

**Operationalising Carbon Credit Markets in
Pakistan: Challenges and Prospects**

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Executive summary

This research paper explores the emerging potential of the carbon credit market in Pakistan, examining its capacity to mitigate the adverse effects of climate change while promoting economic growth. An efficiently managed clean development mechanism (CDM) is essential for attracting investments and generating revenue through new carbon credit projects. Effective management, transparency, and inclusive community engagement are pivotal for maximizing the market's full potential. This paper advocates for Pakistan's proactive participation in the global carbon trade by establishing a clear regulatory framework, implementing stringent data transparency measures, ensuring robust community participation, and fostering strong stakeholder collaboration. These steps are vital for Pakistan to realize substantial environmental and economic benefits from a well-developed carbon credit market infrastructure.

Pakistan is adapting its behavior and policies to align with trends and innovations in the carbon credit markets. The country has made significant strides in emission mitigation and promoting sustainable development. Pakistan's commitment to emission reduction is evident through initiatives such as the Nationally Determined Contributions (NDCs), the Green Stimulus, and the One Billion Tree Tsunami. Consequently, Pakistan aims to attract foreign investment by developing renewable energy sources and engaging in international carbon trading markets.

Enhancing sound policies and complying with international standards will enable Pakistan to participate more vibrantly in global carbon markets. As a result, Pakistan is poised to become an influential player in climate change negotiations. Key recommendations include developing government-to-government (G2G) cooperation agreements to reduce reliance on costly foreign advisors, creating a clear legal framework to attract foreign direct investment (FDI), and producing high-quality project proposals. Additionally, advanced technology is necessary to maintain record-keeping systems that ensure transparency and accountability. Policies must also ensure that affected communities have a voice in the decision-making process and can derive financial benefits from carbon credit projects.

By integrating these strategies, Pakistan can effectively leverage the carbon credit market to foster both environmental sustainability and economic growth.

Introduction

Climate change represents one of the most significant challenges humanity has ever encountered throughout history. It impacts both locally and globally, affecting diverse ethnic groups, communities, and geographical regions¹. However, developing countries bear an uneven burden of these changes. The extent of their vulnerability, influenced by various factors, varies significantly across different areas. To address this issue, climate experts have proposed two main strategies: mitigation, aimed at reducing carbon emissions into the atmosphere, and adaptation to the changing climate².

Even with significant emissions reductions across all industries, carbon credits will remain crucial in achieving net-zero goals. Consider the 1,000 largest companies: to reach net zero by 2050, they'd need to slash gross emissions by 14.5 gigatons annually, roughly a third of current global emissions. However, even these drastic efforts might not be enough, leaving them with 7.9 gigatons of residual emissions. Carbon markets can address this gap by funding carbon reduction initiatives outside their own value chains³.

Currently, 36 "compliance carbon markets" exist, employing cap-and-trade systems for major polluters. Collectively, these markets cover sectors responsible for nearly 20% of global greenhouse gas emissions⁴.

Carbon Markets History⁵

Year	Event
1997	Eighty-four countries signed the Kyoto Protocol, which sets legally binding targets to cut greenhouse gas (GHG) emissions. The treaty includes provisions to set up carbon trading arrangements between countries. The Chicago Climate Exchange, the first voluntary carbon market, launches. It contributed to more than 700 million tons of GHG emissions reductions until closing in 2010.
2003-2021	Twenty-five countries in the European Union form the Emissions Trading Scheme (ETS) to address emissions from power plants and carbon-intensive industries such as oil, cement, and steel. The EU's ETS reduced emissions by 35% between 2005 and 2021.

¹ Stern, Nicholas (2006) What is the Economics of Climate Change? World Economics7:2.

² Becken, Susanne (2005) Harmonising Climate Change Adaptation and Mitigation: The Case of Tourist Resorts in Fiji. Global Environmental Change15:4, 381–393

³ Kyle Harrison, "The past, present, and future of carbon offsets," BloombergNEF's presentation at the US Commodity Futures Trading Commission's second voluntary carbon markets convening, July 19, 2023.

