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GREENING CPEC ENERGY AND SUSTAINABLE ENVIRONMENTAL GOVERNANCE

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Abstract
Energy is shaping our modern life. CPEC energy is a pedal ship for green energy which will help in sustainable environmental governance. Pakistan's contribution to ecological footprints is 0.79%. Green energy focuses on the sources of renewable energy that are renewable and considered environmentally friendly. Pakistan is also making its new renewable targets and making the project greener and environmentally sustainable. Policy Makers are also incorporating long-term issues like climate change and ecological risks into the decision-making. Greening BRI and CPEC are Chinese official projects which is a positive step.

Introduction
Energy is the life blood of modern age of machines. Smooth economic growth needs sustainable energy supply. They both are essential for economic and social development. In international relations, energy and routes of energy supply play an indispensable role. Both technical and political reasons may cause an interruption in the supply of energy. Its shortfall or its disturbed distribution disturbs economic development, affects social cohesion and causes unemployment. Energy interruption disturbs demand and supply system which lead towards energy crisis. Energy crisis is shortage in any energy related commodity. When a state faces shortage in the supply of some specific resource, it is termed as energy crisis. There is a variety of sources like coal, oil, gas and etcetera for the generation of energy. Therefore, when there is scarcity in the required amount of such sources, energy crisis crop up. Energy crisis have divesting impacts on economy of states. Globally, bulk of population do not have secure access towards sustainable energy and they are on the cusp of energy intensive economic development.

To run economic life of a state, energy is the lifeline of economy. Smooth economic growth needs sustainable energy supply. Energy shortfall or problems of energy distribution result in the loss of not only economic development but it also badly affects social cohesion in the society and increases unemployment. For economic development of any nation, energy, in the form of electricity, is essential. At present, energy is recognized as a vital commodity.

Pakistan is facing acute energy crisis, which is worsening by the by. Poor strategic and proactive approach, mismanagement in distribution of resources and poor infrastructure has put Pakistan in this dearth. These crises are semi-permanent and multi-faceted. For an economist, it is a circular debt issue; for a politician, it is lack of political will; for an engineer, it is a technical problem and for an aid organization, it is an administrative issue. Unfortunately, since a few decades, Pakistan has been stuck mainly in energy crisis. These energy crisis are severe and effect political and social life. These energy crisis has shut down various factories and industries, paralyzed production and caused unemployment. Currently, Pakistan is up against the issues like production and demand, the lack of planning and institutional governance. The methods of governments remain a failure for they were based on short-term crisis management rather than on the strategy for sustainable supply of energy.

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In order to cope with it, certain governments introduced certain energy policies which, on papers, were practical their implementation was checked by the emergence of some certain problems. Decision making authorities of energy institutions failed to resolve these problems. In terms of policy, energy sector is suffering from serious governance challenges. Weak institutional structure, along with poor enforcement mechanism of policies, is the key hurdle in the management of energy problem in an efficient and effective way. It is a well-known fact that without sustainable supply of energy, all efforts of improving growth potential will remain but a dream.

China's trajectory of its stakes based on BRI abounds it to curve the potential of the international economy. It insinuates its potential to manage the impact of climate change as well. China is the top country in the world to spend on climate change management projects. This fact is manifested in the US policy as well. The US invited China on the Climate Summit in April 2021. Bill Gates has proven to appreciate China's fortitude in prioritizing climate change impact and its desire to reduce carbon emissions. He further emphasized that the world community must take benefit from China's efforts to manufacture green energy products. The cash-strapped poorer countries can utilize rechargeable batteries and solar power panels made in China. China must be appreciated because of its achievements in building up its energy grid to organize further renewable energy. The transport in Chinese cities is being added with electric buses. The facts determine the ideas of the same practices in the China-Pakistan Energy Corridor (CPEC) included in the Belt and Road Initiative (BRI).

