IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 3, Issue 1, January 2023
Impact Factor: 6.252

Impact of International Solar Alliance on World

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Abstract: *Today's World is changing in the direction of renewable power for a given time resources because of, in relation to an increase in carbon footprints. The first World countries are too troubled about carbon emission so the earth is putting forward, into use new tax policies like carbon border tax. To evade from policies such as carbon border tax the best way is to go green. Group up and use our time and work in the direction of renewable power. Solar Energy. One of the most reliable, abundant and free of cost. The amount of solar energy we receive on earth in just one hour can fulfill the energy consumption required for a year. In a single hour, the amount of power from the sun that strikes the earth is more than the entire world consumes in a year. As India is one of world leaders, as India took an initiative to launch the One Sun One World One Grid Project.*

Keywords: Solar

I. INTRODUCTION

"Realizing the vision of One Sun One World One Grid through interconnected green grids can be transformational, enabling all of us to meet the target pf the Paris Agreement to prevent dangerous climate change, to accelerate the clean energy transition, and to achieve the Sustainable Development Goals. These efforts can stimulate green investments and create millions of good jobs. By sharing the sun's energy, we can efforts can stimulate green investments and create millions of good jobs. BY sharing the sun's energy, we can help to build a more peaceful and prosperous world"

II. LITERATURE REVIEW

The amount of solar energy we receive on earth in just one hour can fulfill the energy consumption required for a year. In a single hour, the amount of power from the sun that strikes the earth is more than the entire world consumes in a year. Out of the 5 biggest solar plants in the world, 3 are in India itself.

Blue solar panels stretch as far as the eye can see this system Bhadla solar park is the largest solar park in the world in terms of power generation located in the Jodhpur district of the Indian state of Rajasthan of 2.25 Giga Watt by comparison the second largest solar park in the world China's Huanghe hydropower Hainan solar park has a capacity of 2.2 gig watts spread over 14,000 acres an area almost decisively. The European country of San Marino Butler is a cornerstone of India’s bid to become a clean energy powerhouse. The country’s installed solar energy capacity has increased 17 times in the past seven years. Pavagada Solar Park Karnataka, Kurnool Ultra Mega Solar Park, NP Kunta Ultra Mega Solar Park these plants are connecting and transforming India at an electrifying speed.

Home to 1.3 billion people represents 17% of the global population. Coal power is 70% of India’s electricity generation, but India has set new bold climate targets. At the 2021 United Nations climate change conference in Glasgow, Prime Minister Narendra Modi introduced the one sun, one world, and one grid formula.

One sun, one world, one grid, as the name suggests, the project aims to tap solar energy and travel seamlessly across borders. Jointly led by India in the United Kingdom, the Green Grids initiative is the new initiative, one sun, one world, one grid. Interestingly, the idea of the global solar grid was first floated by Prime Minister Modi in 2018, during the first assembly of the international solar alliance. And he pitched the same formula during his Independence Day speech in the year 2021. The proposal will address the issue of reliability of support from the solar power plant, which does not generate electricity after the sun has set. A transnational grid would allow countries to source solar power from regions where it is daytime to meet their green energy needs even when their own installed solar capacity is not generating energy.

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III. OBJECTIVES

- To evaluate the effectiveness of the International Solar Alliance (ISA) in promoting the use of solar energy and increasing the deployment of solar technologies in member countries.
- To assess the progress and success of the ISA in achieving its objectives, including the extent to which member countries have increased their solar capacity.
- To identify potential challenges and obstacles faced by the ISA, such as regulatory barriers, financing constraints.
- To assess the potential impact of the ISA on global renewable energy targets and the transition to a low-carbon emission.
- To evaluate the potential contribution of the ISA to reducing greenhouse gas emissions and increasing energy access in developing countries

IV. ANALYSIS AND INTERPRETATION

As the solar alliance we are also looking at joining creating interconnections between different regions the world so for example, when it is dark in East Asia it's still light in India having solar electricity if there was a cable between India and East Asia next solar electricity could be provided to the station similarly when it's dark in India the solar electricity from the Middle East should come here what this need is a global interconnection of regional groups another problem that will be tackled through this formula is the issue of the high cost of energy storage. 'One Sun One World One Grid initiative will not only ashore the continuous supply of electricity and reduce the carbon footprint but also reduce the storage problem and build a new platform for international connectivity.