⁴ BloombergNEF, "The untapped power of carbon markets in five charts," September 16, 2022.

⁵ <https://www2.deloitte.com/us/en/insights/industry/financial-services/future-of-carbon-market.html>

2005	In 2024, the EU ETS will expand to include the shipping sector. It will then expand to include nitrogen oxide, methane, and soot in its accounting.
2006	The UN-run Clean Development Mechanism introduced the first global carbon crediting system, which reduced 3.2 billion tons of carbon before it expired in 2020. The European Union and 195 countries signed the Paris Agreement, a landmark treaty that aims to keep the rise in mean global temperature well below 2°C above preindustrial levels, preferably limiting the increase to 1.5°C.
2015	The International Civil Aviation Organisation adopts the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) to address air travel emissions. It will run as a voluntary program until 2026, and then almost all international flights will be subject to requirements.
2016	Conference parties at COP26 adopt Article 6 of the Paris Agreement to the United Nations Framework Convention on Climate Change. It lays the groundwork for an international carbon market to advance climate targets laid out in the Paris Agreement. The provision also establishes an avenue for countries to use carbon markets to achieve domestic climate goals.
2021	There are 36 compliance carbon markets ("cap-and-trade" systems) around the world that cover about one-fifth of emissions, worth US\$850 billion.
2023	Voluntary carbon markets (VCMs) are valued at US\$2 billion. Oversupply in the VCMs is keeping carbon prices low, but there is a growing demand for higher quality credits, such as those that advance direct air capture technology. Global carbon crediting standards are being piloted to add credibility to voluntary carbon markets. Several countries have secured Article 6 trading agreements, but an authorised transfer has yet to occur.

Benefits of Carbon Markets

As carbon markets become more established, they will exhibit greater interconnectedness, consistency, and liquidity. This will provide companies and countries with more robust opportunities to manage their transitions to net-zero emissions, while also creating more attractive investment markets for financial institutions seeking risk-adjusted returns⁶.

⁶ <https://www.spglobal.com/esg/solutions/carbon-markets>

Benefit	Explanation
Cost Reduction	Lower costs of achieving climate goals through international cooperation. Research suggests potential savings of \$250 billion per year by 2030.
Goal Achievement	Carbon markets can mobilise finance for developing countries to meet Paris Agreement targets, estimated to be up to \$6 trillion by 2030.
Business Imperative	Carbon markets incentivise companies to reduce emissions faster by putting a price on carbon.
Ecosystem Protection	Carbon finance provides value for ecosystems and their services like biodiversity, livelihoods, and climate regulation.
Super Pollutant Reduction	Carbon markets offer a proven way to finance the destruction of superpollutants like methane, significantly reducing their warming potential.
Inclusive Climate Action	Carbon markets create financial incentives for groups like Indigenous communities, small businesses, and individuals for diverse to participate in climate action.
Indigenous Community Benefits	Carbon finance allows Indigenous communities to generate benefits from responsible land management.
Co-Benefits Generation	Carbon projects often provide additional benefits like biodiversity conservation, clean water, job creation, and energy access.
Policy Change Driver	Carbon markets can drive the adoption of solutions that inform new policies and encourage action beyond existing regulations.
Learning Model	Carbon markets offer valuable experience in transparency, measurement, reporting, and verification, which can guide other climate actions.

Recently, The Prime Minister of Pakistan directed the Ministry of Climate Change to collaborate with provincial authorities and relevant stakeholders⁷. Their objective is to develop and present a draft climate change policy at the next meeting. Recognising the progress made in carbon credit initiatives across the country, the Prime Minister stressed the

⁷ <https://www.brecorder.com/news/40300558>

urgency of accelerating these efforts. He highlighted Pakistan's vulnerability to climate change, citing the devastating 2022 floods as a stark reminder. Recognising the escalating severity of the climate crisis, he emphasised the crucial need for close collaboration between federal and provincial governments in crafting a comprehensive climate change policy in terms of carbon markets. Extensive discussions during the meeting focused on the framework for carbon credit trading.

