



The Opportunities and Challenges for Climate Mitigation Actions (NDCs and NAMAs)- The Case of Pakistan

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Contents



- National Context- Country overview, Climate change impacts, GHG emissions
- Pakistan Perspective on NDCs
- Identified NAMAs
- Mitigation Targets in Energy Efficiency Sector
- Climate Action Plans- Challenges
- Climate Action Plans- Opportunities
- Way Forward

Country Overview

- Pakistan extends over an area of 796,095 km²
- Climate varies from arid to semiarid
- The northern region includes some of the world's
 - highest mountain peaks, such as K-2 (8,611 meters [m] high), and
 - the largest glaciers including Siachen (70 kilometers [km] long) and Biafo (63 km) that feed the Indus River and some of its tributaries
- The western and southern segments of the country represent the Indus River basin plain and Balochistan Plateau
- Pakistan is the fifth most populous country in the world with a population size of 220.89 million (2020)



Climate Change Impacts

- About **495 000 people** have lost their life to climate change between 1999- 2018, with losses of **US\$ 3.54 trillion** observed directly as a result of extreme climate events
- According to Global Climate Risk Index 2020 report, Pakistan is **ranked fifth** when it comes to being affected by the risks of climate change
- In the last 50 years, the annual mean temperature in Pakistan has increased by roughly 0.5°C
- By the end of this century, the annual mean temperature in Pakistan is expected to rise by **3°C to 5°C** for a central global emissions scenario
- Average annual rainfall is not expected to have a significant long-term trend, but is expected to exhibit large inter-annual variability
- Sea level is expected to rise by a further **60 centimeters** by the end of the century and will most likely affect the low-lying coastal areas south of Karachi toward Keti Bander and the Indus River delta



Heatwave 2015, 'an unending queue of corpses'
<https://www.dawn.com/news/1395438>

