Implementation of a Carbon in the Nigerian Telecommunications Sector

Stakeholder Consultation Workshop

Feb 11, 2025

THE NATIONAL COUNCIL ON CLIMATE CHANGE SECRETARIAT

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Promoting Climate Action in Western and Francophone Africa

With financial and technical support from the UNFCCC under the CIACA Initiative

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Outlines

1. Introduction
2. Nigeria's Path to NDC Implementation
3. Strategic Analysis of Nigeria's Telecommunications Industry
4. MRV in Telecommunications
5. Proposed framework for Carbon Tax in Telecommunication

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Carbon Pricing

Carbon Tax

Fee imposed by government on companies that burn fossil fuels (high carbon fuels such as coal, oil, gasoline, & natural gas).

Price is put on CO_2 emissions usually dependent on carbon content of fossil fuels covered.

Emission Trading Scheme

Tradable-permit system for GHG, also known as "cap-and-trade."

Each entity establishes a limit (cap) on quantity of GHG that can be emitted.

For each ton of GHG emitted, entities covered by ETS must have an emissions permit, known as an "allowance".

The ETS differs from a Carbon Tax because its price remains flexible depending on the supply and demand of permitted allowances rather than setting a fixed price on the emissions and letting operators decide their levels of emissions.

Hybrid Systems

- Combines features of both carbon taxes and ETS.
- May include a price floor in an ETS to ensure a minimum price for carbon.
- Offers flexibility while providing price stability.

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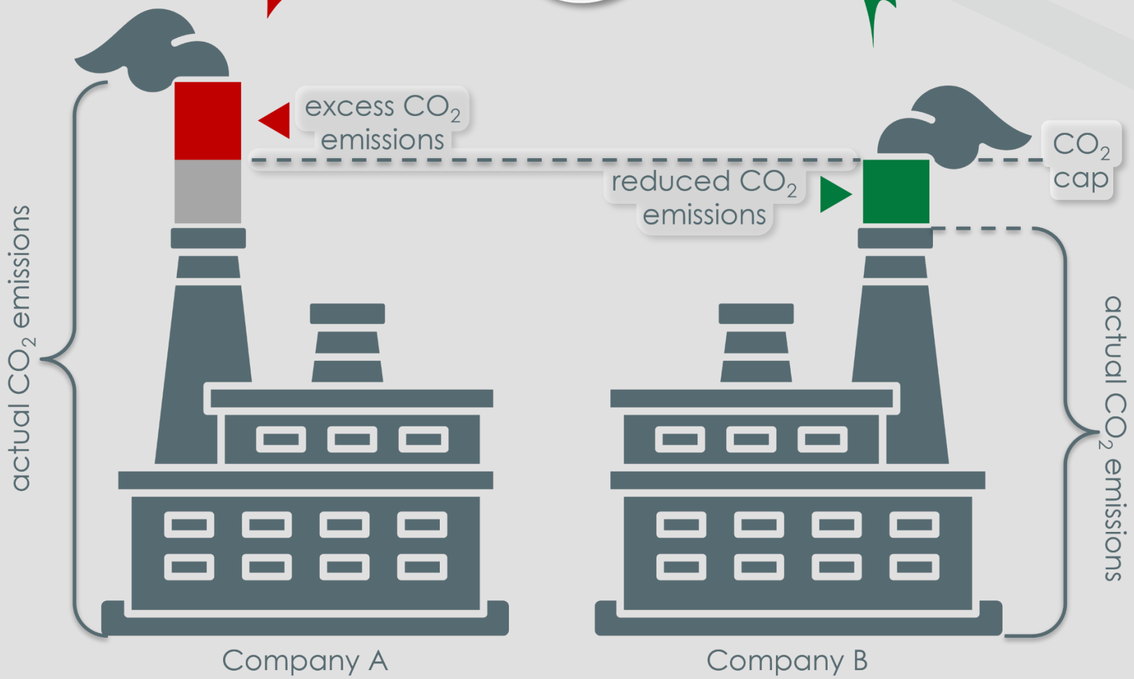
Carbon Markets: Illustrating the Emission Trading Scheme

