Addressing Energy Policies and Plans of Bangladesh and South Asia: Looking Back to Way Forward

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1.1 Introduction

Bangladesh has made significant strides toward its development goals outlined in Vision 2021 and Vision 2041. Energy has played a vital role in this journey, with the government implementing various policies and reforms. The energy sector's growth is evident from the remarkable 366.9% increase in installed generation capacity from 5,719 MW in the fiscal year 2008-09 to 26,700 MW in June, 2023, achieving 100 percent grid electricity coverage (BPDB and Ministry of Finance). However, Bangladesh's energy sector faces several challenges, and addressing these issues is crucial for ensuring a sustainable and efficient energy sector, reducing financial burdens, and promoting the transition towards cleaner and more self-reliant energy sources. On the other hand, the decarbonization of South Asia's energy sector is crucial for sustainable growth, as it's the region's largest greenhouse gas emitter, causing air pollution and health issues. South Asia imports a significant portion of its energy, making it vulnerable to global price fluctuations, particularly during crises like the Ukraine war. Transitioning to renewables is vital for resilience, cost reduction, and climate change mitigation. Currently, only Bhutan and Nepal primarily use renewable sources, but India is rapidly expanding its solar and wind markets.

1.2 Methodology and Objectives

This research paper derives from secondary literature review and employs quantitative analysis utilizing data sourced from different official government websites. The analysis draws upon diverse sources including websites, newspapers, policy papers and articles.

The primary aim of this study is to examine the prevailing energy policies, plans, and objectives within the context of Bangladesh and South Asia while discerning areas of policy gaps and shortcomings. Additionally, the study underscores global trends that support capacity development and investments in renewable energy. Furthermore, the article pinpoints ongoing plans and initiatives among South Asian nations that facilitate their targets and goals of achieving an energy mix prominent from renewable sources. Concluding the study, the paper provides recommendations for Bangladesh to consider, guiding the country toward an effective and equitable transition to renewable energy sources.

2. Energy Policies and Plans of Bangladesh

	Policies and Plans	Key-notes
2.1	**Energy Policy 1996**	a) Aims to facilitate sustainable economic growth by ensuring adequate energy supply for different sectors and regions. b) Focuses on optimizing indigenous energy sources, promoting environmentally friendly energy programs, and encouraging public-private sector participation. c) Prioritizes the expansion of energy infrastructure and advocates a diversified energy mix with greater reliance on indigenous fuels. d) Promotes the commercialization of Compressed Natural Gas (CNG) in various modes of transport.

2.2	**Bangladesh Energy Regulatory Commission Act, 2003**	a) A national legislation aimed at establishing an independent and impartial regulatory commission for the energy sector in Bangladesh. b) Empowers the Commission to determine the prices of power generation at the wholesale, bulk, and retail levels, as well as the supply of energy to end-users, in consultation with the government. c) Provides financial incentives for energy infrastructure through the creation of the "Bangladesh Energy Regulatory Commission Fund," which receives funds from grants, loans, fees, and other sources. d) Designates private companies with pre-existing agreements with the government as licensees for power generation, supply, transmission, distribution, storage, and bulk energy under this legislation.
2.3	**National Energy Policy 2004**	a) Aims to provide energy to support sustainable economic growth, ensuring that energy shortages do not hinder development across sectors. b) Seeks to meet the energy needs of different regions and socio-economic groups. c) Emphasizes the optimal development of indigenous energy sources. d) Prioritizes the sustainable operation of energy utilities. e) Promotes the rational use of all energy sources while minimizing environmental impact. f) Encourages public and private sector involvement in energy sector development. g) Targets nationwide electrification by 2020. h) Aims to provide reliable and affordable energy access to the population and establish a regional energy market to enhance energy security through efficient commercial energy exchange.
2.4	**Renewable Energy Policy of Bangladesh 2008**	a) Emphasizes the urgent need for the country to develop renewable energy technologies to ensure the efficient utilization of renewable energy resources. b) Sets ambitious targets of achieving 5% of total power demand from renewable energy by 2015 and 10% by 2020. c) Outlines actions for scaling up solar PV systems and implementing outreach programs to develop renewable energy initiatives.
2.5	**The Power System Master Plans in 2010**	a) Focused on coal power development and aimed to deliver stable and high-quality electricity to the people of Bangladesh to improve their living standards. b) Prioritized fuel diversification and aimed to achieve self-sufficiency in primary energy resources, with coal, natural gas, and renewable energy accounting for a significant share by 2030.