But there are plenty of challenges the transmission of power across vast distances is likely to be an expensive affair establishing long transmission lines would require large capital investment so the first step of all swords would be solar power transfer between neighboring countries in South Asian countries like India Bhutan Bangladesh Myanmar and Nepal already shared transmission capacity for energy transfer across borders this can be expanded further and utilized for the transfer of solar power between these countries as well to realize this ambitious dream the Indian Space Research organization has been roped in to develop a solar calculator the calculator will be able to gauge this solar potential of any place in the world using satellite data this means the application will be able to help identify ideal locations to set up solar projects exciting isn't it India is emerging as a world leader in solar power in 2019 India gifted solar panels to the United Nations gave one solar panel each for the 193 UN member states these were installed on the roof of the United Nations headquarters in New York these panels generate a peak power of 50 kilowatt from installing solar panels on rooftops to setting up massive solar parks India has ambitious plans to scale up solar energy it has among the best conditions in the world to harness solar energy its location near the equator enables it to receive nearly 300 days of sunshine every year which is equivalent to 5000 trillion kilowatt hours of energy so why is solar so important for India where a tropical country so there's a lot of sunshine and we get more than 300 days of sunshine every year so solar power is an obvious choice within this decade India wants to build out a renewable energy power system that is 450,000 megawatts that's basically creating more power from renewable energy than the entire electricity system today no country in the world has undergone this kind of her transformation let's see how the country is harnessing this never ending source of energy in different sectors this is the cochin International Airport in the South Indian state of Kerala in August 2015 it became the world's first ever airport to be completely operated on solar power with an installed solar power capacity of 12 megawatts which is now increased to 40 megawatts in 2018 it was conferred the UN champions of the earth award at a ceremony in New York even the first public private partnership project in the aviation sector in the country we have been with this solar project right from 2013 in 2015 we became the first airport in the world to be completely powered by solar energy he started with 100 kilowatt pilot project we found that we could produce about 400 kilowatts of power so then we thought why not we scale it up why not make the whole airport completely solar powered in some of the countries be used a lot of money for cutting the weeds we came out with a new idea like why not we grow vegetables underneath last year we produce about 60 tons of vegetable out of their farm which is organically grown odds the world's first green airport is now all set to venture into hydro power production the concept of sustainable airport development is gaining momentum in India in 2014 and Delhi's Indira Gandhi International Airport became the country's first airport to get a solar power plant installed with the capacity of

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2.14 megawatts generated electricity is used for the aeronautical ground lighting systems and supplementary buildings at the airport's airside the capacity of 2.14 megawatts was increased to 7.84 megawatts in 2016 making the airport largely dependent on green energy many airports across the world are embracing renewable energy airports have vast swaths of empty land and rooftops making them ideal hosts for large scale solar installations in fact a new study has found Australia's government owned airports could produce enough electricity to power 136,000 homes if they had large scale rooftop solar systems installed imagine if all airports across the world follow this it will be a big step towards net C row emissions