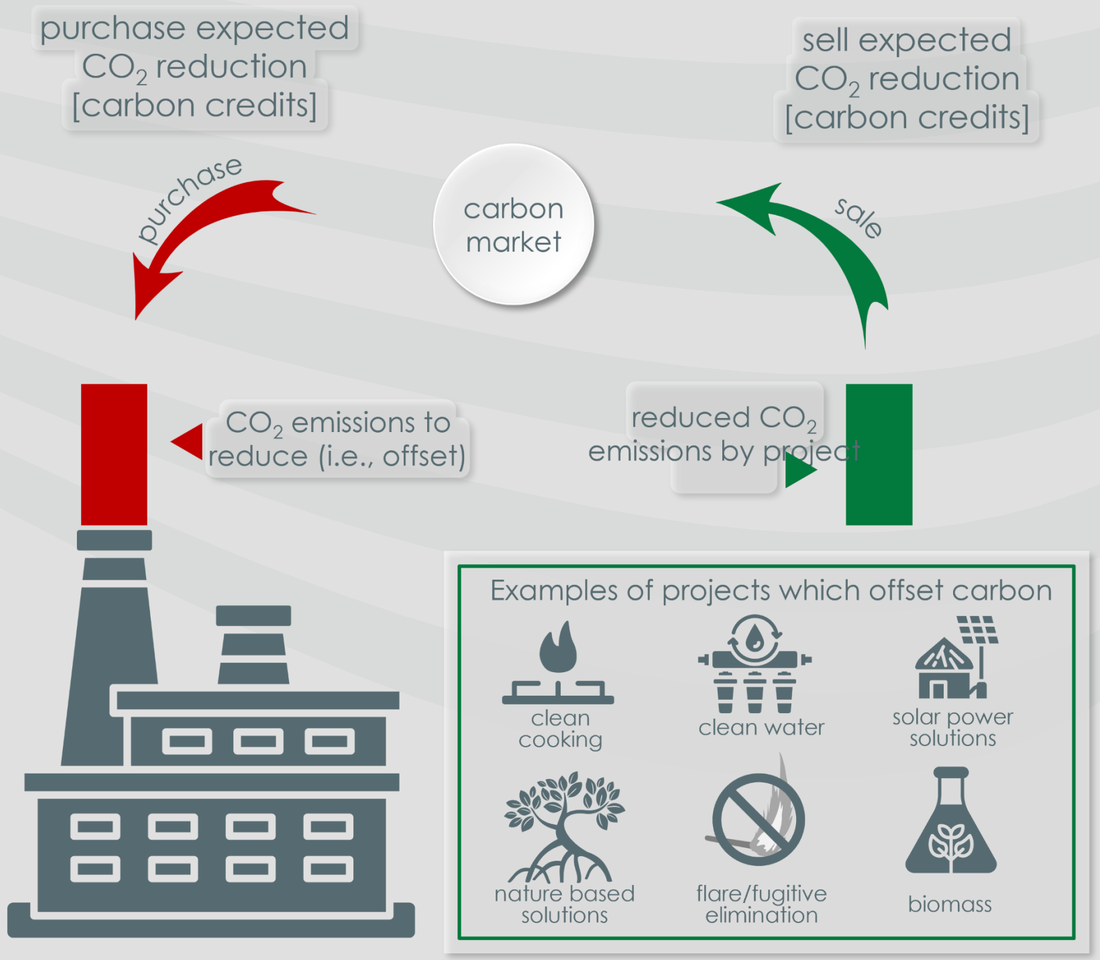
There are two types of markets; compliance & voluntary

Compliance Market

a.k.a. Mandatory Market



Voluntary Market



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Benefits of Carbon Pricing Implementation with Case Studies

Initiative	Case Study	Result
Emission Reduction	EU ETS	Reduced emissions by 43% (2005-2019).
Clean Energy Investments	British Columbia's carbon tax	Boosted renewable capacity.
Innovation & Technology	Chile's carbon pricing	Promotion of green hydrogen.
Revenue for Sustainable Projects	Sweden's carbon tax	Funding of green technology subsidies.
Climate Resilience	Mexico's carbon tax	Funds provided for adaptation initiatives.
Public Health	UK's carbon pricing	Reduction in rate of respiratory illnesses.

Hybrid Systems – Pros and Cons

Pros

- Price Stability
- Flexibility
- Broader coverage including various sectors with different pricing mechanisms.

Cons

- Complexity
- Higher Administrative Costs
- Coordination Challenges

Emission Trading System (ETS) – Pros and Cons

Pros

- Certainty in achieving emissions reduction targets.
- Flexibility for companies including opportunity to trade emission credits.
- Potential for linking with other systems for broader impact.

Cons

- Operational, administrative and legal infrastructure needed.
- Strong need for capacity building of all relevant stakeholders.
- Price volatility can create uncertainty for businesses.

Carbon Tax – Pros and Cons

Pros

- Easy to understand and implement with low Implementation cost.
- Only affects high emitters and provides incentives for less emitters.
- Generates revenue that can be reinvested in environmental initiatives like cleaner technologies.

Cons

- Potential impact of Tax on consumers.
- Potential resistance by government agencies.
- Emission reduction impact dependent on level of taxation.

