

Terms of Reference

Development of Net Zero Target and Pathways for Pakistan

A. Background

As required from all parties of the Paris Agreement Pakistan submitted its updated NDCs at COP26, where an ambitious climate target was set by the country. Pakistan declared its intention to set a cumulative ambitious conditional target of an overall 50% reduction of its projected emissions by 2030, with a 15% reduction from the country's own resources and a 35% reduction subjected to the provision of international grant finance. To achieve the target, Pakistan aims to shift to 60% renewable energy, 30% electric vehicles by 2030, increase in protected areas from 12% to 15%, ban coal imports as well as expand nature-based solutions. The updated NDC have also identified and added new sectors such as youth, gender and blue economy for enhanced contributions. The revised NDC envisage a broader approach to adaptation, addressing adaptation needs in several sectors and stressing the loss and damage component.

In addition to the NDCs, in order to better frame the efforts towards the long-term goal, the Paris Agreement also invites countries to formulate and submit long-term low greenhouse gas emission development strategies (LT-LEDS) which would provide the long-term horizon to the NDCs. Unlike NDCs, they are not mandatory. Nevertheless, they place the NDCs into the context of countries' long-term planning and development priorities, providing a vision and direction for future development.

The Government of Pakistan, represented by the Ministry of Climate Change, has recently expressed its interest to join the 2050 Pathways Platform and lay the foundations for its LTS. It is planned that a Long-term vision will be declared by COP27, while the strategy will be prepared and adopted within a year. A Net Zero goal and strategy will complement the Long-Term Vision and Strategy of the Government of Pakistan, as a responsible leader on climate ambition across the globe.

The Glasgow Pact – a formal outcome of COP26 – encouraged all parties to develop long-term strategies that demonstrate progress towards the achievement of the Paris Agreement temperature goal. Pakistan's Net Zero Strategy will be coupled with sustainable economic growth while reducing the pressure on the environment and natural resources, with specific targets for every sector. The increment in GHG emissions over the years and sectoral breakdown of Pakistan's GHG emissions are both shown below.

Figure 1 NATIONAL GHG INVENTORIES 1994, 2012, 2015 & 2018 BY SECTOR (MT CO₂ Eq.)

