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TABLE OF CONTENTS

S. No. Title of the Paper/ Author **Page No.**

1. Emerging Role of Just Energy Transition vis a vis Sustainable Development Goal 7
Ms. Amita 1

2. Critical Analysis of Social Security Schemes for Women in India
Ms. Richa Srivastava 19

3. Mass Atrocities and Reparation to Rohingyas in Myanmar
Mr. Mostafijur Rahmani 28

4. Constitutional Discourse on Homosexual Rights in Nepal, India and Singapore
Ms. Mansi Singh Tomar & Mr. Kumar Mukul Choudhary 42

5. Open Prisons: Reserialising Prisoner's rights with Freedom
Ms. Ritika Kanwar 54

6. Victim Participation in the Criminal Justice Process: A Therapeutic Approach
Ms. Neha Singh 70

7. Reassessing Section 498A: Exploring Judicial Interpretations and Statistical Data
Mr. Lalit Anjana 90

STUDENTS SECTION

8. Current Regulatory Framework on Cryptos and Crypto Exchanges in India
Mr. Vedant Lathi 109

9. Taxation of Cryptocurrency in India: The Future Finance
Ms. Meher Sachdeva 118

10. Rule of Law Implementation in India: A Critical Review
Ms. Neha Samji 133

11. Beyond Borders- The Use of Comparative Law in Constitutional Interpretation
Mr. Satyam Sah and Ms. Krati Gupta 142

12. Implementation of Section 12(1)(c) of the Right to Education Act: An Overview
Ms. Anushka Singhal and Mr. Ashmit Raj 151

13. Critical Analysis of the Last Seen Theory
Mr. Chaitanya Thakur 167

14. Juvenile Justice Care and Protection Act: Framework on Adoption in India
Ms. Raghvi Kanwal 181

15. Abortion and Natural Law
Ms. Snigdha Rohilla 196

EMERGING ROLE OF JUST ENERGY TRANSITION VIS A VIS SUSTAINABLE DEVELOMENT GOAL 7

Ms. Amita*

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ABSTRACT

The Concept of Just Transition is widely acknowledged as it opens the door for debatable perspectives. There are diversified national and international regulations and standards that are used to achieve the aim of Just Transition. This has led to the birth of the principle of "Just Energy Transition" through the diverse efforts towards clean energy transition and the application of sustainable technologies which are targeted towards the larger goal or achieving Sustainable Development Goal 7 (SDG 7). Even though the nations together had made a collaborative effort to achieve the targets, they are facing certain setbacks in the process. The study focusses on achieving the goal of energy sustainability through the synchronization of social, economic, environmental, labor, governance etc. and how the concept of just energy transition has gained the international recognition to be adopted all over the globe. Further, the author tries to identify the rationale behind just energy transition in the light of contemporary policies and regulations governing renewable energy. The author also examines the role of Just Energy Transition in achieving the targets of SDG 7.

Keywords: *India; Renewable Energy; Sustainable Development; Just Transition; Just Energy Transition*

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I. INTRODUCTION

Presently, global energy sector is in a state of transition which requires equity and fairness which term it as just transition. COP 27 stresses on the point that the world is facing a critical point for global climate action. The experts were of the view that if the world wants to achieve the promises of Paris agreement SDG 7, then, there is a need of co-operation and collaboration by all the stakeholders laid down by the Marrakech partnership. Over the past decades, expert body of research on climate change has made it very apparent that there is a need to shift away from non-renewable sources gradually which has become in evitable in the present times. Providing justice for millions of people in the transition away from non-renewable resources is clearly going to be a major challenge. There are various socio economic, political, cultural issues which cannot be ignored.

The term "Just transition" aims to provide a sustainable and decent livelihood for the people who are dependent on the fossil fuel industry. It is only possible through proper planning and investments. It also aims to build resilient communities and also eradicate poverty in these regions. It focusses on the idea that there should be synchronization between clean energy and clean environment which ultimately trickle down to a healthy economy. There are many factors involved in the low carbon energy transitions such as economic, health, infrastructural, gender etc. at the same time it is driven and accelerated by the various targets and goals such as SDG 7, policies and regulations relating to climate change. The Paris Agreement on Climate Change includes an important principle and explains the same not only as a fixed set of rules but considers it as a vision and a process. It is implemented with a set of guiding principles, such as the International Labour Organization's guidelines for a just transition.[1]

It is high time to address the increasing risk of catastrophic climate change all over the world and at the same time provide sustainable energy to people who currently lack access to electricity, and also achieve sustainable development goals. Hence, there is an urgent need to transition to renewable energy by adopting the process of 'Just Transition'.