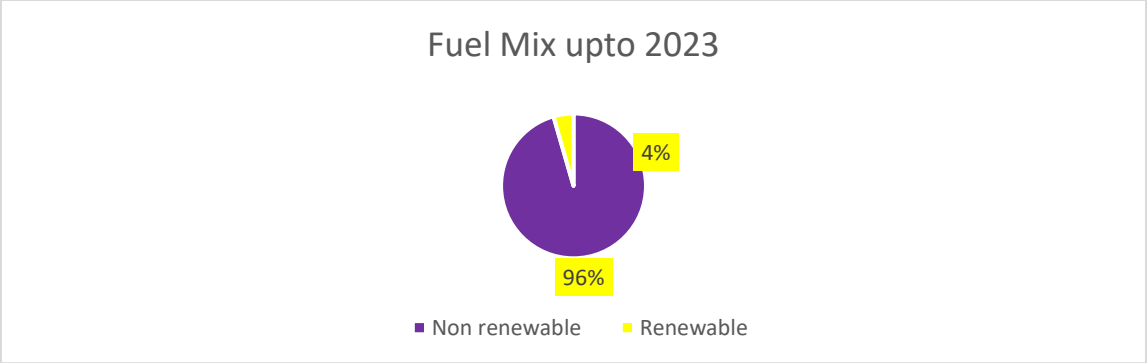
		c) Emphasized the importance of infrastructure development, including the establishment of the imported coal chain and deep-sea ports for petroleum product transportation.
2.6	**The Sustainable and Renewable Energy Development Authority Act 2012**	a) Aims to establish the Sustainable and Renewable Energy Development Authority (SREDA) in Bangladesh. b) Covers the establishment of the authority, its management, funding, budgeting, and accounts. c) Addresses the establishment of committees, the appointment of employees, and the auditing of accounts.
2.7	**The Power System Master Plan 2016**	a) Enhancement of imported energy infrastructure and its flexible operation. b) Efficient development and utilization of domestic natural resources, such as gas and coal. c) Construction of a robust, high-quality power network. d) Maximization of green energy and promotion of its introduction. e) Improvement of human resources and mechanisms related to the stable supply of energy.
2.8	**The Gas Sector Master Plan of 2017**	a) Focuses on domestic gas supply and production analysis and offers recommendations to enhance the legal and regulatory framework to support positive developments in gas production, LNG imports, and the transmission system. b) Recommends prioritizing LNG imports in the short term (2017-2021) to meet gas demand, while also focusing on infrastructure development. c) In the medium term (2021-2030), additional LNG terminals and connections to India's terminals can be explored. d) Suggests rigorous exploration and development of indigenous gas resources in the long term (2031-2041) to ensure a sustainable gas supply.
2.9	**Mujib Climate Prosperity Plan 2022-2041**	a) Targets 40% renewable energy by 2041, with a further vision of achieving 100% by 2050 while reducing or eliminating coal, oil, diesel, and gas imports. b) Grid modernization, financing, and investment are emphasized to support around 10,000 jobs by 2025 and approximately 30,000 jobs by 2030. c) Focuses on phasing out all fossil fuel subsidies, redirecting the savings to loss and damage adaptation, renewable energy projects, and storage technology. d) Prioritizes women and vulnerable groups, providing them with access and training to benefit from renewable energy wealth, energy efficiency, and storage infrastructure.
2.10	**Integrated Energy and Power Master Plan 2023-2050**	a) Targets achieving 40% clean energy in the total energy mix and proposes a combination of renewable energies, nuclear power, electricity import, hydrogen, ammonia, and carbon capture in thermal power plants. b) Emphasizes expanding the LNG sector and improving the grid system to support renewable energy expansion.

		c) Suggested some significant and realistic renewable energy-promoting policies such as removing cumbersome, complex, and time-consuming permission and bidding procedures for renewable electricity procurement, transferring bidding authority to SREDA (Sustainable and Renewable Energy Development Authority) from BPDB (Bangladesh Power Development Board), increasing the labour force of SREDA, improving limited financing options in the RE sector, structuring a capacity building program for private financial institutions, etc.
2.11	**Bangladesh Delta Plan 2100**	a) Promotion of research and technology development in renewable energy becomes a priority, with a focus on building capacity for practical applications in universities and research institutions. b) To ensure the feasibility of renewable energy projects, innovative financing packages, such as grant funding and low-interest financing, will be devised to address affordability for both grid and off-grid solutions. c) Targets a significant milestone of achieving at least 30% of energy production from renewable sources by the year 2041. d) Domestic energy security will be driven by investment in solar (rooftop, grounded, floating) including reclaimed land under Delta Plan 2100.

3. Assessing Bangladesh Energy Policy Gaps

3.1 Fossil Fuel Dependency

Fiscal-financial pressure on importing fossil fuels, as Bangladesh heavily relies on fossil fuel imports for its energy needs, leads to a heavy financial burden on the economy. By 2023, 95.53% of fuel mix is dependent on fossil fuel and only 4.47% comes from renewable sources. (Author's calculation from SREDA). Moreover, only 3.6% of the total capacity comes from solar energy. (Fig-00)



Source: SREDA

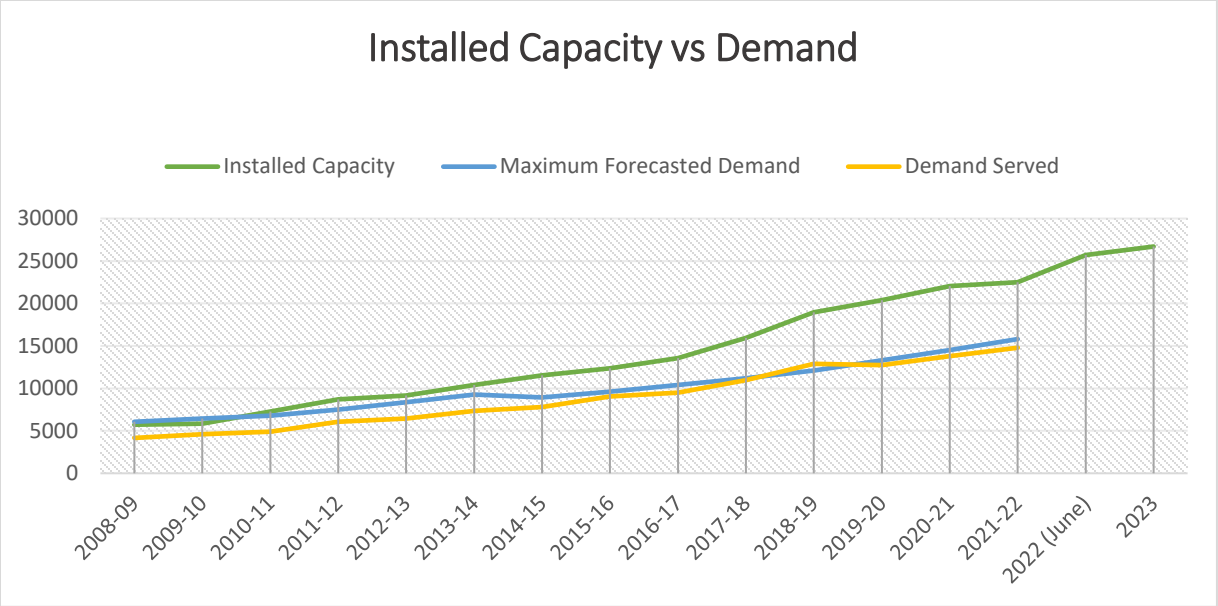
Throughout the last decade, the share of coal power generation has increased. According to CPD, around 6167 MW of coal-based generation capacity is to be added by 2026. According to BPDB, the share of coal-based power generation capacity will be 7912 MW by 2027. However, the total generation from renewable energy is predicted to be only 3200 MW according to the BPDB Annual report. That clearly states that the coal power generation alone is more than double the expected renewable generation capacity, which denotes the government's limited attention to the national plan estimated in the MCPP.

