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Report No: PADHI00696

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A
PROPOSED GRANT

IN THE AMOUNT OF SDR 39.6 MILLION
(US$52.6 MILLION EQUIVALENT)

TO THE

REPUBLIC OF THE GAMBIA

FOR

THE GAMBIA INFRASTRUCTURE PROJECT

MAY 7, 2025

Transport Global Practice
Western and Central Africa Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective March 31, 2025)

Currency Unit =	Gambian Dalasi (GMD)
GMD 72.63 =	US$1.00
SDR 0.75 =	US$1.00

FISCAL YEAR
January 1 - December 31

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ABBREVIATIONS AND ACRONYMS

AfDB	African Development Bank
ASI+R	Avoid, Shift, Improve + Resilience
AVIS	Assessments of Vehicle Inspection Systems
BESS	Battery Energy Storage System
BIMS	"BOKA" Information Management System
CEM	Credit Enhancement Mechanism
CERC	Contingent Emergency Response Component
CPCU	Central Project Coordination Unit
DA	Designated Account
E&S	Environment and Social
ECOWAS	Economic Community of West African States
ERR	Economic Rate of Return
ESCP	Environmental and Social Commitment Plan
ESMF	Environmental and Social Management Framework
ESMAP	Energy Sector Management Assistance Program
ESMP	Environmental and Social Management Plan
FM	Financial Management
GAP	Gender Action Plan
GBA	Greater Banjul Area
GBV	Bender-based Violence
GCA	Global Center on Adaptation
GCF	Green Climate Fund
GDF	Global Data Facility
GEMS	Geo-Enabling Initiative for Monitoring and Supervision
GERMP	Gambia Electricity Restoration and Modernization Project
GHG	Greenhouse Gas
GMD	Gambian Dalasi
GoG	Government of The Gambia
GRM	Grievance Redress Mechanism
GTSC	Gambia Transport Service Company
HFO	Heavy Fuel Oil
IDA	International Development Association
IFC	and International Finance Corporation
IPF	Investment Project Financing
IPP	Independent Power Producer
LMP	Labor Management Procedures
LTS	Long-term Strategy
M&E	Monitoring and Evaluation
MEPS	Minimum Energy Performance Standards
MIGA	Multilateral Investment Guarantee Agency
MOCDE	Ministry of Communication and Digital Economy
MOFEA	Ministry of Finance and Economic Affairs
MOI	Ministry of Interior
MOTWI	Ministry of Transport, Works, and Infrastructure
MOPEM	Ministry of Petroleum, Energy and Mines
MW	Megawatt
NAWEC	National Water and Electricity Company Limited
NDC	Nationally Determined Contributions

NEA	National Environment Agency
NPV	Net Present Value
NMT	Non-motorized Transport
NRA	The Gambia National Road Authority
OMVG	*Organisation pour la Mise en Valeur du Fleuve Gambie* (Gambia River Basin Organisation)
PA	Project Advance
PCE	Private Capital Enabling
PIM	Project Implementation Manual
PPA	Power Purchase Agreement
PPIAF	Public-Private Infrastructure Advisory Facility
PPSD	Project Procurement Strategy for Development
PSC	Project Steering Committee
PURA	Public Utilities Regulatory Authority
PV	Photovoltaic
SEAH	Sexual Exploitation, Abuse and Harassment
SEP	Stakeholder Engagement Plan
SOE	State-owned Enterprise
SPC	Shadow Price of Carbon
SRMI	Sustainable Renewables Risk Mitigation Initiative
T&D	Transmission and Distribution
TGSB	The Gambia Standards Bureau
TVET	Technical and Vocational Education and Training
UA	Universally Aligned

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Map: IBRD 48802

DATASHEET

BASIC INFORMATION

Project Beneficiary(ies)	Operation Name		
Gambia, The	The Gambia Infrastructure Project		
Operation ID	Financing Instrument	Environmental and Social Risk Classification	
P504762	Investment Project Financing (IPF)	Substantial	

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[✓] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Performance-Based Conditions (PBCs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternative Procurement Arrangements (APA)	[✓] Hands-on Expanded Implementation Support (HEIS)

Expected Approval Date	Expected Closing Date
29-May-2025	30-Jun-2031
Bank/IFC Collaboration	
No	

Proposed Development Objective(s)

To improve access to resilient transport and energy infrastructure in selected areas of The Gambia and to strengthen the sectors' capacity in the provision of related services.

Components

Component Name	Cost (US$)

Resilient Access to Infrastructure	38,700,000.00
Policy, Planning and Management	9,100,000.00
Project Management and Capacity Building	4,700,000.00
Service Delivery Modernization	3,600,000.00
Contingent Emergency Response Component	0.00

Organizations

Borrower:	The Republic of The Gambia		
Contact	Title	Telephone No.	Email
Abdoulie Jallow	Permanent Secretary	+220 420 2258	liejallow@hotmail.com
Implementing Agency:	Ministry of Transport, Works and Infrastructure , Ministry of Petroleum, Energy and Mining		
Contact	Title	Telephone No.	Email
Matarr Ceesay Kemo Ceesay	Permanent Secretary Director of Energy	+2202433657 2208805395	mat.csay@gmail.com info@mope.gov.gm

PROJECT FINANCING DATA (US$, Millions)

Maximizing Finance for Development

Is this an MFD-Enabling Project (MFD-EP)? Yes

Is this project Private Capital Enabling (PCE)? Yes

SUMMARY

Total Operation Cost	**56.10**
Total Financing	**56.10**
of which IBRD/IDA	**52.60**
Financing Gap	**0.00**

DETAILS

World Bank Group Financing

International Development Association (IDA)	52.60
of which IDA Recommitted	12.20
IDA Grant	52.60

Non-World Bank Group Financing

Counterpart Funding	3.50
Borrower/Recipient	3.50

IDA Resources (US$, Millions)

	Credit Amount	Grant Amount	SML Amount	Guarantee Amount	Total Amount
National Performance-Based Allocations (PBA)	0.00	52.60	0.00	0.00	52.60
Total	**0.00**	**52.60**	**0.00**	**0.00**	**52.60**

Expected Disbursements (US$, Millions)

WB Fiscal Year	2025	2026	2027	2028	2029	2030	2031
Annual	0.50	7.50	12.25	12.00	12.00	7.50	0.85
Cumulative	0.50	8.00	20.25	32.25	44.25	51.75	52.60

PRACTICE AREA(S)

Practice Area (Lead)

Transport

Contributing Practice Areas

Energy & Extractives

CLIMATE

Climate Change and Disaster Screening

Yes, it has been screened and the results are discussed in the Operation Document

SYSTEMATIC OPERATIONS RISK- RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	Substantial
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Substantial
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Substantial
8. Stakeholders	Substantial
9. Overall	Substantial

POLICY COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

ENVIRONMENTAL AND SOCIAL

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
ESS 1: Assessment and Management of Environmental and Social Risks and Impacts	Relevant
ESS 10: Stakeholder Engagement and Information Disclosure	Relevant
ESS 2: Labor and Working Conditions	Relevant