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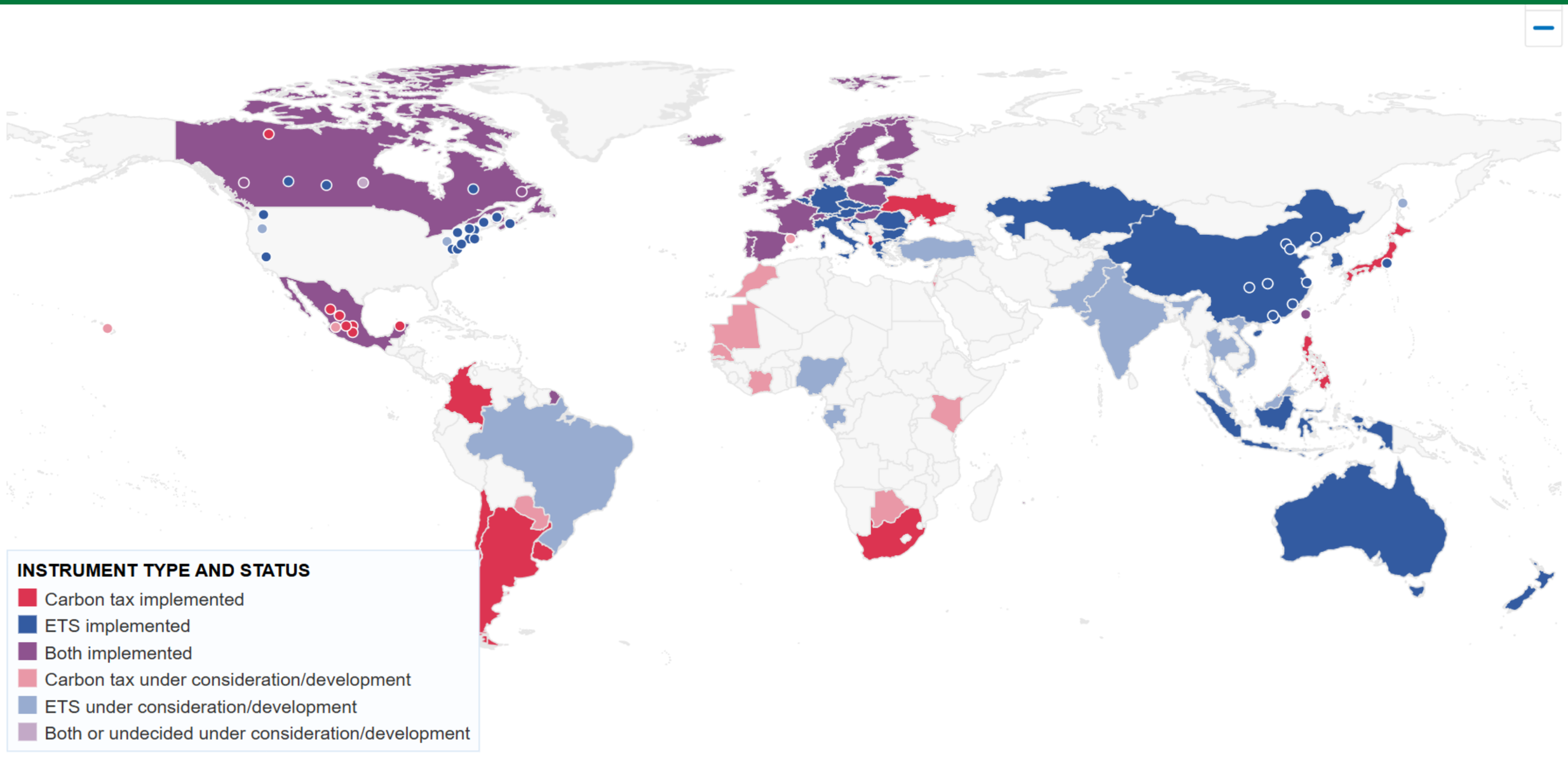
Carbon pricing at the International and Regional Levels



Map shows jurisdictions with carbon taxes or emissions trading systems implemented, under development or under consideration, subject to any filters applied in the table below the map.

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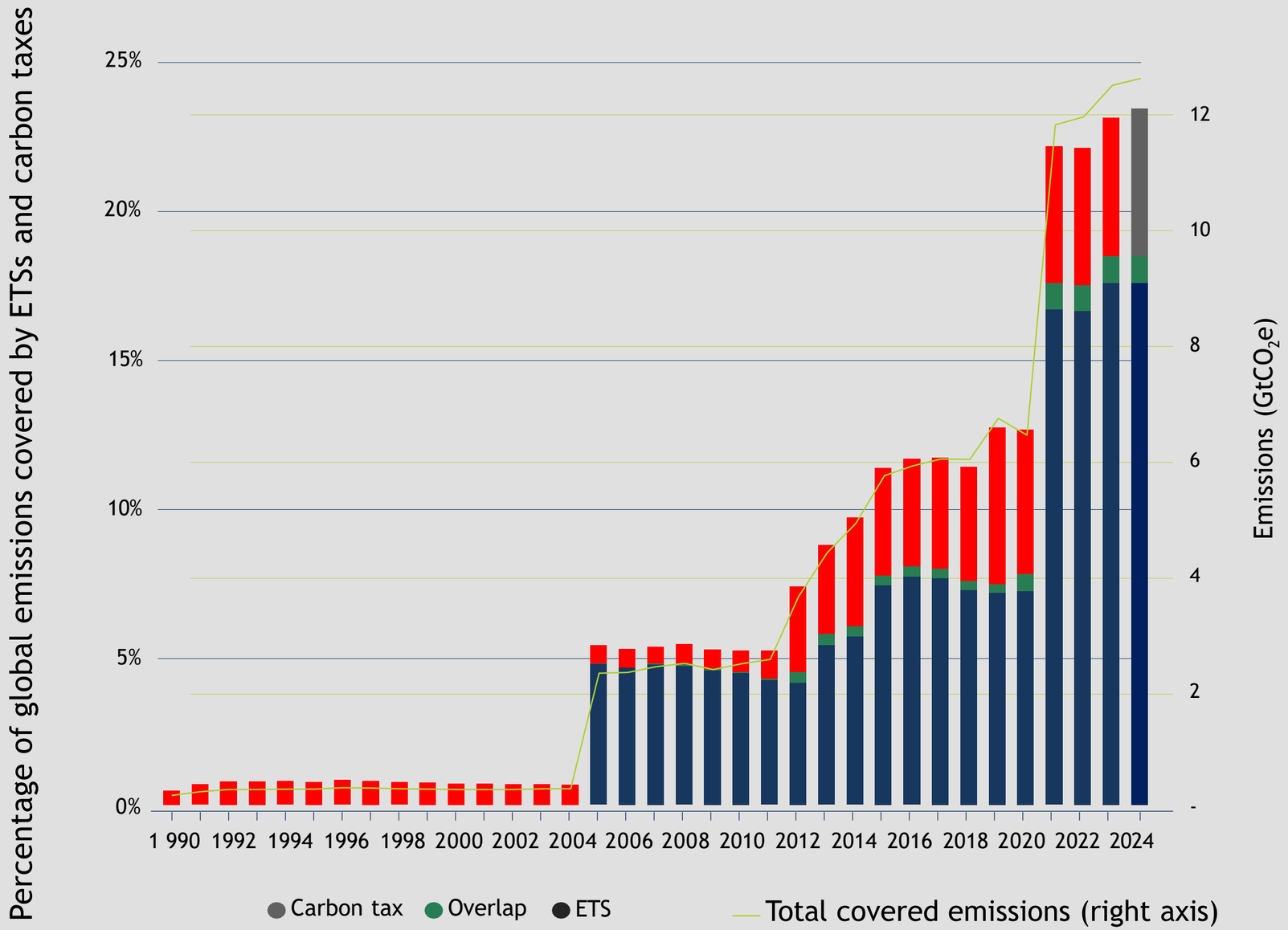
International Trends in Carbon Tax Implementation

A stable share of global GHG emissions covered by carbon taxes and ETSs masks several important changes. Some of which include:

1. The overall effect of carbon pricing instruments on global emissions can fluctuate. Successful policies aim to reduce emissions, potentially leading to a declining share of globally covered emissions over time.