Belt and Road Initiative (BRI) 2013 had prelude the UN endorsement of Sustainable Development Goals (SDGs) in 2015. The two international public goods have shared concepts, objectives, and principles. The 17 goals for Sustainable Development seem supported by the principles of BRI named; policy coordination, facilities connectivity, unimpeded trade, financial integration, and people-to-people bonds. BRI is found styled to construct ecological civilization being proactive to manage the enlarging challenge of climate change to human sustainability. The international community has positively recognized the role of BRI in defining and operating the emerging economic geography transcending the continents of Asia, Africa, and Europe. It will promote global actions to address the common challenge of environment and poverty by forging reasonable and fair global governance systems. BRI is committed to align with the green principles of SDGs. SDGs are emphasizing on low-carbon construction and elevating collaboration to protect the environment, conserve biodiversity, and mitigate the climate change impact.

BRI will help the connected countries:

- To promote policy communication for implementing SDGs
- To construct governance systems to prevent environmental risks
- To green the financial integration
- To enhance the capacity building to practice the SDGs

China has extended its economic strength by way of initiating the China-Pakistan Economic Corridor (CPEC) in 2015 meaning the economic development of Pakistan on the confluence of South Asia-West and Central Asia. CPEC project posits to develop energy corridors to manage the energy crisis of Pakistan to invigorate the economy. Though the energy mix of CPEC 69% is dominated by coal-based power generation; there can be opportunities to promote renewable energy by processing solar, wind, and hydel energy policies and business intimacy with the Chinese enterprises. The possibility arises to benefit from China's experience and expertise regarding solar technology at an economical price to comprehend the future challenges linked to climate change's impact on Pakistan. China and Germany are known as the top countries in the world for developing and utilizing solar energy to support their inland

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energy systems modestly. China's Foreign Direct Investment can be a source to develop solar energy in Pakistan.

Clean Energy and CPEC

The best clean way to meet global energy needs is through sources of green energy like wind, solar, hydel, geothermal etcetera. These green sources produce energy with little or no pollution or emissions in global warming. Green energy focuses on the sources of renewable energy that are renewable and considered environmentally friendly. Under CPEC, hydel, solar, and wind-based green energy projects are playing a vital role in Pakistan's low-carbon economy and renewable energy goals. In 2020, the share of renewable energy in power production of Pakistan was 4 percent. China through CPEC is paving the way for Pakistan to increase the share of renewable energy in the energy mix up to 30 percent by 2030.

Obstacles to Ramping up Renewables in CPEC

China will help in green CPEC because there are strong moments in and outside China regarding the promotion of green energy. On CPEC, China's reputation as green leader is at stake. But in greening the CPEC, the obstacles are as:

1. State Owned Enterprises and government bodies driving decisions.
2. Access to finance
3. Preference for fossil fuels among policymakers in Pakistan
4. Reflects of BRI trends

Coal based energy production is not suitable for Pakistan because it is more expensive than the renewable (Solar and Wind) energy. The idea of coal power plant was initiated before the CPEC because Pakistan was facing the problems of Sever power shortage, high generation cost and circular debt. So, coal became the solution of these problems. Government of Pakistan wants to use coal to replace expensive oil and gas imported from overseas. When CPEC was initiated in 2015, it became an opportunity for Pakistan to use coal as window to achieve its power development goals. Pakistan has abounded coal reserves and it attracted foreign investors for coal-based power plants and facilitate them. These mechanisms combined to contribute to the coal fever but the renewable during that times were not given the same privilege as coal. Renewables were not comparative as coal in terms of the generation cost during that time. But now the situation is quite different there is the tendency of power surplus in Pakistan and coal power is losing advantage over renewables in terms of the cost. Pakistan is also making its new renewable targets. One can say that in 2013, climate change or environmental issues were giving less importance during CPEC negotiation process compare to the urgent need to quickly filling the power gap. Now both sides are focusing on making the project greener and environmental sustainable. They are also incorporating long term issues like climate change and ecological risks into the decision making. Greening BRI and CPEC is Chinese official project which is a positive step. It also shows that how seriously things are being taken at the top level.