Carbon markets are the trading system in which carbon credits are bought and sold. A carbon credit represents 1 tonne of CO² or equal to greenhouse gas emissions that have been reduced or removed by a mitigation activity. There are two types of carbon markets. One is regulated or compliance which is created by the need to comply with the regulatory act and the other is voluntary in which the government or individuals volunteer to offset their emissions by purchasing carbon credits⁸.

In finalising the climate change policy, a thorough analysis of Pakistan's current carbon credit market landscape is crucial. This includes examining the role of the Kyoto Protocol, the country's Nationally Determined Contributions (NDCs), and the designated CDM authorities. Aligning with Article 6 of the Paris Agreement, Pakistan seeks to not only achieve its own sustainability goals but also contribute meaningfully to regional and global climate efforts. However, challenges like limited public awareness and inadequate waste management infrastructure necessitate focused educational programs and strategic investments.

Despite these hurdles, the Carbon Market Engagement component offers promising opportunities. These include generating revenue through carbon credit trading, attracting international investments, and demonstrating alignment with global climate commitments. By capitalising on these opportunities, Pakistan can effectively balance economic growth with environmental responsibility, solidifying its position as a key player in global sustainability initiatives.⁹

National Determined Contributions (NDCs) for Pakistan

Pakistan's path towards sustainable development faces a multi-faceted challenge. A significant gap exists between energy supply and demand, leading to high electricity costs due to dependence on imported energy sources. This situation further compounds widespread poverty and food insecurity concerns. Recognising the need to address these issues while contributing to global climate goals, the Government of Pakistan has outlined its specific

⁸ <https://www.cpdipakistan.org/wp-content/uploads/2023/12/CPDI-Policy-Brief-Carbon-Markets-in-Pakistan.pdf>

⁹ <https://www.nation.com.pk/25-Apr-2024/overcoming-challenges-in-carbon-market-engagement>

targets and implementation strategies in its updated Nationally Determined Contributions (NDCs).

Expanding on its initial 2016 NDC submission, Pakistan has set ambitious goals to achieve a 50% reduction in greenhouse gas emissions by 2030. This target comprises a 15% reduction through domestic resources and a 35% contingent on securing international grant funding. Key action areas include a significant shift towards renewable energy sources, aiming for 60% renewable energy production by 2030. Pakistan also recognises the crucial role of nature-based solutions, including afforestation programs, to sequester carbon emissions and mitigate climate impacts. However, financing these ambitious mitigation and adaptation efforts remains a substantial challenge, requiring significant investments to transition towards a low-carbon and climate-resilient development path.

Pakistan emphasises the need for international assistance in addressing loss and damage arising from climate-induced events like floods, droughts, and rising sea levels. This highlights the critical need to prioritise adaptation, mainstream it into national planning, and strengthen institutional frameworks. By pursuing a comprehensive approach that integrates mitigation, adaptation, and loss and damage measures, Pakistan aims to navigate the complex climate landscape while simultaneously advancing its development goals on a sustainable trajectory.

Clean Development Mechanism (CDM) in Pakistan

CDM was established under the Kyoto Protocol which allows developing countries like Pakistan to initiate carbon emission reduction projects and achieve certified emission reduction (CER) credits. Pakistan has started various projects under CDM guidelines in waste management, forestry and renewable energy. These projects include wind farms and solar power plants which generate electricity without any carbon emissions. These types of projects can earn carbon credit which can be traded in the international market very easily. In waste management projects, Pakistan mainly focuses on methane capture from waste energy and landfills which also generate carbon credits. As per forestry projects, Pakistan is working on afforestation and reforestation which reduce carbon emissions from the atmosphere and contribute to carbon credit generation. CDM is working on all these projects but along with CDM is facing numerous challenges like lack of technical expertise, financing constraints and bureaucratic hurdles.