2. In regions like the EU, California, and **South Africa**, covered GHG emissions have been steadily decreasing. This shows the effectiveness of established carbon pricing policies.



Source: State and Trends of Carbon Pricing by World Bank Group 2024,

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Carbon pricing in the Regional Level

South Africa's Carbon Tax *became* effective in 2019, covering GHG emissions from industry, power, buildings, and transportation, regardless of the fossil fuel used. This is the only African country at the moment with a carbon tax.

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Carbon pricing in the Regional Level

South Africa's Carbon Tax *became* effective in 2019, covering GHG emissions from industry, power, buildings, and transportation, regardless of the fossil fuel used. This is the only African country at the moment with a carbon tax.

Currently, **Gabon** and **Nigeria** are developing their carbon tax while in 2024, **Ghana** has imposed emissions levy on specific sectors.

Carbon tax implemented

ETS under consideration/development

Carbon tax under consideration/development

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Carbon pricing in the Regional Level

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Currently, **Gabon** and **Nigeria** are developing their carbon tax while in 2024, **Ghana** has imposed emissions levy on specific sectors.

Other regions like ***Morrocco, Mauritania, Senegal, Cote d'Ivoire, Nigeria, Gabon, Kenya, Botswana,*** etc., have demonstrated willingness and are currently considering the adoption of either a carbon Tax or an ETS.

Carbon Pricing Regional Initiatives

West African Alliance on Carbon Markets and Climate Finance

Strengthens participation in international carbon markets.

Provides capacity building and policy harmonization.

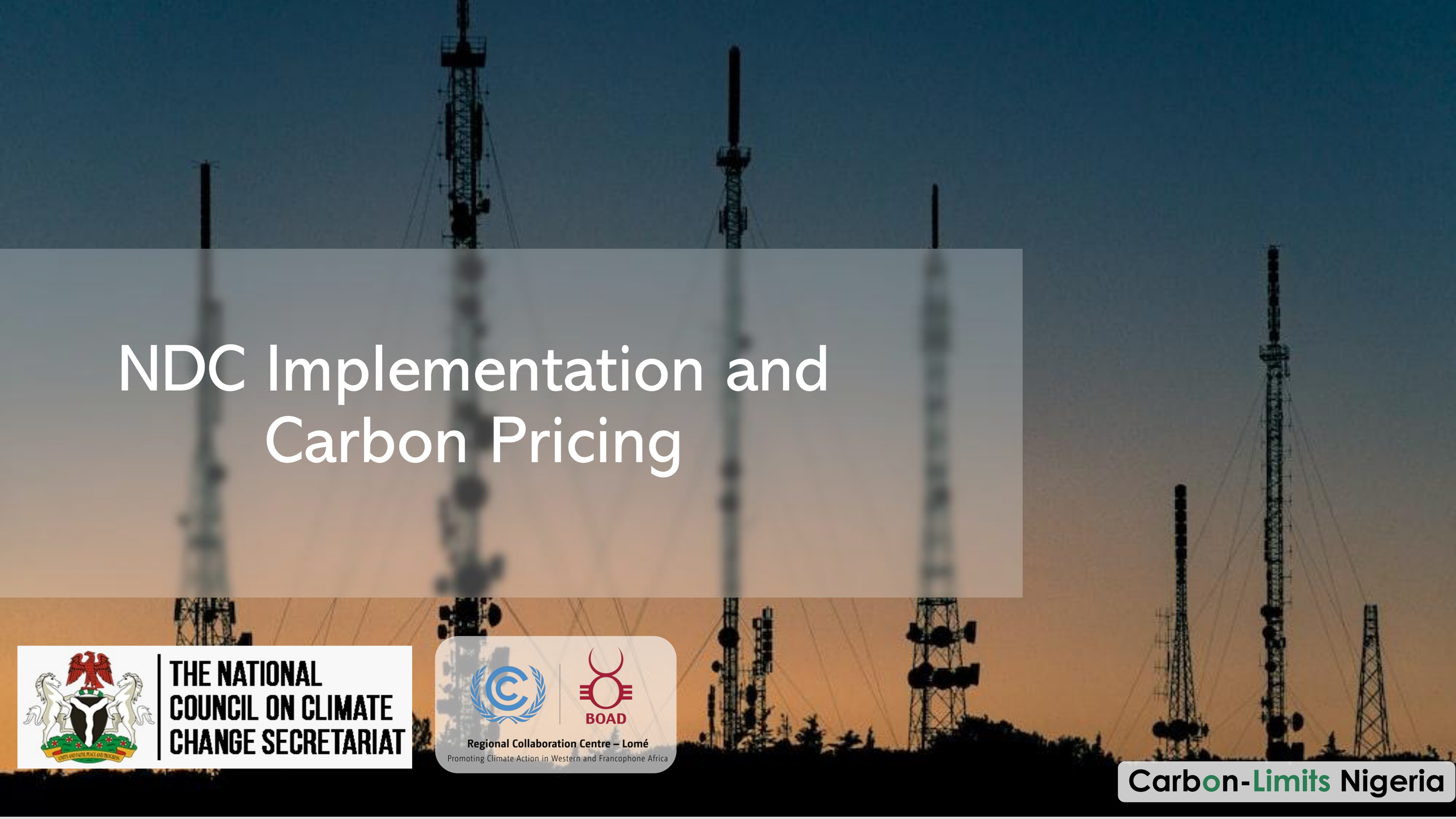
Ensures readiness for Article 6 mechanisms and sustainable investments.

