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Missing the Bus

Status of Pakistan's Nationally Determined Contributions (NDCs) and the Likelihood of Achieving them by 2030

With the current pace, Pakistan will miss the 2030 deadline.

September 2024

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Status of Pakistan's Nationally Determined Contributions (NDCs) and the Likelihood of Achieving Them by 2030

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1. Introduction

Nationally Determined Contributions (NDCs) are country-specific climate action plans under the Paris Agreement, aiming to reduce greenhouse gas (GHG) emissions and adapt to the impacts of climate change. Pakistan's NDC, submitted in 2021, outlines ambitious targets for both mitigation (reducing GHG emissions) and adaptation (improving resilience to climate impacts), with a timeline for achieving significant milestones by 2030.

Although Pakistan contributes less than 1% to global GHG emissions, it is one of the most vulnerable countries to climate change, experiencing frequent floods, droughts, and extreme weather events. This report assesses Pakistan's progress towards its NDCs as of 2024, analyzing whether it is on track to meet its 2030 targets based on available data and its implementation framework.

2. Overview of Pakistan's NDC Commitments

2.1 Mitigation Targets (By 2030)

Pakistan's mitigation efforts toward 2030 can be divided into two main parts. The country is unconditionally committed to reducing 15% emissions through indigenous resources. This reduction will be achieved by implementing better agricultural practices, transitioning to electric vehicles (with a target of 30% of new vehicle sales being EVs by 2030), improving industrial processes, afforestation and enhancing waste management. These initiatives are projected to save approximately 240.15 MtCO2eq (Million tons of Carbon Dioxide Equivalent) , representing 15% of the total emissions expected by 2030. With the Business-As-Usual (no intervention) the estimated total emissions for 2030 are 1,601 MtCO2eq.

The remaining 35% (561.5 MtCO2eq) of the reduction is contingent upon the availability of international financial support and technology transfer. It is important to note that under a Business-As-Usual scenario, Pakistan's emissions are projected to increase by 300% by 2030, using 2016 as the base year. Even if all mitigation plans are executed as intended, Pakistan's emissions are still expected to rise by 100% by 2030.

The NDC outlines a comprehensive range of actions across various sectors, including improvements in irrigation and water management practices, the adoption of clean production technologies, waste management, and urban planning. The NDC occasionally mentions reduction targets for some sectors but do not account for the full 801 MtCO2eq or specify the allocation quotas for the sectors responsible for achieving these reductions.

The NDC estimates that stabilizing the energy mix at 40-60% in favor of renewable energy could save approximately 22 MT CO2e. Additionally, the introduction of electric vehicles (EVs) is projected to save around 24 MT CO2eq, while the cancellation of two coal power plants could contribute a further 1.7 MT CO2e in savings. Furthermore, the NDC anticipates an additional reduction of 70 MT CO2e by 2030 through improvements in industrial processes and product use (IPPU), as well as in agriculture and food systems.

Below are the NDCs that Pakistan submitted in line with the requirements of the Paris Agreement.

1. **GHG Emission Reduction**:
   - **Unconditional Reduction**: 15% from business-as-usual (BAU) emissions.
   - **Conditional Reduction**: 35% reduction contingent upon international financial, technological, and capacity-building support.
2. **Renewable Energy**:
   - By 2030, Pakistan aims to generate **60% of its electricity** from renewable energy sources, such as solar, wind, and hydropower.

3. **Electric Vehicles (EVs)**:
   - **30% of all new vehicles** sold in Pakistan by 2030 should be electric vehicles.
4. **Coal Power Plants**:
   - Pakistan has committed to **no new coal-fired power plants** based on imported coal and will instead promote clean energy alternatives. The plans for two new coal-fired power plants have been shelved in favor of hydro-electric power, and there is an increased focus on coal gasification and liquefaction of indigenous coal.
5. **Ten Billion Tree Tsunami**:
   - Aimed at afforestation, this initiative seeks to plant **10 billion trees** by 2030 to restore forests and enhance carbon sequestration.

2.2 Adaptation Priorities

1. **Water Security**:
   - Addressing water management challenges due to glacier melt and changing monsoon patterns in the Indus River system.
2. **Agriculture and Food Security**:
   - Enhancing the resilience of Pakistan's agricultural systems to reduce vulnerability to climate variability.
3. **Disaster Risk Reduction**:
   - Strengthening disaster preparedness and response capacity, particularly for extreme weather events like floods, droughts, and heatwaves.
4. **Biodiversity Protection**:
   - Expanding protected areas to **15% of Pakistan's land area** and using nature-based solutions for ecosystem restoration.