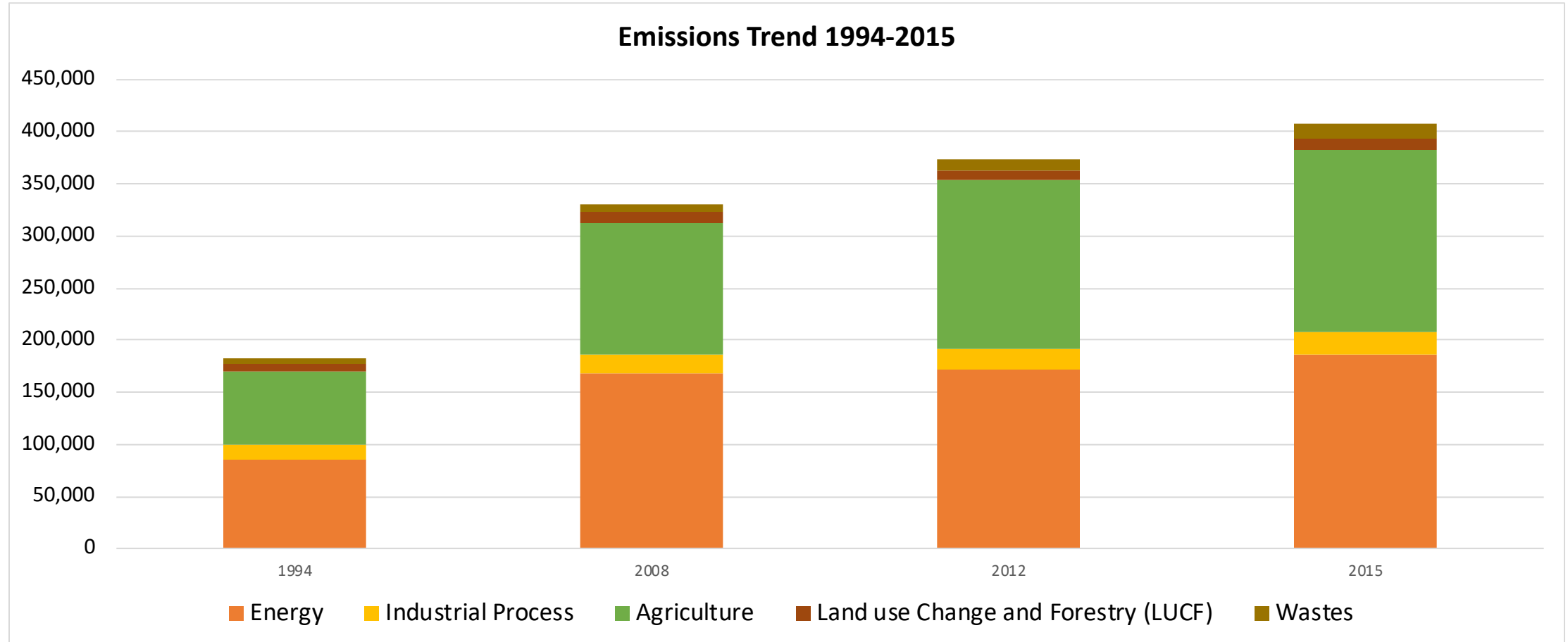
Pakistan Climate Expenditure

Pakistan climate-relevant expenditure (CPEIR 2011/12 to 2015/16)

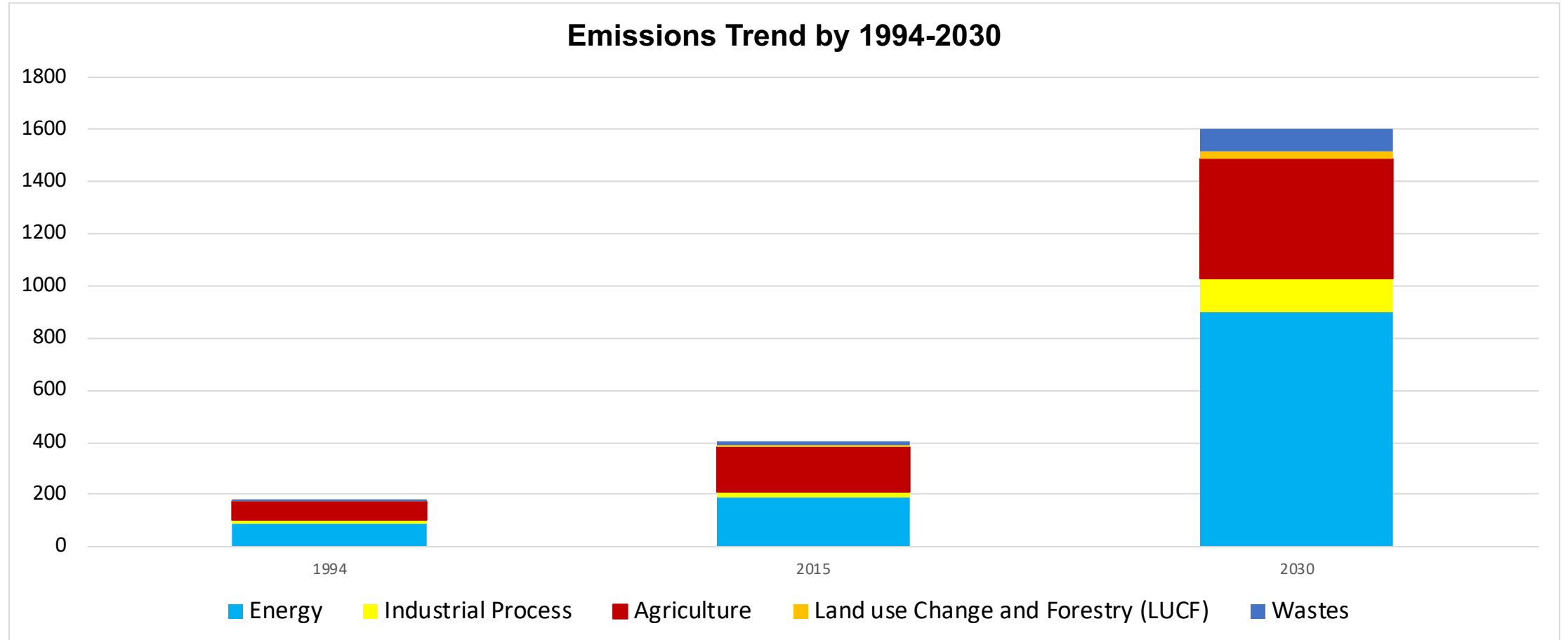
	2011/12	2012/13	2013/14	2014/15	2015/16
Federal	6.5%	5.8%	6.2%	8.1%	6.5%
Khyber Pakhtunkhwa	7.2%	5.3%	7.1%	9.7%	8.9%
Balochistan	7.3%	10.4%	11.1%	11.3%	11.9%
Punjab	6.2%	7.1%	8.2%	9.3%	13.7%
Sindh	5.7%	4.2%	4.3%	6.9%	7.2%
FATA	13.1%	12.5%	11.6%	11.9%	10.2%
Gilgit-Baltistan	16%	19%	20%	28%	25.6%
Azad Jammu & Kashmir	9.2%	14.0%	12.5%	16.9%	14.3%
National	6.7%	6.1%	6.7%	8.5%	8.4%

