DEVELOPMENT OF GREEN FDI IN INDIA

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ABSTRACT

In order to develop the Indian economy, foreign direct investments are imperative. It has been possible to attract varied foreign attention due to the robust liberalised structure and ratified policies. When it comes to foreign investments in renewable energy, India has made a huge jump forward from where it was just a few years ago. Furthermore, investment interest has soared, and the renewable energy market has proven to be immune to the Covid-19 pandemic. India has demonstrated remarkable resilience in the green energy industry, taking critical milestones and contributing to the major objective of sustainable development by closely adhering to the principle that "resources are solely ours."This is where 'Green Finance' comes into play, as it becomes critical to channelize the flow of financial instruments across India in order to complete projects and future commitments that support the environmentally benign usage of renewable energy and their long-term development. Green finance in India is still in its early stages, but it has had a significant impact on India's future goals to adopt emission-free infrastructure and green growth targets. This article examines the topic of green finance and argues that it is a critical component of the renewable energy sector's ability to accomplish future goals in these exceptional times.

KEYWORDS: FDI, Government Initiatives, Green Finance, Renewable Energy, Sustainable Development, Pandemic

INTRODUCTION:

India in the recent years has striven to become a global power for foreign direct investments and has gained lot of foreign attention throughout the world. As per the latest official data FDI has increased to 40% what it was in starting of the financial year 2020-21. But in the pandemic scenario investors are facing hindrances to maintain normal business due to which there is a sharp reduction in the global flow of FDI. It has badly affected the renewable energy sector too as targeted potential resources are now facing problems regarding inflow of investments. So Indian government by taking consultancy of policy makers, business leaders and entrepreneurs has started post pandemic liberalization policies to enhance foreign investment in renewable energy sector again. Thus, Indian government has set up plans to attract foreign attention to these sectors again and has bought up liberalized investment policies according to the need of the hour.

As that of an developing nation, India can attract higher foreign direct investment (FDI) through Green Finance, an environmentally and climactically-related debt instrument. In India there is a strong connection between economic growth, environmental protection and social objectives. Although policymakers now rightly focus on restarting our economy safely in the context of the Corona Pandemic, there are numerous other threats like Air pollution. In 2020, India closed education institutions, transportation and distributed masks and sanitizers for a different public health problem: air pollution at an unparalleled level that was extremely harmful. Climate change that extends over the long term and gets worse over time is even more worrisome. Although FDI can attract many new ways, the impact on Environment is unavoidable. Reportedly, the speculation of 'pollution evaders' is a major focus of discussion on FDI and the environment. This essentially states that companies move their businesses to less-developed countries to use less stringent environmental regulations. In order to attract new investment, all countries can deliberately undervalue their environment.

For instance, with the current projected trajectory of the use of fossil fuel based resources , it is almost certain that the global temperature will rise by at least 3-5 degree Celsius above its pre-industrial level this would have severe and destructive repercussions in every sector including agriculture and human health , governments of several countries have had several meetings and summits to make sure this rise in temperature does not go above a certain point however it has not materialized yet into efficient action by creating low carbon energy systems in place for most industries.The problems in a country which already struggles to lifting poverty are detrimental. But there are solutions and ways today. Different ways for development and harmonizing. Foreign Direct Investment through Green Finance and taking responsibility for the environmental considerations, financial pressures need to be identified and accountability enhanced, Indian involves an integrated internal measurement, auditing and reporting system. The fields that are capable of creating clean, healthy and safe jobs for millions are clean energy, Low Carbon Transport, Buildings that are energy efficient and climatic agriculture, which leads to a green and peaceful future.

GREEN FINANCE IN INDIA

In India there is a strong connection between economic growth, environmental protection and social objectives. Although policymakers now rightly focus on restarting our economy safely in the context of the Corona Pandemic, there are ennumerous other threats. In 2020, India closed education institutions, transportation and distributedmasks and sanitizers for a different public health problem: air pollution at an unparalled level that was extremely harmful. Climate change that extends over the long term and gets worse over time is even more worrisome. According to a McKinsey Global Institute Report, huge rise in storms, heat and floods will hurt India harder than most other countries and endanger up with upto 4.5 percent of Gross Domestic Product(GDP) per year.[1] The problems in a country which already struggles to lifting poverty are detrimental. But there are solutions and ways today. The fields that are capable of creating clean, healthy and safe jobs for millions are clean energy, Low Carbon Transport, Buildings that are energy efficient and climatic agriculture, which leads to a green and peaceful future.

