INNOSUSTAIN 2023: PURSUIT FOR SUSTAINABLE DEVELOPMENT GOALS.

by

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ABSTRACT:

The 2030 agenda for Sustainable Development which was adopted by the United Nations member states in 2015.It is a global partnership which has a heart of 17 goals for Sustainable Development by all developed and developing countries. The concept of SD is ending poverty on one hand by using specific strategies which lead to the improvement in health, wealth and education while protecting the forest and ocean for future generations and also throw in together the climate changes.

Keywords: Renewable energy, science and technology, Wind plants, Wind energy, climate action

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INTRODUCTION:

Use of IP & technology in achieving SDGs (affordable and clean energy, climate actions).

Encourage and enhance capacity building through science and technology at the regional, national and international levels.

UN's Sustainable development goals:

1. No poverty
2. Zero hunger
3. Good health and well being
4. Quality education
5. Gender equality
6. Clean water and sanitation
7. Affordable and clean energy
8. Decent work and economic growth
9. Industry, innovation and infrastructure
10. Reduced inequalities
11. Sustainable cities and communities
12. Responsible consumption and production
13. Climate action
14. Life below water
15. Life on land
16. Peace, justice and strong institutions
17. Partnerships for growth

IPR-INNOVATION-ENERGY INDUSTRY:

The oil crisis of the 1970s was the turning point for a new political era of regulation. It was an evidential landmark that the energy sector could not be left to unrestricted market forces. For about 25 years the reformation in consuming the form of energy and regulation of energy

supply has been brought into public intervention and the state has direct control and detailed planning about energy resources. In these 25 years of reformation the world could see a lot of changes in the energy policies of most countries which had a major legal implication. The change in use of the energy sector and its prospects at the beginning of the 21st century have been more turbulent than ever influenced by the wave of privatization, liberalization, deregulation and globalization. The recent years have taken the energy sector's fundamental changes in a way in which energy is brought, produced, transported and regulated at all the local, regional and global level too.

Also, the global developments have brought more competition to energy markets which increases the transboundary cooperation and trade which majorly concerns about the energy security and global warming has created a need for a new foundation for energy policy to ensure that the environment is safeguarded under the market conditions and renewable energy is further more considered. Simultaneously, the international markets for energy have assumed energy company ownership, new forms and alliances have undergone major changes.

WITH A SENSE OF URGENCY, SUBSTANTIALLY INCREASE THE GLOBAL SHARE OF RENEWABLE ENERGY SOURCES WITH THE OBJECTIVE OF INCREASING ITS CONTRIBUTION TO TOTAL ENERGY SUPPLY.

In 2007 statement, the world energy council emphasized;

"If we are to keep the world economy humming along and improve standards for all, we face triple challenge; provide every household with access to affordable modern energy services, to make energy services available to meet a sharply rising demand and to rein in greenhouse gas emissions at the same time"

The need for urgent action to achieve more secure and lower carbon energy systems and the role which energy efficiency, nuclear power, conservation and renewable can play in lowering the emissions is also pointed out in the International Energy Agency's most recent World Energy Outlook 2007.

And here the story starts with an issue of oil crisis where it gave the importance of energy resources also the concept of sustainability in using the available sources while not exploiting the mother earth's resources and the heroic entry of INTELLECTUAL PROPERTY RIGHTS, where it helps to promote new innovations/inventions and also guards the rights of inventor in one hand and also curbing the concept of monopolistic system in the society. It shows us that IPR not only paved the way for inventions and sustainability in energy resources

but also gave the proper functioning of the economy without monopoly, here people's resources were kept under the concept of SD and also the country's economic functioning.

GREEN PATENTING[3]:

In the areas of green technology and green innovation India is acting as an active player. Most of the technologies are acquired through international licensing, international technology transfer etc. Here the local patent applications and innovations in regard with environment friendly or sustainable friendly were still kept in matter of concern. The stronger legal process and less financial incentives to the local patent applications is paving way for the international companies to tap indian market.

With their use of clean technologies. The point which gives growth to the deliberation in between Indian government's commitment towards green growth and sustainable development. It is a fact that the confidence of an investor is boosted inside the market only when the inventions are protected so the concept of green patenting is welcomed but also the government should liberalize the processes in getting and maintaining the patents and special concentration should be given to the sectors who focus on sustainable development.

WIND ENERGY AND CHALLENGES:

The wind power sector of India is still struggling to match the solar sector since 2017 and it could not even achieve the installation capacity target.And this is because of lack of financial incentives, difficulties in finding windy lands and the possibility of maintaining wind plants over the period of time due to a rapid change in the environmental climatic conditions and most importantly the postulation of reverse bidding process in wind energy sector.

The emergence of reverse bidding processes makes the wind energy sector downfall, as the investors are more concerned with high PLF states. Investors are only placing bids in the states with the highest PLF levels in the present reverse bidding process to win the bids since Discoms are only ready to negotiate long-term power purchase agreements (PPAs) at rates over Rs. 3.00 per kwh. Low-capacity increase (around 1.50 GW annually) has been the effect of this scenario in India during the previous five years. Challenges related to land availability, power evacuation, grid and infrastructure capacity made constraints to install beyond 1.5 - 2.0

[3] Mr. Ankit Singh (2019). Contemporary trends in Green patenting in India : A critical analysis. Retrieved from https://www.lawaudience.com/contemporary-trends-in-green-patenting-in-india-a-critical-analysis/ Date : 10-04-2025 Time : 10.34 am

GW per annum of wind energy projects in any state. Land and power evacuation infrastructure creation leads to choking situations seen in Gujarat when concentrating the projects to create severe pressure on it. This creates the challenges in execution levels of state and ends in resulting inability to generate volumes. Though the availability of land and infrastructure development is good, investors are not interested to invest in the states like Madhya Pradesh, Rajasthan and Maharashtra as they cannot compete on the PLF and these states couldn't compete on the reverse auction economics basis in comparison to the states like Gujarat and Tamil Nadu.[4]

IPR ISSUES IN INSTALLING WIND PLANTS?