It is estimated an additional 7-15billion per year are required for adaptation efforts.

3. Current Status of NDC Implementation (As of 2024)

3.1 Budget Allocations for Climate Change

The federal climate change budget reveals Pakistan's limited domestic financial resources dedicated to climate action. The overall allocation remains a small fraction of Pakistan's total budget, with climate change representing only 0.042% of the total current budget by 2024-2025. This level of domestic financial commitment is insufficient to meet the ambitious NDC targets without significant international support.

Pakistan Climate Change Budget

Year	Current Budget	Current Budget	Percent share	Develop Budget	Develop Budget	Percent share
	Total	Climate Change	Climate change	Total	Climate change	Climate change
2021-22	8,373,798	452	0.005	190,295	9,573	5.031
2022-23	10,527,616	660	0.006	449,206	4,071	0.906
2023-24	14,334,395	1,142	0.008	488,646	2,750	0.563
2024-25	17,203,000	7,252	0.042	952,558	6,257	0.657

Figures are in PKR Million

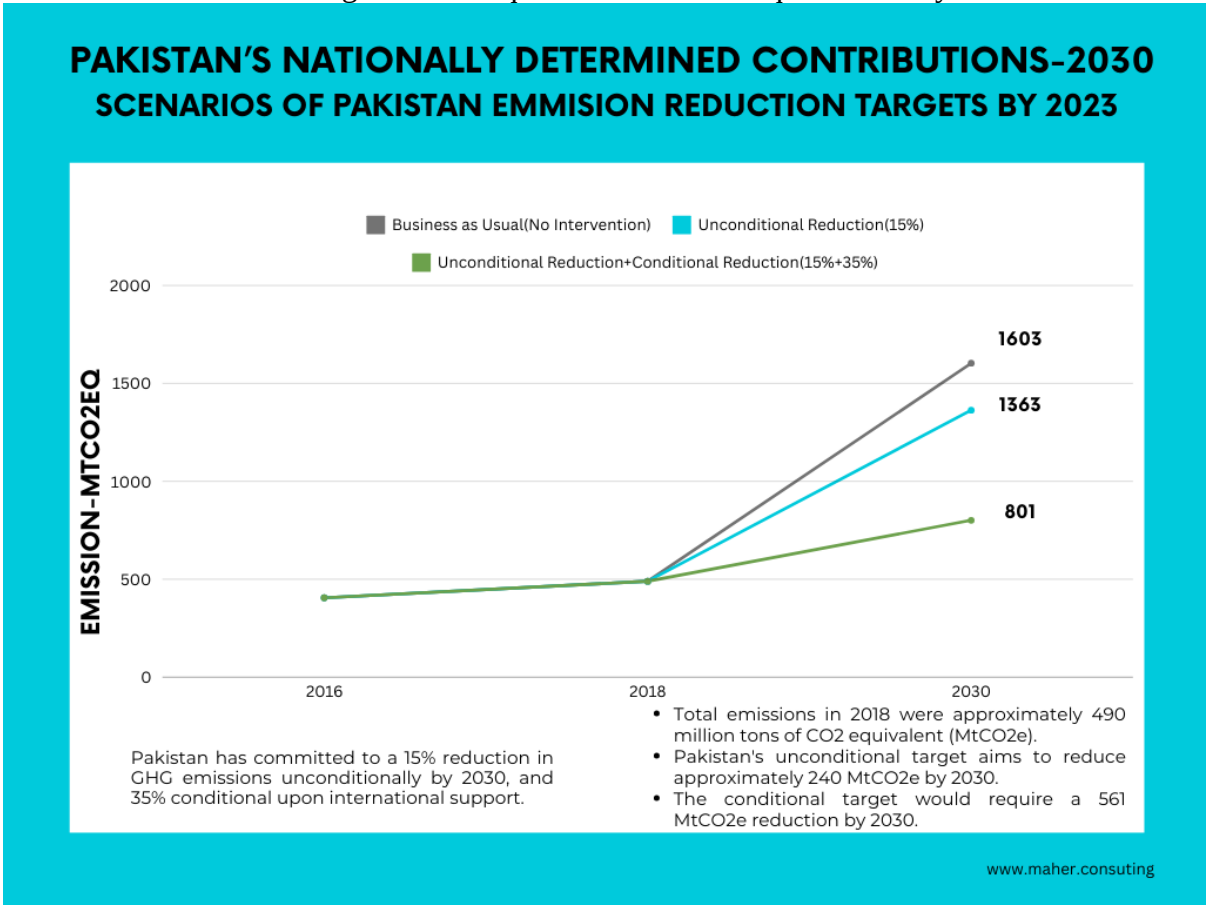
(Source: Federal Government Budget, Different years).