Although skyrocketing data are being collected on Environmental pollution and Green employment in India, compliance with or under-service of India's Green Economic Development Goals is not very concise.

GREEN FDI IN INDIA

The Indian green financial flows INR 111,000crores (USD 17,000) in FY 2017 and INR 137,000crores in the year 2018. INR 124,000crores ($19 thousand billion) per year, while 248 thousand crores have been tracked for the years 2016-2018 (USD 38 billion), on an average.

[1] Mayank Agarwal, India Needs Massive Increase in Green Finance For Required Climate Action,(May 3, 2021, 15:21) https://india.mongabay.com/2020/09/india-needs-massive-increase-in-green-finance-for-required-climate-action/

DEFINING GREEN FDI

A Green Foreign Direct Investment definition can allow researchers to evaluate whether and how FDI contributes to the Environmental Goals and to adopt strategies to elevate these financial flows. The feasible definition can help project developers, prospective funders, consumers, governments and other parties to identify environmentally sound and to reduce costs for transactions involved in Investment decisions, government approvals and consumer choices more easily and efficiently. Defining a Green Financing FDI is not easy, as no common definition of "Green FDI" has yet been widely adopted or statistically operational. Various publications include the definitions as:

- Climate finance: This comes from local, domestic or supranational funding derived from public, private and alternative financing sources, in order to support the mitigation of climate change and adaptation measures.
- Green finance: It covers climate finance, other environmental objectives necessary to promote sustainable development, and specific aspects such as biodiversity and resource conservation.
- Sustainable Finance: In order to construct a world which is inclusive, fiscally, environmentally and economically sustainable, sustainable finances cover a wider range of investments in the investment universe.

1. **SOURCES OF FINANCE**

Domestic Sources of Finance

In 2016-2017 and 2017-2018, national private investors contributed the biggest share of approx. INR 139,000 crores in debt and equities (63 percent and 51 percent). The commercial financial institutions comprised 40 percent of these funds. Nearly all funds have been earmarked for renewable energy development in the country.[2]

The public financing was paid either through the ministries and government departments of the central government (approx. 37 percent) or by PSUs (62 percent). The bulk of government

[2] Jolly Sinha, Shreyans Jain, and Rajashree Padmanabhi, Landscape of Green Finance in India,Climate Policy Initiative, August 2020 Report,(last visited May 3, 2021, 12:58 PM), https://www.climatepolicyinitiative.org/publication/landscape-of-green-finance/

money was spent on electricity production (70%), power efficiency, transmission and sustainable transport (20%) and (10 percent).[3]

Climate Outlay on dedicated PSUs more than doubled from fiscal year 2017 in 2018, while the budget allocations grew by 36 percent. The various initiatives and systems implemented by the Government of India are the main reasons for this. This is the fact.[4]

International Sources of Finance

International public finances remained almost equal in FY 2017 and FY 2018 with 10% in tracked green finance (INR 12 thousand crores). A disproportionate division between bilateral and multilateral agencies was made between Official Development Assistance (ODA) or Other official flows (OOF)[5] (75 percent and 25 percent respectively).[6]

In the sustainable transportation sector, the majority of bilateral finances (56 percent) have been used as infrastructure loans to develop metro projects. The lion's share of these funds was received by Mumbai and Delhi metro projects (45 percent and 25 percent respectively). Multilateral funds, on the other hand, were designed to develop power plants and country-wide roofs project work (40 percent). A Survey examines two of private international finance, Philanthrophy and FDI, in year 2017 and year 2018. These sources have disbursed the funds through equity and grant instruments.[7]

2. INSTRUMENTS

Debt, through projects or corporate finance, was on an average INR 70,000 crores a year for the 2016-2017 channel of green finance. It represented 54% of the maximum green finance that was monitored. Over 85% of the debt was directed to the electricity sector and ~INR 60,000 crores annually, and solar energy accounts for about 50 percent of its share.[8]

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[3] Jolly Sinha, Shreyans Jain, and Rajashree Padmanabhi, Landscape of Green Finance in India,Climate Policy Initiative, August 2020 Report,(last visited May 3, 2021, 12:59 PM), https://www.climatepolicyinitiative.org/wp-content/uploads/2020/09/Landscape-of-Green-Finance-in-India-1-2.pdf

[4] *Id*. at 2.