On the other hand, in the Year-End Review 2022 by the Ministry of New and Renewable Energy (MNRE), India has achieved significant progress in its transition towards renewable energy sources. As of the report, India ranks 4th globally in terms of installed renewable energy (RE) capacity. The country has a total installed capacity of 172.72 GW from non-fossil sources, which includes 6.78 GW of nuclear capacity. Notably, as of October 2022, the share of non-fossil fuel-based capacity in India's total installed capacity stands at 42.26%. The Ministry is working diligently to achieve an ambitious target of 500 GW of installed electricity capacity from non-fossil sources by the year 2030.

3.2 Generation VS Demand

Over-generation capacity, leads to excess supply compared to demand, resulting in inefficiencies and financial losses. Under-utilization of power plants, as the over-generation capacity means that many plants operate below their maximum capacity, leads to wastage of resources. The data presented indicates that Bangladesh had an excess generation capacity of 34.2% during the 2021-22 fiscal year. This means that the country had more power generation capabilities than required to meet the actual electricity demand. However, despite the increasing generation capacity, the demand served shows that a significant amount of energy, averaging 4238.86 MW per year, was wasted. The significant unused capacity from 2019 to 2022, with values of 7645 MW, 8239 MW, and 7700 MW, is concerning, as it highlights a lack of proper policy-making decisions and inefficiencies in the energy sector. This unused capacity indicates that investments in power generation may not have been optimally matched with the actual demand, leading to a waste of resources. Moreover, the ratio of load shedding per year suggests that there are challenges in the transmission and distribution of electricity, leading to disruptions in power supply to consumers.

Year	Installed Capacity	Increase in Installed Capacity per year	Maximum Forecasted Demand	Increase in Demand per year	Demand Served	Unused Generation Capacity	Unused % relative to Installed Capacity
2008-09	5719	7.8%	6066	8.9%	4162	1557	27.2%
2009-10	5823	1.8%	6454	6.4%	4606	1217	20.9%
2010-11	7264	24.7%	6765	4.8%	4890	2374	32.7%
2011-12	8716	20.0%	7518	11.1%	6066	2650	30.4%
2012-13	9151	5.0%	8349	11.1%	6434	2717	29.7%
2013-14	10416	13.8%	9268	11.0%	7356	3060	29.4%
2014-15	11534	10.7%	8920	-3.8%	7817	3717	32.2%
2015-16	12365	7.2%	9600	7.6%	9036	3329	26.9%
2016-17	13555	9.6%	10400	8.3%	9479	4076	30.1%
2017-18	15953	17.7%	11200	7.7%	10958	4995	31.3%
2018-19	18961	18.9%	12100	8.0%	12893	6068	32.0%
2019-20	20383	7.5%	13300	9.9%	12738	7645	37.5%
2020-21	22031	8.1%	14500	9.0%	13792	8239	37.4%
2021-22	22482	2.0%	15800	9.0%	14782	7700	34.2%
2022 (June)	25,700	14.3%					
2023	26,700	3.9%					
2008-2023		**366.9%**					