3.2 GHG Emissions Reduction

Emissions Trajectory and Target

Pakistan has committed to a 15% reduction in GHG emissions unconditionally by 2030, and 35% conditional upon international support. Total emissions in 2018 were approximately 490 MtCO2eq.

- Pakistan's unconditional target aims to reduce approximately 240 MtCO2eq by 2030.
- The conditional target would require a 561 MtCO2eq reduction by 2030.



As of 2024, Pakistan's progress toward this target has been moderate, with limited large-scale mitigation projects in place. Despite initiatives in renewable energy, the emissions trajectory suggests that the 15% unconditional reduction is challenging but potentially achievable if current projects are scaled up. However, the 35% conditional reduction is highly dependent on international financing and technology transfers.

In the year 2024-2025, the Climate Change ministry has only five development projects underway. As indicated by their titles, four of these projects primarily focus on capacity building and are progressing slowly. The true impact of capacity building initiatives typically emerges in the years following their completion. Additionally, none of these projects involve foreign components.

Ministry of Climate Change Development Projects, 2024-25

Title	Total Volume (PKR Million)	Start Year	Expenditure by 30 June 2024
Capacity Building on Water Quality Monitoring & SDG (6.1)	1289	2021-22	52.06
Climate Resilient Urban Human Settlements Unit	59.288	2018-19	47.457
Ten Billion Trees Tsunami Programme - Green Pakistan Programme (Revised)	125.184	2019-20	29,564
Pakistan Bio Safety Clearing House for GMOs Regulation	200	2023-24	19.075
Strengthening Technical Capacities of the Ministry of Climate Change & Environmental Coordination (	306.660	2024-25	0

Figures are in PKR Million

Pakistan's hydropower sector for 2024-25 has a portfolio valued at PKR 201,224 million, consisting of 11 ongoing projects. Of these, 10 projects include a foreign loan component, totaling PKR 31.896 million, which averages PKR 2.89 million per project. The total budget allocation for the hydropower sector is PKR 169,328 million, with only PKR 10,114 million allocated from the national budget. The remaining PKR 159,214 million is self-financed by WAPDA.

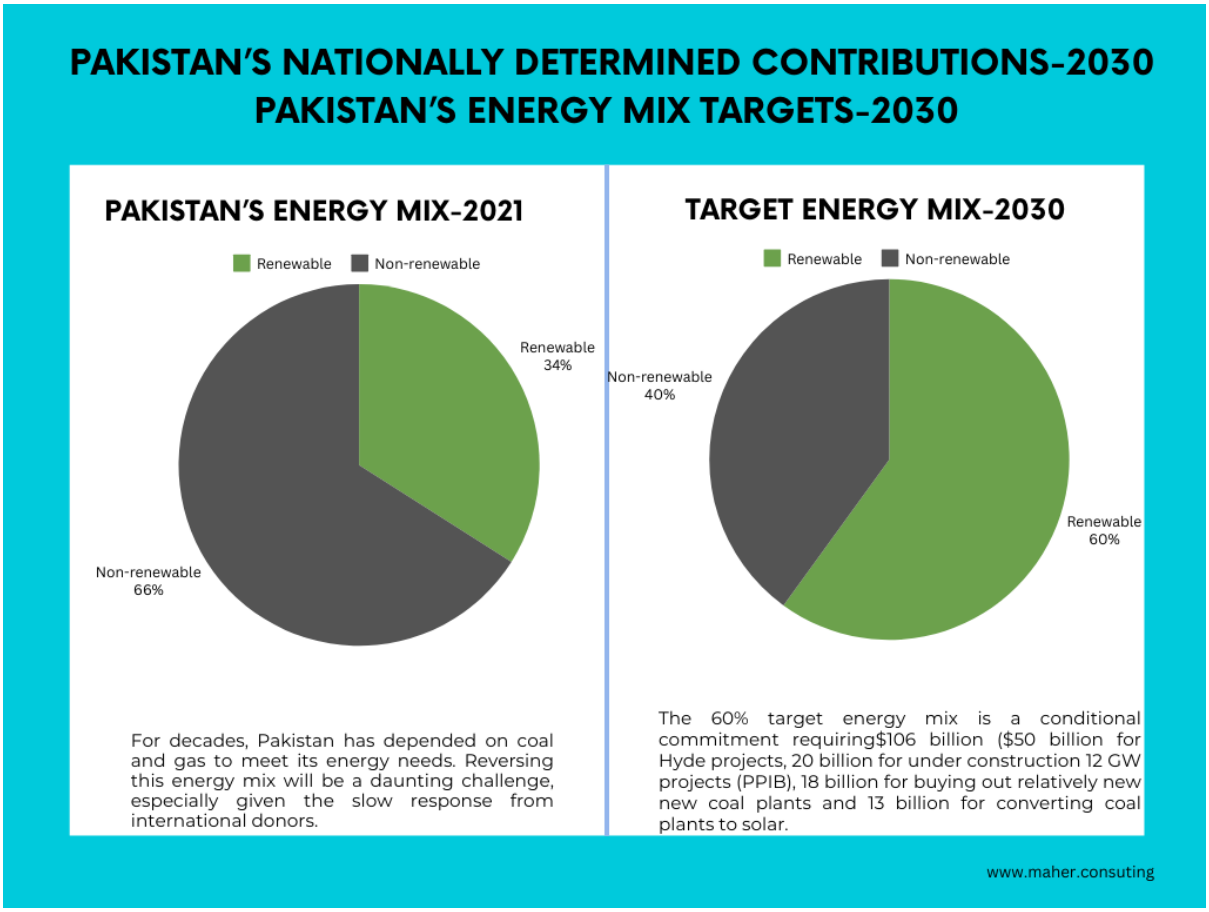
Hydel Projects under Water Resource Division, 2024-25