ESS 3: Resource Efficiency and Pollution Prevention and Management	Relevant
ESS 4: Community Health and Safety	Relevant
ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant
ESS 8: Cultural Heritage	Relevant
ESS 9: Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

LEGAL

Legal Covenants

Sections and Description
Schedule 2. Section I.A.1 (a) - GoTG to establish, no later than three (3) months after the Effective Date, and thereafter maintain, a Project Steering Committee (PSC) with functions, composition, and resources satisfactory to the Association.
Schedule 2. Section I.A.2 (b) - GoTG shall recruit for the CPCU, within one (1) month after the Effective Date, and thereafter maintain throughout implementation, an operations manager, a financial management specialist, a procurement specialist and an environmental and social assistant, all with experience and qualifications, and under terms of reference acceptable to the Association.
Schedule 2. Section I.A.2 (d) - GoTG shall cause MOTWI, MOPEM, NRA, NAWEC and PURA to each nominate, not later than two (2) months after the Effective Date, a technical coordinator to ensure efficient coordination with the CPCU and the provision of technical inputs for the activities under their respective mandate.
Schedule 2. Section I.A.2 (e) - GoTG shall cause NRA and NAWEC to each recruit, not later than two (2) months after the Effective Date, one social specialist and one environmental specialist all with experience, qualifications, and under terms of reference acceptable to the Association.
Schedule 2. Section I.C.1 - GoTG shall carry out the Project in accordance with Annual Work Plans and Budgets to be prepared and furnished to the Association not later than November 30th of each year during the implementation of the Project (the first Annual Work Plan and Budgets being due one month after the Effective Date).
Schedule 2. Section. 1.F.2 - the Recipient shall ensure that the Project is implemented in accordance with the Environmental and Social Commitment Plan ("ESCP"), whereby a Memorandum of Understanding (MoU) between the CPCU and National Environment Agency is signed within two (2) months after Effective Date and thereafter maintain throughout project implementation.
Schedule 2. Section. 1.F.2 - the Recipient shall ensure that the Project is implemented in accordance with the ESCP, whereby a Grievance Redress Mechanism is operationalized within three (3) months after project Effective Date prior to engaging project workers and thereafter maintain throughout implementation,

Schedule 2. Section. 1.F.2 - the Recipient shall ensure that the Project is implemented in accordance with the ESCP, whereby a Sexual Exploitation and Abuse/Sexual Harassment Action Plan that was prepared as part of the ESMF, maintained throughout implementation.

Conditions

Type	Citation	Description	Financing Source
Effectiveness	Section 4.01	The Recipient has prepared and adopted the Project Implementation Manual.	IBRD/IDA
Disbursement	Section III.B.1.(b).(i) of Schedule 2	No disbursement under Category (2) until and unless NAWEC has concluded the NAWEC Project Agreement in accordance with the provision of Section I.D.1(a) of this Schedule.	IBRD/IDA
Disbursement	Section III.B.1.(b).(ii) of Schedule 2	No disbursement under Category (2) until and unless the IPP has concluded the IPP Project Agreement in accordance with the provisions of Section I.D.1(b) of this Schedule.	IBRD/IDA
Disbursement	Section III.B.1.(b).(iii) of Schedule 2	No disbursement under Category (2) until and unless the Recipient has furnished evidence, in form and substance satisfactory to the Association, that it has concluded the Subsidiary Agreement in accordance with the provisions of Section I.D.1(c) of this Schedule.	IBRD/IDA
Disbursement	Section III.B.1.(b).(iv) of Schedule 2	No disbursements under Category (2) until and unless the Recipient has concluded the Escrow Agreement in accordance with the provisions of	IBRD/IDA

		Section I.D.3(a) of this Schedule.	
Disbursement	Section III.B.1.(b).(v) of Schedule 2	No disbursements under Category (2) until and unless the Recipient has furnished evidence, in form and substance satisfactory to the Association, that all conditions for Financial Close of the Soma Solar and BESS Subproject have been met, including, without limitation, confirmation from the lenders under the Finance Documents that all conditions precedent to the first disbursement under the Finance Documents have been met.	IBRD/IDA

I. STRATEGIC CONTEXT

A. Project Strategic Context

1. **A low-income country, The Gambia has for many years seen its efforts to reduce poverty challenged by high population growth, rapid urbanization, and limited access to basic infrastructure.** Classified as a Least Developed Country, The Gambia is among the poorest nations in Africa. The population is estimated to have reached 2.42 million people in 2024[1], having nearly doubled since 2000[2], 63 percent of which are less than 25 years old[3]. Poverty rates were estimated at 53.4 percent[4] in 2020, up from 45.8 percent the previous year, due to COVID-19 pandemic undermining previous reduction gains. Approximately 21 percent live in extreme poverty when measured against the international threshold of US$2.15 per person per day.[5] Gross domestic product (GDP) is projected to reach US$2.68 billion in 2024, which, with the projected population growth, would bring The Gambia's GDP per capita estimates to US$985 (US$ current).[6]

2. **Rural poverty rates are highest in the Northeast, though a greater proportion of poor are concentrated in the more populous and increasingly urbanized Southwest of the country.** Seven of the ten poorest wards are in the sparsely populated Kuntaur Local Government Area (LGA), where estimated poverty rates reached 88 percent or greater.[7] Extrapolating the most recent census data (2013), The Gambia's urban population is estimated to be around 1.82 million people in 2024, implying an urbanization rate of 66 percent, one of the highest urbanization rates in the region. With over 60 percent of the country's population now living in the Greater Banjul Area (GBA), the two districts with the largest number of resident poor are Kanifing and Brikama, with informal settlements outpacing the provision of basic infrastructure and services in housing, roads, electricity, water, and drainage.

3. **The Gambia is already experiencing impacts from natural hazards, which are projected to intensify with climate change.** Climate projections indicate a substantial warming trend by 2050, particularly for inland areas, which could experience up to 290 days per year above 40ºC and drive consistent increases in drought risk and doubling wildfire risks across the country. Flooding will persist as a major risk to infrastructure, exacerbated by rising sea levels and more frequent short-duration, high-intensity rainfall events, increasing fluvial, pluvial, and coastal floods.

4. **Green, resilient, and inclusive delivery of transport and energy infrastructure and services will be vital to facilitating access as an essential economic enabler.** The Gambia's transport and energy sectoral ambitions are central to its Recovery Focused National Development Plan (2023-2027), which emphasizes quality infrastructure for service delivery. Climate-resilient infrastructure investments targeting the development of more reliable transport and energy networks are needed to improve rural and urban accessibility in poor and underserved areas, which would also minimize service disruptions to households and enterprises. Implementation of complementary policy and regulatory frameworks is necessary to strengthen core public institutions and improve public spending efficiency. Unlocking local commercial capital to contribute to better motorization management and in the further penetration and integration of renewable energy solutions will be equally important.