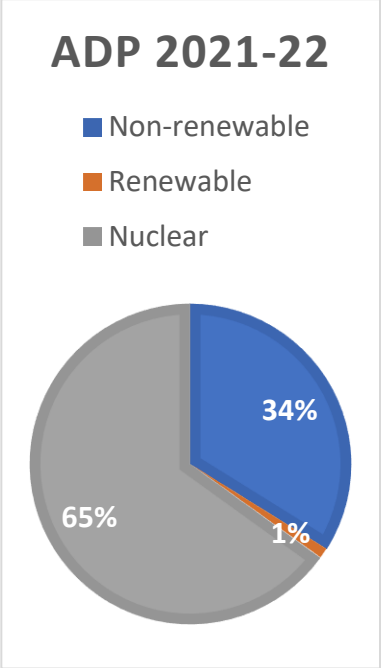


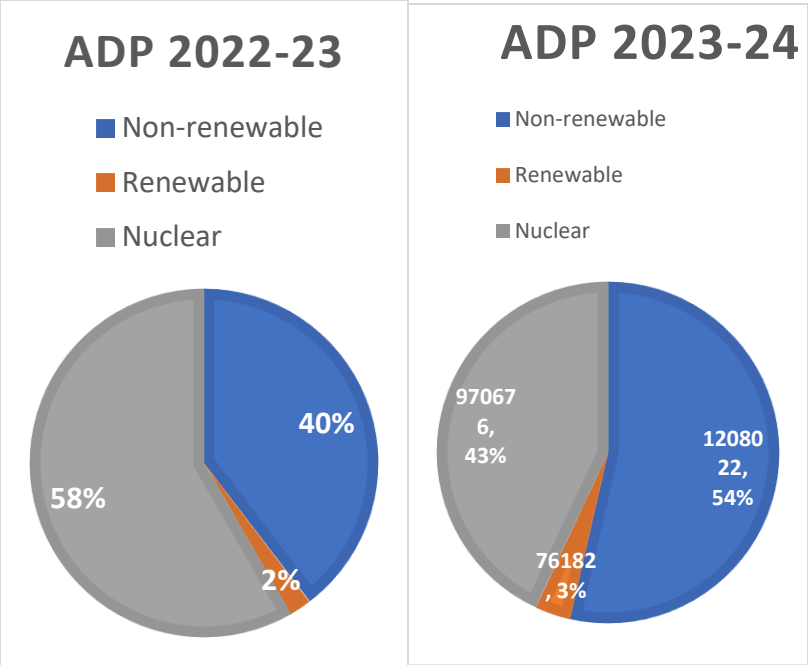
Source: Authors calculation from BPDB Annual Report

3.3 Increasing public debt of the Bangladesh Power Development Board (BPDB)

Due to the financial strain caused by inefficiencies and over-generation, BPDB's operating loss reached from BDT 6200 crore in FY18 to BDT 27,477 crore in FY 22. According to an estimation of CPD, increasing capacity payment to the IPPs rental and quick rental power plants led to a financial loss from Tk 5376 crore in FY17 to as high as Tk. 28000 in FY23.

3.4 Budgetary Support to Fossil Fuel



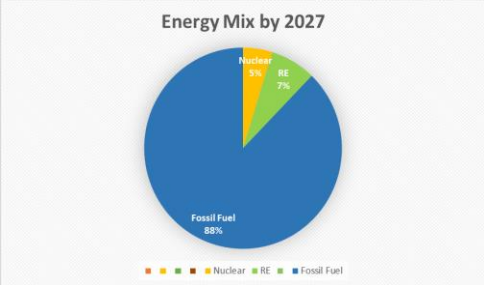


Source: Authors calculation from ADP 2021-2024

The analysis of the last three years' ADP budget indicates that the government of Bangladesh is allocating a larger portion of its budget to fossil fuel-based energy generation compared to renewables. The budget for fossil fuels has increased significantly, reaching 54%, while the growth in renewable energy budget has been disappointing. The lack of substantial investment in renewables is concerning, especially given the global push toward sustainable and clean energy sources. Additionally, it is notable that the government has allocated a specific budget for the development of nuclear power plants, which they consider as 'clean energy.' However, the allocation for solar, wind, hydro, and other renewable sources seems to be neglected each year.

3.5 Fossil Dominance over Renewables in Estimated Plans

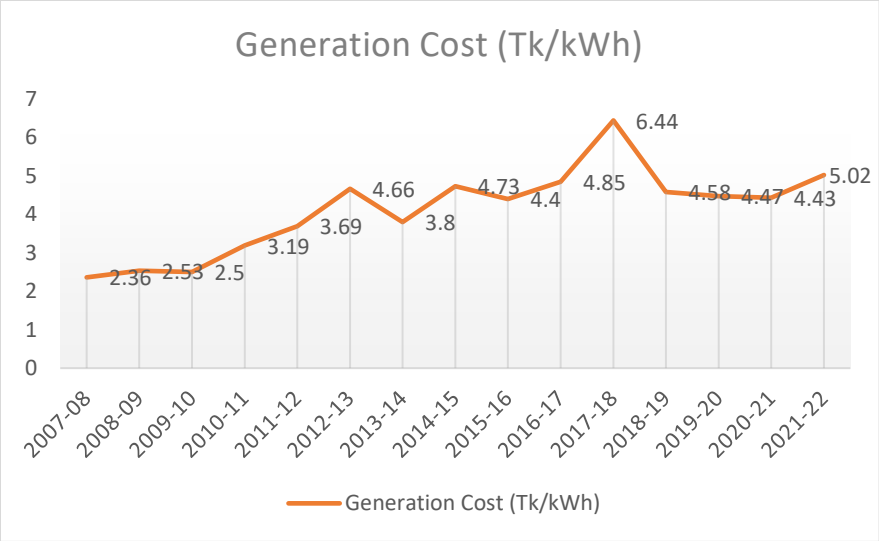
with a focus on traditional fossil fuels, hindering the country's progress towards a sustainable energy future. The energy generation plan outlined in the BPDB annual report for 2021-22 highlights the government's inclination towards fossil fuel-based energy. The projected energy mix by 2027 shows that a vast majority of electricity, 88%, will still be generated from fossil sources, while only 7% is expected to come from renewables. This trajectory raises concerns about the country's commitment to transitioning to a more sustainable and environmentally friendly energy sector.



Source: BPDB Annual Report 2021-22

3.6 Financial Burden Due to Over Generation Cost

Year	Generation Cost (Tk/kWh)	Increase % per year
2007-08	2.36	N/A
2008-09	2.53	7.20%
2009-10	2.5	-1.19%
2010-11	3.19	27.60%
2011-12	3.69	15.67%
2012-13	4.66	26.29%
2013-14	3.8	-18.45%
2014-15	4.73	24.47%
2015-16	4.4	-6.98%
2016-17	4.85	10.23%
2017-18	6.44	32.78%
2018-19	4.58	-28.88%
2019-20	4.47	-2.40%
2020-21	4.43	-0.89%
2021-22	5.02	13.32%



Source: Authors calculation from BPDB annual report 2007-2022

Poor efficiency of power plants, resulting in higher operational costs and lower output of electricity. Starting from 2007 the generation cost per kWh has increased by 112.71%. While observing the BPDB annual report 2021-22, it is clear that the generation cost has increased by 13.32% than the previous year. The financial burden caused by excess generation cost is mainly because of idle power plants, increased capacity charges, and excessive transmission and distribution loss. The increased fuel cost and poor efficiency of power plants are significant factors for high generation costs.