II. THE CONCEPT OF JUST TRANSITION, JUST ENERGY TRANSITION AND ITS DISCOURSE

The origin of the concept of just transition dates back to 1970s, in United States when labour unions argued for economic and social intervention for workers to secure jobs and

1 Indian Institute for Sustainable Development, *Just Transition*, Available at: https://www.iisd.org/topics/just-transition (Last visited June 11, 2023)

livelihood which were threatened by environmental regulations. It is widely accepted that the term 'just transition' has been coined by the US labour and environmental activist, Tony Mazzocchi, who had given reference of an existing federal program to clean up environmental toxic waste and had made efforts for the establishment of a similar "Superfund for Workers". It was aligned with the aim to support these workers with minimum income and education benefits so they are in the position to transition away from the jobs having hazardous consequences. The experts believed the term "Superfund for Workers" had too many negative connotations and thus, it was changed to "just transition" (Eisenberg 2019).

This concept draws a wide range of perspectives but few of the predominates given by Eisenberg are - *Firstly*, it strictly interprets on the idea that because of an intentional shift away from fossil fuel-related activities, the workers and communities involved might lose their livelihoods, therefore, it is the responsibility of the state to support them.[2] Secondly, it interprets justice in more general terms which is not restricted to workers only. The emphasis is on the sustainability i.e. to not sacrifice the wellbeing of the vulnerable class just for the sake of advantaging others which was general norm practiced in the fossil driven economy. It implies that notion of justice and equity must form an integral part of the transition towards a low-carbon world. At present, it calls for a wider interpretation to include ambitious social and economic restructuring that addresses the roots of inequality.[3]

There are diverse opinions and interpretations of the concept of 'Just Transition", but we will only focus on the concept of Just Transition within climate justice and environmental justice. Thus, 'Just energy transition' stands on the fundamental idea that a healthy economy and clean environment should co-exist.[4]

At international level, the concept of just transition integrates a number of equity issues such as: if the cutting of the greenhouse emissions is done in a rapid manner, then it is difficult to address the uneven distribution of burdens and costs associated with the impacts of climate change. It encourages a gradual low -carbon transition to protect countries which are fragile, poor as well as most vulnerable to the impacts of the climate change. The delaying or slowing the transition away from the extraction and use of fossil fuels is fundamentally unjust. It is most probable too that some countries will be adversely affected

2 Directorate Energy and Climate Change Directorate, *Just Transitions: a comparative perspective* (25 August 2020) Available at: https://www.gov.scot/publications/transitions-comparative-perspective/pages/3/ (last visited June 10, 2023)

3 *Ibid*.

4 *Ibid*.

compared to other countries during this global effort to decarbonize globally.[5]

There are various transformative ideas evolved over the years through growing synchronization of various stakeholder groups in this constructive and inclusive vision. According to Climate Justice Alliance, "just transition is a vision-led, unifying and place-based set of principles, processes, and practices that build economic and political power to shift from an extractive economy to a regenerative economy.

This philosophy is also reflected in the 2030 Agenda for Sustainable Development adopted by the United Nations (UN) General Assembly in October 2015. Three Sustainable Development Goals (SDG) provide the impetus for a fair transition from fossil fuels, balancing the needs of secure and affordable energy, full and productive employment, and sustainable use and management of resources. These includes:

- SDG 7: Ensure access to affordable, reliable, sustainable, and modern energy for all,
- SDG 8: Promote sustained, inclusive, and sustainable economic growth, full and productive employment and decent work for all, and;
- SDG 15: Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

III. RATIONALE BEHIND JUST ENERGY TRANSITION

Competitiveness of Renewables

The strong rationale behind using renewable energy is its availability, derives high energy and the cost. It is comparatively more profitable and cost effective compared to renewable resources. It has its additional advantage of easy storage and job creation at a large scale. However, with the decline in the cost, availability of technology and subsidies from the government has led to the decline in the use of renewable energy for the production of electricity. Thus, the advantages of renewable energy are gradually eroding. The main drawback of fossil fuel is that is depleting whereas renewable sources such as solar, wind. hydro, biofuels etc, are replenished from time to time. Even investors are of the opinion

5 Aaron Atteridge and Claudia Strambo, *Seven principles to realize a just transition to a low-carbon economy,* Stockholm Environment Institute (2020) Available at: https://www.jstor.org/stable/resrep25078.5 (Last Visited June 11, 2023).

that now it's not economically viable investing in non-renewable resources.

Rising Pollution Control Costs

Coal-fired power plants produce a range of externalities such as PM4, SO2, NOx and Hg. The rationale behind air pollution is the high concentrations of harmful particles. This could be only determined by continuous emissions monitoring systems. In 2018, the Ministry even amended the standards, however, there was no material change in air pollution norms (Central Pollution Control Board, 2018). If the emission trends of thermal power plants remain unchanged, projections estimate that these pollutants will cause an estimated 1.3 million deaths in India per year by 2050 (Health Effects Institute, 2018).[6] Ministry of Environment Forest and Climate Change had provided that a budget of Rs.8915 Crore have been provided from 2019-20 to 2022-23 for taking air quality improvement measures in 131 cities for achieving the prescribed annual air pollution reduction targets. 24 States/ Union Territories and 131 Cities/Urban Local Bodies under NCAP have been requested to incorporate relevant actions of Mission Life in State and City Action Plans for improvement of air quality.[7]

Displacement of the indigenous people and their rehabilitation

The social risks such as physical displacement, restoration and resettlement exists which the indigenous people and mining affected communities faces. This leads to the deprivation of their livelihoods which is recognized as the fundamental rights by most of the countries. The world is moving at very fast pace towards economic development and industrialization but we all are suffering from a complex problem of "resources curse". The socio-economic conditions of the area involve in mining of the non-renewable sources are really untenable and hence, it is the alarming state to take measures to provide them with livelihood, health and safety and basic necessities of life.