Source: Climate Public Expenditures and Institutional Review (CPEIR) 2017

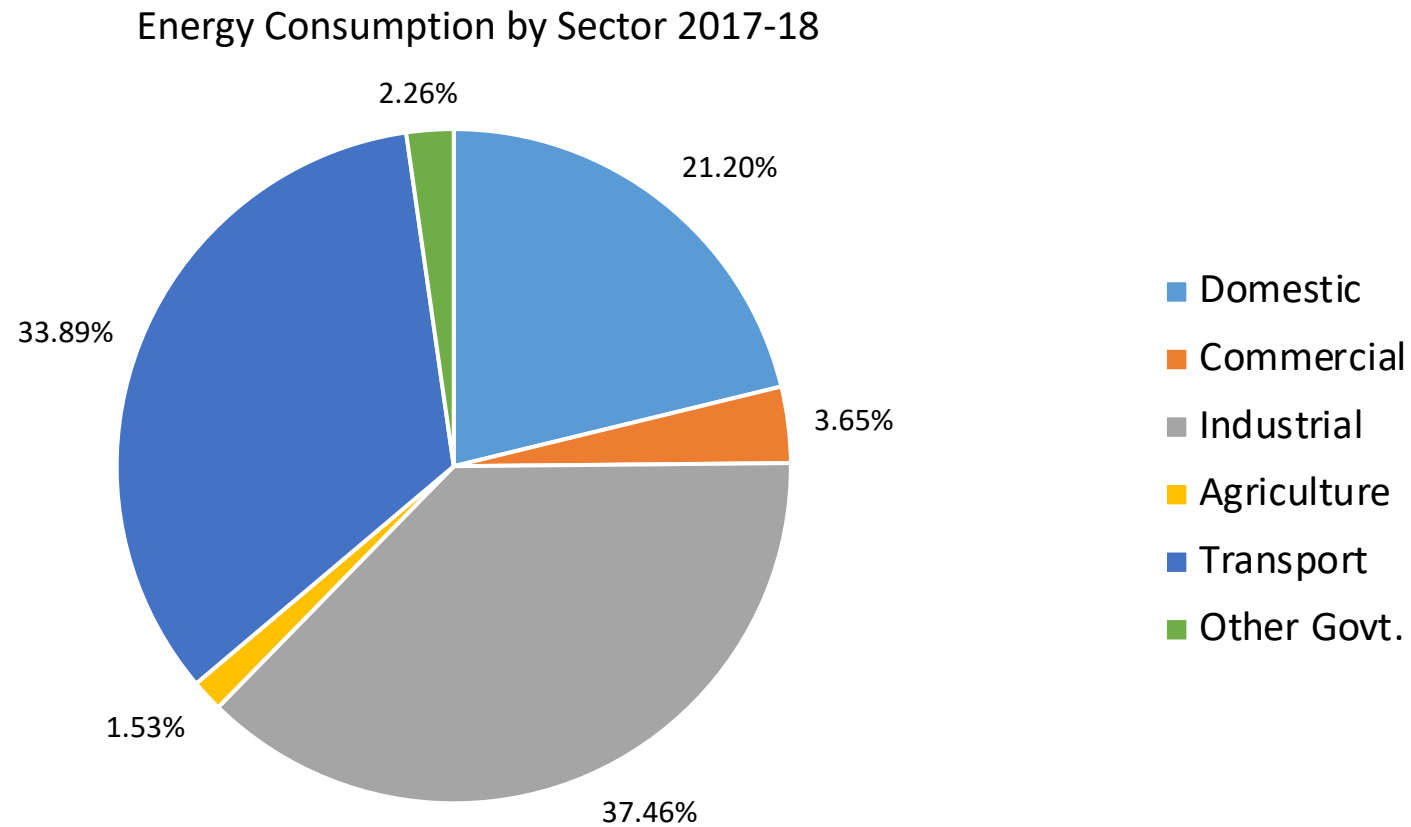
Major Emitter of GHG in Pakistan



Projection of GHG Emissions by 2030



Final Energy Consumption by Sector 2017-18



Source: Pakistan Energy Year Book 2018

Energy Saving Potential Residential Sector and Domestic Sector

Electricity savings potential for selected appliances in the domestic sector

Appliance	Energy Savings Potential	Negawatt-hour Potential (GWh)
Lighting	60%	8456
Refrigerator	23%	667
Fans	50%	6839
Air Conditioners	40%	829