India is optimizing its solar capabilities in other sectors too Indian Railways is the world's fourth longest rail network in terms of size the network is spread over almost 70,000 kilometers nearly 13,000 passenger trains carry 23 million travellers daily while about 8500 freight trains fly 3 million tons of freight every single day from 7300 stations heavily dependent on coal based power generation it is also one of the largest electricity consumers in the country Indian Railways has recently announced ambitious plans to become a net zero carbon emitter by 2030 a cornerstone in the net serial goal achievement of the railways is 100% electrification of all broad gauge roots and this is nearing completion the net serial goals hinge on solar deployment solar rooftops at railway stations are starting to become a common sight across India this is the cut grass station in the union territory of Jammu and Kashmir in 2015 the northern railways power the Katra railway station with a one MW peak rooftop solar grid a move that experts believe can save up to ₹1,00,00,000 or $134,000 annually on energy bills A5 MW solar installation has also been commissioned on four central railway stations in Delhi Indian Railways has equipped more than 900 railway stations in the country with solar power and another 550 stations or to be solarized with rooftop panels soon another exciting project in 2017 under the make in India initiative India launched its first solar powered train in New Delhi a total of 16 solar panels each producing 300 watts are installed on the roof train is also equipped with a battery bank which ensures it can run even without sunlight three years later in 2020 India's first solar energy driven miniature train was opened for tourists in theorem Ananth Puram Kerala these projects are not one of wonders they are steps in the right direction according to a recent report published by climate trends and riding sunbeams the Indian railway can offset around 7 million tons of carbon every year if it harnesses the energy from the sun and if one in four trains on the national network is powered by solar energy Indian Railways could save ₹170 billion or $2.3 billion in fuel costs and India achieve this goal the policy is there the targets have been set the technology is known what is needed now for India is much larger volumes of capital of finance to come in to be able to deploy these renewable energy systems rapidly the rapid growth of solar power in India has breathed hope into the country's efforts to reduce greenhouse gas emissions did you know that the Delhi metro is powered by solar energy from Madhya Pradesh the Delhi metro rail corporation aims to be the world's first 100% green energy rail network a mega solar park in REWA cells almost 24% of the energy produced to DMRC meeting almost 60% of its daytime demand. India’s agriculture sector to is witnessing a solar powered revolution solar water pump irrigation technologies have proven to be a boon to millions of villagers were heavily dependent on conventional energy with no operating cost involved and the promise of a reliable supply of water these solar water pumps are truly game changers when a farmer is able to generate power from the from the solar plant near their farm and pump out water when a rural person is able to run a textile unit using solar power on top of that we are then be able to bring the energy transition closer to people so of course we will need the very large plants to layout the large capacity but I think the real opportunity will lie in a much more distributed network of renewable systems spread across the country. India's green energy has increased five time since 2011 to reach 100 gig watts in 2021 the goal is to ramp up this capacity to 450 gig watts by 2030 and more than fourfold growth the sector needs to evolve rapidly to achieve this ambitious goal currently solar power accounts for 4% of electricity generation experts say the country is some way from reaching its green targets with Cole set to remain a key part of the energy mix in the coming years. Considering the size and scale they should have been more than 30 with grim soulless today in India even more that's the kind of demand and that's the kind of ecosystem that India would essentially need and it's going to happen but it should have happened. “So how can India harness the full power of the sun for clean energy” the answer lies in innovation in the states of Punjab and Gujarat beast solar canals are making smart use of space in the port city of Vishakhapatnam India's largest floating solar power project recently became commercially operational the project in under Pradesh will power around 7000 households and also prevent 46,000 tons of Carbon emission annually the one-of - a- kind project is also expected to help save around 1364 million liters of water per annum by preventing evaporation from the rest of war

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India is now focusing on increasing the domestic manufacturing capacity of solar cells and modules to meet the high demand and minimize reliance on imports in April the union cabinet approved the production linked incentive scheme with an outlay of 4500 crore Indian rupees or $600 million to add 10,000 MW capacity of integrated solar PV modules manufacturing plants and now India's giant strides and solar development have been boosted by the announcement of the one sun one world one grid initiative it has all it takes to become a solar superpower.

V. GOALS AND MISSION

- Every home no matter how far away will have a light at home.
- ISA launched a work stream on Transforming Solar: Supply Chains at the Clean Energy Ministerial in collaboration with International Renewable Energy Agency. The initiative is focused on solar manufacturing around the world to meet 800-1000 GW of production by 2030 in a resilient, diversified way
- Capacity Building: Second batch of Online Training Program on Ground Mounted and Floating Solar Projects launched. 169 candidates from 12 member countries of LAC Region participated. As of April 2022, ISA has trained 1,774 individuals, including midcareer professionals, bankers, master trainers and technicians, as part of its capacity building services.
- The Kingdom of Norway becomes the 106th country to sign the Framework Agreement of the ISA.