Fosters bilateral trading opportunities

Carbon Pricing: Opportunities & Challenges still exist

Opportunities	Challenges
Significant emissions reduction potential in forestry, energy, and agriculture.	Limited technical and institutional capacity.
Access to international funding and voluntary carbon markets.	Low market maturity and private sector engagement.
Regional collaboration enhances resource sharing and policy alignment.	Heavy reliance on international support.

NDC Implementation and Carbon Pricing



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NDC at a glance

Summary of Objectives

- Support economic and social development;
- Grow the economy by 5% per year by tackling climate change;
- Improve the standard of living and ensure electricity access for all.

Nigeria's Updated NDC 2021

- **Updated NDC:** July 2021 (20% unconditional, 47% conditional)
- **Baseline year:** 2010
- **Target Year:** 2030
- **Mitigation Sectors covered**: Energy, Oil and Gas, Agriculture and Land Use, Industry, Transport, and Waste.

Topline Information

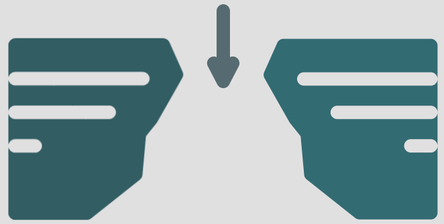
- Updated submission has emission reduction target for six key sectors (including Waste Sector).
- Increased conditional target to from 45 - 47% below BAU emissions in 2030.
- Carbon Pricing instruments are considered as key emission reduction drivers.
- Emissions reductions count against Nigeria's commitment, surplus can be traded for offsets.

Feasibility findings from the NDC

Aspect	Remarks
Policy and Legal Framework	Existing policies like the Climate Change Act provide a foundation, but sector-specific regulations and enforcement are needed.
Technical Capacity	Limited availability of MRV systems; significant infrastructure gaps in renewable energy and low-carbon technologies.
Stakeholder Readiness	Limited awareness among industries and the public; private-sector engagement and collaboration are required.
Implementation Challenges	Resource constraints, capacity gaps, and resistance from sectors heavily reliant on fossil fuels.

NDC Gaps

- No proper costing of climate measures as contained in the NDC which is required to know additional funding required.
- Relatively weak regulatory policies to implement framework.
- Some policies do not seem measurable as they do not spell out how much emission reduction is expected through implementing mitigation projects.
- Inadequate legal framework to support some policies.
- Technical shortcoming.
- Poor implementation strategies of existing policies.



Importance of the Pilot Tax

❑ **Testing Viability**
- Assesses the economic, social, and environmental impacts before full-scale implementation.
- Identifies challenges and refines approaches for broader application and scaling.

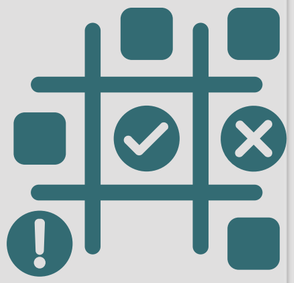
❑ **Policy Development**
- Lays the groundwork for a robust carbon pricing framework aligned with Nigeria's climate goals.
- Strengthens enforcement and compliance mechanisms for emissions reduction.

❑ **Capacity Building**
- Enhances institutional and technical readiness for developing, managing and further implementation of carbon pricing systems.

❑ **Achieving NDC Targets**
- Directly supports emission reduction initiatives
- Drives investments in renewable energy and low-carbon technologies, critical to meeting NDC targets.

Opportunities for Enhanced Climate Action

- **Accelerate Renewable Energy Adoption:** Expand solar, and other clean energy solutions.
- **Improve Energy Efficiency:** Promote energy-efficient technologies across industry.
- **Strengthen Nature-Based Solutions for offsets:** Focus on reforestation, afforestation, and wetland restoration.



- **Leverage Climate Finance:** Access international funds to support emission reduction projects.
- **Promote Carbon Pricing Mechanisms:** Utilize carbon tax revenues to incentivize climate-resilient projects.
- **Encourage Green Innovation:** Invest in research and development of low-carbon technologies.

Strategic Analysis of Nigeria's Telecommunications Industry

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Overview of the Telecommunication Sector

Telecom industry in Nigeria is growing; it is important sector of the economy. With over 40,000 towers and over 127,000 base stations, operations heavily rely on fossil fuels for power generation.

Over 50 billion Naira is spent on diesel each month within the sector according to National Bureau of Statistics due to unreliable electricity supply from the national grid hence contributing to overall GHG emissions.

The sector is dominated by four mobile operators, MTN, Airtel, Globacom (GLO) and 9mobile.