[5] Official sector transactions that do not follow official development assistance (ODA) requirements are classified as Other official flows (OOF) by the OECD , (April 30, 2021, 13:32 PM)

[6] OECD defines ODA as Government subsidies for the promotion of developing countries' economic development and welfare, (April 30, 2021, 13:34 PM) https://data.oecd.org/drf/other-official-flows-oof.htm#:~:text=Other%20official%20flows%20(OOF)%20are,development%20

[7] Mark Halle, Maya Forstater, Simon Zadek, Green Finance for Developing Countries(May 3, 2021, 13:34 PM)

[8] Jolly Sinha, Shreyans Jain, and Rajashree Padmanabhi, Landscape of Green Finance in India,Climate Policy Initiative, August 2020 Report,(last visited May 3, 2021, 12:59 PM),

More than 72% of the total debt has been transferred to commercial banks (public and private) while DFIs contributed approximately 15% in 2016-18.

In order to achieve India's green growth targets, renewables have recognised and it will play an important role.[9] The country will need an IFC study in 2017 to fund its clean energy targets of 2030 in terms of INR 3,360 thousand crores (USD 450 billion). The debt financing requirements are roughly INR 35 000 crores per year, supposedly a normal gearing ratio of 70-30 splits between debt and equity.[10] Even following inflation and maping margin adjustment, significant gaps remain in terms of the country's transformative financing scales and its long-term growth trajectory.[11]

In 2018, the US$1 billion mark was crossed in Foreign Direct Investment in renewable energy.

FDI (INR 12,000 crores) has been split between solar and wind power projects almost exclusively for the clean energy sector for both year, since advanced markets are present. In the other hand, FDI inflows have been steadily rising to the clean energy sector, they only account for 1% of total FDI flows in the economy.

3. SECTORS AND SUB SECTORS

3.1 POWER GENERATION

Over the two years of this study, the power generation sector accounted for almost INR 199 thousand crores. Total new investment in renewable energy in 2017 grew 19 percent over 2016 and was mainly driven by an increase in solar-wind and wind-power capacity.[12]

The electric power industry has always been the most competitive since it matured over time and enabled substantial investments to be absorbed compared to other sectors. However, due

https://www.climatepolicyinitiative.org/wp-content/uploads/2020/09/Landscape-of-Green-Finance-in-India-1-2.pdf

[9] Jolly Sinha, Shreyans Jain, and Rajashree Padmanabhi, Landscape of Green Finance in India,Climate Policy Initiative, August 2020 Report,(last visited May 3, 2021, 12:58 PM), https://www.climatepolicyinitiative.org/publication/landscape-of-green-finance/

[10] *Id*.at 8

[11] Olha Krushnelnytska, Introduction to Green Finance in India, (May 3 2021, 15:22 PM) https://www.thegef.org/sites/default/files/events/Intro%20to%20Green%20Finance.pdf

[12] Jolly Sinha, Shreyans Jain, and Rajashree Padmanabhi, Landscape of Green Finance in India,Climate Policy Initiative, August 2020 Report,(last visited May 3, 2021, 12:58 PM), https://www.climatepolicyinitiative.org/publication/landscape-of-green-finance/

to facilitated reporting and data availability, this bias towards the power generation industry could be exaggerated.