3. 7 Inconsistencies in Plans and Attainable Targets:

Plan	Attainable Targets
BPDB Annual Report 2021-22	Generation capacity up to 2027 - 47,808 MW.
Budget Speech 2023-24	Generation Capacity up to 2030- 40,000 MW and 60,000 MW by 2041.
MCPP 2022-2041	30% from Renewable sources by 2030, 40% from Renewable sources by 2041 100% from renewable sources by 2050
IEPMP 2023-2050	17.1% from Renewable sources by 2050 30.7% from fossil fuel (Coal & LNG) by 2050 32.8% from Advanced Technology (Liquid Hydrogen, Ammonia, Carbon capture) by 2050

4. South Asian Policies and Plans towards RE

4.1 India	
National Portal for Rooftop Solar	A simplified procedure for rooftop solar installation has been introduced through the National Portal (solarrooftop.gov.in). Residential consumers across the country can apply for rooftop solar directly without waiting for any approvals. This aims to streamline the process and encourage wider adoption of solar energy.
Solarisation of Modhera, Gujarat	Prime Minister Narendra Modi inaugurated 'Suryagram' - a battery storage and solar power-based project in Modhera, Gujarat. This project exemplifies a modern village powered by renewable energy, including battery storage, solar rooftops, and electric vehicle charging stations.
PM-KUSUM Scheme	The Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahaabhiyan (PM-KUSUM) aims to support farmers by installing decentralized grid-connected solar power plants, standalone solar-powered agriculture pumps, and solarization of existing grid-connected pumps. The scheme aims to add 30.8 GW of solar capacity and reduce diesel usage in agriculture.
Solar Parks Scheme	The Development of Solar Parks and Ultra Mega Solar Power Projects initiative aims to facilitate large-scale grid-connected solar projects by providing the necessary infrastructure. Several solar parks have been sanctioned across states, contributing to the growth of renewable energy capacity.
Bioenergy Programs	Various bioenergy programs, including waste-to-energy, biomass, and biogas initiatives, have been launched to promote sustainable energy from organic waste and residues.
Off-Grid Solar	Off-grid programs, such as solar street lights and solar study lamps, have been implemented to enhance rural electrification and support decentralized energy solutions.
Human Resource Development	Skill development programs, such as the Suryamitra program and Jal-Urjamitra Skill Development Programme, have been launched to train technicians and promote employment in the renewable energy sector.
National Green Hydrogen Mission	The National Green Hydrogen Mission aims to decarbonize key sectors, achieve energy independence, and become a global hub for green hydrogen production and export. The World Bank's Board of Executive Directors has approved $1.5 billion in financing to support India's development of low-carbon energy. The funding aims to accelerate India's transition to low-carbon energy sources by scaling up renewable energy, developing green hydrogen, and stimulating climate finance for low-carbon energy investments. The financing will support the National Green Hydrogen Mission, aiming to attract $100 billion in private sector investment by 2030.

International Solar Alliance (ISA)	India is actively involved in the International Solar Alliance, a collaborative effort to promote solar energy adoption globally. India and France have been re-elected as President and Co-President of the ISA Assembly.
4.2 Maldives	
Preparing Outer Islands for Sustainable Energy Development Project (POISED)	ADB and the Maldives Government are partnering to create hybrid renewable energy systems on the islands. The POISED project involves installing energy management, storage, and distribution improvements to reduce diesel dependence. Solar-diesel hybrid grids are being set up on 160 islands, replacing inefficient diesel-based systems and aiming to lower costs, emissions, and subsidies. This shift towards renewables will enhance energy sustainability in the region.
OIST Wave Energy Project	The Okinawa Institute of Science and Technology Graduate University has partnered with the Ministry of Environment and Energy of the Republic of Maldives and Kokyo Tatemono Company Limited to launch a wave energy project. This initiative involves testing special Wave Energy Converter units designed by Professor Tsumoru Shintake and his team, capable of converting energy from shoreline waves into electricity. These units are built to withstand wave forces and are positioned at the mean sea level for optimal performance. The Maldives, characterized by decentralized energy generation, vulnerability to sea level rise, and consistent waves, provides an ideal testing location. Initial trials of half-scaled prototypes will be followed by larger models, with the long-term vision of implementing full-scale wave energy converter units across the Maldives.
Low-Carbon Energy Island Strategies Project	The Strengthening Low Carbon Energy Island Strategies (LCEI) project is funded by the Global Environment Facility (GEF) and carried out in collaboration with the Ministry of Environment and Energy of the Republic of Maldives, UN Environment, and Kokyo Tatemono Company Limited from Tokyo, Japan. The project's primary goals are to transform the energy-efficient technology market in Maldives' buildings and promote energy-efficient investments through public-private partnerships. It aims to mainstream energy efficiency measures in policies, guidelines, standards, and building practices, significantly reducing greenhouse gas emissions and enhancing energy efficiency. The project involves multiple components including policy adoption, innovative financing, capacity enhancement, and monitoring. Notable outcomes include the endorsement of energy efficiency guidelines, an energy-efficient appliances labeling program, innovative financing programs, and capacity-building efforts. The project emphasizes collaboration with various government ministries and institutions to achieve its goals.
4.3 Sri Lanka	
Sri Lanka Sustainable Energy Authority	The Sri Lanka Sustainable Energy Authority was established to lead the country toward sustainable energy practices, aiming to increase indigenous energy production, enhance energy efficiency, and promote conservation. The authority was given ownership over renewable energy resources as a national asset, aligned with the Act's provisions. A key focus is the identification, evaluation, and development of renewable energy resources to bolster energy security and bring economic and social advantages. Sri Lanka initially aimed for 10% power generation from New Renewable Energy (NRE) technologies by 2016, which was achieved a year earlier. The current goal is even more