At present, share of coal in CPEC is very high and private renewable energy companies of China are facing various obstacles in getting the green investments in CPEC. Pakistan has weak air pollution monitoring system. Currently, citizens and environmental activists are increasing pressure for installing better air quality monitors. The challenges of integrating the projects of clean energy into CPEC are serious. It is a very genuine desire of current government to increase the share of clean energy in the energy mix of Pakistan.

In comparison with other states, Pakistan's per capita CO_2 emissions are much lower. So, Pakistan needs to invest in renewable energy ensuring energy security. Pakistan is not the only state to shift to the use of coal for energy. When Bangladesh, sources of natural gas were dwindling, it started the use of coal for energy production. Coal and natural gas-based energy supported Bangladesh to come out of the energy crisis. In 2018, in the energy mix, the share

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of natural gas was 75%. By 2030, Bangladesh aims to use coal as the major source of energy production.[1]

China and Pakistan are not only cooperating in making CPEC environment-friendly projects but also cooperating on the trade mechanism of the greenhouse. It will offset the cost of carbon emissions in the environment. To make CPEC, environment environment-friendly project, Pakistan is fully committed to all its promises and objectives of the Paris Agreement. The government is insistent that coal-based plants are fitted within the frame of the latest technology which has reduced emission of pollutants and causes negligible climatic change.

Due to the huge share of coal in CPEC, the concerned authorities of environment-related departments are adopting the best means to reduce environmental damage. Despite this, these projects are granting carbon footprints in the eco-system. Around the globe, usage of coal received a lot of criticism because of its environmental impacts. In the energy mix of Pakistan, the share of coal is low and despite massive investment in coal projects, it will remain low. It is a big fact that in comparison with Pakistan, the carbon footprints of Germany and the USA are much higher. The table shows the global disparity in carbon footprints.

Per Capita CO_2 Emissions in the World (2016)

Sr. #	Country	Metric Tons
1	United States	14.95
2	Germany	8.88
3	China	6.57
4	India	1.57
5	Pakistan	0.92

Source: Henry Bewiicke, "Chart of the Day: These Countries have the Largest Carbon Footprints", *World Economic Forum*, (2019), Pakistan-CO_2 Emissions Per Capita Available At: https://knoema.com/atlas/Pakistan/CO2-emissions-per-capita Access on 3-6-2022

In comparison with other states, Pakistan's per capita CO_2 emissions are much lower. So, Pakistan needs to invest in renewable energy ensuring energy security. Pakistan is not the only state to shift to the use of coal for energy. When Bangladesh, sources of natural gas were dwindling, it started the use of coal for energy production. Coal and natural gas-based energy supported Bangladesh to come out of the energy crisis. Currently, in the energy mix, the share of natural gas is 75%. By 2030, Bangladesh aims to use coal as the major source of energy production.[2]

Pakistan's CPEC Journey and Renewable Energy Projects

Despite massive investment in coal-based energy projects, CPEC also focused on renewable energy projects. In the long-term plans of CPEC, it is mentioned that in the future the major area of investment will be renewable energy projects. In CPEC, renewable energy projects of solar and wind are at the forefront. For long-term sustainability, these renewable energy projects will produce not only affordable energy but also avoid the effects of GHG emissions.[3]

[1]Arif Rafiq, "The China-Pakistan Economic Corridor: Three Years Latter", *Center for Strategic and International Studies*, (12 February 2018), p. 17
[2]Ibid.
[3]Quraat Hashmi, "CPEC Projects: Is CPEC an Environment Friendly Project", *The EurAsian Times*, (28 March 2018)

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Renewable energy replenishes with time. In term, renewable energy is sustainable energy that is clean with no carbon emission. In renewable energy, Pakistan made no significant progress. Yet, in CPEC, renewable energy is providing a significant share of the energy mix of Pakistan. Wind and Solar projects are at the forefront to shun the greenhouse effect. Renewable energy projects will not only provide environmentally friendly and cheap energy but will also provide sustainability to the energy sector of Pakistan.