B. Sectoral and Institutional Context

5. **While The Gambia holds real potential to reach universal electricity access by 2030, greater investment in transport access and mobility is increasingly crucial.** The Gambia has elaborated a bold vision for universal energy access

[1] The Gambia Bureau of Statistics: The Gambia 2024 Population and Housing Census.
[2] World Bank data.
[3] Hilger, Anne; Ng, Odyssia Sophie Si Jia; Wu, Nuoya. *Gambia, The - Human Capital Review (English)*. Washington, D.C.: World Bank Group. 2023.
[4] World Bank. 2022. The Gambia Poverty and Gender Assessment.
[5] Ibid.
[6] International Monetary Fund data https://www.imf.org/external/datamapper/profile/GMB
[7] World Bank. 2022. The Gambia Poverty and Gender Assessment.

(Sustainable Development Goal – SDG 7) and could potentially be among the first countries in Sub-Saharan Africa to attain its objectives. Approximately 85 percent of urban residents are connected to the electric grid, with rural areas lagging at around 35 percent connection rate[8]. A significant shift is expected by the end of 2025 with the closure of ongoing electricity access projects expected to provide connections to 955 communities, primarily in rural Gambia. Then, the electricity access rate is expected to reach approximately 90 percent. The electricity access initiatives place The Gambia as a success case for the "Mission 300" agenda pioneered by the World Bank Group and the African Development Bank. However, the country's Rural Access Index (SDG 9.1.1) - the proportion of the rural population who live within 2 km of an all-season road - is approximately 55 percent, implying more than 400,000 Gambians are without reliable access. The National Development Plan targets the reconstruction or rehabilitation of more than 1,200 km of road network to improve access. The *National Transport Policy (2018 – 2027)* plans to improve access to isolated regions, address mobility needs, as well as strengthen institutional capacity for regulating safety, asset management, and the private sector enabling environment.

6. **Climate hazards contribute to the deterioration of transport and energy infrastructure, increasing rehabilitation and maintenance costs, and affecting the reliability of access, connectivity and service provision.** Extreme temperatures, heavy precipitation, sea level rise, high storm surge, strong winds, dust storms, drought, wildfire, fluvial, pluvial and coastal flooding, and coastal erosion are all considered high-risk.[9][10][11] Climate exposure models project that the road network's exposure to flood events will continue to worsen, while the impacts of extreme heat or flooding on energy transmission and distribution (T&D) will either diminish operational efficiency or safety of energy systems that can lead to significant operational disruptions.

7. **Gender disparities in The Gambia persist in physical access to existing markets, obstetric care, clean energy and employment in the transport and energy sectors.** Intra-urban travel is considered expensive, inconvenient, slow, difficult, dangerous and undignified.[12] Women, more often times poor and reliant on public transport to perform daily economic activities that require trip chainage, are worst affected by this situation, making transport more costly for them.[13] Lack of safe, reliable roads and transport services are among the barriers to women's mobility in rural areas, which disproportionately affect rural women small-scale entrepreneurs access to markets, while also making travel more expensive for women than men. Additionally, surveys reveal that long distances to obstetric care facilities (56 percent of respondents) and lack of transportation (20 percent of respondents) limit women's ability to access and utilize services.[14] While gender-specific data on energy access is not available in The Gambia, low rural energy access rates are more likely to disproportionately impact women than men due to differences in energy use, where household chores often undertaken by women become time consuming and physically demanding without electricity.[15] Gender imbalances in employment for both transport and energy sectors are notable; women hold less than 9 percent of jobs in the transport, storage and communication sector, while women in the energy sector represent 26 percent of the workforce, according to International Labor Organization data (2022).[16] These disparities

[8] World Bank. World Development Indicators (2023). Access to Electricity (Urban/Rural) – The Gambia.

[9] Think Hazard. Consulted on 26 February 2025. Available at: URL https://thinkhazard.org/en/report/90-the-gambia

[10] Climate Hazard Assessment – Integrated Adaptation Options for Transport Energy and Water Sectors in the Gambia. Project Report. 28 January 2025. GCA.

[11] African Development Bank and World Bank Group. *The Gambia Fragility Risk and Resilience Assessment: A Joint AfDB-World Bank Report.* Washington, DC: World Bank. 2017.

[12] Pirie, 2013. Urban Mobility in Anglophone Sub-Saharan Africa. https://unhabitat.org/sites/default/files/2013/06/GRHS.2013.Regional.Anglophone.Africa.pdf

[13] https://idl-bnc-idrc.dspacedirect.org/server/api/core/bitstreams/21219623-4202-41b2-a988-fe4045fc6468/content#:~:text=The%20strategy%20states%20that%20investments,World%20Bank%20Group%2C%202016).

[14] Gambian Mothers Lack Obstetric Danger Sign Knowledge, But Educational Intervention Shows Promise. https://annalsofglobalhealth.org/articles/10.5334/aogh.3930

[15] ECREEE, 2015. Situation Analysis of Energy and Gender.

[16] ILOSTAT,2022.

are usually due to lack of appropriate skills and employment opportunities in technical and managerial roles in the transport and energy sectors, and the absence of women-friendly work environments.

Transport Sector Context

8. **About half of the primary road network is in good condition, connecting Banjul and Kanifing, the capital cities of all five regions, and most other large towns**.[17] Although the primary and secondary road networks[18] provide some rural connectivity, it is the tertiary network[19] comprising earth and gravel roads that provide basic connectivity to rural communities. Most urban earth roads are impassable during the June to September wet season, impeding walkability and access for more than one-half of the country's population. While the Ministry of Transport, Works, and Infrastructure (MOTWI)[20] is responsible for the overall policy and planning of the road sector, its parastatal, The Gambia National Road Authority (NRA), manages road construction and maintenance for the primary and secondary network, as well as the tertiary network on behalf of LGAs. Ambiguity regarding the definition of the road network, particularly demarcation of secondary and tertiary roads, creates uncertainty with planning, financing, and prioritization of road maintenance regimes for urban and rural roads. Public investment in road assets remains crucial, justified by the need for access and efficiency, market development of the local road contracting industry, and achievement of long-term social and economic benefits.

9. **Annual budget plans for road preservation and maintenance works are programmed through the Road Fund.** Responsible for construction and maintenance of the country's national road assets, the NRA receives its resources through monthly transfers from the Road Fund. The Road Fund's primary source of revenue is a fuel levy, the historical rate of which has fluctuated. Irregularity in the Road Fund allocation prevents proper maintenance planning and predictability in future financing of works, which also hinders the development of the local road construction industry. In 2023, fiscal transfers to the Road Fund exceeded US$11 million after raising the fuel levy to 3 GMD/liter (US$0.04). Subsequently in 2024, the fuel levy was set to 9 GMD/liter (US$0.12), apportioning around 7.5 GMD/liter to NRA and the remaining 1.5 GMD/liter to central budget, though it continues to vary at the discretion of the Ministry of Finance and Economic Affairs (MOFEA). Approximately 6 GMD/liter is reserved for payment of fully subscribed, local NRA bonds[21] that were issued in April and June 2024 for debt financing of capital works and the clearing of contractual arrears. A modest allocation, approximately 1.5 GMD per liter, is designated for maintenance and operating costs of the NRA monthly. To achieve proper maintenance levels across the road network would require 6 GMD/liter dedicated solely to periodic and routine maintenance. The government is reviewing the NRA Act (2003), recognizing that the establishment of a third-generation road fund would fix a proportion of the fuel levy to be managed by an independent board of directors, in line with the National Transport Policy.