Urgent action towards Climate Change

Various initiatives taken at the national and international level reflects the need to urgent action to overcome the consequences of climate change. The notable achievements of Paris

6 Maureen L. Cropper,Sarath Guttikunda, Puja Jawahar, Zachary Lazri, Kabir Malik, Xiao-Peng Song, and Xinlu Yao, *Applying Benefit-Cost Analysis to Air Pollution Control in the Indian Power Sector* (2019) 10(Suppl 1)185–205., National Library of Medicine, Available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7473063/ (Last Visited June 13, 2023).

7 Ministry of Environment, *Forest and Climate Change, Shri Bhupender Yadav calls for coordinated actions by all the stakeholders for effective implementation of National Clean Air Programme (NCAP*), Available at https://www.pib.gov.in/PressReleseDetail.aspx?PRID=1907272 (Last visited June 15, 2023).

Agreement and recently COP 27 showcases the achievements and gaps of our journey to achieve the targets. It also considers suggestions and recommendation given by the experts which will facilitate the other stakeholders too.

Restoration of the site of mining

During the earlier time, there was a universal target of production of coal which will provides us with electricity. There was so much pressure on the coal sector to meet the demand of the energy through fossil fuel. This led to the rise of so many issues such as impact on environment, displacement, rehabilitation as well as restoration of the mining site. The stakeholders were very reluctant to deal with these issues. At present, we are substantially dependent on the fossil fuel but these issues can be tackled through the process of Just Transition by following the rules and regulations to protect the vulnerable communities as well as environment.

IV. REGULATORY AND POLICY FRAMEWORK RELATING TO JUST ENERGY TRANSITION AND SDG 7: INDIAN PERSPECTIVE

Current Status of Renewable Energy in India

India has overtaken China and becomes the world's most populous country with total population of 1,425,775,850 and expected to increase to 142.86 crore. According to the U.N population estimates, this event has been considered as most significant shift in the global demographics till date. India's demographic dividend will certainly contribute to the economic growth and expected to become 47 trillion-dollar economy by 2047.[8] Therefore, economic growth is dependent upon the just energy transition within the economy which drives the economy towards synchronization between renewable energy and environment protection.

The world in its commitment to achieve sustainable development goal 7 and has aimed to expand infrastructure and advanced technology for providing efficient and sustainable energy services for all the developing countries including India. India has taken the center stage to deal with the most debatable issue of just energy transition. India stands fourth in renewable energy installed Capacity globally. As per the report "Year- End Review 2022" given by Public Information Bureau, it includes fourth in wind power and solar

8 Ministry of Commerce & Industry, *India will continue to be the world's fastest growing large economy for many decades to come: Union Minister Piyush Goyal at Asia Economic Dialogue, Pune* (February, 2023) Available at: https://pib.gov.in/PressReleasePage.aspx?PRID=1902288 (Last visited June 15, 2023).

power capacity.[9]Generation from non-fossil sources is 42.26% of total installed generation capacity in India.

As per the infographic stated in figure 1, India's Energy mix has been seeing a shift from more conventional resources of energy to renewable sources. The financial year 2021-22 has witnessed a growth of 16.4% over last year in the installed capacity of RES (Renewable Energy Sources, other than Hydro) under utility; while that of thermal sources grew only at 0.06%.[10]