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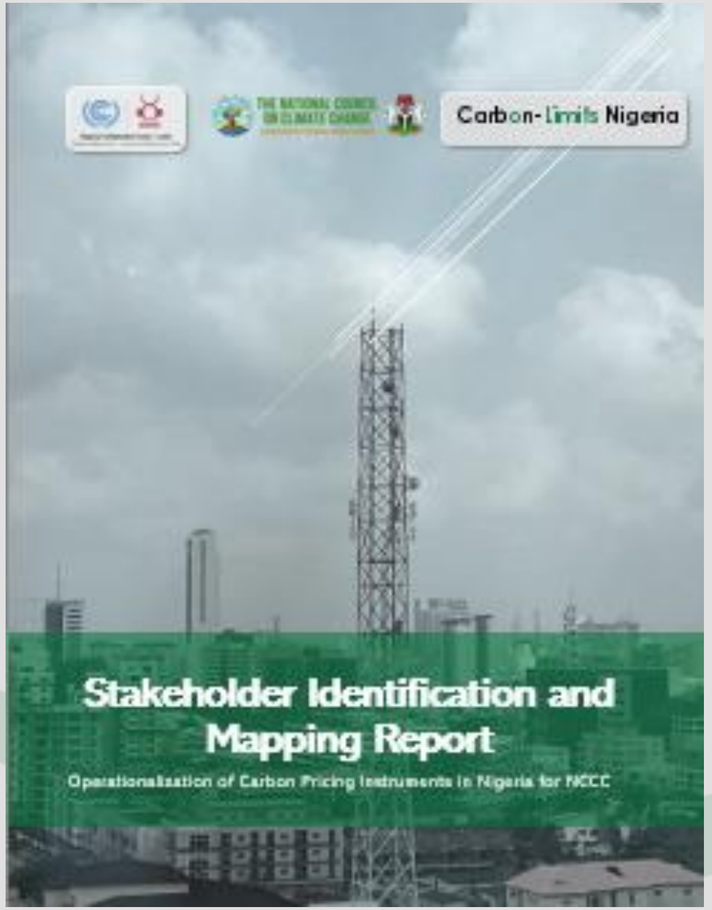
Identified Telecommunication Stakeholders

Stakeholder Category	Stakeholders
Mobile Network Operators	MTN Nigeria
	Airtel Nigeria
	Globacom Limited
	9Mobile (Emerging Markets Telecommunication Services Ltd)
Data Centres	Africa Data Centres (Cassava Technologies)
	Digital Realty
	WIOCC (Open Access Data Centres)
	Jovis Nigeria Limited
	Rack Centre
Internet Infrastructure	MainOne
Internet Services	Spectranet
	FiberOne Broadband Ltd
	Starlink Internet Services Nigeria Ltd
	Tizeti Network Ltd
	ipNX Nigeria Ltd
	Broad-based Communications Ltd
	VDT Communications Ltd
	Cobranet Ltd
	Radical Technology Network Ltd (Coollink.Ng)
	Cyberspace Network Ltd



This report aims to map out key stakeholders (regulators, policymakers, operators, data centers, etc) in the telecommunication sector that would be relevant for information (data) sharing for the goal of designing a pilot carbon tax for the Nigeria telecommunication sector.

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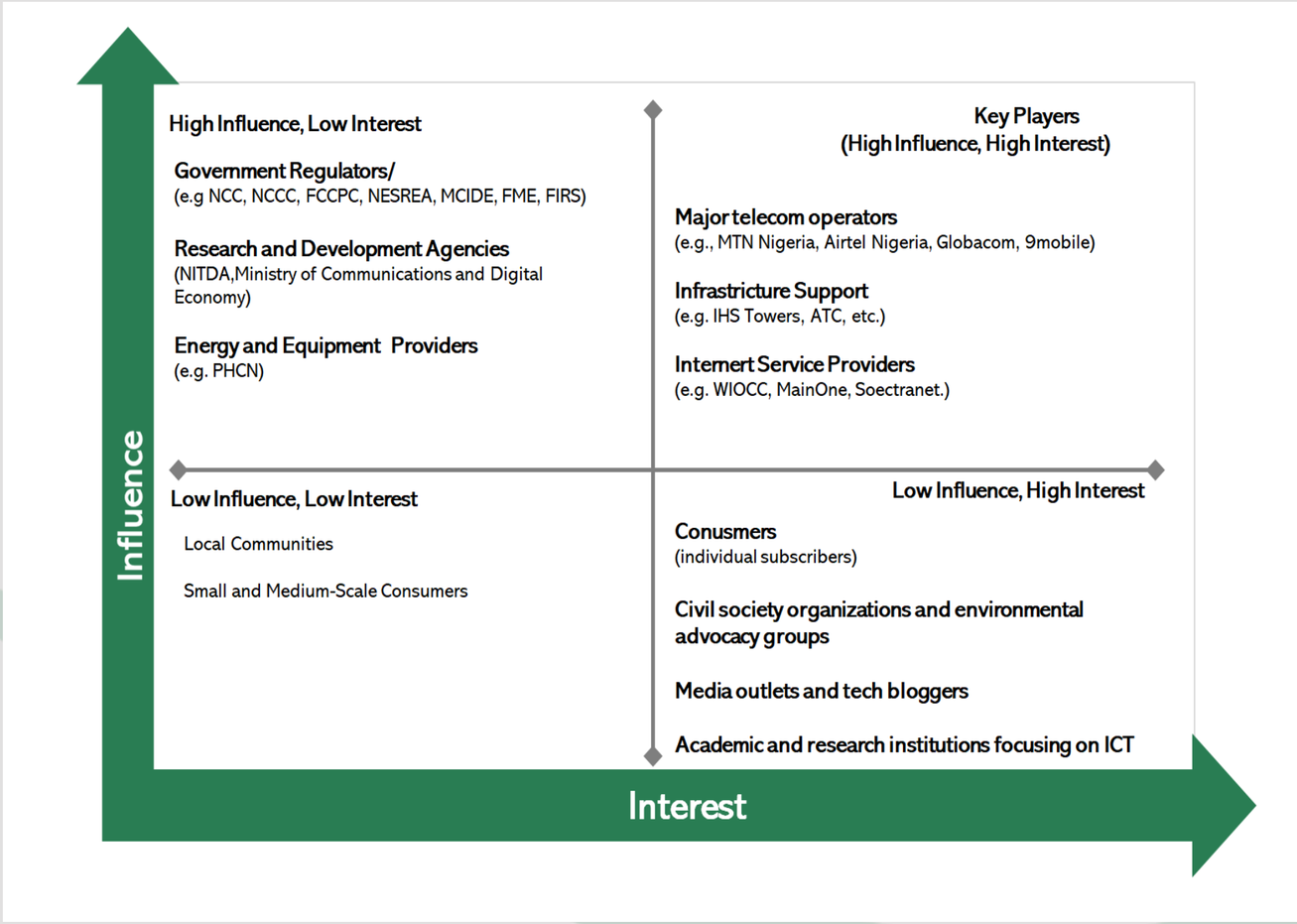
Identified Telecommunication Stakeholders