10. **Inefficient public transport in the GBA is largely due to the predominance of informal transport operators with an aging fleet.** The *GBA 2040 Plan* looks to respond to the challenge of rapid urbanization and emerging development patterns through provision of climate-resilient infrastructure upgrades and by defining services that support economic and social inclusion. Among the key impediments to efficient delivery of transport services in the GBA area, is the prevalence of paratransit with an aging fleet of high fuel consumption and emission levels, as well as poor safety standards. Though non-motorized transport (NMT) accounts for around 50 percent of daily trips in The Gambia, the sector generates more than 50 percent of Gambia's greenhouse gas (GHG) emissions. The size of the informal sector

[17] Eighty-four percent of the 876 km primary network is paved, with 53 percent reported in good or very good condition; about 16 percent is gravel surface, all of which is in fair or poor condition.
[18] Primary and secondary roads make up 52 percent and 23 percent of the total classified network, respectively.
[19] Eighty-seven percent is in poor or very poor condition; only two percent is paved, while 20 percent has a gravel surface, and the remaining network comprises earth roads.
[20] MOTWI is the central government entity responsible for the transport sector's policy agenda, preparation of road traffic safety legislation, economic and technical regulation, and management of environmental externalities.
[21] The bond issuances raised GMD 1.57 billion (US$25 million equivalent).

is large, with gele-geles, minibuses and taxis well represented among the roughly 100,000[22] registered vehicles in the country's fleet stock. To enhance the efficiency of mobility services and improve air quality, there is an urgent need to renew the fleet and gradually organize both formal and informal bus and gele-gele operations through a centrally planned set of service routes and schedules.

11. **Recent adoption of vehicle safety and emission standards, and age limitations of imports align with global and regional commitments.** The Gambian Road Safety Strategy (2021- 2030) performance targets aim to align United Nations regulations for vehicles safety standards by 2030. The Gambia Standards Bureau (TGSB) has codified vehicle emission standards and age limitations on importation of light-duty and heavy-duty vehicles (10 years and 15 years, respectively) that conform with Economic Community of West African States (ECOWAS) agreements.[23] All new and used imported private vehicles are expected to meet Euro IV emissions standards with minimum fuel efficiency standards of 5 liters/100km by 2025. GTSB is drafting safe vehicle standards for roadworthiness inspections, as well as certification methods in the calibration of emissions testing equipment. However, the absence of compliant emission testing centers as a component of vehicle inspections is among the top challenges for safer and cleaner road transport. Though MOTWI mandate covers land transport, the Ministry of Interior (MOI) is currently responsible for vehicle title and registration, vehicle roadworthiness and emission inspection, and drivers licensing and training. The Motor Traffic Act (1948, last amended in 2013) is considered outdated, with regulatory gaps or institutional overlaps creating administrative and enforcement challenges.

Energy Sector Context

12. **The Gambia's energy sector is undergoing a major transformation, driven by sustained World Bank Group support through national and regional initiatives since 2016.** Initial interventions addressed acute power deficits in 2017 by rehabilitating power plants, enabling medium-voltage imports to the North Bank for the first time, and expanding prepaid meter deployment.[24] Subsequent operations added a 23 MWp solar + 8MWh Battery Energy Storage System (BESS), connected 414 communities, and established the first 225 kV national transmission line and critical substation upgrades while supporting the National Water and Electricity Company Limited (NAWEC) restructuring and digital transformation.[25] Regionally, the Gambia River Basin Organisation (*Organisation pour la Mise en Valeur du Fleuve Gambie,* OMVG)[26] has introduced low-cost electricity imports, while complementary investments expanded electricity access within a 100km radius of OMVG substations[27], accelerating progress toward universal electrification. Further strategic investments in line the *Electricity Sector Roadmap (2021-2040)* will aim to enhance network resilience and improve the overall quality of service delivery to attain universal energy access through the integration of renewable energy sources and imports into the energy mix complemented by a robust transmission network.[28] Building on and sustaining these initiatives will help the sector attain the goals envisioned in its long-term strategy (LTS) on least cost generation and universal access.

13. **Diversifying The Gambia's energy mix and transitioning to green energy sources will be crucial to its prospects for achieving sustainable energy access.** Electricity generation remains predominantly reliant on imported heavy fuel oil (HFO), while higher-than-average electricity tariffs, currently around GMD 14.3 (or US$0.22) per kWh, are a barrier to affordable and equitable energy services. Electricity supply is dominated by NAWEC, a vertically and horizontally

[22] World Health Organization Global Status on Road Safety reported 94,962 vehicles in 2021.
[23] National emissions standards that set sulfur content of transport fuels to a maximum of 50 parts per million (ppm) for all imported petrol and diesel fuels are yet to be aligned with regional agreements.
[24] Gambia Electricity Support Project (P152659).
[25] Gambia Electricity Restoration and Modernization Project (P163568).
[26] OMVG Project (P143680).
[27] ECOWAS Regional Electricity Access Project (P164044).
[28] Domestic renewables production includes a 23 MW solar, regional imports from OMVG of 50 MWh (60 percent thermal/ 40 percent renewable/hydro). Planned addition of 50MW Solar to come online in 2027.

integrated state-owned enterprise (SOE) public utility. Operating as a single buyer model, NAWEC currently holds exclusive rights over T&D within The Gambia, where power from private generators and electricity imports are sold exclusively to NAWEC for onwards distribution. The combination of high losses and a continued reliance on emergency power sources exposes the utility to significant financial strain. In 2019, the government absorbed 75 percent of NAWEC's debt, amounting to US$150 million. A reticence to apply periodic tariff adjustments[29] that respond to oil market shocks and currency fluctuations[30], the prevalence of T&D losses[31], and periodic arrears to independent power producers (IPP)[32] jeopardizes its medium-term fiscal outlook. Such pressures have led to sustained fiscal interventions by the government (US$20 million in July 2024) to address potential supply interruptions and repayment of arrears to power supply vendors. New power supplies through the OMVG infrastructure from Guinea at much more competitive rates (US$0.11/kWh compared to thermal based options of US$0.18-US$0.20/kWh) point to increased prospects of financial recovery. A transparent competitive procurement of power sources will support the emergence of a resilient and financially viable energy sector. The continued digitalization of vending points (e-payments) and deployment of prepayment and smart meters for energy access can simultaneously improve customer service and consolidate gains made in NAWEC billing efficiency.