Total Projects	Total Allocation	Foreign loan	Total	Avg. Foreign loan per project	Avg. Allocation per project including foreign loan
10	169,328	PKR 31.896 million ($113914)	201,224	PKR 2.89 million ($10,321)	18,239 ($65million)

Pakistan requires $101 billion to meet its conditional climate commitments, with $50 billion allocated for hydropower projects. With this slow pace, meeting 2030 targets will be a forlorn hope. It also remains unclear which other sector projects have been designated as climate change initiatives. During this year's budget speech, the finance minister announced that the climate and gender tagging of development projects has been completed, yet this information has not been made publicly available.

3.3 Renewable Energy Progress

As of 2021, approximately 34% of Pakistan's energy mix comes from renewable sources, primarily from hydropower. More than 12 GW for Coal and Hydro projects are under construction under Private Power and Infrastructure Board (PPIB) requiring about $20 billion but their pace needs to increase significantly to meet its target. Solar and wind projects are expanding, but the growth rate is slower than needed to meet the 60% renewable energy target by 2030.



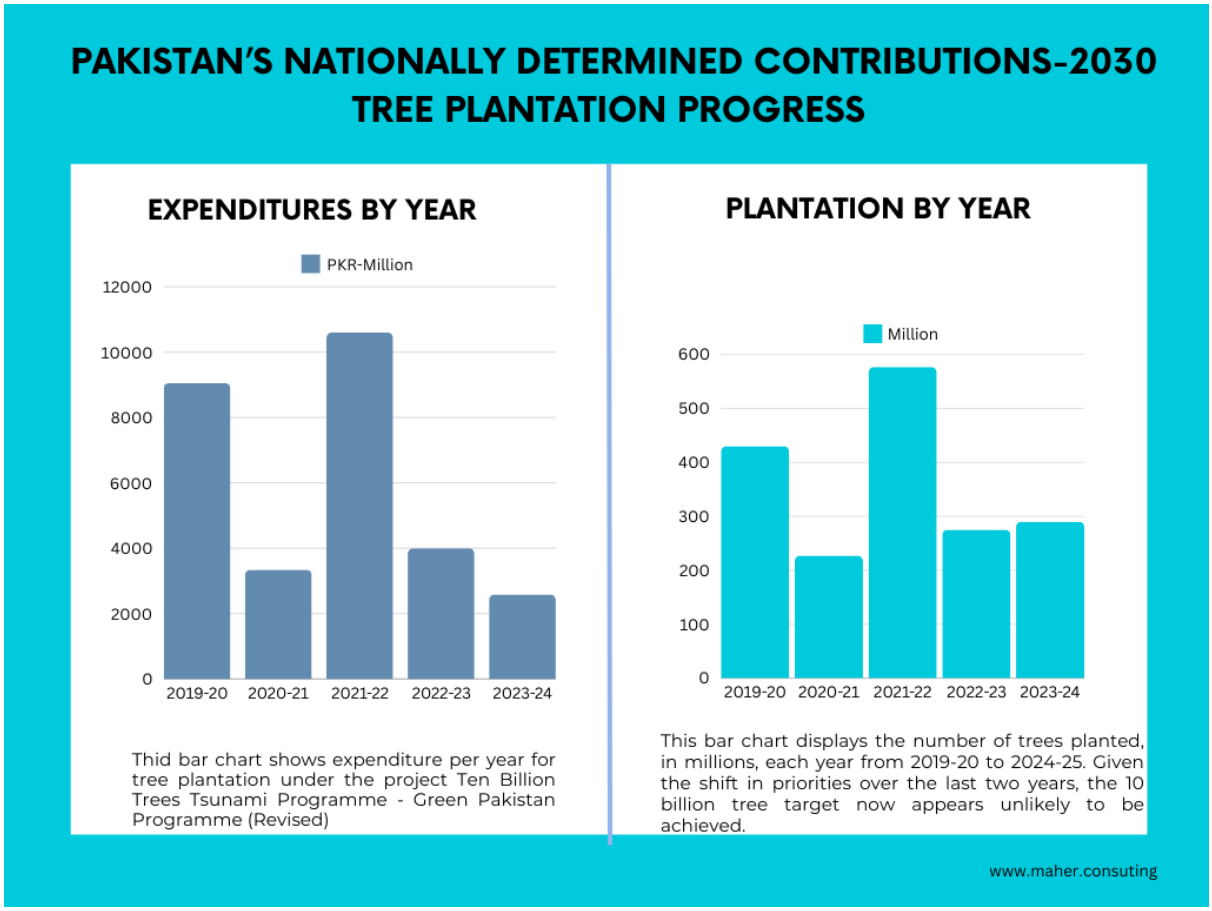
3.4 Electric Vehicles (EVs)

