in renewable.

By November 2017, a total of 62 GW Renewable Power installed, of which 27 GW installed since May 2014 and 11.79 GW since January 2017. Historic Low Tariffs for Solar (Rs. 2.44/ unit) and Wind (Rs. 2.64/ unit) achieved through transparent bidding and facilitation. Government is on its way to achieving 175 GW target for installed Renewable Energy capacity by 2022. The geographic distribution of the estimated potential

across states reveals that Gujarat has the highest share of about 14%(12,489MW), followed by Karnataka with 12%(11, 071MW) and Maharashtra with 11%(9,596MW)mainly on account of wind power potential. Table-1 shows the states wise estimated potential of renewable power in India as on November 2017. India has a vast supply of renewable energy sources. The ministries responsibilities are:

1. Formulating policies and programmes for the development of new and renewable source of energy.
2. Coordinating and intensifying research and activities in new and renewable sources of energy.
3. Ensuring implementing of government's policies in regard to all matters concerning new and renewable sources of energy. Table-2 shows the potential and achievements of renewable energy in India as per the IREDA.

3. INDIAN RENEWABLE ENERGY MARKET-

Increase in the production of renewable energy need an active participation of business and financial institutions supported by enough support and a enabling from the government. Increase the chances of emerging market in India is bound to provide a strong incentive for the development of clean and renewable energy field. Many facts and factors have made the Indian renewable energy market exciting for entrepreneurs and investors.

Table 1: Source wise and State wise Estimated Potential of Renewable Power in India As on 31.03.2017

States/ UTs	Wind Power @ 100 m	Small hydro power	Biomass power	Cogeneration biogases	Waste to energy	Solar energy	Estimated Reserves	Distribution (%)
Andhra Pradesh	44229	409	738	250	123	3840	49590	4.95
Arunachal Pradesh		2065	9			8650	10724	1.07
Assam		202	279		8	13760	14249	1.42
Bihar		527	646	200	73	11200	12646	1.26
Chhattisgarh	77	1098	246	10	24	18270	19715	1.97
Goa	1	5	26			88	120	0.01
Gujarat	84431	202	1226	50	112	35770	121791	12.17
Haryana		107	1375	100	24	4560	6167	0.62
Himachal Pradesh		3460	142		2	33840	37444	3.74
Jammu&kashmir		1707	43			11105	112800	11.27

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						0		
Jharkhand		228	107		10	18180	18525	1.85
Karnataka	55857	3726	1222	1400		24700	86906	8.68
Kerala	1700	647	864		36	6110	9358	0.93
Madhya Pradesh	10484	820	1386		78	61660	74429	7.43
Maharashtra	45394	786	1970	2200	287	64	50701	5.06
Manipur		100	15		2	10630	10747	1.07
Meghalaya		230	11		2	5860	6103	0.61
Mizoram		169	1		2	9090	9262	0.93
Nagaland		182	10			7290	7482	0.75
Odessa	3093	286	433		22	25780	29614	2.96
Punjab		578	3178	160	45	2810	6771	0.68
						14231		
Rajasthan	18770	52	1122	10	62	0	162326	16.21
Sikkim		267	2			4940	5209	0.52
Tamil Nadu	33800	604	1164	700	151	17670	54089	5.4
Telangana	4244	102		100	2	20410	24858	2.48
Tripura		47	3		176	2080	2306	0.23
Utter Pradesh		461	1765	2000	5	22830	27061	2.7
Uttarakhand		1664	88	80	148	16800	18781	1.88
West Bengal	2	392	529			6260	7183	0.72
Andaman & Nicobar	8	7			6		21	0
Chandigarh							0	0
Dadar & Nagar Haveli								0
Daman & Diu					131		131	0.01
Delhi						2050	2050	0.2
Lakshadweep	8				3		11	0
Pondicherry	153				1022		1175	0.12
Others*						790	790	0.08
All India Total	302251	21134	18601	7260	2554	64934	1001132	100
Distribution (%)	30.19	2	1.86	0.73	0.26	64.86	100	
* Industrial waste								
Source: Ministry of New and Renewable Energy								