14. **Recent energy sector investments have largely focused on improving and expanding the national T&D network systems.**[33] In 2024, the country had a total installed capacity of 158 MW, though available capacity is around 102 MW as the generation fleet ages. Despite major improvements in GBA's network stability (i.e., commissioning of a first national 225 kV high voltage line in February 2025, and 52 new secondary substations constructed)/rehabilitated), the frequency of electrical outages owing to antiquated infrastructure in parts of the urban network continues to disrupt daily life and economic activities. Reconfigurations, substation upgrades and targeted interventions to create redundancy that allows for the re-routing of power flows in the event of outages on certain segments is necessary to improve network resilience and stability, particularly during extreme weather events. While rural access initiatives have significantly expanded provincial electricity networks, a focus remains on complementing ongoing interventions by ensuring the provision of climate-resilient infrastructure that enhances grid stability, promotes renewable energy integration and improves service reliability across the network.

15. **While the institutional framework for the energy sector is well-established, further support is needed to advance renewable energy and energy efficiency efforts and cater to the increasing complexity of the generation mix.** The Ministry of Petroleum, Energy, and Mines (MOPEM) oversees overall sector coordination and policy, with recent milestones including the adoption of The Gambia's first grid code (May 2024), feed-in tariff regulations, and green mini-grid rules. The completion of the publicly financed 23 MWp solar park and 8 MWh BESS in Jambur highlights the role of large-scale solar PV, complemented by smaller rural PV installations, in driving the country's just energy transition. Additionally, the Energy Sector Management Assistance Program (ESMAP) through the Sustainable Renewables Risk Mitigation Initiative (SRMI)[34] is supporting the development of a privately financed 50 MWp solar park and BESS plant in Soma through transaction advisory services[35] critical in unlocking private sector capital in the energy sector. Despite these advances, further policy and regulatory reforms, substantial investments, and de-risking

[29] The tariff process is to be complemented with bi-annual pass-through assessments, this is yet to be implemented.
[30] NAWECs cumulative losses in 2022 amounted to US$45 million due to oil market prices.
[31] T&D losses range from 21-24 percent, split between technical and non-technical losses (i.e., theft).
[32] In March 2024, payment arrears totaled approximately US$33 million to various partners.
[33] The Gambia Electricity Restoration and Modernization Project (P163568), co-funded by World Bank and European Union; the ECOWAS Regional Electricity Access Project (P164044), funded by the World Bank; The Gambia Electricity Access Project, funded by African Development Bank (AfDB) and Electricity Expansion Project, funded by India Exim Bank.
[34] SRMI is a partnership of the World Bank's Energy Sector Management Assistance Program (World Bank-ESMAP), the French Development Agency (*Agence Française de Développement,* AFD), the International Renewable Energy Agency (IRENA), the International Solar Alliance (ISA), Sustainable Energy for All (SE4all), the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the African Development Bank (AfDB) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) via the GET transform program.
[35] Regional Solar Park of The Gambia (P504421).

mechanisms are essential to increase renewable energy penetration, enhance tariff frameworks, reduce high generation costs, and attract private capital to scale up the sector's transformation.

16. **The Gambia has made significant progress in laying the foundation for demand-side management through energy efficiency initiatives.** The country's first Energy Efficiency Law, expected to be adopted by end 2025, will drive the transition to more efficient appliances while establishing a legal and institutional framework for energy efficiency investments.[36] It builds upon the National Energy Efficiency Strategy and audits of 20 public sector buildings, promoting energy management in government facilities. Under its expanded mandate in the draft Energy Efficiency Law, the Public Utilities Regulatory Authority (PURA), in collaboration with TGSB, is tasked with enforcing Minimum Energy Performance Standards (MEPS). The law mandates a multi-sectoral approach to developing MEPS for residential, commercial, and industrial products while establishing a dedicated Energy Efficiency Agency responsible for coordination and oversight.

17. **The project is consistent with The Gambia's Long-Term Climate-Neutral Development Strategy 2050.**[37] Key areas of intervention to foster resilient cities and green mobility relate to vehicle emission testing, rationalizing public transport systems, promoting active mobility in transport, and embedding contemporary technologies for more efficient, safe, and affordable climate-smart mobility solutions that protect people, communities, and the planet. With the emergence of renewable, off-grid solutions, the project facilitates resilient energy and low carbon development by integrating climate resilience into the design of the electricity system to enable the increasing use of clean energy. This can lower the cost of energy supply through a shift in the energy generation mix and improve operational efficiency, ultimately reducing The Gambia's energy-related expenditure to create fiscal space to invest in other developmental priorities.

18. **The project aligns with the World Bank's Maximizing Finance for Development approach, with private investment generated under the project counted as Private Capital Enabling (PCE).** Component 2 – Policy, Planning, and Management – qualifies as PCE through the provision of a credit enhancement mechanism (CEM) expected to facilitate a privately financed 50 MWp Solar PV and 10 MW/40 MWh BESS project. The structured CEM is needed to ensure financial closure of the project given the offtaker risk perceived by private actors in The Gambia. This solution complements the Regional Solar Park of The Gambia Project (RSPG; P504421), for which ESMAP/SRMI financed a transaction advisor to NAWEC and MOPEM, who are negotiating the solar and BESS project. Once financial closure is reached, which is expected by mid-2026, the project will have leveraged a total of US$60 million, representing the total capital expenditure of the IPP. This is reflected in the development outcome indicator, which captures an estimated US$20 million in additional private capital mobilized and accounted for in the RSPG project (US$40 million). The cost differential captures increased battery sizing[38] and additional investments, including the Soma substation extension and the connection facilities between the solar plant and the grid, to be covered by the IPP.

II. PROJECT DESCRIPTION

A. Project Development Objective

To improve access to resilient transport and energy infrastructure in selected areas of The Gambia and to strengthen the sectors' capacity in the provision of related services.

[36] Energy Efficiency Framework supported by ESMAP and PPIAF.