Greening CPEC

It is very interesting that Pakistan has not been invited by President Joe Biden on Climate change summit. In this summit, leaders of 40 nations will participate including from Bangladesh, India and Bhutan. Despite of growing rivalry between China and US, Biden administration has invited Beijing on climate change summit. China has gained tremendous progress in energy generation through renewable energy sources. China has already introduced electric buses in many cities. However, there is the need of increase in Chinese commitments regarding increase in the use of renewable energy not only in Belt and Road Initiative (BRI) but also in China-Pakistan Economic Corridor (CPEC) as flagship project. The per capita energy consumption of BRI's countries is less than 2,000 kW/h each year. This low level of energy consumption is indicating exceptional energy indigence. Through BRI, China is promoting partnership with other countries and encouraging sustainable and low-carbon energy production. The fundamental purpose behind this initiative is to produce renewable energy and reduce CO^2 emission.[4]

In 2020, Prime Minister Imran Khan, during his address before Climate Ambitions Summit, had expressed his desire that Pakistan will fulfil 60 percent of its energy needs through renewable energy resource at the end of 2030. To meet this target, government has initiated tsunami tree plan but this is not enough. There is the need of encouraging investments in renewable energy generation. It is also necessary to convert coal-based power plants to reduce CO^2 emission level. There are certain media reports that in CPEC, few coal-based energy projects has been stopped and government is planning in increasing the share of renewable energy projects which is a good sign. To counter climate change threats on CPEC, there is the need of more attention instead of stopping coal-based energy projects. Under energy projects of CPEC, China is specially focusing on non-polluting sources of energy production. Both China and Pakistan are strengthening their bilateral cooperation in renewable energy production and CPEC is utilizing three sources of clean energy which include Hydel, Wind and Solar.[5]

In December 2020, during a meeting between the authorities of both sides agreed green initiative of CPEC. Special assistant of Prime Minister on climate change briefed a delegation headed by Chinese ambassador regarding Pakistan's initiative on 'Clean Green Pakistan'. It includes plastic free Pakistan, ten billion tree Tsunami program, recharge Pakistan initiative protected areas initiative and clean green Pakistan. In response, the delegation also extended it cooperation regarding green endeavors of Pakistan.

In regional perspective, both China and Pakistan showed their willingness to turn CPEC into modern green BRI to protect and preserve natural environment. Both sides also agreed to enhance their cooperation on the issues like green economic recovery, climate resilience, water conservation and disaster risk, renewable energy and environmental sustainability.

In Pakistan, political analysists are hoping that US may help Pakistan on 'Green CPEC'. However, it is based on the support of Biden administration but Pakistan's hope from this new administration of US will be again a mistake. It is necessary for Pakistan to enhance its

[4] Hu Biliang, "Building a Green and Sustainable Belt and Road", China Today, 25 February 2021
[5] Raheela Nazir, CPEC: Promotes Pakistan's Renewable Energy Goals", *Xinhua*, 17 December 2020

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cooperation with China in getting environmental friendly sustainable energy. In CPEC, Pakistan must give priority to renewable energy projects to address environmental challenges. Both China and Pakistan are required lot of work if they want to turn CPEC into a blueprint for greening the ambitious BRI.[6] China is helping Pakistan in building world largest solar farm but it is not enough. There are certain obstacles in greening the CPEC but renewable energy projects provide opportunities for clean energy Investment in CPEC.