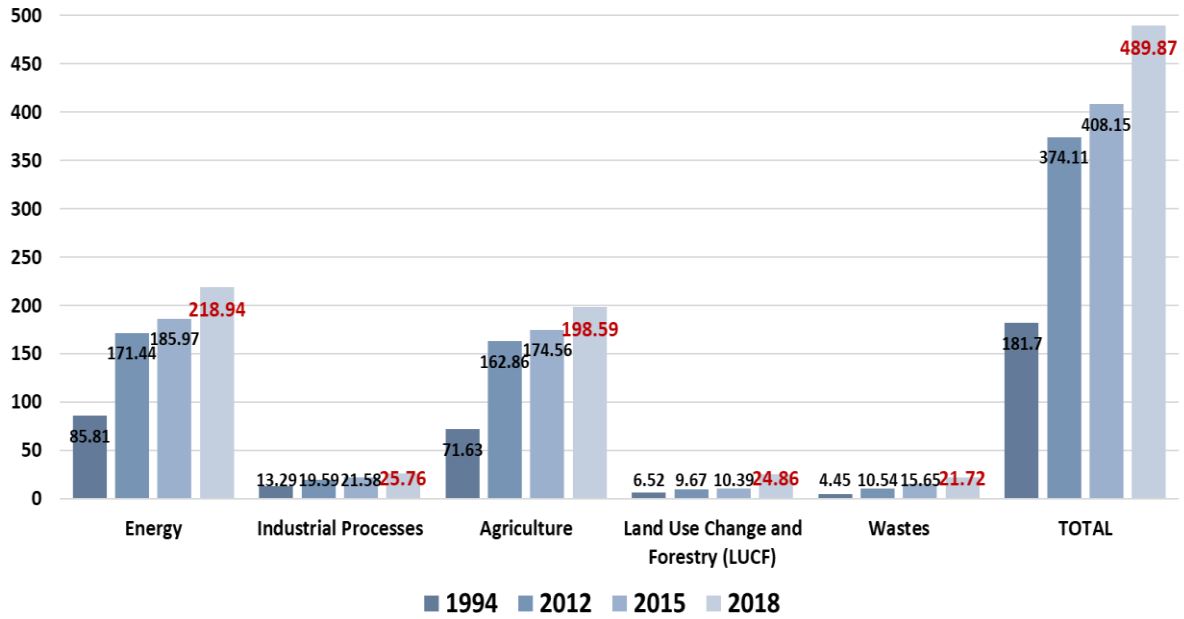
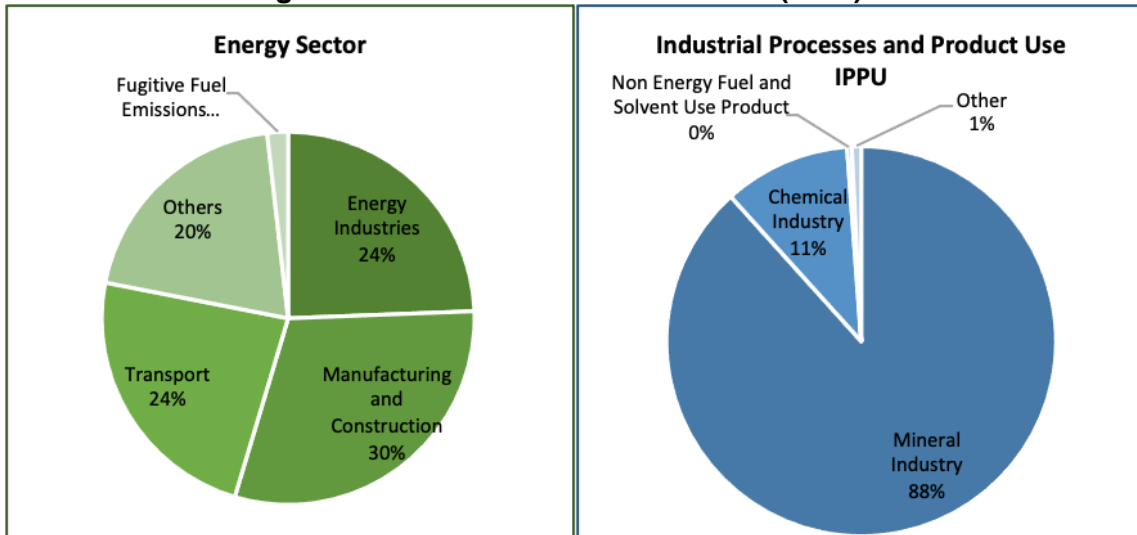
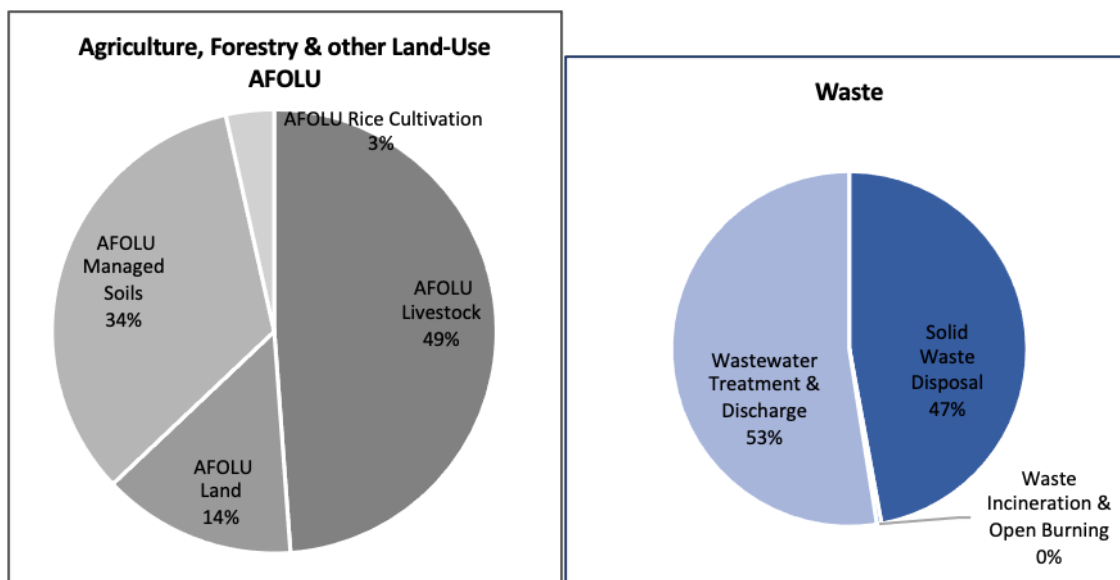


Figure 2 Pakistan Sectoral Emissions (2018)





There are several reasons that are expected to cause hindrances in achieving the net zero commitments such as lack of funds (international as well as local), weak institutions, need for capacity building, lack of training and awareness of climate change issues and limited access to technology.

