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Powering the Future: The Need for a Legal Framework for Renewable Energy in India

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ABSTRACT

India is a developing nation with an increasing demand and need for energy and hence, the importance of renewable energy has a better alternative to fossil fuels has come to light. The Government has introduced various policies and strategies to promote renewable energy generation and consumption, but currently, there is no definite legal framework for renewable energy power generation and consumption in India.

This paper throws light on the need for a legal framework for renewable energy in India that can provide a comprehensive and robust regulatory framework to address the challenges and promote renewable energy. The paper reviews the existing provisions for renewable energy, including regulations, and policies. This paper also reviews the international policy framework for renewable energy. The article argues that a new renewable energy law is necessary to streamline and simplify the regulatory environment and to address the challenges faced by the renewable energy sector in India. Furthermore, the article emphasizes the need for stakeholder engagement and participation in the formulation of the new renewable energy legal framework.

The article concludes by highlighting the potential benefits of the legal framework which would include attracting more investments, promoting innovation and research, creating job opportunities, and contributing to climate change mitigation and sustainable development. It also suggests the certain key provisions to be needed in the legislative framework for renewable energy. It can serve as a valuable reference for policymakers, researchers, and stakeholders interested in renewable energy development in India.

Keywords*: Energy, Renewable, Framework, India, Legal.*

I. INTRODUCTION

Today the world is facing several challenges due to climate change and increasing greenhouse gas emissions. From forest fires to landslides and floods- the world is calling for immediate action. Climate change has been having an immediate effect on public health and economies. In recent times, global warming has been rising significantly and that has led to a rise in the earth's temperature. This has posed an alarm on the rising sea level due to increased melting of

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glaciers which would lead to tsunamis, floods and other natural calamities.

India is a developing nation with an increasing demand for energy. With the population and industrial growth, India is facing a surge in energy demand. Hence, provisions and policies have been introduced to meet such an increasing demand and keeping a balance between energy generated from renewable sources and conventional sources. India presently ranks at 4th position in renewable energy installed capacity. Further the Indian Government has aimed to increase the installed capacity and generate more power to meet energy demand in a sustainable manner.[2]

(A) Renewable Energy- An International Scenario

The world is facing a climate crisis and big economies of the world are being affected by the catastrophes caused due to the same. Renewable energy is one of the measures that is being focused and discussed among the world leaders to fight climate change. As time progresses, the population of the world grows, with a growth in industrialization, both leaving increased demand for power and energy. Even today, our world's energy generation source predominantly remains to be the conventional sources or the fossil fuels. The earth's temperature has grown by 1.1 Degree Celsius and this poses a great danger. The world leaders have called for Net Zero. Net Zero denotes cutting the greenhouse gasses as much as possible and as close to zero as possible.[3]

In 2016, 196 countries came together, to sign a legally binding international agreement called the Paris Agreement, under United Nations Framework Convention on Climate Change (UNFCCC). This agreement aimed at bringing down greenhouse emissions and limiting global warming. It focused on the social and economic transformation of countries in order to cut down carbon and greenhouse emissions. It provides a five year cycle wherein the countries propose their climate change action plans which are also known as Nationally Determined Contributions.[4] India is a signatory of the Paris Agreement and has incorporated the provisions of the Paris Agreement in several legislations and policies.

Renewable energy is chosen as a source of generation of energy due to its low carbon emission and high rate of replenishing. The sources are abundant in nature unlike fossil fuels which take hundreds of years to form and are present in limited quantities on earth. Hence, the world leaders

[2] Amar Narula, Saachi Kapoor & Ujjwal Gupta, *The Renewable Energy Law Review: India*, THE LAW REVIEW, (July 26, 2022), https://thelawreviews.co.uk/title/the-renewable-energy-law-review/india.
[3] UNITED NATIONS, https://www.un.org/en/climatechange/net-zero-coalition, (Apr 08, 2023).
[4] UNITED NATIONS CLIMATE CHANGE, https://unfccc.int/process-and-meetings/the-paris-agreement, (Apr 08, 2023).