The Kyoto Protocol, established under the United Nations Framework Convention on Climate Change (UNFCCC), represents an essential step in global efforts to mitigate climate

change¹⁰. This protocol led to the creation of carbon markets through the adoption of the Clean Development Mechanism (CDM). To facilitate the smooth operation of carbon trading in Pakistan, infrastructure related to CDM was developed. This included the establishment of a CDM Cell within Pakistan, alongside the emergence of several private consultancies aimed at bolstering the carbon trading business in the country. The CDM, also known as Global Environmental Investment, specifically facilitates carbon trading within development projects of various scales. It plays a crucial role in making these projects financially viable, environmentally sustainable, and profitable in the long term. Essentially, the CDM promotes cleaner production practices and contributes to reducing the carbon footprint of economic activities.

To initiate a Clean Development Mechanism (CDM) project in Pakistan, potential areas are categorised into several major sectors, including energy, solid waste management, industrial processes, agriculture, and forestry. Each project proponent selects a suitable area from these broad categories where a potential CDM project can be developed. Notably, the majority of projects in Pakistan are in the energy sector, which have been registered with the UNFCCC and are being awarded with Certified Emission Reductions (CERs). However, no projects have been approved or registered in the agriculture and forestry sectors due to the stringent criteria and difficult conditions for project registration in these areas.

The process of developing a CDM project involves three main steps that proponents need to undertake. Firstly, a Project Idea Note (PIN) is prepared, providing a summary of the project activities and its CDM component. The PIN is then submitted to the CDM Cell/Designated National Authority (DNA) along with a request for a Letter of Intent (LOI). CDM experts conduct a preliminary evaluation of the PIN to assess its viability and alignment with environmental criteria. Upon review, the department decides whether to issue the LOI to the concerned party and requests the submission of a complete Project Design Document (PDD). After the PDD is submitted, it undergoes detailed evaluation by experts. These experts then submit an evaluation report to the DNA focal person, assessing the project's strengths, weaknesses, and the claims made by the proponents. The DNA focal person, who also chairs the approval session for projects, makes decisions based on the experts' evaluation and the overall merit of each project.