The road to net zero becomes a reality if the net zero targets are informed by the evidence on the opportunities and associated risks, risk mitigation strategies and high stakeholders' buy-in on plan, priorities and investments. Globally, countries that are making progress on net zero or carbon neutral future are taking the actions programmatically for each transition in prioritized sectors¹. Therefore, a roadmap underpinned by the feasibility analysis is the key to finalizing realistic net zero targets.

B. Objective of the Assignment

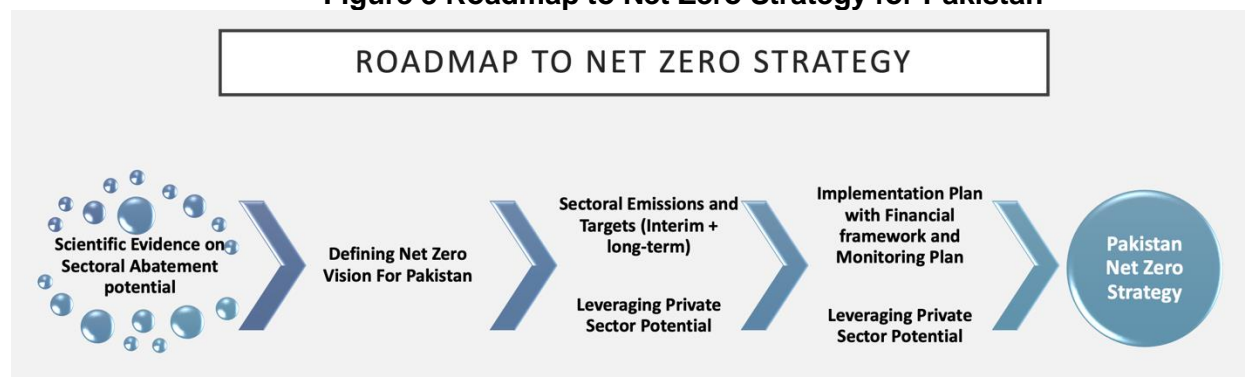
The goal of the framework is to delineate a plan to set realistic Net Zero target for Pakistan aligned with its NDC 2021 that highlights the importance of "Just Transition", Vision 2025 and sustainable development targets that are designed to deliver inclusive socio-economic benefits. The activity plan will adopt a bottom-up approach where stakeholders will be involved every step of the way to fulfill following objectives:

- Building scientific evidence to inform net zero vision
- Setting up long-term ambition backed up by sufficient near-term actions
- Leveraging private sector potential to achieve net zero vision

The objectives of the framework will be achieved through following underpinning actions:

¹ <https://blogs.worldbank.org/ppps/how-can-developing-countries-get-net-zero-financeable-and-affordable-way>

Figure 3 Roadmap to Net Zero Strategy for Pakistan



A. Scientific Evidence on Sectoral Abatement potential

To initiate the analysis, there will be a need to conduct desk reviews and stakeholder consultations to identify the assessment needs, research questions and to define the scope of the analysis. The analysis will also be used to generate evidence on sectoral decarbonizing pathways, finance requirement, skill requirement, technology requirements and will inform the forthcoming actions in the activity plan.

B. Defining Net Zero Vision for Pakistan

The important element of the strategy is to have a vision for Pakistan’s future. This activity will build on a simple question

“Where Pakistan wants to be in 2040, 2050 and 2060?”