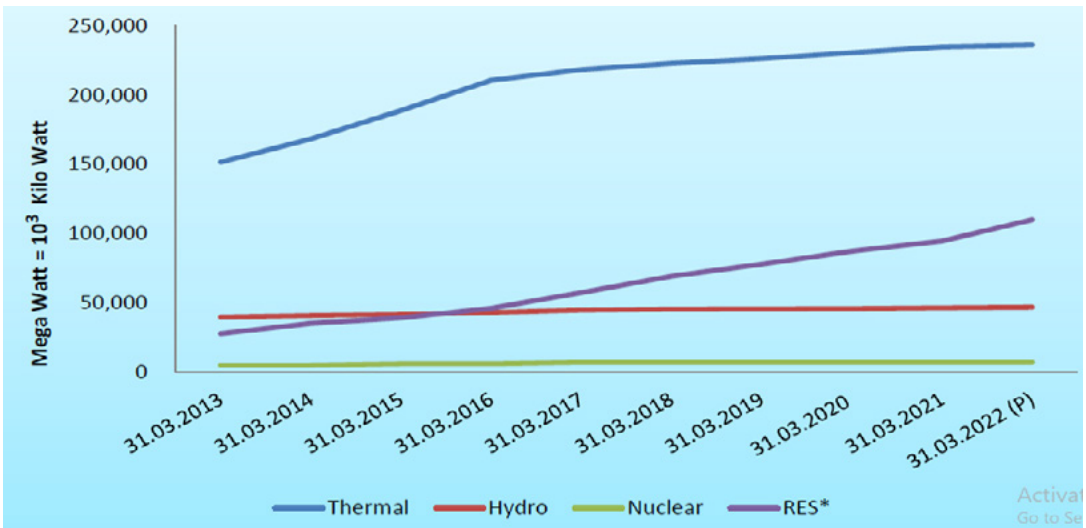


Fig 1: Trends in Installed Electricity Generation Capacity from utilities (MW) in India – Source wise during the period 2012-13 to 2021-22 (P)[11]

9 Ministry of New and Renewable Energy, Year- End Review 2022- Ministry of New and Renewable Energy Posted (20 DEC 2022) Available at: https://pib.gov.in/PressReleasePage.aspx?PRID=1885147 (Last visited on June 19, 2023).

10 *Ibid*

11 Government of India, Ministry of Statistics and Programme Implementation, Energy Statistics India 2023, Available at: https://www.mospi.gov.in/sites/default/files/publication_reports/Energy_Statistics_2023/Chapter%202-Installed%20Capacity%20and%20Capacity%20Utilization.pdf (Last visited June 19, 2023).

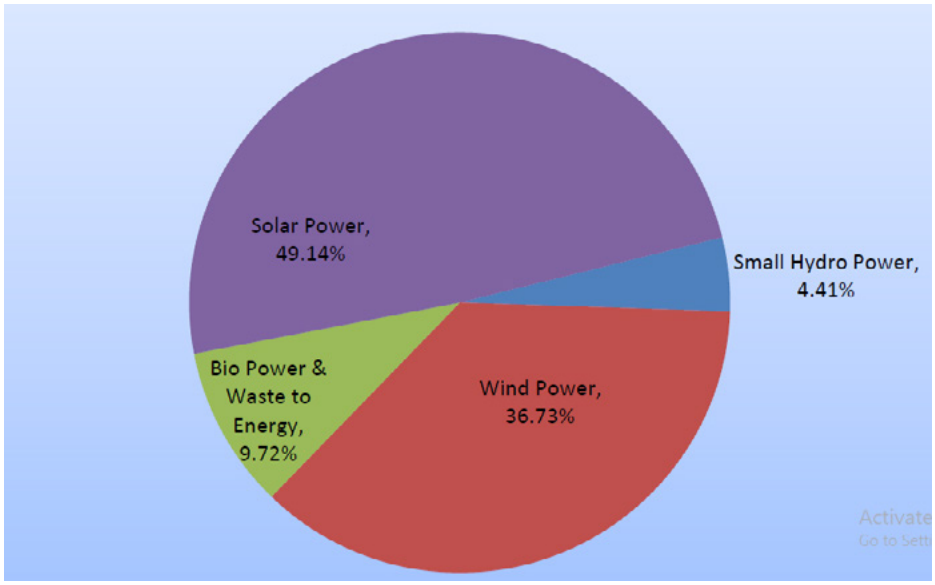


Fig 2: Sector wise percentage distribution of Installed Grid-Interactive Renewable Power Capacity during 2021-22(P)

As per the infographic stated above, it explains the total installed generation capacity of renewable sources of power in 2022 in which installed capacity of Solar power including roof tops accounted for about 49.14%, followed by Wind power (36.73%) and Bio Power & Waste to Energy (9.72%). However, in terms of growth rates year on year, Solar power installed capacity has a growth rate of 30.95% from FY: 2020-21 to FY: 2021-22.[12]Considering this parameter, Rajasthan has contributed as the highest installed capacity of grid connected renewable power (17,040.62 MW) in 2022 which is followed by Gujarat (16,587.90 MW) mainly on account of wind and solar power. Analyzing the state wise cumulative Installed Capacity of Grid Interactive Renewable Power during 2020-22 as on 31.03.2023 reveals that Goa (155.8%) has the highest growth rate, followed by Assam (5.7%), then followed by Rajasthan (63.8%).[13] Moreover, Rajasthan had contributed as the highest installed capacity of grid connected renewable power (17,040.62 MW) in 2022 followed closely by Gujarat (16,587.90 MW) mainly on account of wind and solar power.

12 *Ibid*

13 Government of India, Ministry of Statistics and Programme Implementation, *Energy Statistics India 2023, Chapter-2, p 23 Table 2.5: State-wise cumulative Installed Capacity of Grid Interactive Renewable Power as on 31.03.2022*, Available at: https://www.mospi.gov.in/sites/default/files/publication_reports/Energy_Statistics_2023/Chapter%202-Installed%20Capacity%20and%20Capacity%20Utilization.pdf (Last visited June 19, 2023).

