Overview of Pakistan’s Low Carbon Transport Roadmaps and Strategies

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Sequence of Presentation

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Introduction

- **COP21** led to an unprecedented *Paris Agreement*, a landmark in the multilateral climate change process.

- **Art. 4 of the Paris Accord** – all Parties to prepare, communicate and maintain a *nationally determined contribution (NDC)* and to *pursue domestic measures* to achieve them.

- **Transport Sector** plays a significant role (14%) in CO$_2$ emissions in Asia-Pacific Region.

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1. Share of global GHG emissions
2. Climate Vulnerability Index ranking
3. Emissions reduction target by 2030

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1UNDP Climate Promise ([https://climatepromise.undp.org/what-we-do/where-we-work/Pakistan](https://climatepromise.undp.org/what-we-do/where-we-work/Pakistan))
Nationally Determined Contributions (NDCs)

TRANSPORTATION:
By 2030, 30% of all new vehicles sold in Pakistan in various categories will be Electric Vehicles (EVs)².

RENEWABLE ENERGY:
By 2030, 60% of all energy produced in the country will be generated from renewable energy resources including hydropower².

² Pakistan Updated NDCs 2021 (https://unfccc.int/sites/default/files/NDC/2022-06/Pakistan)
Current State of Transport Emissions

Transport Sector contributes *approx.* 11% of Total GHG Emissions

88% emission is from Road Transport (cars: 30%, motorcycles: 9%, trucks: 49%)

Summary of Sectoral GHG Emissions (*Mt CO2e*)

Source: Pakistan’s First Biennial Update Report (Bur-1)

Emissions from Transport Sector (*Mt CO2e*)

Source: Pakistan’s First Biennial Update Report (Bur-1)
National Roadmaps / Initiatives for Low-Carbon Transport

- To control emissions, the following environmental protection related legislations have been introduced in the country:
  - The National Transport Policy 2018
  - The National Electrical Vehicle Policy (NEVP) 2019
  - National Electricity Policy 2021
  - EV Charging Infrastructure Regulations 2023

- Pakistan has taken several initiatives to mitigate the CO₂ emissions, which include:
  - Introduction of EVs in Mass Transit Systems
  - Rail Rapid Transit System
  - Karachi Bus Rapid Transit – Red Line Project
  - Focus on Non-motorized Transport
I. National Transport Policy 2018

- Bolsters **multi-modal transport**: road, rail, air, maritime, pipeline, and inland waterways.
- Promotes shift towards **more sustainable fuels** instead of high dependence on fossil fuels and oil.
- Aims to enhance the usage of **non-motorized transport and public transport** in urban areas.
- Focuses on **preserving environment** by minimizing adverse effects of transport system.

"Reduce transport emissions (air, noise, and vibration) from vehicles by improving emissions and fuel standards, ensuring adherence to such standards, and promotion of sustainable transport modes."

– Policy Objective 8-B
II. National Electrical Vehicle Policy 2019

- Aims to electrify all passenger vehicles and heavy-duty trucks to reach 30% by 2030 and 90% by 2040.
- Proposes a phased approach for achieving EV penetration targets in three stages.
- Outlines various incentives and subsidies to promote EV adoption.
- Expects to reduce the fuel import bill, and foster economic growth through the development of a Green Economy.
- Includes plans for extensive development of charging infrastructure in major cities / highways.
III. National Electricity Policy 2021

- Expanding **generation capacity** with an emphasis on **reducing reliance on imported fuels** and promoting local resources
- Calls for **zone-based renewable resource assessments** to identify and prioritize renewable zone
- Aims to **minimize environmental degradation** while ensuring the technical, operational, and financial sustainability of the power sector
IV. Introduction of EVs in Mass Transit Systems

- **Sindh** province led the initiative by introducing **30 hybrid** and **50 EV buses** for its public transport network.
- The Federal capital **Islamabad** is in the process of acquiring **160 EV buses** to enhance its public transportation fleet.
- In **Punjab**, plans are underway to introduce **20,000 e-bikes** and **over 650 EV buses**.
- **Khyber Pakhtunkhwa** has also introduced **diesel-hybrid buses** for its capital city, Peshawar.
V. Rail Rapid Transit System

- **Ongoing Projects** for Rail Rapid Transit:
  - *The Karachi Circular Railway*
  - *Lahore Metro – Orange Line*

- **Orange Line Metro** is driven by electricity to achieve **zero pollution** and **zero emission** with an estimated reduction in annual fuel emission of gases by **30,000 tons**.

- **Proposed Projects** for Rail Rapid Transit:
  - *Peshawar Circular Railway*
  - *Quetta Mass Transit*
  - *Rawalpindi-Islamabad Circular Railway*
VI. Karachi BRT Red Line Project

- This proposed project will develop a 26.6-kilometer (km) Bus Rapid Transit (BRT) Red Line corridor.
- Aims to reduce 2.6 million tonnes of CO$_2$ equivalent over 30 years.
- The project will utilize biomethane from cow dung to power buses.
- A facility will be established to produce 11 tonnes of biogas per day for the 213 buses.
VII. Focus on Non-motorized Transport

- ‘Cycling as an Alternative Transport’ project launched in Federal Capital Islamabad.
- Over 146 KM of dedicated cycling lanes will be developed and is scheduled to be completed by **February 2025.**
SWOT Analysis of Pakistan's Strategies

**STRENGTHS**
- Strong government commitment
- Growing public awareness
- Cost savings
- Environmental benefits

**WEAKNESSES**
- High initial costs
- Lack of infrastructure and technical expertise
- Regulatory and policy gaps

**OPPORTUNITIES**
- International funding and collaboration
- Technological advancements
- Public awareness and support

**THREATS**
- Economic instability
- Resistance to change
- Climate change impacts
Conclusion

- Despite facing many challenges, the Government of Pakistan remains committed to achieving zero / low-carbon transport.
- Policy / Legal framework is in place to ensure transition to low-carbon transport.
- Initiatives have been taken, such as the introduction of EVs in mass transit systems, the development of cycling infrastructure, and the steps taken to meet NDC targets.
- To further support low-carbon transport initiatives, international funding, technological advancements, and increased public awareness is required.
Thanks You

Do you have any questions?
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