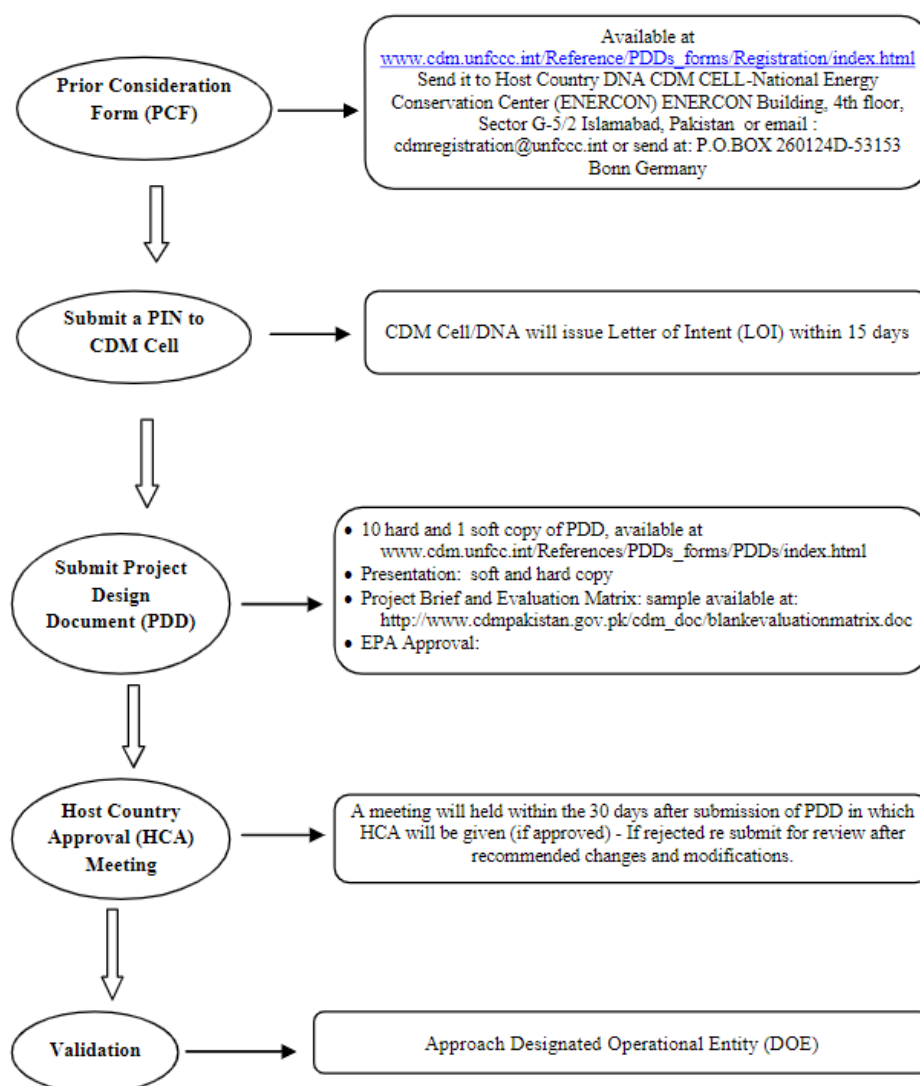
¹⁰ Miriam, Hinojosa, Chia Chen Cheng, Xianli Zhu, and Jorgen Fenhann (2007) Potential and Barriers for End Use Energy Efficiency Under Programmatic CDM. Capacity Development for the Clean Development Mechanism. (Working Paper No. 3)

In the next step, the DNA focal person directs the CDM staff to call for oral presentations of the projects. A Host Country Approval (HCA) meeting is convened for this purpose, where decisions about the projects are announced. A panel of field experts is invited to provide on-the-spot evaluations, submitting their expert opinions on each project. Based on the internal evaluation by the CDM Cell and the comments from the HCA meeting panel, the DNA focal person decides whether to approve the projects. Approved projects receive the HCA Letter after the meeting, while proponents whose projects do not meet the criteria are advised to revise them.

This initial step constitutes the first stage of project registration for CDM and carbon trading. Subsequently, projects are submitted to the Designated Operational Entity (DOE) for technical evaluation. The DOE, a committee that verifies claims of emission reduction production of a given CDM project, assesses the projects in the second stage. In the third and final stage, the CDM project is submitted to the UNFCCC for registration and issuance of CERs. After evaluating the basic documents and requirements for a project, the decision is made to grant CERs to the proponent, completing the CDM project cycle¹¹. The provided

¹¹ Ahmed, A. and Salman, A., 2012. Clean development mechanism (CDM) business in Pakistan: perceptions and realities. *The Pakistan Development Review*, pp.303-315.

diagram outlines the steps involved in project registration with the UNFCCC



Source: Ahmed, A. and Salman, A., 2012

Projects Registered with CDM¹²

The current Market price of one CER is below USD 1. However, it is expected to increase as the developed countries are going to reaffirm their commitments to take the target to reduce emissions in COP-21. To avail maximum benefits from new market situations, the investors are endeavouring to register their projects with CDM. The details of the ARE projects that have started the process for CDM registration are as follows:

Sr No.	RE resources	No. of registered Projects	Cumulative capacity of registered projects	No approved CERs
1	Wind	8	405.9	709287

¹² <https://ppib.gov.pk/wp-content/uploads/2023/07/Clean-Development-Mechanism.pdf>

2	Biomass	8	190	550000
3	Small hydro	1	15	76000
4	Solar	1	50	33000
Projects In the Process of being Registered with CDM				
Sr No.	RE resources	No. of registered Projects	Cumulative capacity of registered projects	No approved CERs
1	Wind	10	528	929280
2	Biomass	4	88	254737
3	Small hydro	12	116.8	591787
4	Solar	3	125	82500

Critical Need for Establishing a Carbon Market in Pakistan

Establishing a proper carbon market is crucial for Pakistan, as not having one could lead to significant risks and implications. Without a carbon market, accessing international climate finance mechanisms becomes more challenging. This limitation could hinder Pakistan's ability to fund and implement projects designed to reduce greenhouse gas emissions and adapt to the impacts of climate change.