Country’s vision must represent the national consensus and should represent an inclusive future. Hence, the vision must be set by consulting wide range of stakeholders from public to private sector. This can be achieved after the first activity has already commenced and minimum evidence for defining a net zero future for Pakistan becomes available. This can be done by holding a workshop with an objective to first brainstorm the opportunities for net zero future and making it a reality following with setting the vision for a net zero future and deciding on guiding principles to reach that vision. It is important that the discussion also sets the stage for upcoming activities and explores the topics of interim targets, implementation plans, finance mobilization and public private partnerships. These events are important from awareness and capacity building point of view also where relevant stakeholders are made aware of the government’s plan aligned with the goals of the Paris agreement. This will also ensure high stakeholders’ buy-in and will mitigate the risks associated with political volatility in future.

C. Sectoral Emissions and Targets

Deciding realistic sectoral targets must be informed by the assessment of the risks and uncertainties which activity A will fulfil. Following that another round of stakeholder consultation will need to be organized to decide the sectoral targets to achieve the vision decided in activity B. This round of engagement will essentially find the answer to a simple question that

“What is the role of each sector in achieving net zero vision?”

The interim sectoral targets will be important for transitioning systematically as it allows for the government to assess and understand the new system and make changes accordingly. This also highlights the need to monitor progress and delivery against net zero vision for continuous improvements. This will be covered in activity D.

D. Implementation Plan with Financial framework and Monitoring Plan

A national effort needs to be initiated to plan province- and region-wise implementation plans to overcome the challenges, and mitigate the possible risks. The relevant national ministries including Ministry of Climate Change, Ministry of Commerce and Textile, Ministry of Energy, Ministry of Federal Education and Professional Training, Ministry of Finance, Revenue and Economic Affairs, Ministry of Housing & Works, Ministry of Human Rights, Ministry of Industries and Production, Ministry of National Food Security and Research, Ministry of National Health Services, Regulations and Coordination, Ministry of Planning, Development and Reform, Ministry of Maritime Affairs, Ministry of Railways, Ministry of Science and Technology, Ministry of Statistics and Ministry of Water Resources, should all support their relevant provincial counterparts to design an implementation plan with clearly defined roles and responsibilities.

The plan will also include the plan for diversifying financial means to achieve sectoral targets while addressing the challenges of tapping different financial opportunities like carbon trading, direct finance from Green Climate Finance, Nationally Appropriate Mitigation Activities facility, etc.

Finally, the decision on monitoring the progress and clarity on responsible agency for reporting progress against set indicators will be important. The ministries will have to make sure that the reporting indicators align with the international reporting and required local capacities for regular reporting is built and strengthened.

Another important decision to make here would be on a timeline to review the progress and review new evidence on climate science, technology and transition to make changes to interim targets and implementation plans. This will allow for robust planning to realistically approach net zero vision for Pakistan.

E. Leveraging Private Sector Potential

Net zero goals require multi-stakeholder approach and global evidence suggests that private sector involvement becomes tangible to achieve this objective as it accelerates the execution of targets. Net zero Economy index shows that a 12.9% of annual global rate of decarbonization is essential to limit warming to 1.5 C where 2020 stats shows the performance five times slower than what is required². The Index also notifies the boosted role of private sector in existing rate of decarbonizing where 3000 private sector's net zero commitments came in year 2020 along with 120 countries representing 25% of global CO₂ emissions and 50% of GDP.

The role of private sector in supporting government to achieve Net Zero ambition will also need to be defined and clarified. This will allow for government to focus on their part of the commitment while monitoring compliance of the private sector against their commitment.

² <https://www.pwc.co.uk/services/sustainability-climate-change/insights/net-zero-economy-index.html>

F. Net Zero Strategy Scenarios Development

To establish a baseline and understand the financial requirements for Pakistan to achieve a goal of Net Zero, three scenarios will be developed that would effectively inform on different transition pathways for the country to achieve its climate ambition goals.

- *Existing Policy Scenario*
- *Energy Transition without Financial Support Scenario*
- *Low Carbon Development and Net Zero Scenario*

G. Overview of Sectoral Measures and Reduction Targets by 2030 and beyond

Through primary and secondary research conducted throughout this activity, target setting for sectoral emission reduction will be done through emission modeling and reporting.