The Intellectual Property Rights on one view protects the rights of the inventor on the other hand curbs the monopoly, here the process of reverse bidding done to reduce the cost of the plant makes the some of the windy states which were capable to produce 2 GW per annum and correlating if all the seven windy states brought together then it can compete producing over 14 GW per annum.Approximately 19.7 GW of wind capacity has allotted, out of which only 4.5 GW of capacity has been commissioned so far. This shows the improper functioning of the power plants due to the restrictions and interference of IPR. Captive projects are being avoided at present days due to loss of their revenue stream by power incentive industrial customers. Unfortunately, the reverse bidding process (done in the namesake to avoid monopoly by reducing the cost which does match to the value of the invention and development), made to slow down the development and led to the reduction in number of wind turbine manufacturers from 12-13 to 4-5 and the reduction in number of MSMEs who joined hands with wind energy sector from 4000 to 1000. Intellectual Property rights are merely to support, protect and promote the innovations and innovators but it itself developed the sense of curbing the upcoming innovations by not providing proper financial reputation for the innovative product and playing a crucial role in maintaining the patent ownership where the owner cannot enjoy the profit of his own invention. As this part deals with the wind energy sector, the globe is in an urge to care the available resource in a sustainable manner as our future generations have rights to enjoy the resources of world but only when it is not exploited before they arrive, so sectors like wind energy helps to decarbonize the world and reduces the usage of fossil fuels

[4] Reviving the wind sector: challenges & suggestions (08-03-2022). Retrieved from https://www.financialexpress.com/opinion/reviving-the-wind-sector-challenges-suggestions/2 454196/ 10-04-2025 Time: 10.34 am

which leads to SUSTAINABLE DEVELOPMENT but when IPR plays such a role, the inventions in wind energy sector is getting lower day by day as mentioned in above statistics. The jobs in the wind energy sector grounded to 63000 from 2 million on average. Finally, when the companies were given the right to set up their own monetary value for invention and maintenance and when the laws were liberalized, the sustainability through renewable energy can be achieved.

More than $5.2 of commercial loss was suffered by the wind energy sector since 1995 and this is associated with Intellectual property disputes which includes denial of market access, product sales etc.

New innovations: The heart of today's wind industry is patents related to technological innovation. Companies like GE, Siemens and vestas were investing millions of dollars to maintain IP portfolios to gain the profit and stage of upper hand but this is difficult for the companies who enter into the emerging markets and this condition is true in China. And the survey of EU shown that China reminded the single most problematic country for IP Protection. Experts state that China is new to the concept of IP and there is no independent judiciary and corruption is seen common with officials.[5] GST rate:

The GST rate on turbines has increased from5% to 12% w.e.f. On 1st of October 2021 it became the additional 7% cost in wind turbines which might result in the slowdown of turbine manufacturing and lower participation in upcoming bids due to decreased returns.[6]

WHEELING CHARGES AND CAPTIVE USE:

Each state has its own banking policy, APTEL vide its judgement directed to the CEA(Central Electricity Authority) to come up with a uniform banking system which can be followed by all the states. Multi option Payment (MoP) amended order dated on june 21, 2021, waiver of Inter State Transmission System (ISTS) creates applicability to third party users and waiver of transmission losses to stakeholders.Even when the third party consumers are within more than 1 MW project are allowed because of high cost due to banking charges and its frequent changes by various states through State Electricity Regulatory Commission which also lands on poor

[5] Ros Davidson (2012) Wind Manufacturers act to defend intellectual property rights, Retrieved from https://www.windpowermonthly.com/article/1114292/wind-manufacturers-act-defend-intellectual-property-rights Date: 10-04-2025 Time: 2.00 pm

[6] Michelle Froese (April 23,2019). Wind industry has lost billion to IP Retrieved from https://www.windpowerengineering.com/wind-industry-has-lost-billion-to-ip-infringements-and-trade-secret-theft-finds-intelstor/

functioning in enforcing (RPO) Renewable Purchase Obligation so hereby investors are not opting for captive option.

SUGGESTIONS:

1. Choosing solar energy over wind energy should be considered because, the generating work hours of solar power in a day is from 8 am to 5 pm while the peak power demanded hours range from 5 pm to 8 am, where the productive hours of wind energy sector is seen in this time that is during this time hours wind energy generates over 70% of the power. So unless and until wind energy is considered respectfully the power cuts seen in the USA and other countries cannot be changed.
2. PLF of wind power in India is varying in the range of 35% to 43% across the 7 windy state's sites. The study suggests the Central Transmission Utility and State Transmission Utility to create power evacuation.
3. Super highway grids should be planned.
4. The domestic wind manufacturing sector was adversely affected by the reverse bidding process which was earlier seen in coal mines auction. So that the current system of reverse bidding should be replaced with no reverse auction in the view of respecting innovator's inventions.
5. Providing strong insurance claims to the wind energy sector as there is a high chance of disturbance in maintenance due to environment and climatic changes.
6. As using wind energy leads to a sustainable development also increases the economical value in a society, the GST implied on it should be reduced and MSMEs should be made to tie up in manufacturing the parts of windmills also a strong commission should be lead to properly use the available land for setting up windmills.
7. Plans should be welcomed to set up windmill plants in coastal areas of the country and the high and top-rated engineering strategies should be welcomed.


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