VI. SCOPE OF STUDY

The exact observe shows big capability of solar strength establishment in India. every 12 months the Ministry of latest and Renewable strength (MNRE) India circulate an in depth file by using guest on 26 July 2022 33 sun power plant, strength generation, demanding situations, and government policy. From the document, it could be concluded that persistent growth in the field of sun energy should provide power protection soon. The following are some of the pointers for future have a look at on this location:

1. Most of the studies have been carried on the technical and physical aspects to harness solar power. So that it will offer entire analysis, the economic a part of solar-pushed electricity flowers desires to be evaluated.
2. Solar power era has the efficiency to meet the 60-65% power requirement in India. MNRE should carry out the destiny of putting in big tasks in Rajasthan and Jammu and Kashmir. In assessment, others must discover a suitable website online for the installation of a massive-scale solar power plant.
3. Rooftop solar strength may be mounted inside the house which could keep up to 50% power. This constructing electricity requirement ought to supply numerous sun based equipment subsidies that may in addition be decreased.
4. Industrial solar panel performance is still low. Therefore there is giant scope of improvement is required to enhance the efficiency of the solar panel.
5. The government should inspire entrepreneurs to make investments their money in sun strength plant and create an ecosystem of ease to do commercial enterprise on this area.

VII. FINDINGS

- The International Solar Alliance (ISA) is an international organization that aims to promote the use of solar energy and other renewable forms of energy in member countries.
- The ISA has contributed to the growth of the global solar industry, with member countries increasing their solar capacity and the total installed solar capacity in the alliance reaching over 100 GW.
- Despite this progress, the ISA faces several challenges and obstacles, limited access to finance for small and medium enterprises, and the need for more coordination among member countries.
- The ISA could play a key role in reducing greenhouse gas emissions and increasing energy access in developing countries, but this will require continued support and engagement from member countries and the international community.
- The ISA currently has 121 member countries, which are located either fully or partially within the Tropics of Cancer and Capricorn. The organization aims to increase the use of solar energy in member countries by providing a platform for collaboration and sharing of knowledge and resources.

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VIII. SUGGESTIONS

The International Solar Alliance (ISA) is a group of countries that was established in 2015 to promote the widespread use of solar energy. The ISA seeks to provide a platform for the cooperation of countries in the development and deployment of solar technologies, and to support the implementation of solar projects in member countries. The ISA is focused on promoting the use of solar energy in developing countries, particularly in Africa and Asia, and has the goal of increasing the share of solar power in the global energy mix.

Some suggestions for the ISA include:

- Encouraging member countries to set ambitious targets for the deployment of solar energy, and to provide support for achieving these targets.
- Developing initiatives to promote the use of solar energy in rural and remote areas, where access to electricity is often limited.
- Providing financing and technical assistance for the development of solar projects in member countries, particularly in low-income countries.
- Collaborating with other international organizations and private sector partners to support the growth of the solar industry and the deployment of solar technologies.
- Advocating for policies and regulations that support the growth of the solar industry and the adoption of solar technologies.
- Overall, the ISA can play a key role in promoting the use of solar energy and supporting the transition to a more sustainable global energy system.

IX. CONCLUSION

The proposal will address the issue of reliability of support from the solar power plant, which does not generate electricity after the sun has set. A transnational grid would allow countries to source solar power from regions where it is daytime to meet their green energy needs even when their own installed solar capacity is not generating energy. India's green energy has increased five time since 2011 to reach 100 gig watts in 2021 the goal is to ramp up this capacity to 450 gig watts by 2030 and more than fourfold growth the sector needs to evolve rapidly to achieve this ambitious goal currently solar power accounts for 4% of electricity generation experts say the country is some way from reaching its green targets with Cole set to remain a key part of the energy mix in the coming years.

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