Stakeholder Category	Stakeholders
Infrastructure Support	IHS Towers
	ATC Nigeria
	Huawei Technologies Nigeria
Software and Hardware Services	Ericsson Nigeria
	Nokia Networks Nigeria
	ZTE Corporation
	Cisco Systems
	Samsung Networks
Regulators	Nigerian Communications Commission (NCC)
	National Environmental Standards and Regulations Enforcement Agency (NESREA)
	Federal Competition and Consumer Protection Commission (FCCPC)
Policy Maker	Federal Ministry of Communications and Digital Economy
Revenue	Federal Inland Revenue Services (FIRS)
Training Institute	Digital Bridge Institute (DBI)
Research & Development	National Information Technology Development Agency (NITDA)
Consumers (End Users)	Individual Subscribers, Large companies using internet services



Stakeholders Mapping Quadrant

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Other Relevant Regulatory Bodies/Stakeholders

S/N	Regulatory Agencies	Responsibilities
1	**Nigerian Cybercrime Advisory Council**	Oversees cybersecurity regulations impacting the telecom sector.
2	**Nigerian Information Technology Development Agency (NITDA)**	Regulates data protection and ICT, which overlaps with telecom services.
3	**Nigerian Office for Developing the Indigenous Telecom Sector (NODITS)**	Promotes local content and indigenous participation in telecom.
4	**National Environmental Standards and Regulations Enforcement Agency (NESREA)**	Ensures environmental compliance in telecom infrastructure development.
5	**National Identity Management Commission (NIMC)**	Oversees identity management, affecting telecom services like SIM registration and user identification.
6	**Federal Inland Revenue Service (FIRS)**	Regulates tax compliance for telecom companies, including VAT and corporate tax.
7	**Federal Competition and Consumer Protection Commission (FCCPC)**	Ensures consumer protection and fair competition practices in the telecom industry.
8	**Association of Licensed Telecom Operators of Nigeria (ALTON)**	Represents telecom operators, advocating for industry-wide issues.

MRV in Telecommunications Industry

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Existing Institutional Arrangement

- The NCC oversees and regulates the telecom operations across the country.
- Telecom operators (fixed and mobile operators, infrastructure providers, internet service providers, equipment manufacturers, etc.) reports operational, compliance, and performance data to the NCC.

Activity Data Providers

- ✓ Mobile & Fixed network operators
- ✓ Data centres
- ✓ Internet service & infrastructure providers
- ✓ Training institutes
- ✓ Equipment manufacturers etc.

Regulator

National Communication Commission

Policy Formulator

Ministry of Communications and Digital Economy

Overarching Decision-making Body

Federal Executive Council (FEC)

To effectively operationalize a robust and effective MRV system in the telecommunications sector, it is essential that the responsibilities of each stakeholder are clearly defined, and regulatory mechanisms are put in place to mandate compliance.

Current MRV Framework in Telecommunications Industry

The telecommunications sector in Nigeria is still in its infancy when it comes to implementing formal MRV systems for tracking and reporting emissions.

Monitoring practices are mostly focused on operational metrics e.g. subscriber data, internet data usage, etc.

Monitored Operational Metrics	Current Practice
Subscriber Data	The NCC and telecom operators collect data on the number of subscribers and active SIM cards, which helps monitor market penetration.
Internet Data Usage	Telecom companies track data usage to optimize network performance
Energy Monitoring	While some telecom operators monitor energy consumption at their facilities, this is done inconsistently and often lacks a focus on emissions reduction.
Infrastructure Operations	Telecom infrastructure providers like IHS Towers, ATC Nigeria and Helios Towers monitor the performance of telecom towers but are not integrated into national climate reporting systems.

Proposed MRV Setup

Data Custodian

Nigerian Council on Climate Change

Quality Assurance (Third Party)

Data Ownership, Management, Aggregation and coordination

National Communication Commission

Quality Assurance (Third Party)