At December 2018, the solar rooftop total reached 4 GW, with an additional nearly 1 GW for FY 2017 and more than 1.5 GW for FY 2018. Despite the decrease in solar and wind energy costs, significant capacity additions indicate an increase in tracked investment. With the solar tariff reaching a record low in the second quarter of 2017, the average cost of renewable energy technology continued in 2016. Overall, policy measures in the solar energy sector such as solar power planning and grid-connected solar roof systems together with a sharp decrease in solar tariffs have made investment in the industry extremely attractive.[13]

According to the Ministry of New and Renewable Energy, wind energy projects totaling 5000 MW in 2017 were installed (MNRE). In India, almost 2 000 MW were installed in the same year in new wind energy projects.[14] This indicates that there was an annual decline of 68%21. Government's objective to set 60 GW of wind energy by 2022 and the decline in costs for wind energy developers were promising. Despite the lead-up, however, wind-fueled projects had taken place before 2014, the solar panel caught up shortly afterwards and compensated for the advantage of solar energy with lower spreads of interest.[15]

The power sector was financed primarily by domestic and international commercial debt (58 per cent), followed by private investment. Interestingly, PSUs like NTPC and IREDA pushed tracked public expenditure in the power generation sector. It is not really hard to believe, as these PSUs often serve as means to finance the country's green projects by the central government. Only 8 percent of total public spending for the sector was accounted for by DFIs.[16]

3.2 SUSTAINABLE TRANSPORTATION

Between 2017 and 2018, the transport of low carbon amounted to INR 27,500,000 crores, both in-house and international. Both domestic and international stakeholders carried these investments equally.[17] The largest contributor to the construction of metro projects was international bilateral finance, with its combined investment of nearly INR 13 000 debt crores.

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[13] Climate Budget Tagging (CBT) – What is CBT and how useful it is ? (May 3,2021, 15:15 PM) https://www.climatefinancedevelopmenteffectiveness.org/sites/default/files/climateBudgetTagging.pdf

[14] *Id.*at 10

[15] Jolly Sinha, Shreyans Jain, and Rajashree Padmanabhi, Landscape of Green Finance in India,Climate Policy Initiative, August 2020 Report,(last visited May 3, 2021, 15:20 pm), https://www.climatepolicyinitiative.org/publication/landscape-of-green-finance/

[16] *Id.*at 12

[17] *Id.*at 13

The largest beneficiaries of these funds were Delhi and Mumbai Metro projects (45 percent and 25 percent each). On the contrary, various ministries, such as the Housing and Urban Affairs Ministry and the Highways and Road Ministry, have disbursed total INR 895 crores budgetary subsidies for sub-projects.[18]

Between 2016 and 2018, a total of 6,00,000 EVs were sold in India representing 1.2% of the country's total car sales. Road EVs contain a wide range of vehicles, including electric two-wheelers, e-rickshaws and electric cars as well as electric buses. Although the 2-wheeler sales doubled during the two years, 87 percent of the total electric 3-wheelers, commonly known as e-rickshaws, were sold.[19]

Household spending on electric vehicles climbed by 20% year over year to INR 7,000 crores, accounting for the highest part of tracked private investment in sustainable low carbon transportation. One factor for the adoption of power supply could be the support offered through demand incentives, which have resulted in the purchase of over 280 thousand hybrid and electric cars over the years.

3.3 ENERGY EFFICIENCY AND POWER TRANSMISSION

India, in the two years INR has totalled 20,000 crores, which included energy efficiency and power transmission investments, retrofitting, refurbishment and modernisation (R&M), intelligent grids and green employment. The majority of share of those investments was captured by green energy corridors projects at approximately 47% followed by intelligent NSGM grids at 14%. Both have been driven by national and international public funding. The major sources of finance at 34%, central and public budget investments have been brought closer, with PSUs, including Energy Efficiency Services Limited (EESL), Energy Efficiency Bureau (BEE) and the National Thermal Power Corporation(NTPC) Limited.[20]

The notion that there are so many governmental entities involved in energy efficiency and power transmission finance contributes to the lack of data on private investments in R&M or

[18] Mayank Agarwal, India Needs Massive Increase in Green Finance For Required Climate Action,(May 3, 2021, 15:21) https://india.mongabay.com/2020/09/india-needs-massive-increase-in-green-finance-for-required-climate-action/

[19] Labanya Prakash Jena, Dhruba Purkayastha, Accelerating Green Finance in India, Climate Policy Initiative, (May 3 2021, 15:32pm) https://www.climatepolicyinitiative.org/wp-content/uploads/2020/07/Accelerating-Green-Finance-in-India_Definitions-and-Beyond.pdf

[20] Jolly Sinha, Shreyans Jain, and Rajashree Padmanabhi, Landscape of Green Finance in India,Climate Policy Initiative, August 2020 Report,(last visited May 3, 2021, 12:59 PM), https://www.climatepolicyinitiative.org/wp-content/uploads/2020/09/Landscape-of-Green-Finance-in-India-1-2.pdf

upgrades. We're working on enhancing our methods in order to better capture private sector investment.