Characteristics of Clean and Green CPEC

In December 2020, during a meeting between the authorities of both sides agreed green initiative of CPEC. The special assistant of the Prime Minister on climate change briefed a delegation headed by a Chinese ambassador regarding Pakistan's initiative on 'Clean Green Pakistan'. In it, the major initiative was the "Ten Billion Tree Tsunami program". The government of Pakistan has initiated the "Ten Billion Tree Tsunami Program" with a cost of 125.1843 rupees. It is a four-year program (2019 to 2023) and is being implemented through the Ministry of Climate Change. According to the ministry plantation target of 430 million trees has been achieved and by 30 June 2021, the target of 1 billion plantations will be achieved.[7]

In 2020, Prime Minister Imran Khan, during his address before the Climate Ambitions Summit, expressed his desire that Pakistan will fulfill 60 percent of its energy needs through renewable energy resources at the end of 2030. To meet this target, the government has initiated a tsunami tree plan but this is not enough. There is a need to encourage investments in renewable energy generation. It is also necessary to convert coal-based power plants to reduce CO^2 emission levels. According to Xinhua (News Agency), in CPEC, few coal-based energy projects (i.e., Rahimyar Khan Imported Coal Power Plant) have been stopped and the government is planning to increase the share of renewable energy projects which is a good sign. To counter climate change threats on CPEC, there is the need for more attention i.e., increasing focus on renewable energy projects, instead of stopping coal-based energy projects. Under energy projects of CPEC, China is especially focusing on non-polluting sources of energy production (Amount Not Specified Yet). Both China and Pakistan are strengthening their bilateral cooperation in renewable energy production and CPEC is utilizing three sources of clean energy which include Hydel, Wind, and Solar.[8]

Pakistan must enhance its cooperation with China in getting environment-friendly sustainable energy. In CPEC, Pakistan must give priority to renewable energy projects to address environmental challenges. Both China and Pakistan require a lot of work if they want to turn CPEC into a blueprint for greening the ambitious BRI.[9] There are certain obstacles in greening the CPEC but renewable energy projects provide opportunities for clean energy investment in CPEC.

Obstacles Behind CPEC Green Energy

It is not easy to undo the CPEC energy provided so far. There are certain obstacles to ramping up this energy. When the idea of a coal power plant was initiated before the CPEC, Pakistan was facing the problems of Sever power shortage, high generation costs, and circular debt. In 2015, there was a 5000MW to 7000MW demand and supply gap and the nation was facing a terrible energy crisis. So, coal became the solution to this crisis. The government of Pakistan wants to use coal to replace expensive oil and gas imported from overseas. When

[6] Syed Mohammad Ali, "Make CPEC Greener", *Tribune*, 02 April 2021

[7] Ten Billion Trees Tsunami Program-Phase-I Up-Scaling of Green Pakistan Program (Revised), Available At: http://www.mocc.gov.pk/ProjectDetail/M2QzOWJmMjUtZTU3MC00NmFkLWE4YmMtZDFhMmRlOGU2NGRh. Access on 24-04-2024

[8] Raheela Nazir, CPEC: Promotes Pakistan's Renewable Energy Goals", *Xinhua*, 17 December 2020

[9] Syed Mohammad Ali, "Make CPEC Greener", *Tribune*, 02 April 2021

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CPEC was initiated in 2015, it became an opportunity for Pakistan to use coal as a window to achieve its power development goals. Pakistan has abounded coal reserves and it attracted foreign investors for coal-based power plants and facilitated them. Renewables were not comparable to coal in terms of the generation cost during that time. But now the situation is quite different there is a tendency for power surplus in Pakistan and coal power is losing an advantage over renewables in terms of cost. At present, the share of coal-based energy is very basic and it is not easy to undo this energy. However, things can be managed by increasing the share of renewables. But it will increase the cost which cannot be determined yet and will also take time. There are also certain obstacles to greening the CPEC as:

5. State-owned enterprises and government bodies driving decisions.
6. Access to finance
7. Preference for fossil fuels among policymakers in Pakistan
8. Reflects on BRI trends

Despite above mentions hurdles, Pakistan is also making its new renewable targets. Now both sides are focusing on making the project greener and environmentally sustainable. They are also incorporating long-term issues like climate change and ecological risks into the decision-making. Greening BRI and CPEC are Chinese official projects which is a positive step. It also shows how seriously things are being taken at the top level. China will also help Pakistan in green CPEC because there are strong moments in and outside China regarding the promotion of green energy. At CPEC, China's reputation as a green leader is at stake.