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have focused on a more sustainable generation of energy to bring down carbon and greenhouse gas emissions.[5] Top three greenhouse gas emitter countries contribute 46% of the total emissions in the world. Such figures have called for an immediate action. It is estimated that with the Nationally Determined Contributions we placed and in action, the world could achieve 45% less emissions.[6]

(B) Renewable Energy- Present scenario in India

India's energy sector has been diverse in the methods of generating electricity. It comprises both conventional and non-conventional sources of generating energy. Non-conventional sources include majorly solar, wind and nuclear while hydro energy and biomass energy are also developing in India. The conventional sources primarily include oil, natural gas and coal.[7] India still dominantly depends on conventional sources of energy production for generation of electricity.

However, in recent times, there have been focused action plans and policies adopted to aim at the growth of energy generated through non-conventional sources. India has been 63% energy self-sufficient majorly through both the conventional and non-conventional usage of energy generation.[8] India has presently, over fifteen thousand installed mode wise renewable energy with over ten thousand wind energy plants, making India positioned at 4th in the world in installed renewable energy.[9]

India has been increasing the installation of renewable energy generation with the aim to cut carbon emissions and usage of fossil fuels. Generation of electricity via renewable sources also helps to cut costs in long term use and keep the environment clean which comes with additional benefits to the health and economy.

There have been many steps taken by India to increase the generation of renewable energy. The country is at a central location to extract and efficiently utilize renewable energy specially, solar and wind energy. Certain states like Gujarat and Tamil Nadu provide a central location for extraction of wind energy, which also makes them top two states in wind energy production.[10] In 2008, India launched the National Solar Mission which aimed at increasing the solar energy production capacity. It was launched in the line of the National Action Plan on Climate

[5] UNITED NATIONS, https://www.un.org/en/climatechange/what-is-renewable-energy, (Apr 08, 2023).
[6] *Id.*
[7] ENERGY ATLAS,http://energyatlas.iea.org/#!/profile/WORLD/IND, (Apr 08, 2023).
[8] IEA, https://www.iea.org/sankey/#?c=India&s=Balance, (Apr 08, 2023).
[9] ENERGY MAP OF INDIA, https://vedas.sac.gov.in/energymap/view/powergis.jsp, (Apr 08, 2023).
[10] Kalpesh Damor, *Gujarat again tops new wind power capacity*, TIMES OF INDIA, (May 12, 2021), https://timesofindia.indiatimes.com/city/ahmedabad/gujarat-again-tops-new-wind-power-capacity/articleshow/82563709.cms.

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Change.[11]

India is also a signatory to the International Solar Alliance which was created under the Paris Agreement. This treaty was formed to promote an international market for solar energy generation and for the promotion of cleaner energy. [12] Wind energy has also been intensively promoted through major projects being outlined in the cities of Gujarat, Tamil Nadu and other states throughout India. Due to the Geographical location of India, Wind Energy is available in abundant nature and similarly harnessed. Gujarat presently has big wind power farms situated in the state operating in both public and private capacity. Major names such as Adani Greens and ReNew Power also are situated in the state.[13] Gujarat serves as a major hotspot for harnessing solar energy with the total installed capacity of over six thousand watts and total installed capacity of eighty nine thousand watts of wind energy, serving the state as a major location for harnessing clean energy. [14]

(C) Renewable Energy Laws in India

India has been taking progressive steps to promote clean energy. The same has been reflected in its legislations and policies.[15] The Ministry of New and Renewable Energy was constituted for improvement of the strategies to promote renewability in power, transport, and intensity in India. The National Institute of Solar Energy and The National Institute of Energy were also constituted under the same. The MNRE likewise covers bioenergy for power. MNRE also offers monetary help to those engaged with the sustainable power area.[16] The Indian Renewable Energy Development Agency (IREDA) is presently under MNRE which functions as a non-banking monetary establishment for giving credits to various sustainable power projects.[17] The Indian Government has proposed various policies to boost renewable energy projects in India and foreign investments in the renewable energy sector. The policies advances foreign financial investments and funds in entering a joint endeavor with Indian organizations for monetary or specialized coordinated effort and for setting up renewable power based projects. Foreign Investment Implementation Authority (FIIA) has been laid out to promote and regulate Foreign