	ambitious, targeting 70% of electricity generation from renewable sources, predominantly NRE, excluding existing large-scale hydro projects.
Renewable Energy Resource Development Plan 2021-2026	The Sri Lankan government has set ambitious energy goals, aiming to achieve 70% of electricity generation from renewable sources by 2030 and achieve net carbon neutrality by 2050. Plans involve increasing the country's power generation capacity from 4,043 megawatts (MW) to 6,900 MW by 2025, with a significant emphasis on renewable energy. Sri Lanka boasts a high grid connectivity rate of 98%, primarily powered by thermal (coal and fuel oil), hydropower, solar power, and wind power. From 2018 to 2037, Sri Lanka intends to add various power sources to its electricity grid, including major hydro, mini hydro, solar, wind, biomass, oil-based power, natural gas, and coal power, to meet the annual electricity demand of about 14,150 gigawatt hours (GWH). Despite these plans, the country has faced power outages due to fuel shortages and unpredictable weather affecting hydropower. To address these challenges, Sri Lanka is investing in additional renewable and non-renewable power plants, including liquefied natural gas (LNG) facilities, and modernizing its aging oil refinery.
4.4 Nepal	
The Nepal Renewable Energy Programme (NREP)	The Nepal Renewable Energy Programme (NREP) is a strategic initiative by the Government of Nepal aimed at enhancing private sector investment in distributed renewable energy (RE) while promoting universal energy access. This comprehensive program focuses on creating a conducive policy, legal, and regulatory environment for sustainable RE market development. Notable achievements of NREP include launching the Sustainable Energy Challenge Fund, developing numerous distributed RE projects, advocating for innovative business models like Power Project Financing, facilitating Public-Private Partnership policies for local governments, and fostering stakeholder engagement strategies. Guided by two key outcomes, NREP aims to establish an enabling environment for increased RE investment and significantly scale up RE investments through partnerships with financial institutions and the private sector.
Wind-solar hybrid power system	Nepal's wind-solar hybrid systems offer rural communities sustainable energy access. A pioneering project in 2011 brought electricity to 46 households, showcasing hybrid viability. In 2017, the largest system in Hariharpurgadi village, backed by Asian Development Bank, merged a 20 kW wind turbine and 15 kW solar panels, providing 110 kWh daily for 83 households. These initiatives highlight hybrid potential for rural electrification and eco-friendly energy solutions.

5. Global and South Asian Trends:

5.1 Investment

Year	Global Fossil Investment (Billion USD)	Increase in Fossil Investment	Global RE Investment (Billion USD)	Increase in RE investment
2015	1216	N/A	340	N/A
2016	1022	-15.95%	263	-22.65%
2017	1019	-0.29%	351	33.46%
2018	1034	1.47%	322	-8.26%
2019	1003	-3.00%	329	2.17%
2020	783	-21.93%	348	5.78%
2021	897	14.56%	430	23.56%
2022	953	6.24%	499	16.05%

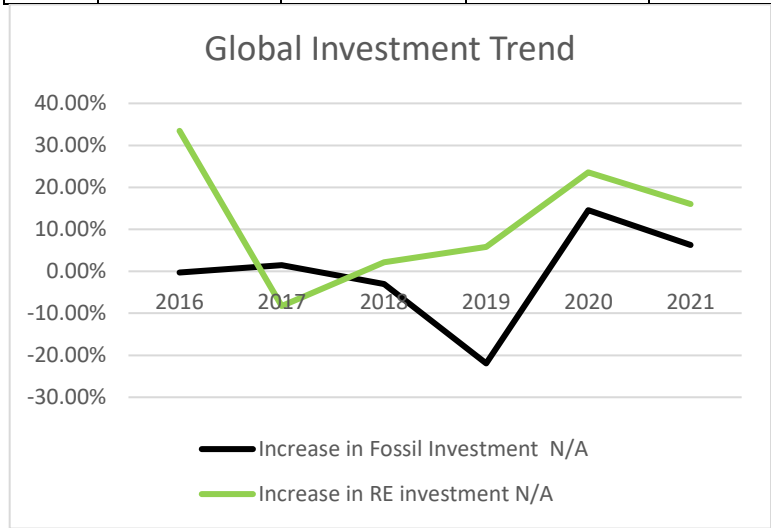
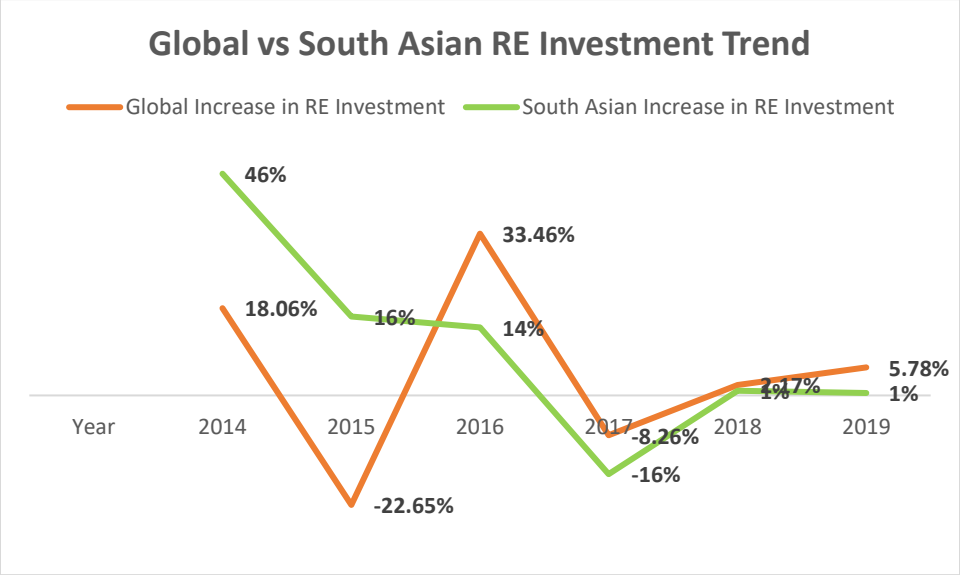