Green Energy Potential of Pakistan and Environment Sustainability

Pakistan's contribution to ecological footprints is 0.79%. It is ranked 184 out of 188 countries causing emissions. The "Global Climate Risk Index 2021", has shown Pakistan the 8th most vulnerable country to climate change. Climate change is a perceived security threat multiplier in the region of South Asia. Three countries particularly India, Pakistan, and Bangladesh share the rivers dependent on the depleting Himalayan glacier system. The Climate Ambition Summit was convened in Glasgow in December 2020. It was the fifth anniversary of the Paris Agreement. Prime Minister Imran Khan of Pakistan articulated the desire to compose Pakistan to turn out 60% of energy demand by utilizing renewable resources through 2030. The goal can't be achieved only by relying on the 'Ten Billion Trees Tsunami Program' 2019-23. Pakistan has to raise sufficient investment in the resources referred to as renewable energy namely solar, wind, and hydro. The conversion of coal-fired plants is also desirable. Effective mechanisms to prevent pollution need to be developed and implemented.

There are good signs that a few coal-fired projects are shelved, and the development of the 'Hydro China Dawood Wind Power Project' close to Karachi has begun. But all the CPEC projects need to be vitalized keeping in view the climatic predictions vis-à-vis in and around South Asia. Pakistan could have expected to have US support regarding greening Pakistan. But "The US President Joe Biden had in April 2021 invited 40 world leaders in Summit on Climate, including those from India, China and Bangladesh, to the summit. It was understood at the time that Pakistan had been skipped from the conference despite being one of the most vulnerable countries in the world to climate change."[10] The circumstances advise Pakistan to become more relevant to Chinese largesse. The largesse may be strategized by the decision support systems of Pakistan to count the public and private investments between China and Pakistan. Pakistan has to position a top concern on the navigation of newer CPEC projects towards addressing ecological

[10] Naveed Siddiqui, US Invites Pakistan to Virtual Climate Summit after Earlier Overpass", *Dawn*, April 19, 2021

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challenges in front of the country. Both China and Pakistan have a lot further effort into do proviso they wish to go around CPEC into a drawing for greening the ambitious BRI.

The ruling government of Pakistan expressed the ambitious targets in the Glasgow Climate Summit 2020 to boost the contribution of energy generated with alternative and renewable sources to 20% by 2025 and 30% by 2030. The existing share of renewable energy stands at a meager 6 percent of energy production. However, due to the alternating nature of renewables and Pakistan's not-so-'well-turned-out transmission and distribution grid, reaching the targets foresees challenges. Opting for renewable energy reflects the need for substantial investment in Pakistan's energy transmission system. It will make sure to facilitate the reliability of energy consumption systems. The placement of Phasor Measurement Units and Flexible AC Transmission Systems will help this idea into practice. The existing energy distribution systems have to be upgraded to safely embrace the increase in the utility of energy renewable through collaboration with China.

The most capable renewable energy projects should be selected via competitive bidding processes. The approach is appreciated as competition for the market. The government can intervene to regulate the bids on merit for longer project life. In this way, investors in renewable energy projects are supposed to become more responsible for market risks. The trend may give relief to the government and clients. The entities may benefit from lower energy prices. Pakistan can establish energy markets by collaborating with Chinese experts. The energy governance in Pakistan has initiated organizational processes to indigenize renewable energy production. For this purpose, the testing labs in Pakistan would be required for renewable energy resources such as solar panels. These labs resolve need to the organize testing at both national and international principles to ensure that only worthwhile is produced and installed. China can be the source to uplift Pakistan for such development and capacity building. China's Bagasse energy expertise can be the source to develop and enhance the green energy potential of Pakistan. Credit to energy facilitated by distribution companies. Bagasse-powered sugar mills can be able to transfer their excess energy to further industries which will help to manage Pakistan's energy demand.