Secondly, without having a carbon market could also mean fewer economic opportunities like carbon incentive emission reductions and encourage investment in clean and sustainable technology. Consequently, Pakistan will miss out on new economic opportunities related to carbon trading and offset projects.

As the global market prioritises environmental consciousness, the absence of a carbon credit system in a nation can pose significant challenges. Pakistani businesses, for instance, might face difficulties accessing international markets if they lack mechanisms to demonstrate their commitment to emissions reduction. Furthermore, the lack of a carbon credit market could hinder Pakistan's progress towards achieving its climate goals as outlined in its Nationally Determined Contributions (NDCs) under the Paris Agreement. Without this mechanism, meeting these targets could become considerably more difficult, potentially hindering the country's contribution to global efforts in mitigating climate change¹³.

The absence of a robust carbon market framework carries significant environmental and social risks. Without this mechanism, emissions reduction projects may lack proper monitoring, reporting, and verification, potentially leading to ineffective mitigation efforts.

¹³ <https://www.linkedin.com/pulse/accelerating-climate-action-establishing-carbon-credit-amir-jahangir-nqydf/>

This could result in Insufficient monitoring and could allow emissions to continue unchanged, undermining progress towards climate goals. Unregulated emissions reduction projects could have unintended consequences on ecosystems, leading to biodiversity loss. Projects with inadequate oversight might negatively impact local communities, raising concerns about social equity and environmental justice.

Ultimately, the failure to establish a carbon credit market could delay Pakistan's ability to Ineffective mitigation efforts could significantly hamper progress towards achieving national climate goals. International climate finance, often linked to carbon markets, may become less accessible. Participating in a global carbon market offers potential economic benefits that could be missed out on. Without a robust carbon market, achieving climate goals in a sustainable and socially responsible manner becomes more challenging. Pakistan's involvement in the carbon credit market has been relatively limited compared to some other countries. However, the country has shown some interest and initiatives in this area, particularly through the Clean Development Mechanism (CDM).

Although Pakistan has an emerging carbon credit market, its development has been hampered by limited involvement from industries and businesses. This sluggish progress is mainly due to a lack of awareness and insufficient incentives to motivate companies to reduce emissions and participate in carbon trading. Nevertheless, proactive initiatives are being implemented to promote carbon credits, particularly through projects centred on renewable energy, energy efficiency, and afforestation efforts.

In the global push towards net-zero emissions, regulations are being implemented that assign carbon emission allowances to different business sectors. This approach, adopted by regions like the EU, US, and China, aims to limit overall emissions but can impact industrial output, trade potential, and access to future global contracts. Businesses and governments are adapting by purchasing carbon credits to offset their emissions exceeding the allocated allowance. The carbon credit market, valued at US\$402 billion in 2022, is projected to soar to US\$4.4 trillion by 2031. Additionally, the market for Renewable Energy Certificates (RECs) is expected to reach US\$101 billion by 2030. Regions like ASEAN, China, and the EU are utilising regulated Emissions Trading Systems (ETS) to facilitate the trading of carbon credits. In Pakistan, CDM mechanism is very effective in term of carbon emissions. Currently in Pakistan, private power infrastructure board (PPIB) and ministry of climate change are probably governing carbon emissions reduction framework. CDM mechanism is a well designed mechanism through which Pakistan can boost its economy as India does. CDM market however is a volatile market, due to which the corporate entities need to follow the

standard protocol and the guideline of any foreign consultant. Every company needs to prepare a report based on guidelines given by consultants after which is sent for approval. CDM mechanism is effective if it is based on the G2G mechanism. Because of the G2G mechanism, a fair price can be offered. At the moment, Pakistan is not reaping many benefits from the CDM mechanism because governmental entities are not doing anything regarding this. FWEL, A wind energy IPP of Fauji foundation had used this mechanism effectively¹⁴.