Gas savings potential in the residential sector

Appliance	Gas Savings Potential
Domestic Geysers	30%
Space Heaters	36%
Cooking Stoves	43%

Pakistan Perspective on NDCs

Pakistan intends to reduce up to 20% of its 2030 projected GHG emissions subject to availability of international grants to meet the total abatement cost for the indicated 20 percent reduction amounting to about US\$ 40 billion at current prices

Pakistan's adaptation needs range between U\$ 7 to U\$ 14 billion/annum during this period

- Ministry of Climate Change
- Pakistan's Vision 2025
- National Climate Change Policy 2012
- National Disaster Risk Management Policy 2013
- Framework for the Implementation of CCP (2014-30)
 - National Adaptation Plan (NAP)
 - Nationally Appropriate Mitigation Actions (NAMAs)
- Public Sector Development Programmes (PSDP)
- Climate Change Act 2017

NDC Submitted to UNFCCC

- Pak-INDC presents the overall GHG emissions profile and future emission projections, by considering both the present and future socio-economic parameters, changes in the demographic dynamics and emerging energy needs
- While the NDC identifies a goal of 20 percent below 2030 projections, it is unclear which actions are conditional upon receiving foreign funds
- The country did not include a single measurable target to reduce its greenhouse gas emissions
- Mitigation potential and mitigation options in two key emission-generating sectors of the economy – Energy and Agriculture