Indian Regulatory Framework towards just energy transition and SDG7

Roadmap for Just Energy Transition by the Ministry of New and Renewable Energy (MNRE)

The Ministry of New and Renewable Energy (MNRE) as part of the third Energy Transition Working Group (ETWG) meeting of India's G20 Presidency together with the Indian Renewable Energy Development Agency (IREDA), and International Renewable Energy Agency (IRENA) deliberated on Low-cost Finance for New & Emerging Energy Technologies towards just energy transition. The Ministry of New and Renewable Energy (MNRE), India through the Presidency of the G20, is committed towards an accelerated, responsible and just energy transition through international cooperation and collaboration.[14]

Report by Niti Aayog on Just Energy Transition

At present, India's primary energy sources constitutes more than 80% fossil-based energy sources. Coal as a fuel still plays a crucial role in meeting India's energy requirements and it will continue for the next few decades too. The report of the inter-ministerial Committee on Just Transition evaluated and addressed the key issues and pre- requisites required to enable a just transition framework. They also gave recommendations for the action plan and implementation framework adopted for the just energy transition. The ministry of Coal in collaboration with the World Bank is working on the principle of just energy transition.[15]

India's vision to promote clean energy transition and climate change

India's vision is to achieve ambitious long-term goal of Net Zero Emissions by 2070 shows its commitment towards Net zero target. The other short term targets are: increasing renewables capacity to 500 GW by 2030, Meeting 50% of energy requirements from renewables, reducing cumulative emissions by one billion tons by 2030, and reducing emissions intensity of India's gross domestic product (GDP) by 45% by 2030.[16]Also, India aspires for the commitment to clean energy with ambitious targets like 500GW of non-fossil, including 450 GW Renewable Energy (RE) capacity addition and 43% RE

14 Ministry of New and Renewable Energy, *India, through the Presidency of the G20, is committed to an accelerated, responsible and just energy transition through international cooperation and collaboration – Shri Bhupinder Singh Bhalla, Secretary, MNRE (*15 MAY 2023) Available at : https://pib.gov.in/PressReleasePage.aspx?PRID=1924283 (Last visited June 17, 2023).

15 Niti Aayog, *Report of the inter- ministerial Committee on Just Transition from coal, 202*2, Available at: https://www.niti.gov.in/sites/default/files/2022-11/Report_Just-Transition-Committee_compressed.pdf (Last visited on June 17, 2023).

16 Government of India, Press Information Bureau, *Ministry of New and Renewable Energy Renewable Energy in India* (09 SEP 2022) Available at: https://pib.gov.in/FeaturesDeatils.aspx?NoteId=151141&ModuleId%20=%202 (Last visited June 18, 2023).

purchase obligation by 2030.Several policies and legislative instruments such as Energy Conservation (Amendment) Act), missions (National Green Hydrogen Mission), fiscal incentives (production-linked incentives) and market mechanisms (upcoming national carbon market supports these targets.[17]

The Energy Conservation Amendment Act, 2022[18]

Recently, the Energy Conservation Act, 2001, was amended with the Energy Conservation (Amendment) Act, 2022.It came into force on January 1, 2023.[19] The Energy Conservation Act, 2001[20], was enacted to provide for efficient use of energy, its conservation and additional issues related to it. The amendment comprehensively explains the regulation of energy consumption through different sources. It has special focus is in consonance with the principle of "Panchamrit" and focusses on the promotion of new and renewable energy and the National Hydrogen Mission. The amendment aims to facilitate the achievement of "Panchamrit" which is the five nectar elements presented by India in COP-26 in 2021.

India committed to (a) reach 500GW non-fossil energy capacity by 2030; (b) meet 50 per cent of its energy requirements from renewable energy by 2030; (c) reduce total projected carbon emissions by one billion tons from the date of COP-26 to 2030 (d) Reduce carbon intensity of the economy by 45 per cent by 2030, over 2005 levels and (e) achieve net zero emissions by 2070.[21] Thus, the amended act aims to promote just energy transition although the term is not specifically stated in the Act and also provides a roadmap towards achievement of sustainable development goals in line with the Paris Agreement.

The Electricity (Amendment) Bill, 2022

The Electricity (Amendment) Bill, 2022 proposes important changes required in the distribution of power and its related businesses and mainly aims towards the clean energy transition and achievement of India's Intended Nationally Determined Contribution (INDC). It also empowers State Regulatory Commission to specify Renewable Purchase

17 *Ibid.*

18 The Energy Conservation Amendment Act, 2022(Act No. 19 0f 2022).

19 Government of India, The Gazette of India, The Energy Conservation (Amendment) Act, 2022, Available at: https://beeindia.gov.in/sites/default/files/2023-05/EC%20Act%2C%202022.pdf (Last visited June 15, 2023).