[11] Deepak Chowdhury & M Arun Kumar, *Renewable energy regulations in India*, ASIA BUSINESS LAW JOURNAL, (Dec 15 2021), https://law.asia/renewable-energy-regulations-india/.
[12] GOVERNMENT OF INDIA, MINISTRY OF NEW AND RENEWABLE ENERGY, https://mnre.gov.in/isa/, (Apr 08, 2023).
[13] *Id.*
[14] Express News Service, *Gujarat second in wind power and third in solar energy in the country: CM Bhupendra Patel*, THE INDIAN EXPRESS, (Feb 21, 2022), https://indianexpress.com/article/cities/ahmedabad/gujarat-second-in-wind-power-and-third-in-solar-energy-in-the-country-cm-bhupendra-patel-7784106/.
[15] *Id.*
[16] GOVERNMENT OF INDIA, MINISTRY OF NEW AND RENEWABLE ENERGY, https://mnre.gov.in/, (Apr 08, 2023).
[17] IREDA, https://www.ireda.in/, (Apr 08, 2023).

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Direct Investment (FDI). This will advance foreign interest in sustainable power based projects. MNRE has also introduced provisions to attract foreign funds in development of renewable energy projects leading to growth in the economy.[18]

The Ministry of New and Renewable Energy (MNRE) has laid down various rules and regulations for promoting small and medium projects associated with the assembling and overhauling of different framework of renewable energy and related projects. The Government authority likewise permits monetary relaxations to sustainable power based projects for 5 years. The policies have made easy credits that are accessible for environmentally friendly power producing projects. Tax exemptions and others are provided to such renewable energy projects. MNRE and Indian Renewable Energy Development Authority have set various provisions to provide monetary or financial help for businesses in need of the same.[19]

II. LEGISLATIVE STEPS TAKEN BY THE INDIAN GOVERNMENT

Presently, there is no existing legislation that focuses on production, consumption, purchase and distribution of renewable energy. However, there are certain provisions added in existing legislations that regulate some interest areas pertaining to renewable energy.

In 2003, the Electricity Act was introduced which contained provisions regarding regulation of electricity and distribution of electricity among the states by establishing the respective State and Central Electricity Boards. It regulates disputes arising out of power distribution and the sales and tariffs applicable to electricity distribution. The Electricity Act, 2003 has introduced Renewable Energy into the amended Act, however the Act has only a handful of provisions that mention renewable energy.[20] Considering that India and the world is having a shift towards renewable energy, the Electricity Act has recognized only renewable energy in the light of promoting it, but does not incorporate crucial provisions regarding harvesting, consumption and distribution of renewable energy and electricity generated through it. [21]Only few provisions have been mentioned under the Act regarding renewable energy but they also do not provide clarity on terms of how to promote renewable energy. The Electricity Act, 2003 primarily deals with distribution of electricity and any disputes arising from it among the states and other

[18] Mayank Aggarwal, *India's renewable energy industry is up against financial challenges*, MONGABAY, (Aug 06, 2021), https://india.mongabay.com/2021/08/indias-renewable-energy-industry-is-up-against-financial-challenges/.

[19] Kushang, *Renewable energy law and policy review*, IPLEADERS, (Dec. 07, 2020), https://blog.ipleaders.in/renewable-energy-law-policy-review/#Ministry_of_New_and_Renewable_Energy_MNRE.

[20] Dibyanshu, Shikha Rastogi & Prateek Bhandari, *Renewable Energy in India*, LEXOLOGY, (Apr. 03 2019), https://www.lexology.com/library/detail.aspx?g=6efdf930-f5f5-44c8-a4b3-54cf1de07b94.

[21] Rishika Rathore, *Laws and regulations of the Indian power sector: An Overview*, IPLEADERS, (Aug. 30, 2021), https://blog.ipleaders.in/laws-regulations-indian-power-sector-overview/#The_Electricity_Act_2003.

