NETWORK FOR CLEAN ENERGY TRANSITION IN PAKISTAN: RESEARCH AND ADVOCACY

Quarterly Meeting | January 2022 | Serena Hotel, Islamabad

SECTION-I: INTRODUCTION

Background

In recent years, Pakistan has observed a marked increase in its carbon emissions due to extensive use of fossil fuels in both power and demand sectors. Degradation of natural resources, air pollution, droughts and head waves has exacerbated the environmental crisis, and brought Pakistan among the top ten most affected and vulnerable countries to climate change. Secondly, the energy sector of Pakistan is marked with major inefficiencies, rising circular debt, capacity payments, high dependency on imported fossil fuels, transmission and distribution losses, low energy access, low operational efficiencies, and the impacts of COVID19 on the energy supply chains. Therefore, both energy and climate are the core challenges for Pakistan, and if not addressed and managed properly, could easily jeopardize the sustainable development.

However, despite these challenges, Pakistan is no exception to a new and emerging Global Energy Economy. We have many of the technologies and solutions to reach Net Zero as renewables, EVs, efficiency and other technologies progress, along with international and national collaborations in innovation and digital society to transform the world. However, country's vulnerability to climate change impacts, exacerbated by COVID19 pandemic, requires strengthening the capacity to develop and execute various sector specific interventions that address the adverse effects of climate change, contribute to reducing greenhouse gas emissions, and improve the country's ability to attract climate finance.

Under this backdrop, SDPI had established a network of Public sector, Private sector, International experts, Multilaterals, CSOs, Think Tanks, and Non-Profit entities across Pakistan. ***Network for* Clean Energy Transition (NCET) in Pakistan: Research and Advocacy** is envisioned to bring

along all the visionary founding members and actors from each sector, fundamental to address the risks posed by climate change and delivering a smooth transition to a low-carbon economy and clean energy transition in Pakistan.

Network Objectives

The NCETRA aims to achieve the following objectives:

- Constructively engage & facilitate stakeholders in Pakistan Clean Energy Transition debate pertinent to uptake of Variable Renewable Energy sources (solar, wind), energy efficiency & conservation, Transmission & Distribution networks & off-grid systems, & decarbonization in (& beyond) the power sector.
- To identify the key elements missing from Pakistan's near- and long-term energy sector planning.
- Capacity building around the challenges and opportunities for corporate sector in setting their net-zero targets and mainstreaming sustainability into their development agendas.
- To identify the green financing opportunities & consult on development priorities for green infrastructure in Pakistan.
- What are the technically & economically feasible solutions for Renewable Energy (RE) uptake in Pakistan? And what market barriers & RE adoption challenges can they be addressed through support of policies and regulations?

Network Outcomes

Through consultative sessions between all network members, it aims to achieve the following outcomes:

- Promote technical knowledge on policy planning for cleaner, accessible, and reliable energy while advocating gender equality and social inclusion.
- Summarize key findings & insights on technology transfer for curbing greenhouse gas emissions to fight climate change.
- Develop & propose a framework to share the newly emerging green technologies, practices, & low carbon solutions.
- Increase sectoral cooperation, inter-provincial cooperation, & international collaborations to lower costs of electricity and secure the grid.
- Green financing: Green bonds, sustainable finance instruments, & tools to stimulate & enhance private sector investments to support our efforts to a green economy of Pakistan.

Network Outputs and Products

- Research reports and publications for evidence-based decision making.
- Sustainable Energy Policy Bulletin (contributions from founding members).
- Advocacy on issues, challenges, and opportunities.
- Capacity-building workshops on energy and climate change.

SECTION-II: KEY TAKEAWAYS AND RECOMMENDATIONS FROM THE NETWORK MEETING

Session 1: Energy & Climate Change Governance: Building Pathways for Sustainable Energy in Pakistan

Key Points Highlighted

- Current energy generation mix of Pakistan constitutes 27% Hydro, 5% Renewables (Wind, solar, and bagasse) and about 28% of gas-based power generation. As per the targets of Indicative Generation Capacity Expansion Plan 2021, Government of Pakistan is committed to generate around 60% of total energy from renewables by 2030.
- Following Transport, Power sector is the second largest contributor to CO2 emissions, however, still the emissions intensity of Pakistan's power sector is only 0.23 tons/capita/year as opposed to much higher values in India (0.85), China (3.28), and USA (6.64).
- Almost 61 million population of Pakistan is living without access to electricity and around 120 million people without access to clean cooking technologies.
- A major reason for lack of financing in renewable energy sector in Pakistan is because the traditional investments are more conducive for fossil fuels. Lack of mechanism and financing models is still a major challenge to be addressed for green infrastructure development.
- The existing state of Pakistan's National Grid and power evacuation capacity is not at par with its power generation potential, and hence to expedite the RE investments, improvements in grid infrastructure must outpace the capacity expansions.