20 The Energy Conservation Act, 2001(Act No.52 0f 2001).

21 Government of India, Press Information Bureau, *National Statement by Prime Minister Shri Narendra Modi at COP26 Summit in Glasgow (*01 NOV 2021) Available at: https://pib.gov.in/PressReleseDetail.aspx?PRID=1768712 (Last visited on June 18, 2023).

Obligation (RPOs)[22] which has to be not less than prescribed by the Central Government. It also empowers SERCs to specify renewable purchase obligations (RPO) for discoms. The Failure to meet RPO will attract penalty between 25 paise and 50 paise per kilowatt of the shortfall.[23] Therefore, the amendment certainly helps us towards the clean energy transition in a gradual manner.

Implementation of Energy efficiency measures and Government Schemes facilitating Just Energy Transition

The Government of India through the Ministry of Power and Ministry of New and Renewable Energy is implementing various measures and schemes to conserve energy and meet the consumption through renewable energy with an objective to reduce CO2 emission levels in the environment from industries, establishments and by using equipment/ appliances etc. The Ministry of Power, through the Bureau of Energy Efficiency (BEE), plays an active role in implementing various policies and schemes viz Perform Achieve Trade (PAT) Scheme, Standard and Labelling, Energy Conservation Building Codes and Demand Side Management.[24] These programs facilitate towards significant energy conservation, energy efficiency and use of renewable sources for the production of energy.

International Solar Alliance

The ISA is structured as an international resource hub with in-house technical expertise which is action-oriented, member-driven, collaborative platform for increased deployment of solar energy technologies for ensuring energy security, energy access, affordable and efficient ensuring energy, transition towards renewable energy. The Solar Alliance was conceptualized on the side-lines of the 21st Conference of Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) held in Paris in 2015.[25] Its Framework Agreement undergone an amendment which allows all the member states of the United Nations to join the ISA. At present, 101 countries are signatories to the ISA Framework Agreement, of which 80 countries have submitted the necessary instruments of

22 RPO refers to the mandate to procure a certain percentage of electricity from renewable sources.

23 Ministry of Power, The Electricity (Amendment) Bill, 2022, Available at: https://prsindia.org/billtrack/the-electricity-amendment-bill-2022#:~:text=The%20Electricity%20Act%2C%202003%20permits,The%20Bill%20removes%20this%20requirement. (Last visited on June 18, 2023).

24 Government of India, Ministry of Power, Bureau of Energy Efficiency, Programmes Available at : https://beeindia.gov.in/en/programmes (Last visited on June 9, 2023).

25 Press Information Bureau, Government of India, Ministry of New and Renewable Energy, *International Solar Alliance will be the First International and Inter-Governmental Organisation of 121 Countries to have Headquarters in India with United Nations as Strategic Partner* (2016) Available at: https://pib.gov.in/newsite/printrelease.aspx?relid=135794 (Last visited June 9, 2023).

ratification to become full members of the ISA.

It helps in transfer of solar energy technologies to other member nations and also guides other countries in project implementation. Its vision is to provide access to energy on priority basis otherwise just energy transition would be meaningless. It collaborates with governments globally to improve energy access and security worldwide and promote solar power as a sustainable transition to a carbon-neutral future.[26]

'One Sun, One World, One Grid' is an initiative discussed at the Fourth General Assembly and this thought was first outlined in late 2018 at the First Assembly of the ISA.OSOWOG aims to decarbonize energy production, which is today the largest source of global greenhouse gas emissions. 'One Sun, One World, One Grid' is a solution to the demand of clean and sustainable energy.[27] Moreover, economically developed countries can manage their fund for just energy transition but economically weaker countries have to be helped by financing them through the green funds. Therefore, International Solar Alliance has to facilitate them to achieve these targets.

V. REGULATORY AND POLICY FRAMEWORK RELATING TO JUST ENERGY TRANSITION: INTERNATIONAL PERSPECTIVE

Current Status of Renewable Energy at the Global Level

The International Trade Union Confederation (ITUC) for the first time included the proposition of "Just transition" in its statement to the Kyoto Conference. Again in 2009, a statement on just transition was submitted to the COP15 held in Copenhagen. Finally, the concept of just transition was included in the preamble of the Paris agreement, COP21. The preamble notes that the parties to the agreement shall respond to the urgent threat of climate change *"Taking into account the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities"* [Para 10].[28] 2018: The 'Solidarity and Just Transition Silesia Declaration' adopted during the Katowice Conference, COP24, signed by the Polish presidency of the

26 Ministry of New and Renewable Energy, *International Solar Alliance and West African Power Pool hosts 13 African countries in New Delhi to share best practices in solar deployment* (14 FEB 2023) Available at: https://www.pib.gov.in/PressReleasePage.aspx?PRID=1899198 (Last visited June 12, 2023).

27 Ministry of New and Renewable Energy, *Fourth Assembly of the International Solar Alliance closes with a promise to achieve $1 trillion global in solar investments by 2030*, (22 OCT 2021) Available at: https://pib.gov.in/PressReleasePage.aspx?PRID=1765671 (Last visited June 13, 2023).