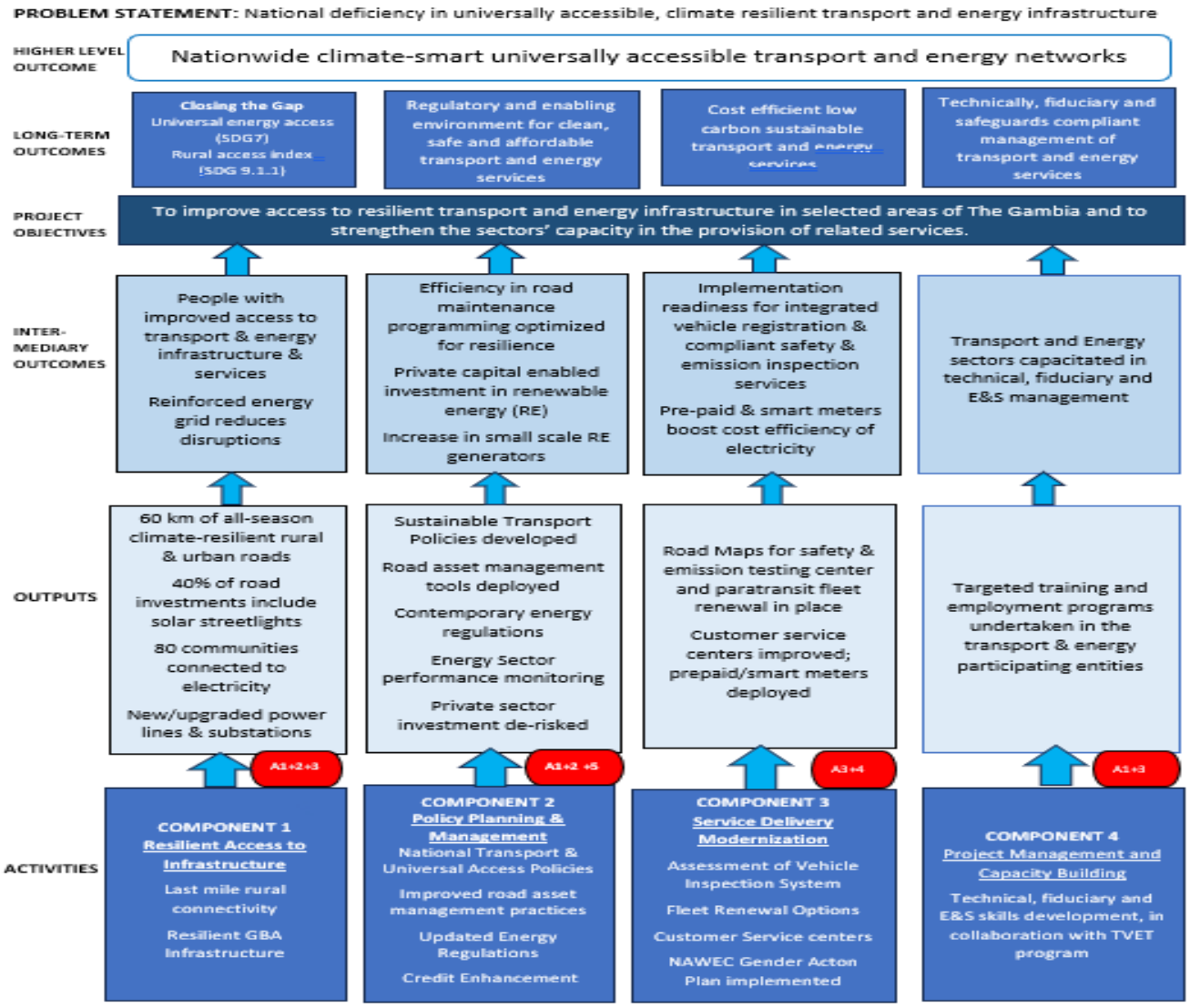
[37] The Strategy focuses on five mitigation actions in transport related to (i) vehicle fuel efficiency standards; (ii) vehicle emission testing; (iii) strengthening public transport system; (iv) roads designed with designated lanes for public transport, bicycles and pedestrians; and (v) introduction of vehicle age limit; it focuses on seven mitigation actions in the energy sector related to (i) solar energy; (ii) wind energy; (iii) improved cook stoves; (iv) power saving devices and appliances; (v) Hydro Energy Power Plant (Sambangalou hydro-electricity Dam); (vi) Capacity building programs and public sensitization in renewable energy development; and (vii) Biomass.

[38] Initial Capex estimates were based on a Battery size of 18 MW/18 MWh, this has been revised to 10 MW/40 MWh to support peak demand.

B. Theory of Change and PDO Indicators

19. **Theory of Change.** The project aims to: (a) upgrade infrastructure access and network resilience through targeted investment in transport and energy investments in rural and urban areas; and (b) build capacity in the management of public service delivery by incorporating modern technologies and incentives for private sector participation. The implicit theory of change is that developing resilient and safe access to transport and energy infrastructure while simultaneously establishing the foundations for contemporary sector policy, planning, and regulation will improve management capacity for higher quality service delivery, ultimately strengthening resilient and safe access to transport and energy systems. Institutional and organizational capacity for road asset management will facilitate more efficient maintenance programming and motorization management interventions will support transitioning to a cleaner and safer vehicle fleet through more stringent vehicle inspection and emission standards. Strengthening the adequacy and responsiveness of the energy sector regulatory framework to increase the penetration of renewables and imports into the energy mix, together with the introduction of energy efficiency performance standards, will support the resilience of energy systems.

Figure 1: Theory of Change



20. Critical assumptions underlying project implementation are: (A.i) continued coordination and mutual support among national and municipal government entities, parastatal organizations and SOEs of the reforms during implementation; (A.ii) no fiscal shocks, geopolitical events or natural disasters during implementation; (A.iii) timely availability of funding and technical resources during implementation; (A.iv) sustained stakeholder ownership of transport and energy modernization across the country; and (A.v) NAWEC/GoTG reaching commercial close for the privately-financed solar and BESS park.

21. **PDO Indicators.** The following indicators are selected to measure achievements towards the expected development outcomes:
    - Direct users that benefit from improved access to sustainable transport infrastructure and services (number of people); disaggretated by number of females and number of youth (number)
    - Inferred beneficiaires of improved access to sustainble transport infrastructure and services (number of people); disaggretated by number of females and number of youth
    - Annual optimized periodic and routine maintenance programs prepared by NRA using contemporary asset management tools (number)
    - People provided with access to electricity through new connections (Number of people); disaggretated by number of females and number of youth (number)
    - Private capital enabled for renewable energy investments (amount/US$)
    - Frequency of outages on MV network in The Gambia reduced (SAIFI) (number)
    - Authorized redistributed generators of renewable energy connected to the grid (number)

C. Project Beneficiaries

22. **The primary beneficiaries are local populations with improved transport and energy access and connectivity**. The direct beneficiaries of upgraded roads are users, while inferred (indirect) beneficiaries include populations living in the catchment areas of the project-financed road segments, defined as the buffer areas within 400 meters of urban roads and within 2 km from rural roads. Road users (direct beneficiaries) from improved road access are estimated at approximately 4,500 daily users. Upgraded urban roads will enhance pedestrian access to public transport, as well as increase accessibility to taxi and gele-gele services. It is estimated that over 40,000 indirect beneficiaries will benefit from rural upgrades and about 65,000 from urban upgrades. The electricity interventions aim to expand and enhance access to electricity for households, businesses, and essential public sector facilities. New rural connections will provide access to an estimated 40,000 people, defined as the number of people who received new electricity services through the project as defined under the multi-tier framework for energy access. In the GBA, 100,000 people are estimated to benefit from improved electricity access. It is expected that in the medium term, the population living in the project's area of influence will benefit from reduced economic and social isolation, improved employment options and will therefore become less vulnerable to economic and external shocks.