Pakistan has announced its Electric Vehicle (EV) policy in 2020, but EVs have struggled to gain popularity among commuters as battery development is in early stages, requiring frequent charging, the lack of adequate charging infrastructure, and the significant price gap between petrol and EV variants. The EV target—30% of new vehicles sold by 2030—remains ambitious, given that, as of 2023, less than 1% of new vehicles sold are electric. Urgent steps are needed to achieve the target of 30% of new car sales being EVs by 2030.

3.5 Ten Billion Tree Tsunami Project

The Ten Billion Tree Tsunami project, launched in 2019, is a key component of Pakistan's afforestation efforts. By 2024, approximately 2.6 billion trees have been planted, with a target of 10 billion by 2030.

- Tree planting rate has fluctuated annually, with the largest growth in 2022-23, where over 576 million trees were planted.
- The survival rate of these trees remains a concern, as deforestation, poor management, and climate conditions threaten their longevity.



3.6 Adaptation Initiatives

- **Water Security**: Pakistan's **Indus River system**, fed by glaciers, is highly vulnerable to climate change, with erratic rainfall and glacier melt posing serious risks to water security. Pakistan has undertaken projects to improve water infrastructure, but these efforts are insufficient to match the growing water demand and variability caused by climate change.
- **Agriculture**: The agriculture sector, which accounts for 20% of Pakistan's GDP and employs nearly 40% of the workforce, remains vulnerable to extreme weather events. Adaptive measures are being introduced, such as climate-resilient crop varieties and improved irrigation techniques, but the sector is still highly susceptible to climate risks.
- **Disaster Risk Reduction**: Pakistan has made significant progress in improving disaster preparedness. Early warning systems, especially for floods and droughts, have been expanded. However, the frequency and intensity of these disasters continue to strain national capacity.

4. Challenges to Achieving NDCs by 2030

1. **Financial Shortfall**: Pakistan's budget allocation for climate change remains low relative to the scale of the challenges. International financial support is critical to achieve the conditional 50% GHG reduction target.
2. **Technological Gaps**: Pakistan needs significant advancements in renewable energy technology, energy storage, and electric vehicle infrastructure to meet its 2030 targets. These require international technology transfers and investments.
3. **Institutional and Governance Weaknesses**: Weak governance and poor coordination between federal and provincial authorities slow the implementation of climate initiatives. Strengthening institutional frameworks is essential to track and achieve NDC targets.

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This report, titled "**Status of Pakistan's Nationally Determined Contributions (NDCs) and the Likelihood of Achieving Them by 2030**," presents a comprehensive assessment of Pakistan's progress toward meeting its climate commitments under the Paris Agreement. Authored by Amer Ejaz, the document critically analyzes both mitigation targets and adaptation priorities set forth in Pakistan's NDCs submitted in 2021. As of 2024, the report evaluates the implementation status across various sectors, identifying the challenges for achieving the ambitious environmental goals by the deadline. This analysis is crucial as it highlights Pakistan's unique position as a low-emission yet highly vulnerable country facing significant climate-related challenges.

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