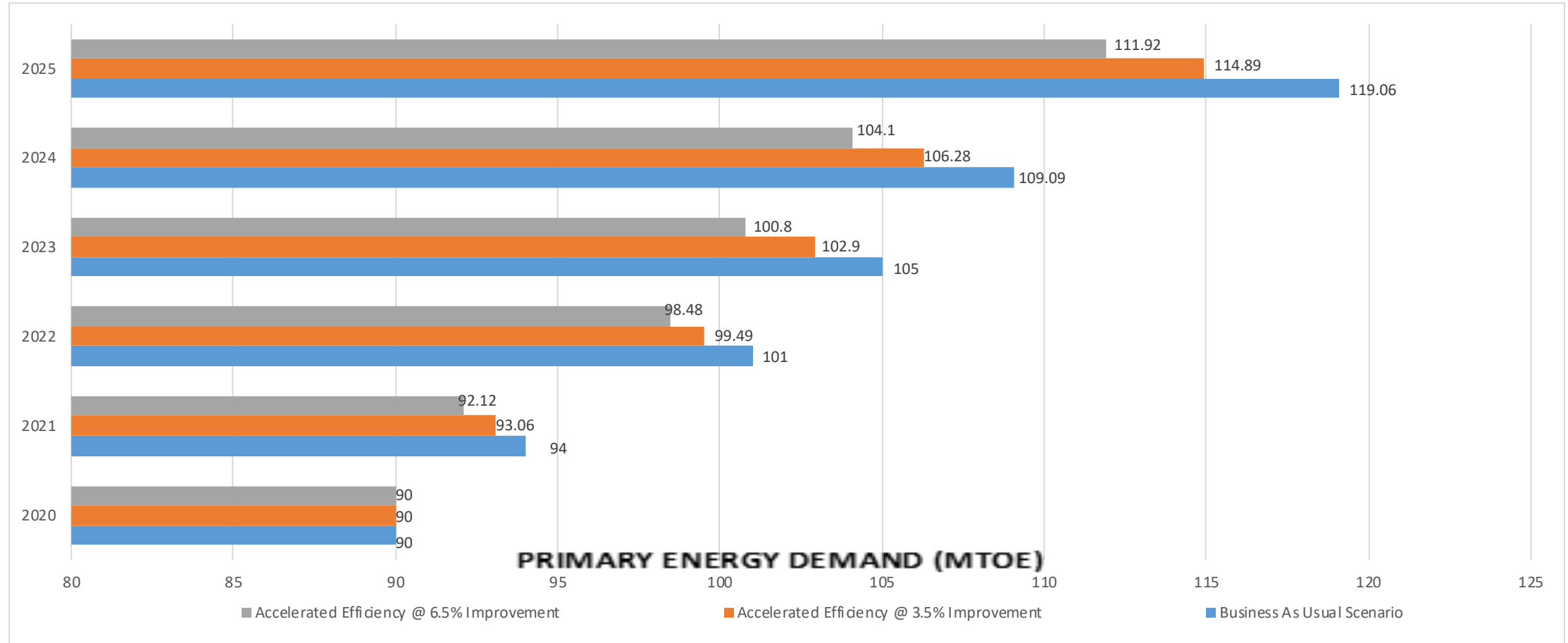
Identified NAMAs

Title	Sector	Sub-sector
Harnessing Municipal Waste of big Cities of Pakistan to Generate Electricity	Waste management	Renewable energy
Energy Efficient Lighting in Residential, Commercial, Industrial, and Outdoor Sectors of Pakistan	Residential and Commercial buildings	Energy efficiency
Development and Installation of Carbon Dioxide Sequestration Technologies in Pakistan	Minerals and Mines	Refining and energy production
Supporting Mechanisms for Promoting Distributed Generation (Net Metering, Wheeling, Banking etc.) in Pakistan to put 3 GW Alternative and Renewable Energy (ARE) Projects in next 7 years.	Energy supply	Renewable energy
Bio-energy generation and greenhouse-gases mitigation through organic-waste utilization	Agriculture, Waste management	Renewable energy
Accelerating the Market Transformation to Energy Efficient Lighting	Residential and Commercial buildings	Energy efficiency
Strategizing for Grid Strengthening / Improvement for evacuation of power from Solar Power Projects	Energy supply	Renewable energy
Strategizing for Grid Strengthening / Improvement for evacuation of power from Wind Power Projects	Energy supply	Renewable energy

Identified NAMAs

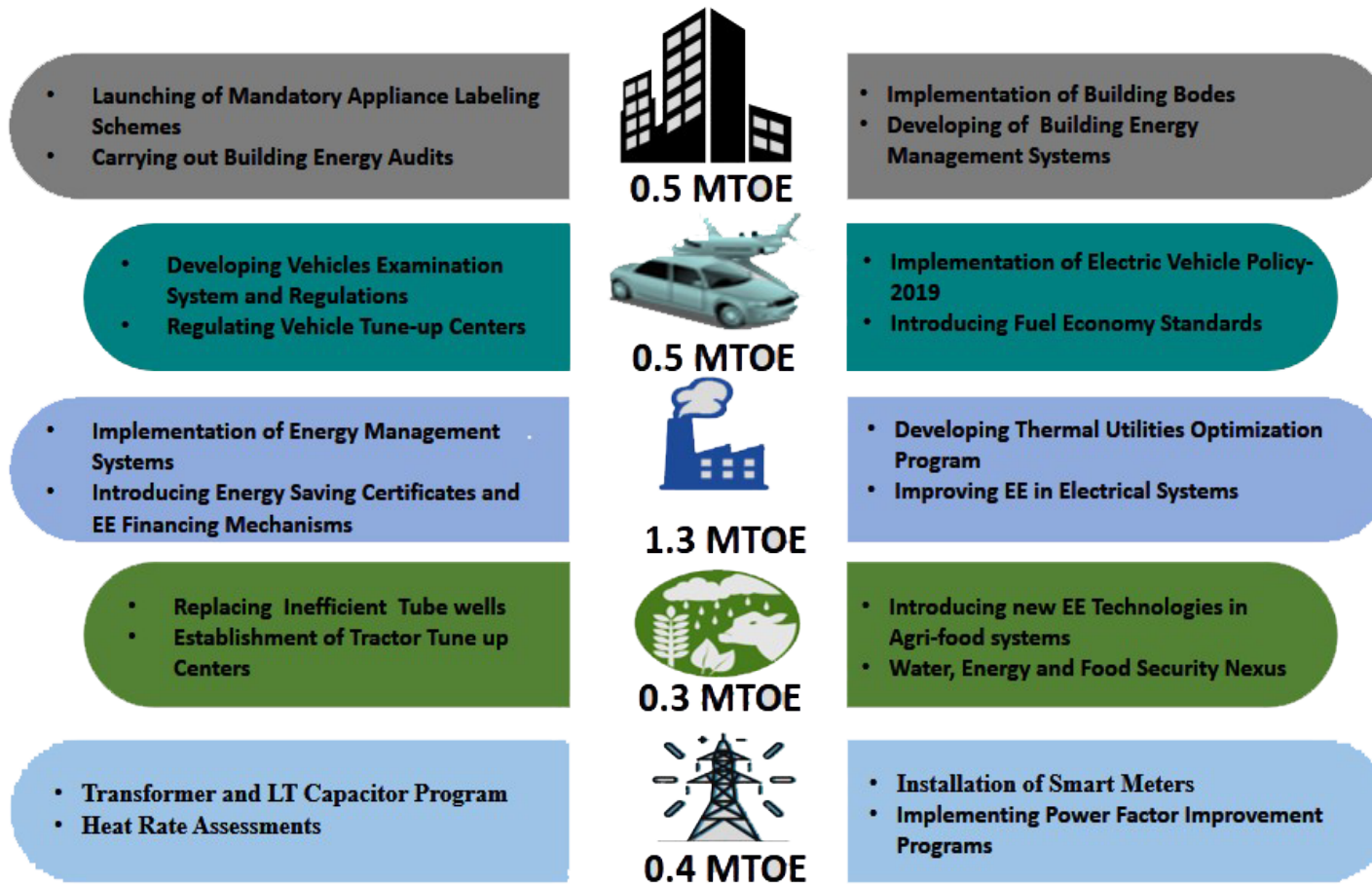
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Climate Change Mitigation-Energy Efficiency