Policy Recommendations and Takeaways

- To achieve clean energy targets as mentioned in Pakistan's revised Nationally Determined Contributions (NDCs), there is a need to attract financing from international donors and build around funding opportunities such as Global Carbon Funds.
- As opposed to same financing terms and conditions, international communities, donors, banks, and multilaterals must differentiate between the financing schemes and have separate benchmarks for a coal and renewables-based project.
- Pakistan must develop plans to promote local manufacturing and transfer of technology as this would play a key role in easing and lowering the tariff of electricity.
- In spite of having policy interventions in the right direction, Pakistan also needs to analyze how to access the resources to reach the desired targets. This includes the financing windows, opportunities, and capacities to develop clean energy infrastructure.
- To overcome the energy access problems in rural and marginalized communities, there is a need to develop local adaptation strategies. In this regard, projects that can bring circular

economy of energy into communities and taken to the grass root level are significantly important.

- To upscale the adoption of renewables energy, policy makers can focus on revision of the Grid Code where Renewable energy projects can be brought under the “Must Run Projects” category.
- To overcome the existing gaps in energy sector planning, there is need for close coordination between all government entities (Federal, provincial and district-level) including ministries, DISCOs, GENCOs, with the private sector developers.
- To ensure provision of electricity and clean cooking to the rural communities, Pakistan needs to mobilize the window of regional cooperation. On a Macro-level, this includes development of regional on/off-grid VRE solutions, regional electricity trade, transmission lines through cross-border trade programs, and developing regional power markets and exchanges. On a micro-level, this could also include quality assurance and control standards.
- To provide an enabling environment to the private sector, government entities must develop a “Principal of Subsidiarity” where it should delicate what can be done efficiency at the consumer scale. Similar barriers and challenges must be addressed for the international and local investors by providing the ease of business.
- For an effective public policy making process, there is a need to humanize the problem by identifying the vulnerable communities and bringing them in the discussions. This can be achieved through an inclusive and participatory research and policy development process.

SECTION-III: ENERGY ECONOMICS & SUSTAINABLE DEVELOPMENT

Key Points Highlighted

- Despite positive initiatives recently taken by the government of Pakistan, the power sector still represents a somewhat bankrupt model with a single transmission network and ten distribution companies. From perspective of a lender or a generation facility, this is challenging to have an economic sense in providing electricity into a system that is being run only on state guarantees. Therefore, unless Pakistan has a system with multiple sellers and buyers, and a market which is more thriving and participatory, the financial situation is likely to get much worse.
- Research carried out by Climate Analytics based on Paris Agreement's principal has shown that for a 1.5-degree compatible pathway, an even greater uptake of renewables by 2030 is required in Pakistan reaching shares of 78-85% by that time. A 1.5-degree pathway will further require that Pakistan reach full decarbonization of its power sector between 20362038.
- On a global comparative scale, Pakistan is missing out the opportunity of sharing its narrative. Achievements under the Ten Billion Tsunami Tree Project (TBTTP) and Bonn Challenge of land restoration were huge positive perception builders for Pakistan where Pakistan restored 650,000 hectares of land.
- There have been major commitments from the private sector to derive towards the renewable energy transition, and a lot of private sector institutions have exhausted the solar space and are looking for wheeling mechanisms and policy incentives to enable that transition even faster.

Policy Recommendations and Takeaways

- For green financing and green infrastructure development, there is need to provide private sector with a clear regulatory environment around mini-grids, private distribution, and electric supply companies.
- Decarbonization needs to go beyond the power sector to inclusion of both formal and informal Small and Medium Enterprises (SMEs) as the major chunk of Pakistan's carbon footprint is coming from that sector.
- For economic sustainability of the energy services, heat sector must be given a main focus especially in winters when Industrial sector is facing shortages and LNG prices have observed a marked increase. This can be addressed by developing local solutions where Academia needs to play a major role through research and innovation.
- To overcome the challenges around lack of innovation and R&D, the Research Agendas of Academic Institutes needs to be aligned with the Sustainable Development Goals. This should also incorporate through strong skill transfer and technology transfer program.
- Engagements with Media around energy transition challenges and initiatives need to go beyond just a story-telling process to capacity building that allows them to promote and raise issues is a more proactive and susceptible manner.

SECTION-IV: GREEN FINANCING & SUSTAINABLE INVESTMENTS

Key Points Highlighted

1. A major challenge for Pakistan in its Net-Zero pathway is the availability of only few practical on-table options i.e., energy efficiency and off-grid setups. Along with their own challenges, only a small portion of total emissions can be reduced through them.
2. A key element missing from Pakistan's energy sector planning is the lack of evidencebased policy design. This goes beyond just overlooking the ground realities to missing upon major pillars of evidence making or lacking a systematic policy design and implementation approach.
3. A limitation on widespread adoption of solar within the households-specifically in the context of net metering- is the regulatory constraints under which the amount of energy which can be sold to distribution companies cannot be more than 30% of the sanction load.