D. Project Components

23. **The project is designed as a scalable set of interventions that can contribute to national ambitions for universal energy and transport access.** Synchronizing investments in areas deprived of transport and energy access and services enables complementarity that can increase climate resilience, facilitate the development of agriculture value chains, and enhance private sector development and access to employment for rural and suburban populations. From a long list of 500 km of roads, detailed designs and tender documents for 150 km of prioritized investments[39] and for 225 rural communities lacking electricity access will be prepared by the project. This is intended to foster readiness for future donor-financed or co-financing opportunities. Jointly identifying an initial set of 'first movers' selections based on proximity and anticipated beneficiary catchments, primarily in the Central River region and Banjul area, the project

[39] 100 km of rural roads and 50 km of GBA roads.

aims to construct around 60 km of rural and urban roads and connect 80 communities located within 2 km of the existing electricity network. Small scale infrastructure that enhances low carbon development as well as community and customer satisfaction are intended to improve perceptions of public service delivery. Preparation of road maps for the implementation of contemporary policy and regulatory initiatives can also support scalability.

Component 1: Resilient Access to Infrastructure (total estimated cost of US$38.7 million, of which US$35.2 million IDA Grant and US$3.5 counterpart funding)

24. The component aims to improve transport and energy infrastructure access to rural and urban populations and enhance the resilience of respective systems. Estimated costs include funding for civil works, goods, and consultant services (for feasibility studies, detailed engineering designs and construction supervision). Land acquisition and resettlement costs will be counterpart financed.

25. **Subcomponent 1.A: Last Mile Rural Connectivity.** The subcomponent will improve rural transport and energy access to unelectrified remote villages, that are cut-off from access to crucial markets and services during flood events. The road selection and prioritization for investment has been informed by a climate vulnerability assessment and will consider road criticality for improved connectivity and resilience at network level. The key investments will rehabilitate or upgrade approximately 42 km of rural roads to all-season climate-resilient standards and finance last-mile connectivity to increase electricity access.[40] The investments will support the extension and densification of the grid in 80 rural communities. This will entail the construction of approximately 142 km of medium voltage (MV) lines, 350km low voltage (LV) lines, 92 MV/LV substations and the provision of prepayment meters to rural beneficiaries.

26. **Subcomponent 1.B: Resilient GBA Infrastructure.** The subcomponent will improve urban transport and energy systems to foster safe and reliable delivery of public services in the GBA. Key Investments include:

    (i) Rehabilitation or upgrading of approximately 18 km of urban roads to all-season climate-resilient standards, including universal access to pedestrian infrastructure leveraging opportunities to coordinate solar-equipped street lighting and bus shelters along selected urban road segments to improve access for vulnerable populations and promote modal shift to lower carbon modes.

    (ii) Identify, design and construct one 'active mobility' corridor that incorporates dedicated bicycle lanes and ancillary facilities[41] for bicyclists, pedestrians and vulnerable road users to enhance urban accessibility.

    (iii) Upgrade and construct two primary electrical substations (33 kV/11 kV) with associated transmission line reconfigurations to boost urban grid reliability and efficiency. This will also include the replacement of 10 overloaded secondary substations in the GBA to support resilience and improve overall system reliability.

Component 2: Policy, Planning and Management (total estimated cost of US$9.1 million IDA Grant)

27. The component aims to introduce sustainable approaches for transport and energy sector development, with a focus on creating enabling policies to support road sector development and universal access for transport and developing capacity for road asset management. The component also supports the acceleration of renewable energy access and energy efficiency standards in The Gambia.

28. **Subcomponent 2.A: Sustainable Transport Policies and Road Sector Management**

    (i) Technical assistance for MOTWI. Consultant services for development to road sector policy, regulation, and implementation action plans covering the following areas:

[40] Climate-resilient standards are informed by current and projected climate conditions and address extreme heat and changing rainfall patterns, using engineering and nature-based solutions, soft measures, and innovative technology for (i) systems planning; (ii) engineering and design; (iii) operations and maintenance; (iv) contingency programming; and (v) institutional capacity and cooperation.
[41] Bicycle parking, seating/benches, refuse bins, signage, and wayfinding.

(a) MOTWI Sustainable Transport Policies. The activity will support (i) updating the National Transport Policy, to reconfirm sectoral ambitions that integrate climate change and development pathways to better incorporate long-term strategies for decarbonization, climate resilience, road safety, sector financial management (FM) and public expenditures, supporting market-based practices in cost-recovery, tariff and subsidies, and restructuring of transport services, among other policy positions; and (ii) developing a Universal Access Policy to frame core principals related to universal access, gender considerations in infrastructure and services, and mobility demand management. The policy frameworks will also include implementation action plans to support realization of related initiatives, including a Ministry gender action plan (GAP).

(b) Road sector legislative and regulatory gap analysis of the Motor Traffic Act. The activity will guide MOTWI objectives for codifying institutional mandates related to responsibilities for the road sector, including services, tariff setting, vehicle registration, road safety. The activity will include an implementation action plan, along with recommendations for measures to strengthen regulations.

(c) Road Safety Awareness and Advocacy. The activity will support road safety campaigns, including television and radio media, with a particular focus on sensitizing project areas of influence.

(ii) Technical assistance for NRA. Consulting services and acquisition of goods will support the following:

(a) Road Asset Management. The activity will acquire road asset inventory and condition software, as well as low-cost road inspection equipment for data collection. The activity includes capacity building in road investment prioritization using social, economic, and environmental criteria. It will support the development of multi-year programming of periodic and routine maintenance works.

(b) Resilient Roads. Consultant services will support (i) updating technical specifications for climate-resilient road design for earth, gravel and paved roads, including nature-based solutions; (ii) preparing a Road Maintenance Manual; and (iii) preparation of a quarry map and the quality of materials to be used in construction.

29. **Subcomponent 2.B: Sustainable Energy Enabling Environment**

(i) CEM to enable private sector investment in renewable energy. The activity will provide a US$5 million[42] contribution into an Escrow Account designed to mitigate the risk of NAWEC payment default (as the off taker), to satisfy the obligations of The Gambia as a condition to the private investor's commitment to construct and operate a US$60 million (equivalent) 50 MWp PV plant with BESS located in Soma, The Gambia[43] under a 25 year-power purchase agreement (PPA) with an award to an IPP.[44] The funding will be deposited into an Escrow Bank, exclusively managed by an independent Escrow Agent and exclusively dedicated to make the payments owed to the IPP by the off taker under the PPA, which have not been paid when due by the off taker (See Annex 3).

(ii) Technical assistance for MOPEM. The activity will engage consultant services for institutional capacity supporting (a) the proposed Energy Efficiency Agency and the development of energy efficiency labels and standards; and (b) conduct a renewable energy integration study to support third-party access provisions that facilitate the continued penetration of renewables into the network.