Figure: Authors calculation from IRENA website. (Accessed on August 22, 2023)

The data from the IRENA (International Renewable Energy Agency) highlights a significant trend in global investment, indicating a shift towards renewable energy. Renewable energy investment has shown a remarkable increase of 16.05% in 2022 compared to the previous year, while fossil fuel investment has grown by a comparatively modest 6.24%. Notably, according to the IEA (International Energy Agency), the total global investment in clean energy amounts to a substantial 1740 billion USD in 2023, surpassing the investment in fossil fuel-based energy, which stands at 1050 billion USD. However, IRENA asserts that the total investment in renewable energy up to 2022 was 499 bn.

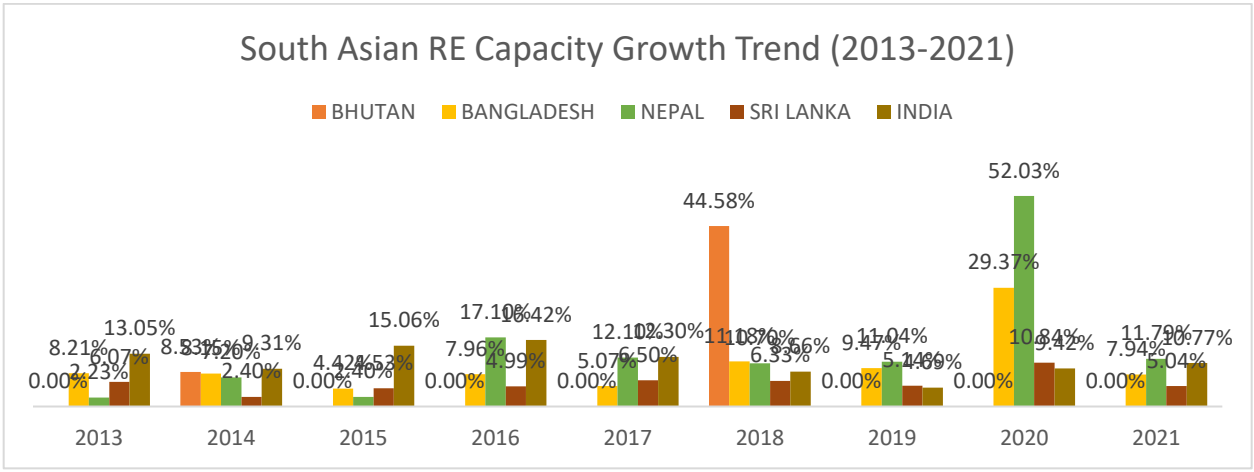
As a developing nation, it is crucial to align with these global trends and prioritize renewable energy over fossil fuels. Allocating more budget towards renewable energy initiatives is not only in line with global standards but also holds the promise of long-term benefits for economic growth, environmental preservation, and energy security. By embracing and promoting renewable energy

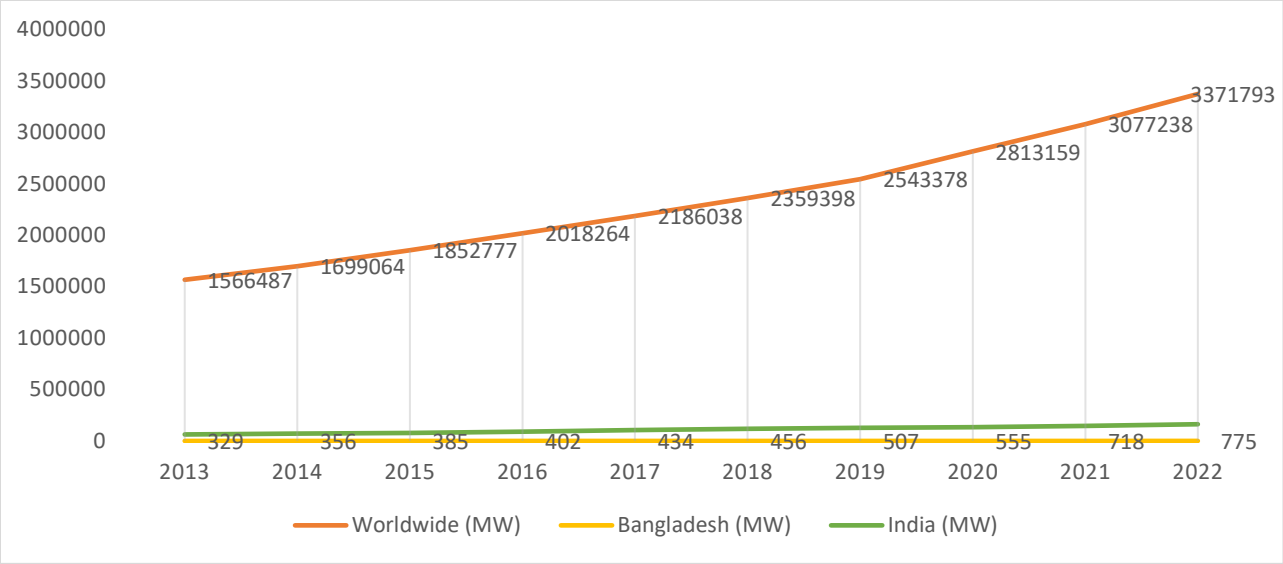
solutions, developing nations can contribute to the global transition towards a greener and more sustainable energy future.