Challenges	Opportunities
Lack of comprehensive regulatory framework and institutional capacity	Supportive policies and capacity-building initiatives to facilitate carbon trading activities.
Low awareness and incentives for businesses to participate	Increased awareness campaigns and financial incentives to encourage participation in carbon credit projects.
Limited understanding of carbon credit benefits	Educational programs and technical assistance to enhance stakeholder knowledge.
Potential for ineffective mitigation efforts due to inadequate monitoring and verification	Development of robust monitoring, reporting, and verification (MRV) systems to ensure project effectiveness.
Advantages¹⁵	Disadvantages¹⁶
Carbon credits incentivise companies and countries to invest in renewable energy projects.	Carbon credits may not be effective at sufficiently reducing emissions to meet global climate goals.
They help reduce greenhouse gas emissions by providing a financial incentive for companies to reduce their carbon footprint.	There have been instances of fraud in the carbon credit market, including the sale of fake credits or credits that do not represent real emissions reductions.
Carbon credits can help countries meet their emissions targets under the Paris Agreement.	Carbon credits can be expensive, which may limit their use to only large companies or governments that can afford them.

¹⁴ An interview from the Fauji Foundation as they used the CDM framework in their wind energy project.

¹⁵ [https://www.developmentaid.org/news-stream/post/164948/advantages-and-disadvantages-of-carbon-credits-
eo](https://www.developmentaid.org/news-stream/post/164948/advantages-and-disadvantages-of-carbon-credits-
eo)

¹⁶ [https://www.developmentaid.org/news-stream/post/164948/advantages-and-disadvantages-of-carbon-credits-
eo](https://www.developmentaid.org/news-stream/post/164948/advantages-and-disadvantages-of-carbon-credits-
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The sale of carbon credits can generate revenue that can be used to fund climate projects.	The carbon credit system can be poorly understood, so calculating carbon emissions and their consequences could be subject to uncertainty or fraud.
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Pakistan's engagement in the carbon credit market, especially through the Clean Development Mechanism (CDM), is still in its early stages, but it holds substantial potential for growth and development. By addressing current challenges and enacting supportive policies, Pakistan can make a meaningful contribution to global climate action efforts. Additionally, it can unlock significant economic and environmental benefits through enhanced participation in carbon trading activities.

Building a carbon credit market for Pakistan: Simplified guide¹⁷

Developing a well-designed carbon credit market in Pakistan holds immense potential for the country's economic and environmental future. This market could act as a catalyst for job creation, particularly in sectors like renewable energy and forestry. Furthermore, it could foster the growth of sustainable business clusters, encouraging the development and adoption of clean technologies. By creating a financial incentive for emission reduction, Pakistan can accelerate the transition towards a greener economy, attracting private capital from both domestic and international sources. This influx of resources can then be directed towards sustainable development projects, further contributing to Pakistan's progress.

Step	Description
Policy Framework	Establish a clear legal framework for carbon markets and credits. Consider incorporating Article 6 of the Paris Agreement.
Regulatory Body	Designate a dedicated agency to oversee the market. Responsibilities include: - Issuing carbon credits based on verified emission reductions. - Maintaining a registry for tracking and trading credits. - Enforcing regulations and ensuring market integrity.
Project Development	Identify and encourage projects that demonstrably reduce emissions. Renewable energy (solar, wind, etc.) - Energy efficiency improvements - Forestry and land-use management projects for carbon sequestration
Market	Create a platform for trading carbon credits (dedicated exchange or