Table -2 Potential and Achievements of Renewable Energy in India

Sector	approx. potential (MW)	Potential Harnessed (MW)	% Achieved
Wind	45,195	12,010	26%
Small hydro	15	2,767	18%
Biogases cogeneration	5,000	1,411	28%
Biomass	16,881	901	5%
Waste to energy	2,700	72	2.60%
Solar power	4-7kwh/sq.m/day	6	
Biomass/ cogen (non biogases, Gasifier, energy recovery from waste ect.		417	
Total	84,776	17,591	21%

Source: IREDA

Some of the important facts are:

1. 100% foreign direct investment is allowed in renewable energy sector.
2. The country is emerging as one of the largest potential sources of Certificates Emission Reduction (CER) and Renewable Energy Certificates (REC).
3. India is attracting more than USD 3 billion in investment in the renewable sector every year.
4. The utilization of renewable energy sources is still relevantly low in India.
5. The overall demand – supply gap in the energy sector is expanding due to increase in population standard of living. The demand – supply gap in power is currently at 10.3% and is one of the key driver's sources of renewable energy.

4. STRENGTH OF RENEWABLE ENERGY IN INDIA-

India is blessed with plenty of sunlight, water and biomass. The fact is that by reducing the traditional source of power generation, the situation has worsened, which provides a future in which predicts an energy crisis. In such context, India in recent times has started emphasizing power generation from renewable sources. The advantages of renewable energy over conventional sources of energy are many to be noted. Following are some of the strengths of renewable energy sector in India:

1. Conducive policy and regulatory framework at central level
2. Good resource potential
3. Growing technology maturity in certain sectors such as grid connected wind power
4. Ability of renewable energy technology to offer off- grid decentralized energy solutions.

5. WEAKNESSES OF RENEWABLE ENERGY IN INDIA-

India has face many difficult problems in climate change pattern, sea level rise, natural disaster and glacier melting today. A market shift to renewable energy could reduce these problems to a large extent. But first of all, it is necessary to remove the weaknesses in the renewable energy sector in India. There are some weaknesses in renewable energy sector which require the attention of government and policy makers:

1. Absence of favorable policy and regulatory framework in some states
2. High cost of some technologies
3. Lack of implementation infrastructure
4. A general lack of awareness about end users
5. Lack of availability of adequate skilled technical manpower

6. FUTURE SCHEME-

India is one of the world's largest, population and fastest growing economies. There is a very high demand for energy. This would mean that the country should switch from non- renewable to renewable energy. India is determined to become one of the world's leading clean energy producers. Government of India has already created many provisions, and installation of the many agencies that will help to achieve your goal. Therefore, opportunities and needs for renewable energy could increase manifold According to the Ministry Of New and Renewable Energy (MNRE), the following incentive can be made for the future of renewable energy in India:

1. To promote the concept of small power plants both for the solar and biomass and to develop financial support structure
2. Developing new financial instruments including Risk Guarantee fund
3. Capacity building and awareness generation in green buildings and campuses
4. Forward to comply with the renewable energy purchase obligations with regulatory authorities and states
5. Large scale deployment and movement towards indigenization as already included in the solar mission

CONCLUSION

India is recognized as just a developing nation, it is developing nations really fast as compared to other countries. Energy is important input to run and improve the life cycle. Energy is necessary to ensure decent and continuous supply energy for every area of economy. The use of energy has also increased much the employments of various people. Therefore the need of the hour is to improve the share of sustainable, new and clean alternative energy sources while trying to fill the energy deficit. It is necessary to build up renewable power to its highest potential regardless of whether renewable power totally replaces non- renewable power. India is suffering from energy crisis. Everything in essence, is about energy. There is no doubt now that energy is fundamental for our development.

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