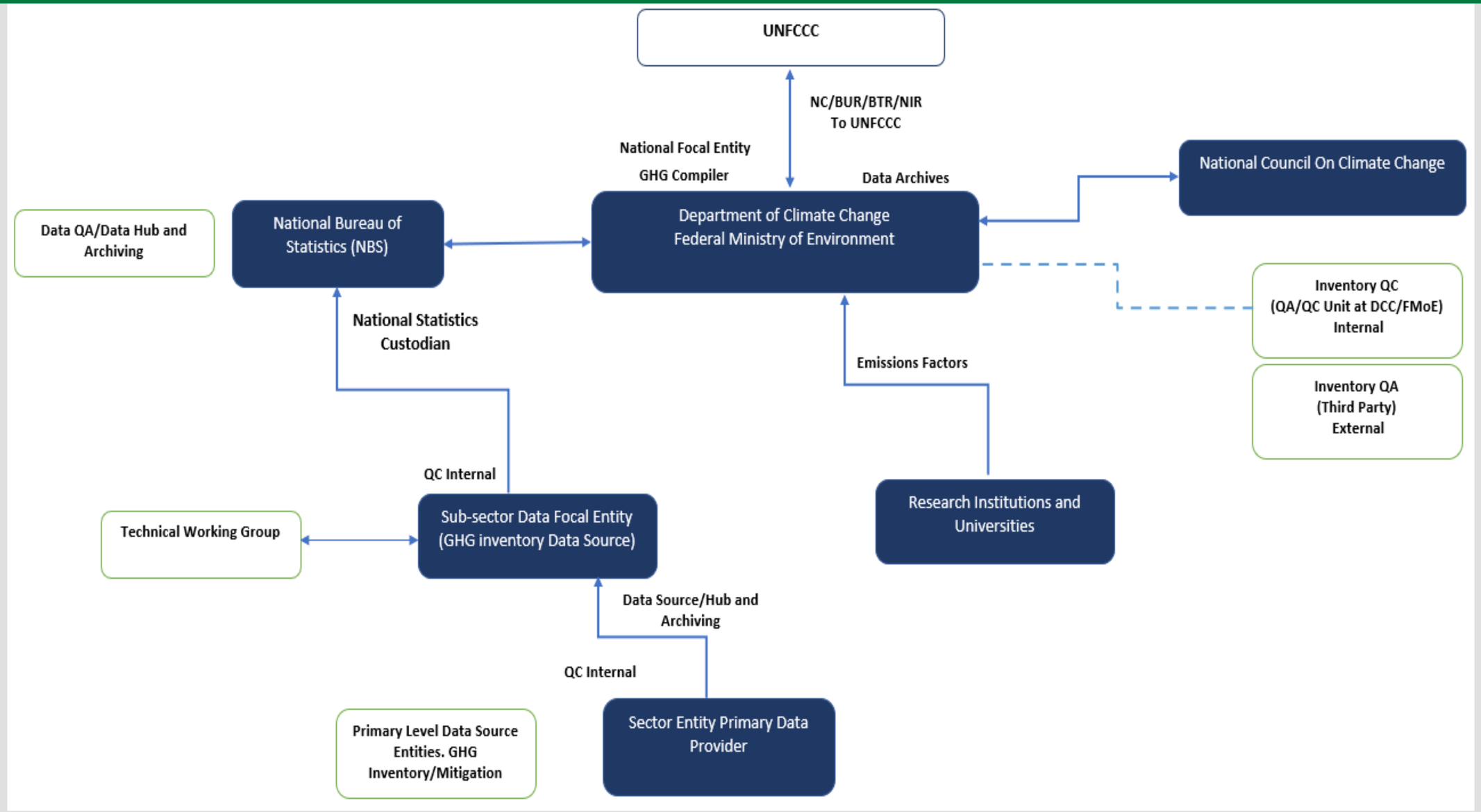
Activity Data Providers

Mobile & Fixed Network Operators, Data Centers, Internet Service & Infrastructure Providers, Training Institutes, Equipment Manufacturers Etc.

Quality Control (Internal)

This proposed institutional arrangement is designed to fit into the existing overarching national institutional arrangement.

Institutional Arrangement for Inventory & Emissions Reduction



Source: Implementation of Nigeria Climate Change Response Programme (NCCRP): Development of the Measurement, Reporting and Verification (MRV) System for the Energy Sector in Nigeria,

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Legal Framework for developing Robust MRV Systems

Existing laws and regulations in the telecommunication and environmental sectors provide a foundation for developing MRV systems in the telecommunication sector.

1

THE NIGERIAN COMMUNICATIONS ACT (2003)

Empowers the NCC to regulate technical standards and ensure accountability among telecommunication operators.

2

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) ACT (1992) & NESREA ACT (2007)

Provide opportunities to embed MRV requirements into environmental compliance standards.

3

THE CLIMATE CHANGE ACT (2021)

Creates a legal foundation for climate action in Nigeria

Proposed Framework for Carbon Tax in Telecommunication

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Rationale for selecting the Telecommunications sector for Carbon tax

- Potential for impactful emission reduction due to adoption of alternative energy sources
- Potential to serve as a high-impact and scalable demonstration model for other sectors.
- The industry is highly centralized (including fewer stakeholders)

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Methodology for the Carbon Tax Design

Review available data (GHG Inventories)

Categorize emitters by carbon emissions profile (low and high emitters).

Establish a base tax rate per tonne of CO_2.

Phased Implementation of the Tax (Short to Long term)

Implement monitoring and verification frameworks.

Stakeholders Engagement

Key Factors to Consider

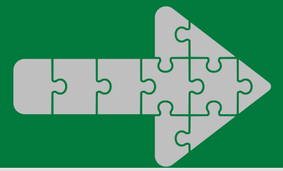
- ✓ Energy profile of the Sector
- ✓ Ability to pass costs to consumers
- ✓ Incentivizing a shift to Clean Energy
- ✓ Benchmarking with international & regional carbon pricing models
- ✓ Revenue recycling and incentives
- ✓ Elasticity of the sector

Data Requirements

GHG Inventory detailing:

- Energy Consumption Data
- Baseline emissions data from operations
- Operational Data (number of base transceiver stations & their energy sources)

Next Steps



- Identify key contacts within stakeholder organizations.
- Communicate timelines for data submission.
- Define frequency for data updates and stakeholder meetings.

Thank You

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