TOWARDS A COMMON UNDERSTANDING AND MEASUREMENT OF GREEN FDI

A number of reasons cause problems with divergent and unpractical definitions of "Green FDI":

1.Failure to understand the green may compromise the integrity of Green Projects and increase the transaction costs of developing truly sustainable FDI projects, thereby blocking support for public and private investment.[21]

2. Concerns to know what hinders efforts to measure Profiles for Risk Return of green FDI projects in relation to non-green sector or activity projects.

3. The lack of data creates challenges to understanding the transformations required for the economy and, particularly, the roles FDI plays in advancing or undermining sustainable development goals. This also hinders the corresponding policy responses and strategies.[22]

The G20 Green Finance Study Group (GFSG), in its 2016 Synthesis Report, identified the failure to reach agreement and comparability on green financial terms, and a lack of relevant and agreed green indicators as one of the key obstacles to a slowdown of the support of green investments in the financial sector.[23] There is no need to identify and agree on one definition: single definitions risk not sufficiently reflecting different areas.

In considering how Green FDI understandings can be developed and harmonised, the relevant issues to be taken into consideration concern:

1. **MNE Conduct scope:** The definition is likely mainly to address practises and impacts of FDI established or acquired in a host country in view of the defining properties of FDI as

[21] Golub, S. S., C. Kauffmann and P. Yeres (2011), "Defining and Measuring Green FDI: An Exploratory Review of
Existing Work and Evidence", OECD Working Papers on International Investment, 2011/02, OECD Publishing. https://www.oecd-ilibrary.org/finance-and-investment/defining-and-measuring-green-fdi_5kg58j1cvcvk-en

[22] Labanya Prakash Jena, Dhruba Purkayastha, Accelerating Green Finance in India, Climate Policy Initiative, (May 3 2021, 15:32 PM) https://www.climatepolicyinitiative.org/wp-content/uploads/2020/07/Accelerating-Green-Finance-in-India_Definitions-and-Beyond.pdf

[23] Mayank Agarwal, India Needs Massive Increase in Green Finance For Required Climate Action,(May 3, 2021, 15:21 PM) https://india.mongabay.com/2020/09/india-needs-massive-increase-in-green-finance-for-required-climate-action/

investment owned by a foreign investor, and controlled by it.[24]

2. **Products and procedures:** While considering the processes, or goods or services manufactured, FDI could be green. Both should be taken into account in a definition. While the product produced in one aspect (e.g. the product) may be green, FDI's provisional green FDI label should not be used to give FDI a green label.

Due to the need to consider the definition and application of green FDI labelling that the environmental performance and impacts of FDI projects can change over time.[25] **Timing and amounts**: Defining, evaluate and measure Green FDI can, therefore, not be limited to initial investments but must anticipate and allow shifts in whether or not FDI is or is not green within a specific project (which includes reinvestment).[26] In addition, if all products or processes do not meet the green definition, definitions may have to evaluate how much FDI in a particular project is counted as a Green FDI.

3. **Economic viability:** Each interpretation should be able to broadly operationalize, using data and indicators that probably differ according to industry or sector of the FDI project, which are collected extensively across countries, and which can monitor and verify.

4. **Utility:** The definition must be designed for the desired ends. Therefore, when the aim is to lower the costs of transaction related to green project development and promotion, or to enable the impacts of private sector operations to be better assessed, the definitions of the green FDI should be in line as far as possible with the definitions in other forms of funding. If the goal is to identify the projects that are guaranteed financial incentives by the Government, green FDI may have be considered & excluded by FDIs produce environmental advantages but that are already established or legally mandatory practises related to procedures and problems.