28 United Nations Framework on Climate Change, Paris Agreement, Available at: https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf (Last visited June 19, 2023).

Katowice COP, along with 52 Head of States and Governments from across the world. The Declaration underscored that just transition of the workforce and the creation of decent work and quality jobs are crucial to ensure an effective and inclusive transition to low greenhouse gas emission and climate resilient development. Moreover, COP26 signed the Glasgow Just Transition Declaration, reemphasizing the need to ensure that no worker or community is left behind. Therefore, it is a process that structures the plans, policies, regulations and economic investments for a future with net zero emissions, green and clean energy, resilient community and achieving SDG 7.

International Regulatory Framework towards Global just energy transition and SDG 7

COP 27 and the Just Energy Transition

For the first time in the history, The United Nations Framework on Climate Change at COP 27 adopted the agenda of creating a specific fund for loss and damage to achieve the goal of Just Energy Transition and to achieve SDG7. There was remarkable contribution by European Union and International Labour Organization hosted the first ever Just Transition Pavilion at COP27. It had different sessions to brainstorm on the diversified themes of inequalities, global transition, energy crisis, policy making and ensuring just sustainability.[29] It witnessed significant progress on adaptation which will conclude at COP28.Undoubtedly, these pledges will help vulnerable communities adapt to climate change through concrete adaptation solutions. The investments of more than USD 230 million were made to the Adaptation Fund at COP27. There was launch of mitigation work program which has a greater significance focused towards mitigation ambition and implementation. It also led to launch of a new five-year work program at COP27 to promote climate technology solutions in developing countries.[30]

The Intergovernmental Panel on Climate Change (IPCC)

The Intergovernmental Panel on Climate Change (IPCC) in March, 2023 has just launched its latest report "The AR6 Synthesis Report: Climate Change 2023" summarizing five years of reports on global temperature rises, fossil fuel emissions, energy crisis and climate impacts. The report analyses and explains that despite progress in policies and legislation around climate mitigation, the warming is likely to exceed 1.5°C during the 21st century.

29 United Nations Climate Change, *COP27 Reaches Breakthrough Agreement on New "Loss and Damage" Fund for Vulnerable Countries*, Available at: https://unfccc.int/news/cop27-reaches-breakthrough-agreement-on-new-loss-and-damage-fund-for-vulnerable-countries (Last visited June 23, 2023).

30 *Ibid*.

The target of Paris agreement to achieve the target of below 2 degrees Celsius is hard to achieve but yet not impossible. Human-caused climate change is already affecting many weather and climate extremes in every region across the globe – with widespread loss and damage to both nature and people. The key findings of the AR6 report[31] include prioritization to equity, social justice, inclusion and just transition processes as it would enable ambitious climate mitigation actions and climate-resilient development. Moreover, this is a decisive decade as the IPCC has "very high confidence" to achieve the goals, agendas, targets through greater integration across the energy systems globally.[32]

International Energy Agency and Just Clean Energy Transition

The reports of IEA stresses on the urgent action for all the governments to achieve the targets of Paris Agreement as well as SDG 7, it's the time to dedicate ourselves towards people-centered and inclusive policies towards clean energy transitions. Vulnerable communities have to be at the heart to achieve just energy transitions. The 'Global Commission on People-Centered Clean Energy Transitions' convened by Dr Fatih Birol, Executive Director of the IEA in 2021 was proved to be extremely valuable in bringing this major issue to the forefront in front of the world. It was a platform that enabled to identify a set of 12 actionable recommendations involved in the transformation of our energy system with equitable distribution which doesn't leaves any country behind.[33]

IEA's '2022 edition of Tracking SDG 7: The Energy Progress Report' tries to explore and assess achievements in the global quest for universal access to affordable, reliable, sustainable, and modern energy by 2030.This edition is influenced by the broad social and economic disruptions due to COVID-19 pandemic and Russian-Ukraine war which might leads to energy crisis.

31 World Economic Forum, Nathan Cooper Lead, Partnerships and Engagement Strategy, Climate Action Platform, *The IPCC just published its summary of 5 years of reports – here's what you need to know,* Available at: https://climatechampions.unfccc.int/the-ipcc-just-published-its-summary-of-5-years-of-reports-heres-what-you-need-to-know/ (Last visited June 20, 2023).

32 The Intergovernmental Panel on Climate Change, *Urgent climate action can secure a liveable future for all, 20 March 2023*, Available at: https://www.ipcc.ch/site/assets/uploads/2023/03/IPCC_AR6_SYR_PressRelease_en.pdf (Last visited June 20, 2023).

33 International Energy Agency, *Global Commission of government leaders and prominent figures announces key recommendations for putting people at the centre of clean energy transitions* (26 October 2021) Available at: ea.org/news/global-commission-of-government-leaders-and-prominent-figures-announces-key-recommendations-for-putting-people-at-the-centre-of-clean-energy-transitions (last visited June 21, 2023).

