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SOLAR ENERGY : SHIFT TO GREEN ENERGY

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ABSTRACT

"We are like tenant farmers chopping down the fence around our house for fuel when we should be using Nature's inexhaustible sources of energy – Sun, Wind and Tide."

Power or electricity is the most needed thing to be used by the every human being and the power generation is the first step to be able to subsequently use it. Power generation in india is being done through the fossil fuel's like coal,petroleum and natural gas. Fossil fuels are diminishing on a higher scale each and every single day and even the use of fossil fuels are creating the very bad impact on the environment.

Providing energy security and energy independence to billion plus population is also on the government agenda. It has been established that to meet power demand, India needs to have a basket of energy resources. Solar energy that is abundantly available across the country could be logical choice. Solar Photovoltaic technology which has the inherent advantages of being modular and solid state, is one of the best technological options for distributed generation close to the point of consumption. Roof mounted solar PV systems can play an important role in augmenting the power generation capacity.

Solar energy including thermal and PV is second largest renewable energy source after wind energy. The price of power generated from solar plants installed today is at par with or lower than the commercial tariff for consumers. The cost of solar power is on the decline trend while the cost of fossil fuel based electricity is increasing day by day.

It is further important from country perspective to avoid any wastage of grid power by usage of inverter and battery set, simultaneously creating additional generation capacity at a point of consumption.

INTRODUCTION

"Green energy is a phenomenon to be able to generate the power with the nature's inexhaustible sources of energy i.e sun, wind, tide. As far as electricity is concerned the current scenario of the country depends upon the fossil fuel's electricity generation which is gradually being shifted towards the solar power generation"

The usage of such a generation of power shall have a positive impact on overall environ of things. Notwithstanding of using the current means of power generation, the inexhaustible sources would empower the world beautifully and with lowest cost as a whole.

LITERATURE REVIEW

Ryan Hirokane, Diana Canfield , 2011 : - We all should think about when we turn on the TV that we are harming the environment or burning a hole through your pocket.(Solar Power Facts) Well stop wasting your money, there are many new different ways these days to help you keep your money and the environment safe. Some of the environmental friendly energy sources are: wind turbines, solar panels, water wheels, and many others. When you get a solar panel you don't have to use it for the whole house you can use it to power just heating installation, phone charger, or portable camping gear. We all should use solar power to make it clean and pollution free the generations to come. **(Solar Power Facts)**

Many people are using solar power these day. Many of these uses are for every day thing such as charging your I-pod, laptop, and cell phone because many of those manufactures have come out with many solar power chargers. There are many different varieties in which you can use solar such as holiday lights, fountains, and floodlights are just some of the many things that can be powered by solar energy. You may be using solar power but you don't even know it. In many cities today they use at bus stops they place the solar panels on top of the roof it is collecting solar energy. Many states have adopted a government program that was introduced to



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the united states in 1997 called the Million solar Roof initiative this program was set up to have more solar in the United states. (Sobha, Geeta. Pg18-20)

What is solar energy? Solar energy or solar power is just energy from the sun. The sun can be used to do many things including: warming a house, burning ants, heating a pool, providing light, and many other things as well. “But specifically, how does the sun’s energy aid us and what exactly are we feeling when we stand out in the sun during the summertime? Well we actually are not feeling anything but the sun aids us by using the energy it has absorbed from the earth and convert light energy into chemical energy. Converting light energy into chemical energy, helps to provide fossil fuels, wood and even food (Craddock, David).”

In order to figure out how much solar power you use you need to survey you household. You can use these steps to see whether solar power will help you. First you can analyze the cost of your energy in one month. Then you compare your cost of energy with a neighbor or another house. Then you look to see how much energy you use. Also performing energy audits in your house. Then last you find ways (by either reading a book or the internet) to reduce your energy. (DeGunther, Rik. Pg 25).