5. Policy consistency: “Green FDI" can specifically be viewed as short concept than "sustainable FDI," broader sustainable development impacts should be considered for the definition used for green FDI. Failure to do so could effectively undermine efforts for socially

[24] Jolly Sinha, Shreyans Jain, and Rajashree Padmanabhi, Landscape of Green Finance in India,Climate Policy Initiative, August 2020 Report,(last visited May 3, 2021, 12:58 pm), https://www.climatepolicyinitiative.org/publication/landscape-of-green-finance/

[25] Golub, S. S., C. Kauffmann and P. Yeres (2011), “Defining and Measuring Green FDI: An Exploratory Review of Existing Work and Evidence”, OECD Working Papers on International Investment, 2011/02, OECD Publishing. (May 3 2021, 15:51 PM) https://www.oecd-ilibrary.org/finance-and-investment/defining-and-measuring-green-fdi_5kg58j1cvcvk-en

[26] Green Finance and Investment in Developing Countries, OECD, (May 3 2021, 15:46 PM) https://www.oecd.org/dac/environment-development/green-finance-and-investment-in-developing-countries.htm

fair, equitable economic growth in accordance with the broader set of objectives set in the Sustainable Development Goals by mobilising support for green FDI projects. While the 'green FDI' concept needs to be different from 'sustainable FDI,' the concept are in danger of becoming more vulnerable.[27]

Compatible guidance and focus on green finance data tracking would help to understand the scale of green investment finance in India.

While evidence exists of an overall upward trend, India is well below the standards laid down by numerous national and international studies for green investment in all three sectors - power generation, energy efficiency, energy transmission and sustainable transmission.[28] An investment scenario as usual sufficiently overcome growing financial gap in these low-carbon sectors. The recent researched financing for the country, according to most conservative estimates, accounts for only 10% of total demand across the sectors.[29] This study helped us to identify a number of green finance opportunities in India:

1. **India requires a system of integrated domestic measurement, reporting, and authentication to improve green finance attributes, identify financial limitations, and promote transparency (MRV)**. A complete climate budget marking framework should be developed to track climate expenditure in national budget systems in order to take benefit of integrated climate action by establishing and mainstreaming policies.

2. **PSUs play a significant role in mobilising and expanding green capital flows.**The development of specialist PSUs was a catalyst. It should be encouraged to further use this as a policy approach that enhance the PSUs, but explicitly adjust their to use expertise and reach to improve participation by the private sector.

GREEN FINANCE IN INDIA ,THE BENEFITS AND BARRIERS OF IT

Even with the continual annual aggregate revenue growth of the global economy at around 3-4% it is absolutely still not being able to at all deliver any form of sustainable growth, in mainly two basic sense that is in most countries this has resulted in a high disparity of wealth between the rich and the poor as well as economically this has cost serious destruction and will result

[27] *Supra note* at 23 at 9
[28] Mayank Agarwal, India Needs Massive Increase in Green Finance For Required Climate Action,(May 3, 2021, 15:21PM) https://india.mongabay.com/2020/09/india-needs-massive-increase-in-green-finance-for-required-climate-action/
[29] *Id.*at 17

potentially in serious repercussions reflected in the climate conditions. There are no qualms to the fact that climate change is the singular most destructive environmental threat that is imminent especially so if this continues and measures are not taken to curb this especially with the ever increasing plethora of new industries coming up to reap in profits and in the process hampering the overall environment let alone do anything in terms of sustainability and preservation of the same.

With the current projected trajectory of the use of fossil fuel based resources , it is almost certain that the global temperature will rise by at least 3-5 degree Celsius above its pre-industrial level this would have severe and destructive repercussions in every sector including agriculture and human health , governments of several countries have had several meetings and summits to make sure this rise in temperature does not go above a certain point however it has not materialized yet into efficient action by creating low carbon energy systems in place for most industries.