¹⁷ <file:///C:/Users/IPRI/Downloads/assessment%20of%20the%20CM%20in%20LAc.pdf>

Infrastructure	integrated into existing markets). Establish transparent pricing mechanisms.
Monitoring & Verification	Implement robust systems to verify emission reductions: - Real, measurable, and additional (wouldn't have happened without carbon credit incentive).
Capacity Building	Train stakeholders (project developers, verifiers, market participants) on carbon market mechanisms and best practices.
Public Awareness	Educate the public and businesses about benefits and participation opportunities.
International Cooperation	Explore connections with established carbon markets and leverage international expertise.
Local Needs Alignment	Prioritise projects that contribute to emission reduction while aligning with Pakistan's development goals (renewable energy access, rural development).

Recommendations

Pakistan needs to refine its policies regarding the carbon market to effectively address challenges. The government could consider adopting the following policies:

- The Government should encourage a G2G corporation mechanism for CDMs rather than leaving corporate entities at the mercy of expensive foreign consultants
- Establish a clear and efficient regulatory framework for carbon credit projects. This should include consistent guidelines and streamlined project approvals to attract investors and ensure project compliance.
- Offer tax breaks, subsidies, or other financial incentives to private investors interested in carbon credit projects. Focus should also be given to renewable energy projects and the development of clean technologies.
- Implement robust data management systems using modern technology for carbon credit projects to ensure transparency and traceability throughout the process.
- Develop policies that ensure communities impacted by climate change and carbon reduction projects are involved in decision-making and benefit from the economic opportunities generated.

- Encourage collaboration between government agencies, private sector entities, and NGOs to leverage expertise and resources for successful project development.

Conclusion

Pakistan holds considerable potential for developing carbon credit markets, due to its renewable energy resources, expanding clean technology sector, and a growing emphasis on climate change mitigation. Following the Prime Minister's directive to enhance carbon credit market initiatives at both provincial and national levels, the Clean Development Mechanism (CDM) must intensify its efforts in fulfilling green initiatives and capitalising on opportunities provided by both government and private sectors. The CDM should launch new projects related to carbon credits, which would not only help Pakistan address climate change challenges but also generate significant revenue, potentially alleviating some economic issues. To effectively leverage the global carbon market, Pakistan must ensure robust management and transparency, and that the benefits of such initiatives extend to communities impacted by climate change.

Pakistan is aligning itself through strategic actions and policies, in which it is following the latest trends and innovations that are happening in the carbon credit markets, and it is taking steps towards reducing its carbon footprint and promoting sustainable development. The country's implementation path including NDCs, Green Stimulus, and one billion tree tsunami show that the country is determined to mitigate emissions. Through increasing investments in renewable energy and participating in international carbon trading markets, Pakistan targets to bring foreign investment in by forming carbon credits. The formulation of stringent regulatory frameworks and collaboration with international organisations will empower Pakistan to take up active positioning to participate in global carbon markets. Thus, Pakistan will be seen as a key player in global climate negotiations. Nevertheless, they are evidence of the ambition to achieve both global emission goals and economic growth and environmental sustainability domestically.

ACTION MATRIX

Action Area	Specific Actions	Lead Stakeholders	Time-Period
Market Infrastructure	Develop clear and transparent methodologies for credit issuance and verification.	Government Agencies and Private Sector	5 years
Awareness & Capacity Building	Organise workshops and training programs for businesses and communities on carbon markets and project development.	NGOs & Development Organisations	5 years
Project Development	Provide financial and technical assistance to project developers for feasibility studies and project implementation.	International Funding Institutions and Private Sector Companies	5 years
Demand Creation	Partner with international companies seeking high-quality carbon credits from developing countries.	Environmental NGOs & Advocacy Groups and Private Sector Businesses	5 years
Regulation & Governance	Establish a grievance redressal mechanism for disputes related to carbon credits.	Government Agencies (e.g., EPA), Independent Verification Bodies and Industry Associations	5 years

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