Solar energy is used in many countries but some of the main countries are the United States, Germany, and Japan. Solar pannels will usually pay for themselves in five to ten years. (Solar Power Energy Information)

A Closer Look at Fossil and Renewable Energy Subsidies, By Susan Kraemer, Contributor, Published on June 10, 2015

A new study by the International Monetary Fund puts the total cost of fossil fuel subsidies at approximately \$10 million a minute globally, when health costs and environmental degradation are included, never mind the effects of a destabilized climate in future centuries.

The most perverse of these subsidies are aimed at finding new reserves of oil, gas and coal, even though it is generally understood that these must be left in the ground if we are to avoid catastrophic irreversible climate change.

RESEARCH METHODOLOGY

- Visiting various EPC Companies
- Gathering information through online websites of various companies who are highly engaged into solar power generation with the core perspectives of green energy
- Got the model structure of Solar panel with various objects working on it
- Theoretical Comparision of data available on online sites, of existing power generation with the solar power generation to promote green revolution as a whole and finding out the existing generation with lots of hazardous consequences causing havoc on the behind
- Timely checkup on MNRE Sites for the various benefits, subsidy and etc for promoting green energy
- Addressing of information on global level that how much green energy is being promoted as on the global level
- Personal visits on the nearby department of solar in Panchkula, HARYANA namely HREDA for the purpose of gathering information on various objectives of solar photovoltaic power & vice versa

OBJECTIVES

- The advantages on promoting green energy.
- To become inversant on the promulgation of green energy all over the countries including germany and etc.
- The promotion schemes of Indian govt. including subsidy for all sectors and the mandated requirements on the same.
- The ‘at present’ view and the world wide initiatives and future scope on green energy amidst the consequences.
- Consequences of not using green energy & is highly worth to move towards green energy.

DATA ANALYSIS



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Current Scenario

The use of fossil fuel power generation is excavating the ground and we all are gradually going down in those trenches. We are gherroid in certain ambit that we feel it as a predicament to be able to get of it but actually it is not difficult as we can shift our use of electricity through solar power generation. We all are pretty sure about the noxiousness of the fossil fuel's power generation but everyone is not taking action and keeping this problem at a invisible view. The harmful effects of fossil fuel's power generation are conspicuous to all the universe or the citizens of the country and the provision to be safe from the coming havoc is with us i.e use of solar power (green energy). PV Roof top Systems have advantages in terms of Low operating costs over the life of the system. Noise free and pollution free. Solar power is green and clean and CO₂ free. Every unit of solar energy saves 3.3 litres of fresh air, and prevents release of 0.9 kgs of CO₂ and thus cuts CO₂ emission. The main favourable aspect of using solar power is that the government itself is promoting its use and providing various schemes like subsidies and etc.

Preference Towards Solar & Green Energy

Use of solar power is pollution free and is very salubrious for every human being and nature also. It is us only who are ruining our lives and the lives of future generation with the swift use of fossil fuels. The scientific records states that the use of fossil fuels with this speed as being now shall deplete them till 2040 or so and we shall have to be rendered with no choice then to adjust with many aspects of our daily life.

The generation should be in phalange and make a effective decision on the use of solar power generation and the stoppage of the use of fossil fuels and only then the survival on this earth is possible. In india, people always feel and talk about the environmental disorders which includes: abnormal time rain, abnormal weather i.e high sunlight in winters and too much sun light in summers or vice versa but nothing would happen if we would invariably be talking about these agendas but not taking action against it. Every individual wants to talk, just talk about the matters and do offing notwithstanding of taking appropriate action and mostly each and everyone living in the country that we are facing the scarcity of fossil fuels, natural resources but everybody is in a state to do nothing about it.

There are some states in india or places in india which have started using solar power which are resulting positive to them and to the environment also and the government should be saluted with pride because the present government of india is promoting the solar power on a higher scale, they are making it mandatory in the percentages to every household & industry etc to use the solar power in their premises. In the ancient times, when there was no electricity people used to light up with petrol or other natural oil whichever was available to them and that lighting up also created pollution but that generation was unaware of the results. They were only concerned with the lighting up their home at night. Now, in todays time we are well aware of the facts that natural resources like fossil fuels are decreasing day by day but we are not stopping their excessive use.