The Energy Progress Report-Tracking SDG 7

The Energy Progress Report is an outcome of close collaboration among the five SDG 7 custodian agencies including International Energy Agency (IEA), International Renewable Energy Agency (IRENA), United Nations Statistics Division (UNSD), World Bank and World Health Organization (WHO) responsible for tracking global progress toward Sustainable Development Goal 7 (SDG 7), which is to "ensure access to affordable, reliable, sustainable, and modern energy for all. As per the Energy Progress Report 2023[34] Tracking SDG 7, the primary indicators of global progress of SDG 7 and latest data is provided in figure 3. The figure 3 rightly explains the growth towards SDG 7. Indicator 7.1.1 explains the number of people without electricity has been almost halved during the period. Indicator 7.1.2 states that the goal of universal access by 2030 remains still elusive to achieve the targets specified. With respect to 7.2.1, the share of renewable energy in total final energy consumption (TFEC) will remain negligible. With respect to indicator 7.3.1, it focusses on doubling the global rate of improvement in energy intensity over the average rate during 1990–2010 with a target of improving by 2.6 percent per year between 2010 and 2030. The indicator 7.a.1 shows a decline trend in international public financial flows in support of clean energy. The reasons for the decline are assumed to be Covid-19 crisis as well as Russia-Ukraine war.[35]

34 International Energy Agency, *Energy Progress Report 2023 - Tracking SDG 2023*, Available at: https://trackingsdg7.esmap.org/data/files/download-documents/sdg7-report2023-full_report.pdf (last visited June 22, 2023).

35 *Ibid*.



Fig 3: Primary indicators of global progress toward the SDG 7 targets

The above-mentioned figure rightly explains the growth towards SDG 7. Indicator 7.1.1 explains the number of people without electricity has been almost halved during the period. Indicator 7.1.2 states that the goal of universal access by 2030 remains still elusive to achieve the targets specified. With respect to 7.2.1, the share of renewable energy in total final energy consumption (TFEC) remained negligible. With respect to indicator 7.3.1, it focusses on doubling the global rate of improvement in energy intensity over the average rate during 1990–2010 with a target of improving by 2.6 percent per year between 2010 and 2030. The indicator 7.a.1 shows a decline trend in international public financial flows in support of clean energy. The reasons for the decline are assumed to be Covid-19 crisis as well as Russia-Ukraine war.

The author truly examines the growth and conveys their views that with this rate of progress, it is difficult to achieve the SDG 7 goals by 2030.No doubt, the investment flows have been directed towards developing and least developed countries to have access to affordable, sustainable and modern renewable energy technologies.

International Renewable Energy Agency

IRENA acknowledges the increasing recognition of just and inclusive energy transitions as countries across the globe. It is essential to accelerate their energy transitions to meet their development and climate objectives. It establishes the Collaborative Framework on 'Just and Inclusive Energy Transitions' and convenes its first meeting on 20 May 2021 which discussed the different issues and possible plan for the same.[36] The Funding remains at the core, so to fill the funding gap for renewable energy projects in developing countries, IRENA launched the Energy Transition Accelerator Financing Platform (ETAF) in 2021 at COP26. This platform provides a multistakeholder climate finance solution dedicated solely to advance the global energy transition by mobilizing and directing close to USD 1 billion into renewable energy projects in developing markets.[37]

VI. THE WAY FORWARD

The year 2023 marks as the mid-point of the implementation of the United Nations 2030 Agenda for Sustainable Development. The author is of the view that aspiring for energy security is very important but it has a missing link. Therefore, the concept of Just Transition has to be incorporated in the whole process and this step will certainly drive us towards Just Energy Transition. Moreover, it will facilitate us to achieve SDG 7.

Globally, the countries are driving towards energy security but faces challenges due to catastrophic events such a Covid 19 pandemic, Russia- Ukraine war. There should Judicial Interventions in all the countries to drive the world towards a Just and Regenerative Renewable Energy transition. Various perspectives such as social, economic, cultural has to adhered but yet, the importance of gender equity cannot be undermined in transition towards renewable energy.

36 International Renewable Energy Agency, *Just & Inclusive Energy Transition Back-Collaborative Framework on Just & Inclusive Energy Transition,* Available at: https://www.irena.org/How-we-work/Collaborative-frameworks/Just-and-Inclusive-Energy-Transition (last visited June 21, 2023).

37 International Renewable Energy Agency, *IRENA's ETAF Recognised as Key Accelerator for Just Transition, 19 January 2023* , Available at: https://www.irena.org/News/articles/2023/Jan/IRENA-ETAF-Recognised-as-Key-Accelerator-for-Just-Transition (Last visited June 21, 2023).

India has taken a Centre stage towards clean Energy Transition and Net zero by 2070 but there are significant structural changes required in the production and consumption through fossil fuels. There is an urgent need to align the regulations and policies with the implementation and operationalization of the renewable energy sector. By incorporating the concept of Just Energy Transition in the National domain, India can send a strong signal that it is willing to play a leadership role by tackling the issue of inequality and climate change.