By streamlining the green energy potential of Pakistan with China's CPEC/BRI initiatives Pakistan may work to elevate the green energy trends in the state. For this purpose, the development of small hydro projects in the northern areas of Pakistan, the solar projects in the far-flung areas of Balochistan, and the appreciation of developing wind energy in the province of Sindh seem rational and practical to green the CPEC 2015. The guiding principles of the energy policy of Pakistan include green energy, the utilization of indigenous resources, and less cost of production. However, the existing commitments of the state to refer foreign-funded energy projects drag the government to work for the principles. The projects heavily depended on fossil fuels which are not environment friendly. Encouragement to the use of electric vehicles also the business activities spun as a result of the China-Pakistan are rest to make possible the accumulation of newer and greener sources of energy in the standard economy of Pakistan. 3,500MW of large hydro energy projects are the connected part of CPEC as compared to its 6,900 MW of coal-fired projects. While hydro energy is renewable, large hydro energy projects have costs in social and environmental terms. It is possible with due collaboration with China's new technology breakthrough in April 2021 to run coal-fired energy production with 'ZERO' carbon emission. All the same, the CPEC deal also covers 1,000 MW solar and 400 wind energy projects. Irrespective of CPEC, while Pakistan ends up over 11,000MW of fossil fuel plants by 2047, production of over 22,000MW from 5 sequenced dams on the Indus River together with Diamer-Basha and Dasu power projects, resolve a long-term system in the growth of renewable energy generation in Pakistan.

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In the second phase of CPEC agriculture has been added in the areas of collaboration between Pakistan and China. Phase II of CPEC was deliberated between the two countries in Dec 2020. The new areas of collaboration include environmental sustainability, climate resilience, green energy, green economic recovery, air pollution, water security, and disaster risk management. Pakistan is all the same working on 'Clean Green Pakistan' that plans to extend the protected area from 13% to 15% by 2023. The project will help to create five thousand jobs in the state of Pakistan.[11] The government of Pakistan has initiated the "Ten Billion Tree Tsunami Program" with a cost of 125.1843 rupees. It is a four-year program (2019 to 2023) and is being implemented through the Ministry of Climate Change. According to the ministry plantation target of 430 million trees has been achieved and by 30 June 2021, the target of 1 billion trees plantation will be achieved.[12]

The study recommends:

1. Proactive participation in the international and regional climate governance systems
2. Promotion of coordination to implement the strategies comprising policies and benchmarks of eco-friendly technologies
3. Encouragement to green investment based on environmental impact assessment
4. Capacity building of formal and informal institutions for sustainable development.

The concerted efforts of China and partners of BRI particularly of Pakistan the owner of CPEC may fruition the efforts to green the global governance for sustainable development.

Conclusion

The renewable energy domain seems promising for fruition the objectives of CPEC the flagship of the Belt and Road Initiative 2013. The available cooperation of China can be a source of benefit. The scenarios are given equipping the low-cost local force with the necessary skills to promote green energy. The universities and the scientists in Pakistan must be linked to Chinese universities and incentivized to research the energy governance of Pakistan. The political economy of energy in China must be utilized in Pakistan to mindset the politicians of Pakistan. Since the ultimate decisions have to come from politicians, they may be given requisite exposure to the subject through a series of seminars, and trainings aimed at 'Energy governance.'

To conclude, one can say that in 2015, climate change or environmental issues were given less importance during the CPEC negotiation process compared to the urgent need to quickly fill the power gap. Now, it is not easy to undo the coal-based energy because, in CPEC, coal-based energy production is providing 4920MW to the national grid. This coal-based energy production is playing a basic role in filling the demand and supply gap. The removal of this energy will lead the nation again towards the previous energy crisis.

[11] Noor Aftab, "CPEC to be Turned into Model Green Belt Initiative", *The News*, December 15, 2020

[12] Ten Billion Trees Tsunami Program-Phase-I Up-Scaling of Green Pakistan Program (Revised), Available At: http://www.mocc.gov.pk/ProjectDetail/M2QzOWJmMjUtZTU3MC00NmFkLWE4YmMtZDFhMmRlOGU2NGRh. Access on 24-04-2024