However the challenge was the extremely low investments in green energy projects and implementation of plans to reduce industry based cause for climate changes, this is even more prominent in the case of developing countries and underdeveloped countries where the monetary policies are proving to be arduous to keep running as well as the public do not have the capability to contribute and thus afford to invest in these long term projects and for green energy projects and the private sector also has not shown sufficient interest to fill this gap, therefore taking into account this it is now of paramount importance that financing of investments which gives good returns as well as environment benefits through new policies such as green bonds, green banks, fiscal policy etc. which is also coined collective under the umbrella of "Green Finance". There needs to be a start first in order to alter the present system of inefficient and environmental unfriendly resources and this would require a massive amount of investment at the initial phase and for this it is very important that all the developed and developing countries work together and come up with new policies and provisions in order to regulate this and so that new green energy projects can find success and so that slowly we can go away from the over dependence on non-renewable and coal based resources which are detrimental to the Environment resulting in massive problems potentially in the future in relation to Climate Change.[30]

MEAURES TO FILL THE GAP OF GREEN FINANCE:

Thus, we can infer from the above discussed dilemma that now more than ever the significance of Green Finance and effect implementation of the same is of great requirement and its central when it comes to the discussion about sustainability of economic growth. What's happening in most places and even more so in developing countries like India is that, the private as well as the government sector is trying to maximize economic growth at a rapid pace this of course more often than not leads to serious environmental damage which takes a backseat in terms of concern for most people because they are careless and blurred of vision as to what are the grave long term consequences of the same. Now we have come to a point that the natural resources are dwindling to the extent that it is in foreseeable future that we will run out of them, along with this there is rampant pollution as well as slow and steady declaration of the environment which could accelerate at any time. What therefore needs to happen is that funds from the conventional and traditional industries (ones using nonrenewable and environmental unfriendly means to achieve economic growth) has to be slow channelized, freed and consequently transferred to green and environmental friendly sectors of the industry. Therefore, there has to be intelligent and efficient allocation of resources and slowly one by one each and every company and business entity with the objective of economic growth has to be involved in implementation of Green Finance based policies some of which is happening already in developed countries. However, this has to spread and eventually also involve the developing industries as a lot of the manufacture and service based industries are in this countries like China, India although the former can't be classified fully anymore as a developing country but it does not meet every requirement of a developed country especially because of the parity of financial power between different class of people in there.[31]

So, Fossil fuels and similar forms of Non-Renewable Resources still even in present day dominate the Energy investment, therefore what needs to be done is that this has to be intricately

[30] Jeffrey D. Sachs, Wing Thye Woo, Naoyuki Yoshino, and Farhad Taghizadeh-Hesary ; Why is Green Finance Important?, Asian Development bank Institute, https://www.adb.org/sites/default/files/publication/481936/adbi-wp917.pdf.
[31] Labanya Prakash Jena, Dhruba Purkayastha ;Accelerating Green Finance in India, Climate Policy Initiative, https://www.climatepolicyinitiative.org/wp-content/uploads/2020/07/Accelerating-Green-Finance-in-India_Definitions-and-Beyond.pdf.

and steadily transferred into Renewable Energy resources now what has happened is Banking Sector is what generally finances these investments however R.E Resources are risky in nature as they are mostly long term projects while the Bank's Resources are mostly doming from regular medium term period deposits therefore investments in R.E is proving to be more risky thus its apparent that banking sector cannot alone fund these investments and other non-banking financial instruments and institutions (i.e pension funds as well as insurance firms). And as these non-banking based financial institutions generally deal in long term deposits for their resources therefore it is absolutely appropriate when it comes to R.E resources as they are in most cases long term projects as well with projected returns for long term value.

RELEVANCE OF GREEN FINANCE IN INDIA

India is ranked in the Top 5 when it comes to countries which have the highest potential risk when it comes to effects of climate change on the GDP at 2.5-4.5% annually which is quite a significant value. Keeping this in view India has promised to make sure to reduce the carbon intensity by curbing the value of carbon Intensity by 33-35% by the year 2030 which is a massive potential win considering the value in 2005 however in order to achieve this India has to mobilize a total of 2.5 trillion dollars however if we actually take a look at the amount of investments made from either private or public sources it is very apparent that when it comes to climate -related investments India is not even mobilizing 25% of investment that is required in order to recoup and reach this particular target that they have previously set.

There are some common barriers which are in the way of Green Finance being a Success in a country like India some of these are:

- **Early-Stage Technologies**: The early stage technology required to initiate effective green energy projects is very arduous and cumbersome along with being extremely expensive and cost intensive.

- **Long Term Nature of Business Projects**: These Projects related to Green Finance require investments to be made for a long term period and hats why because of the risk and uncertainty Financial institutions don't prefer channeling funds for these projects.