Policy Recommendations and Takeaways

1. For corporate sector, there is a need to develop a structured accounting mechanism for carbon emissions at a national level, which must define how companies can evaluate and document themselves around that mechanism.
2. For production facilities, we must develop a GHG inventory with data available for each sector (Textile, Cement, etc.) that can provide a quantification of their emissions per unit of their productions.
3. Along with renewable energy adoption, the Industrial sector must develop its capacity around energy storage devices. This would also cater for an upcoming challenge of handling solar waste after 25 years.
4. To attract local and international financing in clean energy projects, there is a need to develop feasibility studies and financial models which depict that this particular investment is financially feasible in the local context.
5. For an effective policy design, there is a need to humanize the policy context, describe the theory of change in process and then analyze how much of that evidence is aggregated and committed.
6. For electric vehicles to be deployed on a large commercial scale, there is a need to develop the charging infrastructure as the current system is not equipped and mature enough to undergo this transformation.
7. To address corporate governance, it is extremely critical to facilitate carbon measurements across all the practices and processes of organizations. This would require having measurement processes and measurement structures in place for carbon emissions.
8. To overcome the existing financial crisis for DISCOs, there is a need to make them more localized, and provide them more flexibility to get into power generation where they can reduce the basket price.

9. There is a need to integrate agriculture with energy since agriculture is a key contributor, we also need to work on carbon negative energy generation through use of carbon capture and storage systems where we can integrate agriculture with energy.

APPENDIX 1: LIST OF MEMBERS PRESENT IN THE QUARTERLY MEETING

Sr #	NAME	DESIGNATION	ORGANIZATION
1	Mr. Malik Amin Aslam	Federal Minister and Special Assistant to Prime Minister on Climate Change	Ministry of Climate Change
2	Mr. Faisal Javed	Member	Senate of Pakistan
3	Ms. Syma Nadeem	Member, National Assembly and Parliamentary Secretary	Ministry of Interprovincial Coordination
4	Mr. Shah Jahan Mirza	Managing Director | Chief Executive Officer	Private Power and Infrastructure Board | Alternate Energy Development Board
5	Dr. Hassan Daud Butt	Chief Executive Officer	Khyber Pakhtunkhwa Board of Investment and Trade
6	Mr. Hussain Talib	Head of External Affairs	Unilever
7	Mr. Najam ul Hassan	External Affairs Manager	Unilever
8	Mr. Fauz ul Azeem	Dy. General Manager, Sustainability and Chemical Management	Interloop Limited
9	Dr. Fatima Khushnud	Head of Policy, Research & New Business	Engro Energy Ltd.
10	Mr. Arooj Asghar	Chief Executive Officer	InfraCo Asia Pakistan Sunrise / Prism Energy
11	Ms. Hira Wajahat	Managing Partner	Stimulus
12	Dr. Fahad Saeed	Climate Scientist / Regional Lead: South Asia and the Middle East	Climate Analytics
13	Dr. Mohsen Gul	Senior Technical Advisor	Asian Development Bank.
14	Mr. Ali Hassan	Head of Sustainable Initiative	JS Bank

15	Mr. Hammad Bashir	Project Expert	Private Financing Advisory Network (PFAN)
16	Mr. Waqas ul Hassan	Chief Executive Officer	Karandaaz
17	Mr. Harris Chohan	Principal, Green Financing	Karandaaz
19	Dr. Nadeem Ahmed Sheikh	Professor and Dean of Engineering Departments	International Islamic University, Islamabad.
20	Dr. Muhammad Farooq	Associate Professor	University of Engineering and Technology, Lahore.
21	Dr. Najeeb Ullah	Assistant Professor	UET Peshawar USPCASE
22	Ms. Aisha Khan	Executive Director	CSCCC
23	Mr. Khurram Lalani	Principal	Resources Future
24	Mr Saad Latif	Director, Net Zero Pakistan	Pakistan Environment Trust
25	Mr. Hassan Anwar	Director, Carbon	Pakistan Environment Trust
26	Ms. Zofeen Ebrahim	Freelance Journalist	Independent
27	Mr. Mustafa Syed Hyder	Executive Director	China-Pakistan Institute (PCI)
28	Mr. Ahsan Javed	Senior Research Fellow	SAARC Energy Centre
29	Mr. Tanveer Mirza	Director Operation & Coordination	United Energy Pakistan
30	Mr. Hassaan bin Kausar	Regional Business Manager B2B	MAL Pakistan - Alliance Company of Exxonmobil in Pakistan
31	Dr. Muhammad Saghir	Chief Executive Officer	Circular Energies, Pvt. Ltd.
32	Ms. Aniqa Yaqub	Head of Government Affairs	Shell Pakistan Ltd.
33	Mr. Zafar Mehmood Malik	Deputy Chief (Fuel)	Energy Wind, Planning Commission of Pakistan
34	Dr. Abid Qaiyum Suleri	Executive Director	Sustainable Development Policy Institute (SDPI), Islamabad.
35	Dr. Shafqat Munir	Research Fellow and Head, Resilient Programmed	Sustainable Development Policy Institute (SDPI), Islamabad.
36	Dr. Hina Aslam	Research Fellow and Head, Energy and China Study Centre	Sustainable Development Policy Institute (SDPI), Islamabad.
37	Dr. Fareeha Armughan	Research Fellow	Sustainable Development Policy Institute (SDPI), Islamabad.