H. Reporting Requirements and Time Schedule for Deliverables

Deliverables	Target Due Dates	Payment Percentage
Develop and submit an Initial Activity and Action Plan as required by ToRs and Scope of Work, for approval by Ministry of Climate Change	One week after signing of contract	20 %
Develop and Submit a Comprehensive Literature Review and Stakeholder Consultation Reports	30 Nov, 2022	10 %
Net Zero Vision Workshops and Consultations conducted in all provinces and a final target document established after periodic consultation with relevant stakeholders	01 March, 2023	10 %

Develop realistic sectoral targets by conducting risk assessments and sectoral consultations with relevant stakeholders	01 August, 2023	10%
Develop province- and region-wise sectoral implementation plans incorporating a financial framework and monitoring plan after relevant consultations	01 November, 2023	10%
Develop a draft document detailing the role of private sector and finance in achieving Net Zero ambition as well as Monitoring and Evaluation Framework for the reporting of emissions by private sectors	01 January, 2024	20%
Develop and model three different scenarios on potential transition pathways for Pakistan, with decade emission reduction goals, targets for each sector defined and elaborated, financial requirements and enabling structures.	01 May, 2024	10%
Submit final draft report, presentation, strategy and framework for all identified sectors with sectoral measures, emission reduction targets for different scenarios and pathways for Pakistan to successfully achieve a Net Zero Goal	01 September, 2024	10%
		100%

Duration of the Work

The duration of the assignment will be 2 years after award of contract.

I. Key Experts

The team must include at least the following three experts:

Key Expert 1: Climate Change Planning and Policy Specialist

The scope of work and specific tasks will include but not be limited to the following:

- Conduct inception meeting for the assignment and preparing an inception report (comprehensive/detailed project work-plans that include all project activities and roles and responsibilities of the stakeholders and setting-out corresponding milestones)
- Take lead in the scientific data and evidence collection for sectoral abatement potentials
- Lead team of sectoral experts and ensure development of feasible climate scenarios for Pakistan
- Support in the development of an implementation framework and plan, after extensive consultations with relevant stakeholders
- Liaison with emission modelling expert to ensure feasible development of scenarios and models of future climate pathways.
- Support in establishment of a financial framework for sectoral emission reductions
- Support in development of MRV and reporting requirements.
- Lead the development of Institutional framework and administration

Qualification and Experience

The Planning and Policy Specialist shall have:

- Academic qualification in environment, energy, economics, or a closely related field
- Experience of working with government and non-government stakeholders in national and/or regional policy development and implementation of similar activities in South Asia
- Familiarity with government systems and regulatory environment
- Familiarity with and contributions to high-level policy dialogues and advisory functions involving high-level government counterparts and other stakeholders
- Familiarity with political economy and low-carbon development strategy, including climate change and related policies (e.g., energy, industry, transport, forestry, and environment), regulatory and institutional environment, and previous carbon market experience
- Sound knowledge of international climate policies and negotiations, including the background, state, and prospects of the UNFCCC negotiation process, including Pakistan's priorities and interests within that multilateral process
- Strong analytical and critical thinking abilities
- Fluency in English and strong drafting skills

Key Expert 2: Communication and Outreach Specialist

The scope of work and specific tasks will include but not be limited to the following:

- Develop and deliver plan for stakeholders outreach and training underpinned by initial assessment and workplan
- Conduct assessments to identify the level of awareness and expertise of different stakeholders
- Identify gaps that need to be fulfilled through capacity building on range of subjects related to development of a net zero strategy and plan
- Develop activity plans for awareness raising of different stakeholders and responsible agencies
- Ensure effective communications, consultations, and feedback collection throughout the project

- Ensure that drafts are circulated and developed with consensus from key stakeholders of the process.

Qualification and Experience

The Communication Specialist shall have:

- Academic qualification in social sciences, or a closely related field
- Minimum 3 years of Proven expertise in developing communication or capacity building strategies aimed at stakeholder management
- Successfully worked on similar research projects like capacity building programs related to climate change mitigation activities, including institutional and fiduciary arrangements
- Sound knowledge of international climate policies and negotiations, including the background, state, and prospects of the UNFCCC negotiation process, including Pakistan's priorities and interests within that multilateral process;
- Strong analytical and critical thinking abilities
- Fluency in English and strong drafting skills

Key Expert 3: Climate Change Modeling Specialist

The scope of work and specific tasks will include but not be limited to the following:

- Develop sectoral emission models to calculate reduction potentials
- Assist climate change specialist in conducting effective research and analysis
- Develop climate based scenarios and emission reduction pathways for Net Zero
- Use LEAP and other modeling tools to calculate GHG emissions of climate futures for Pakistan
- Model financial requirements for different scenarios of emission reduction for Pakistan.