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individual organizations. Renewable energy is a relatively new phenomenon, which is proving to be a crucial step to be taken towards greener society. For the same, a new legislation would have to be formed because the Electricity Act would not be able to incorporate the relevant provisions as it would fall out of its application and scope.[22]

In 2015, the Indian Government introduced the National Renewable Energy Act to promote and accelerate production and consumption of renewable energy. The motivation behind this Act was to advance the development of energy using sustainable power sources as per environment, climate and macroeconomic contemplations to decrease reliance on petroleum products, guarantee security of supply and decrease emissions of CO2 and other gasses. This Act would specifically add to guaranteeing satisfaction of national and worldwide goals on expanding the extent of energy created using sustainable power sources.[23] This Act was perceived as a step taken towards rural electrification through availability of energy produced from renewable sources along with bridging the gap between demand and supply.

The draft of renewable energy laws has included the definitions of green energy and has incorporated waste to energy plants for application of purchase obligations. The draft has also introduced a uniform system of purchase of renewable energy all over India. Presently, all the states in India follow different methods to allocate projects of renewable energy and different methods to purchase renewable energy. It also introduces distribution licenses according to the amount of energy distributed further on and calls for establishment of an authority by the Government to decide tariffs and appropriate taxes on the purchase and distribution of renewable energy. [24]

Another remarkable highlight of this draft is establishment of a nodal agency by the Government in order to provide an open access for the consumers of green or renewable energy. This authority will allow only small or medium consumption of green energy which would be sufficient for domestic day to day consumption. In order to promote consumption and open access of green energy among the consumers, the draft also proposes subsidies to be levied on the consumers who have subscribed to the open access purchase of green energy. Furthermore, the draft provides banking services to the holders of distribution licenses, in order to ease business. It provides guidelines of banking services accordingly. [25]

[22]The Electricity Act, 2003, No. 36, Acts of Parliament, 2003 (India).

[23] *National Renewable Energy Act 2015*, INDIA ENVRIONMENT PORTAL, (July 14, 2007), http://www.indiaenvironmentportal.org.in/content/414501/national-renewable-energy-act-2015/.

[24] Tyagi, Ruchi & Agrawal, Atul & Ali, Shaikh. (2020). *Indian Renewable Energy Act 2015: A Step Towards Reducing Carbon Footprint*. 68. IJPRVD, 145-151.

[25] Dr. Anoop Singh, *Comments on "Draft National Renewable Energy Act", 2015*, IITK,

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The Electricity (promoting renewable energy through Green Energy Open Access) Rules, 2022 have been proposed by the Government. These rules have been formulated to provide a legal framework to purchase Green Energy and to further provide an open access of Green Energy to those who want to consume the energy for domestic consumption.[26] There are certain provisions introduced in the Electricity (Promoting Renewable Energy through Green Energy Open Access) Rules, 2022, which were a remarkable addition to the legislative framework of renewable energy. The inclusion of Green Hydrogen and providing subsidies for domestic consumption aim at promoting renewable energy. Establishing a nodal agency to provide open access for the consumers, but this limited scope of establishment of a nodal agency has both advantages and disadvantages. [27]On one hand, the nodal agency, focusing on the purchase of open access distribution on energy will provide more efficiency to the agency but it will also limit the scope of this Act. This Act was primarily introduced to promote green energy through open access, however India presently does not have a legislative framework for other areas of renewable energy.[28]

The national government presented the Electricity (Amendment) Bill, 2020, to propose changes that are centered on the development of sustainable power areas. For example, the constitution of the Electricity Contract Enforcement Authority that will have the sole position to mediate debates arising out of agreements of power purchases, make foundation of installment security systems under power buy contracts obligatory, duty of punishment on conveyance licensees for not following the provided rules and regulations and more. [29]The draft National Electricity Policy 2021 and different approaches are supposed to achieve the truly necessary change to upgrade energy effectiveness to meet mechanical progressions and environmental change objectives.[30]

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https://www.iitk.ac.in/ime/anoops/policypapers/AnoopSingh_MNRE_Draft_National_RE_Act2015.pdf.

[26] Hrishikesh Jaiswal, *Green Energy Open Access With Reference To Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022*, LEGAL SERVICE INDIA, (Apr 08 2023, 3:39 IST), https://www.legalserviceindia.com/legal/article-8737-green-energy-open-access-with-reference-to-electricity-promoting-renewable-energy-through-green-energy-open-access-rules-2022.html.