Energy Efficiency Improvement – BAU Projected Scenarios
 Source: NEECA's Estimates based on Energy Year Book 2019

Mitigation Targets in Energy Efficiency Sector



Sectoral Distribution of Energy Saving 3 MTOE by 2025

New Dimensions of Mitigation Actions in Energy Sector



- National Energy Efficiency and Conservation Act- 2016
- NTDC Expansion Plan
- Renewable Energy targets until 2030
- Electric Vehicle Policy- 2019
- Transport Policy- 2018
- Pakistan Green Buildings Energy Codes- 2020 (Revised)
- Zig-Zig Technology for Brick Kiln
- Building Energy Audits
- Approval of Carbon Pricing Mechanism

Climate Action Plans- Challenges

- Understanding and assessment necessary for selecting and planning NAMAs is largely still missing in Pakistan
- NAMAs submitted to UNFCCC NAMA Registry, out of 8 submitted, 6 are still seeking support
- Delays in the Preparation of Biennial Update Report (BUR)
- Some lesson from NAMAs
 - Data availability
 - Industry awareness
 - Government engagement
- Financial grants, technical assistance, technology development and transfer and capacity building
- Financial and technical constraints do not permit realization of the full mitigation potential

Climate Action Plans- Challenges

- Climate change-related expenses already take up a significant portion of the Government's budget
- Matching economic growth with population increase has historically remained a challenge for successive governments
- The voluntary nature of NDCs and not being fully legally binding poses threat to achievement of targets as transfer of funds are not ensured
- Knowledge gaps on the effects of INDC targets on socio-economic development
- Private Sector hesitant to participate in mitigation activities
- Inter-provincial coordination

Climate Action Plans- Opportunities

- NAMA as a driver to implement NDCs- as a Driver for Sustainable Development
- Catalysing internationally transferred mitigation outcomes
- Public Private Partnership- enhancing carbon sinks and involving in carbon credits
- Institutional arrangements
- Ensure all stakeholders have ownership in the debate
- Research financial schemes and actively involve local financial institutions
- Trained professionals
- Smart allocation of resources for successful implementation of mitigation and adaptation measures
- Consider the role of national funds and private investment

Way Forward



- Mainstreaming climate-related actions into national budgets and developing funding strategies as part of NDC implementation plans is of great importance
- Addressing adaptation measures as priority-disaster preparedness
- The government would need to approach foreign governments and multilateral funds
- Need for harmonizing national and sub-national policies and synergizing the action agenda so that considerations of climate change can be incorporated into over-arching development planning in a coherent manner
- Monitoring & Transparency of NDC Progress

Thank You!