- **Lack of Relevant Financial Instruments**: This is probably one of the most significant barriers as there is a lack of Carbon Market Instruments as well as Green bonds, along with these financial Institutions like Green banks or R.E Funds as well as sustainable infrastructure finance all of these together would make the financial instruments to be viable in order to finance and invest in Green Energy Projects but there is a scarcity of these in India.

- **Lack of clarity in defining green economic activities**: There has to be a proper balance between economic growth and proper sustainable green energy planning , just having a few policies and implementing a few nature friendly actions would not result in there to be a proper system of Green Economic activities and the proper definition of Green Finance would thus not be fulfilled.

These above barriers along with some secondary others have really made it difficult for there to be an efficient system of green Finance in India and despite there being a lot of opportunity and potential as well as perspective thinking there is not proper implementation and planning in order to achieve this.[32]

INDIA'S INVOLVEMENT IN GLOBAL INITIATIVES FOR GREEN FINANCE :

Despite several promises and proposed implementation India's Financial system in place have not adopted most of the Global Initiatives for Green Finance in terms of investment practices or general awareness or interest regarding the same.

The Financial institutions in India which have aligned themselves with the global initiatives such as Responsible banking(R.B) and U.N Environment Finance Initiative (UNEP FI) only a handful of Banks such as Yes Bank is a signatory to these and follow the rules mandated by these organizations.

However there is no Representation from India when it comes to organizations such as Network for Greening Financial System (NGFS) as well as making little progress despite being a part of Platforms such as International Platform on Sustainable finance. All these things and the lack of collective effort and cooperation from the side of both the Public Financial Sector as well as Private and Commercial finance sector have caused as a result a situation which creates a grave

[32] Challenge barriers to a Sustainable Financial System, (May 02, 2021, 13:43PM) https://www.unpri.org/annual-report-2018/blueprint-actions/sustainable-markets/challenge-barriers-to-a-sustainable-financial-system.

danger in terms of the negative impact on the Climate Change and Environmental Deterioration which will further also accumulate and aggravate in terms of Economic Damage potentially.[33]

CONCLUSION:

India with over 1.25 billion populations, more than a quarter of total population faces formidable challenge in meeting their necessary energy requirement. Not only that current energy sector is now one of the most polluting sectors with recording emissions and low sub standards of environment concerns. Thus taking these two important factors into consideration government is putting relentless efforts in "Indian Renewable Energy Sector" and by 2030 has planned to improve the scenario and has bought forward a strong liberalized set up for green energy sector. Foreign investors are now setting up their projects in India and are keen to announce future prospects and projects that can shape India's energy sector with non-conventional energy sources. The growing popularity of renewable energy in the energy paradigm has scouted for new investors who can give high returns. Ultimately, scaling an avenue for new opportunities.[34] The key will be to improve the planning and implementation of the FDI flows so that rather than being a deterrent or a barrier in developing these green projects they rather generate benefit both on an International front as well as domestic front. Therefore, initiatives should be sought so as to catalyse Green FDI and leverage and promote emerging development when it comes to technology and financial markets as well as society. Green Finance therefore becomes extremely significant presently as it supports and develops the channeling and flow of the financial instruments as well as the services in relation to it in order to develop and successfully implement projects, policies and investments which are environmental friendly and sustainable like green energy and R.E projects so that there is far lesser risk potentially of Climate Change or at least if the damage can be deferred further and there aren't environment related risks in the future to the degree which if not prevented is looking extremely dangerous as per the current trend. Therefore, it is important for people to note that Green Finance is an important and Crucial priority for public policy. Right now due to Covid 19 we are already in unprecedented times so it's even more important now to realign our strategies and rethink about the policies and financial strategies in place so that we can

[33] RBI Bulletin , January 2021, https://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/04AR_2101202185D9B6905ADD465CB7DD280B88266F77.PDF.

[34] N. Venkata Kumar, Determinants of Foreign Direct Investment in Indian Power Sector, SHODHGANGA, (May 04, 2021), https://shodhganga.inflibnet.ac.in/bitstream/10603/121299/14/14_chapter_07.pdf.

make changes in industrial and commercial level which are sustainable environmentally and facilitate growth in terms of Economic and Environmental Amelioration.