Major Worldwide Initiatives

Germany, USA, Japan are leaders in adopting grid connected SPV Rooftop Systems. Germany has highest PV installations capacity of 32.8 GW of which 70% is in rooftop segment (as on 31.12.2012). Italy has 12.7 GW PV Installations with over 60% roof top systems. In Europe of total 50.6 GW Installation, over 50% are in rooftop segment. GM installs World's biggest rooftop solar panels. The estimated realistic market potential for rooftop solar PV in urban settlements of India is about 124 GWp. Thus, rooftop solar PV can play an important role in providing energy security and in multiple utilization of land, a scarce resource.

India is running the largest renewable capacity expansion program in the world. 1,00,000 MW Till 2022: 20,000 MW (Solar Park), 20,000 MW (Unemployed Graduate & Farmers), 20,000 MW (States/Private/Others), 40,000 MW (Solar Rooftop). When the govt. Itself is promoting the green energy revolution in the country, we all should promote the eco friendly use of green energy i.e solar power.

The Govt. of India has launched financing scheme for the Multi Government Agencies (MGAs) i.e. Govt. Departments, Govt. Institutions, PSUs & their subsidiaries, Discoms, DMRC, National Housing Bank, Commercial Banks, Railways, Army, Financial Institutions/ Financial Integrators etc. Projects to set up Roof top solar installations, on the concept of Net Metering/Feed-in-tariff on Pilot Basis. Another scheme of GOI promotes Grid Connected Solar Rooftop Projects under National Clean Energy Funds from State Nodal Agencies Government /Commercial /Institutional /residential/industrial buildings located in various States



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across the country. Further, the GOI has stipulated Renewable Purchase Obligations for Discoms and 8 categories of Industries with high power consumption requirements to source certain percentage i.e. initially upto 3% from renewable energy sources within the coming years. Even for residential sector, plots of size of 10 marla or more have to get solar installation before getting the construction design approvals from estate office or municipal corporations.

Every home, industry etc should adopt these schemes and then look how green our country shall turn into. We should stop the excessive use of fossil fuels and preserve it for the upcoming generations of the country.

In order to successfully implement the above parameters, the Indian Government has formulated a policy under MNRE (Ministry of Energy and Renewable Resources), New Delhi, which is the governing body to formulate policies/targets. In order to make the cost of solar power generation at par with coal, thermal and nuclear energy, the GOI is offering various incentives including capital subsidy, accelerated depreciation, custody duty/excise duty benefits to Industry to make the solar power generation cost effective.

CONCLUSION & FINDINGS

What is solar energy? Solar energy or solar power is just energy from the sun. The sun can be used to do many things including: warming a house, burning ants, heating a pool, providing light, and many other things as well. "But specifically, how does the sun's energy aid us and what exactly are we feeling when we stand out in the sun during the summertime? Well we actually are not feeling anything but the sun aids us by using the energy it has absorbed from the earth and convert light energy into chemical energy. Converting light energy into chemical energy, helps to provide fossil fuels, wood and even food.

Solar Industry in India is at a nascent stage and so far only 4,000 MW capacity has been installed whereas there is a large potential to take this capacity to GWs in future. Though the use of solar power to each and every household, industry or etc shall not only prevent the fossil fuels but also a deterrent measure for our healths as well because fossil fuel electricity generation and usage has such an bad impetus over us that we are not even thinking over it. It is an aberrant thing that we are still using the hazardous means of power generation. So, we should shift our use of electricity via solar power electricity generation notwithstanding of fossil fuel's power generation. There are folks who are actually suffering the consequences of the hazardous means of power generation but still not collaborating on the aspect due to whatever reasons but resultantly it shall affect the life of 'all & sundry'. Now the present government is also promoting the valuable means of implementing solar power generation which seemingly is a very huge step towards green energy.

Worldwide the solar power generation is operational as the data cited in the research and it has been an phenomenal approach towards green energy.

Implementation of green energy concepts is totally into force and it is pertinent to mention that one day or the other, the future belongs with using inexhaustible sources of energy.

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