Source: IRENA

5.2 Renewable Capacity





Source: Data accessed from IRENA website

Information obtained from the IRENA website shows that the worldwide renewable energy production capability has grown by roughly 115.25% since 2013. As of 2022, the total global capacity has reached 3,371,793 megawatts (MW). The data makes it evident that India has notably boosted its capacity by about 156.27% since 2013.

6. Recommendations for Bangladesh:

	Key Recommendation	Details
6.1	**Expand Renewable Energy through the Development of Model Village**	A Model village where livelihood support will be provided based on renewable sources.
6.2	**Develop a National Energy Transition Policy**	A comprehensive policy that will guide the energy sector.
6.3	**Incorporate Feed-in Tariff Policy**	A feed-in tariff (FIT), a policy tool commonly implemented worldwide, including countries like Germany, Japan, India, Maldives, Italy, is utilized to incentivize investment in renewable energy sources by offering above-market prices to small-scale energy producers (e.g., solar or wind energy) for the electricity they supply to the grid. This policy guarantee cost-based purchase prices, meaning producers are paid in proportion to the resources and capital expended to generate the energy, encouraging efficient use and surplus production.
6.4	**Ensure Alignment of the demand and generation capacity**	Policymakers in Bangladesh need to focus on improving energy planning and decision-making to ensure that power generation capacities align with actual demand.

6.5	**Enhance Efficiency in Transmission and Distribution**	Investments in transmission and distribution infrastructure should be made to enhance the efficiency and reliability of electricity supply, reducing the need for load shedding and wastage of energy.
6.6	**Enhance Regional Cooperation**	Nepal stands out with its abundant hydropower potential, presenting an opportunity to become a vital source of clean energy for South Asia. With over 6,000 rivers and rivulets, Nepal's untapped hydropower reserves can play a crucial role in enhancing energy security and reducing environmental impacts. The country's ambitious Energy and Water Resources Decade aims to achieve self-sufficiency in electricity, with a significant rise in production already achieved. This surplus energy can be utilized to replace non-renewable sources, benefiting not only Nepal but also neighboring Bangladesh, helping it transition to cleaner energy consumption and collectively contributing to global emission reduction targets.

Reference

1. Bdlaws.minlaw.gov.bd. Accessed September 10, 2023. http://bdlaws.minlaw.gov.bd/act-902.html.
2. “Centre for Policy Dialogue: CPD.” Centre for Policy Dialogue (CPD), August 30, 2023. https://cpd.org.bd/.
3. Colorlib. “New Renewable Energy.” Sri Lanka Sustainable Energy Authority. Accessed August 16, 2023. https://www.energy.gov.lk/index.php/en/renewable-energy/new-renewable-energy.
4. “Delta Plan 2100.” Delta Plan 2100. Accessed August 12, 2023. https://bdp2100kp.gov.bd/.
5. Energy profile maldives - irena. Accessed August 16, 2023. https://www.irena.org/-/media/Files/IRENA/Agency/Statistics/Statistical_Profiles/Asia/Maldives_Asia_RE_SP.pdf.
6. “Energy Transition Bangladesh (ETB).” EnergyTransitionBD, March 15, 1970. https://www.energytransitionbd.org/.
7. “Finance Division, Ministry of Finance-Government of the People\’s Republic of Bangladesh.” Finance Division, Ministry of Finance-Government of the People\’s Republic of Bangladesh. Accessed August 7, 2023. https://mof.gov.bd/.
8. Iea. “Nepal - Countries & Regions.” IEA. Accessed August 10, 2023. https://www.iea.org/countries/nepal.
9. “The Integrated Energy and Power Master Plan Project in Bangladesh.” JICA. Accessed August 11, 2023. https://www.jica.go.jp/Resource/project/english/bangladesh/016/index.html.
10. “International Renewable Energy Agency.” IRENA. Accessed August 5, 2023. https://www.irena.org/.
11. “Mujib Climate Prosperity Plan.” MujibPlan. Accessed August 10, 2023. https://mujibplan.com/.
12. Press Information Bureau. Accessed August 16, 2023. https://www.pib.gov.in/.
13. টেকসই ও নবায়নযোগ্য জ্বালানি উন্নয়ন কর্তৃপক্ষ (স্রেডা)-বিদ্যুৎ বিভাগ; বিদ্যুৎ, জ্বালানি ও খনিজ সম্পদ মন্ত্রণালয়. Accessed August 4, 2023. http://www.sreda.gov.bd/.
14. পরিকল্পনা বিভাগ-গণপ্রজাতন্ত্রী বাংলাদেশ সরকার. Accessed August 6, 2023. https://plandiv.portal.gov.bd/.
15. বাংলাদেশ বিদ্যুৎ উন্নয়ন বোর্ড. Accessed September 3, 2023. https://bpdb.gov.bd/.
16. “বিদ্যুৎ বিভাগ.” বিদ্যুৎ বিভাগ-গণপ্রজাতন্ত্রী বাংলাদেশ সরকার. Accessed August 10, 2023. https://powerdivision.portal.gov.bd/site/page/7f197894-2364-4b6e-a14c-08626c61176a/Master-Plan-2010.