Qualification and Experience

The Climate Change Modeling Specialist shall have:

- Bachelor's degree or higher in climate science, or comparable discipline
- Proven experience and knowledge of the Pakistan's institutional framework and policies of Climate Change
- Thorough knowledge and understanding of the global debate on climate change and experience in multilateral environmental debates and dialogues and processes
- Extensive knowledge of Net Zero Frameworks and emission reduction scenario building
- Demonstrated familiarity with LEAP, and other climate modeling softwares
- Understanding of challenges and requirements related to and experience in the development and implementation of Monitoring/Measurement, Reporting, and Verification (MRV), and GHG data management systems
- Successfully worked on similar research projects like carrying out technical assistance and capacity building programs related to climate change mitigation activities, including institutional and fiduciary arrangements
- Strong analytical and critical thinking abilities
- Fluency in English and strong drafting skills

Key Expert 4: Energy Transition Expert

The scope of work and specific tasks will include but not be limited to the following:

- Support development of sectoral emission models to calculate reduction potentials
- Assist climate change specialist in conducting effective research and analysis
- Develop climate based scenarios and emission reduction pathways for Net Zero
- Model financial requirements for different scenarios of emission reduction for Pakistan
- Development of scenarios and models of future climate pathways
- Support in establishment of a financial framework for sectoral emission reductions
- Support in development of MRV and reporting requirements.

Qualification and Experience

The Climate Change Modeling Specialist shall have:

- Bachelor's degree or higher in Energy, Energy systems or comparable discipline
- Proven experience and knowledge of the Pakistan's institutional framework and policies of Climate Change, Energy and Environment
- Thorough knowledge and understanding of the global debate on climate change and experience in multilateral environmental debates and dialogues and processes
- Extensive knowledge of Net Zero Frameworks and emission reduction scenario building
- Understanding of challenges and requirements related to and experience in the development and implementation of Monitoring/Measurement, Reporting, and Verification (MRV), and GHG data management systems
- Successfully worked on similar research projects like carrying out technical assistance and capacity building programs related to climate change mitigation activities, including institutional and fiduciary arrangements
- Strong analytical and critical thinking abilities
- Fluency in English and strong drafting skills

Key Expert 5: Sector Specialists (04)

The scope of work and specific tasks will include but not be limited to the following:

- Support development of sectoral emission models to calculate reduction potentials
- Assist climate change specialist in conducting effective research and analysis
- Develop climate based scenarios and emission reduction pathways for Net Zero
- Model financial requirements for different scenarios of emission reduction for Pakistan
- Support development of scenarios and models of future climate pathways
- Support in establishment of a financial framework for sectoral emission reductions
- Support in development of MRV and reporting requirements.

Qualification and Experience

The Climate Change Modeling Specialist shall have:

- Bachelor's degree or higher in Agriculture and Forestry, Waste, Transport, Industry or comparable discipline
- Proven experience and knowledge of the Pakistan's institutional framework and policies of Climate Change, Energy and Environment
- Thorough knowledge and understanding of the global debate on climate change and experience in multilateral environmental debates and dialogues and processes
- Extensive knowledge of Net Zero Frameworks and emission reduction scenario building
- Understanding of challenges and requirements related to and experience in the development and implementation of Monitoring/Measurement, Reporting, and Verification (MRV), and GHG data management systems
- Successfully worked on similar research projects like carrying out technical assistance and capacity building programs related to climate change mitigation activities, including institutional and fiduciary arrangements
- Strong analytical and critical thinking abilities
- Fluency in English and strong drafting skills

The person month input of key expert and support staff is given below.

S #	Title	Positions	Origin	Person Months
	Key Expert Staff			
1	Climate change Planning and Policy Specialist	1	National	24
2	Climate Change Modeling Specialist	1	National	18
3	Communication and Outreach Specialist	1	National	24
4	Energy Transition Expert	1	National	24
5	Sector Specialists (Agriculture and Forestry, Waste, Transport, Industry)	4	National	24
Sub – Total Key Experts		8		114
	Support Staff			
6	Project Manager	1	National	24
7	Research Analysts	2	National	24
8	Administration and engagement support	2	National	48
Sub – Total Support Staff		5		96