[27] Molshree Bhatnagar & Parichita Chowdhury, *India: Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022*, MONDAQ, (June 22 2022), https://www.mondaq.com/india/renewables/1204352/electricity-promoting-renewable-energy-through-green-energy-open-access-rules-2022.

[28] Niharika Puri & Tinnish Sharma, *Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022*, TRILEGAL, (June 20, 2022), https://trilegal.com/knowledge_repository/electricity-promoting-renewable-energy-through-green-energy-open-access-rules-2022/.

[29] PRS LEGISLATIVE RESEARCH, https://prsindia.org/billtrack/draft-electricity-amendment-bill 2020#:~:text=The%20Draft%20Bill%20requires%20that,concerned%20to%20implement%20the%20subsidy, (Apr 08, 2023).

[30] *Id.*

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III. SUGGESTIVE PROVISIONS FOR RENEWABLE ENERGY

India presently does not have any legislation that regulates the production, generation and consumption of renewable energy among other interest areas of the same. There are some areas upon which a framework is needed to be introduced for ensuring systematic consumption and generation of renewable energy in India.

There is a growing need of a uniform system of purchase of renewable energy. Uniform system of inviting projects and tenders for harvesting renewable energy is a dire need for the present situation. Penalties and liabilities shall be levied non defaulters and violators to ensure strict implementation.

Distribution of renewable energy also needs a uniform system to ensure availability of energy throughout the country. Distribution of renewable energy including grid connection shall be made mandatory for every state to ensure equitable distribution and reach of renewable energy. Dispute mechanism for distribution of renewable energy is needed for every state and an agency or authority has to be instituted by the Government. The same can be included in the Electricity Act 2003, which deals with dispute resolution regarding electricity.

Hydro energy and energy from waste as these areas of renewable energy have great potential but are not presently being harnessed at their full potential. There needs to be a mandatory inclusion of hydro energy and energy from waste in the legislative framework to ensure inclusion of all kinds of renewable energy generation forms and promotion of the same. An authority has to be instituted to adjudicate on energy issues on with renewable energy to increase the scope of renewable energy production and reduce malpractices. Provisions regarding green hydrogen shall also be included in the legislative framework.

Furthermore, stakeholder engagement and participation in the formulation of the regulatory framework are needed to ensure inclusivity, transparency, and accountability. Consultation with various stakeholders, including government agencies, private sector players, local communities, civil society organizations, and academia, can help incorporate diverse perspectives and interests, leading to a more effective and inclusive renewable energy framework for law.

There has to be a uniform system of application of taxes on generation on renewable energy. Subsidies and exemption shall be provided by the authorities to promote renewable energy generation and consumption. Licenses granted for generation, distribution and production shall be duly regulated by the authorities. The same shall be provided in the legislative framework. The Government shall set minimum renewable energy production or purchase obligation on industries producing energy through conventional sources. Corporate sectors and multi floored

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buildings shall have mandatory installment of green energy equipment.

These are certain suggestions for a legislative framework for promotion and regulation of renewable energy production and consumption, which is a growing necessity in the present times.

IV. CONCLUSION

India is a developing nation with increasing need and demand for energy production. Increase in energy production increases the replenishing rate of natural resources like coal, natural gas and petroleum and adds to the pollution level for production of energy through these conventional methods. Apart from increase in pollution levels and environmental degradation, generation of energy through conventional means attract huge costs and becomes a burden on the economy. It then increases the price of manufactured goods which adversely affect the economy and consumers.

The need for a new renewable energy law in India is evident in order to overcome the existing challenges and promote the sustainable development of renewable energy in the country. The current inconsistent legal framework poses hurdles to the growth of the renewable energy sector, resulting in delays, uncertainties, and increased transaction costs for renewable energy projects including various disputes arising out of renewable energy projects.

A legal regulatory framework for renewable energy consumption and generation in India can provide the necessary impetus to achieve the country's ambitious renewable energy targets, foster the growth of the renewable energy sector, and contribute to India's transition towards a low-carbon and sustainable energy future. It is necessary for policymakers to recognize the need for a comprehensive and robust legal framework for renewable energy and take steps towards formulating and implementing a new renewable energy law in India to unlock the full potential of renewable energy for the country's sustainable development.

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