(iii) Technical assistance for PURA. The activity will engage consultant services for institutional capacity for (a) the development of Sector Monitoring Dashboard for transparent reporting of salient indicators; (b) developing recommendations to update regulations that address the directives of the regional electricity regulator for a

[42] An amount equivalent to six months of payment under the Power Purchase Agreement.
[43] The tender process is ongoing with commercial close expected in October 2025.
[44] The IPP includes capital expenditure for the PV plan and BESS components, as well as the Soma substation extension (33/225 kV Substation with two 50 MVA 33/225 kV transformers) and connection facilities (underground cable to be implemented over 400m from the Solar Plant to the Soma Substation), which will then be transferred to OMVG for operation.

compliant regional electricity market and integration of energy imports; and (c) updating the tariff model to create distinct wholesale and retail tariff structures to further support the integration of third-party vendors and a financial recovery plan for NAWEC.

Component 3: Service Delivery and Modernization (total estimated cost of US$3.6 million IDA Grant)

30. The component aims to apply contemporary approaches and innovative finance solutions for improving customer experience in the delivery of transport and energy services.

31. **Subcomponent 3.A: Motorization Management**. The subcomponent includes technical assistance for better enforcement of safe and clean motorization, including innovations for improving the country's vehicle fleet.

    (i) Vehicle inspection and emission testing center assessment. The activity will support consultant services to prepare an implementation roadmap for the transitioning of the GBA vehicle emission inspection center to MOTWI. It will review and make recommendations on institutional arrangements, conduct a financial analysis to forecast revenue, capital and operational expenditures, with consideration for private sector participation, identify technical and equipment requirements, and evaluate human resource skills, including opportunities to train and employ a specific number of women in technical and managerial roles.

    (ii) Vehicle title and registration system, and driver license training. Consultant services to facilitate transitioning the management responsibilities and software integration of vehicle title and registration system, driver license training and driver testing procedures to MOTWI.

    (iii) Design of a vehicle fleet renewal scheme. Consultant services will prepare an options analysis for implementing a fleet renewal process. This will entail a review of institutional and stakeholder mapping, mechanisms to access commercial capital and for modernizing The Gambia's paratransit fleet, financing arrangements, eligibility criteria, and technical requirements for end-of-lifecycle vehicle scrapping.

32. **Subcomponent 3.B: Digitalization and Skills for Energy Services.** The subcomponent includes technical assistance and capacity building to NAWEC to better manage power systems operations, measurement of technical and non-technical losses, cybersecurity support for the "BOKA" information management system (BIMS) and improve customer service touch points:

    (i) Construction/modernization of five customer service centers, including the deployment of prepaid meters to facilitate the replacement of faulty meters[45] and support new customer connections in the GBA.

    (ii) Conducting a smart grid feasibility study. Consultant services to evaluate options for integrating fiber optic and energy system technologies over shared distribution lines to enhance energy efficiency and improve network management of renewable energy sources, including capacity building on cybersecurity measures to protect critical infrastructure and the BIMS.

    (iii) Provide capacity building support to implement NAWEC's GAP, with a particular focus on enhancing women participation in technical and managerial roles.

Component 4: Project Management and Capacity Building (total estimated cost of US$4.7 million IDA Grant)

33. The component will finance project management costs and targeted training programs in the transport and energy sectors:

    (i) Project Management. Consultancy services for (a) individual consultants to support the Central Project Coordination Unit (CPCU), including a dedicated operations manager, FM specialist, and procurement specialist;

[45] Approximately 20,000 first-generation prepayment meters require replacement due to loss of calibration resulting from age-related degradation.

and (b) other specialists that support technical, fiduciary, safeguards, citizen engagement, gender, and monitoring and evaluation (M&E), as needed. The activity also includes project management support.

(ii) Training. Professionalization and management capacity-building activities in technical, fiduciary and E&S roles within MOTWI, NRA, MOPE, PURA, NAWEC and CPCU to foster skills and knowledge for more inclusive human resources. This includes the establishment of a training and apprenticeship program for women in technical roles, in partnership with a Technical and Vocational Education and Training (TVET) institution to provide certified technical training relevant to both sectors.

Component 5: Contingent Emergency Response Component (CERC) (US$0 million)

34. A CERC is included in the project in accordance with the Investment Project Financing (IPF) Policy, paragraphs 12 and 13, for Situations of Urgent Need of Assistance and Capacity Constraints. This will allow for rapid reallocation of uncommitted grant funds in the event of an eligible emergency. To meet CERC activation requirements, the Government will prepare a CERC Manual, submit an Emergency Action Plan (EAP), and meet the E&S requirements agreed in the EAP and ESCP.

Table 1: Project Components and Financing Amounts

	IDA (US$ million)	Counterpart (US$ million)	Total Cost (US$ million)
Component 1: Resilient Access to Infrastructure	**35.2**	**3.5**	**38.7**
1.A Last Mile Rural Connectivity	22.9	1.0	23.9
1.B Resilient GBA Infrastructure	12.3	2.5	14.8
Component 2: Policy, Planning and Management	**9.1**		**9.1**
2.A Sustainable Transport Policies and Road Sector Management	3.1		3.1
2.B Sustainable Energy Enabling Environment	6.0		6.0
Component 3: Service Delivery and Modernization	**3.6**		**3.6**
3.A Motorization Management	2.5		2.5
3.B Digitalization and Skills for Energy Skills	1.1		1.1
Component 4: Project Management and Capacity Building	**4.7**		**4.7**
Component 5: Contingent Emergency Response Component	**0.0**		**0.0**
Total by Financier	**52.6**	**3.5**	**56.1**

E. Role of Partners

Name of Partner	Nature of Involvement
African Development Bank (AfDB)	AfDB-funded technical assistance in the development of a National Transport Master Plan for The Gambia includes urban transport development in Soma and the GBA. Recommendations are expected to inform public and private sector initiatives, as well as consider potential active mobility interventions that can be financed under this project. The National Transport Master Plan is also expected to include a diagnostic of the current vehicle registration system.
Energy Sector Management Assistance Program (ESMAP)	ESMAP supported the development of The Gambia's first national energy efficiency strategy, making significant progress in a nascent sector within the sub-region. The strategy defines key objectives to mainstream the energy efficiency across sectors, with a focus on the public sector, a major electricity consumer. This support was instrumental in identifying opportunities to integrate gender considerations in EE. Broad-based consultations fostered discussions on energy efficiency benefits among key stakeholders, including utilities and the private sector. ESMAP/SRMI are supporting transaction advisory services for the development of the competitively tendered 50 MW Solar + 10 MW/40 MWh BESS in Soma, The Gambia. This is critical in accelerating Gambia's energy transition and lowering production costs.

Name of Partner	Nature of Involvement
Global Center on Adaptation (GCA)	The Global Center on Adaptation (GCA) is preparing (i) Climate Hazard Assessment; (ii) Asset-level Climate Vulnerability and Risk Assessment, and Adaptation Solutions Identification and Appraisal for Energy and Transport; (iii) Technical Guidelines for Implementation of Adaptation measures; and (iv) Network-level Climate Risk and Adaptation Assessment for the Transport Sector, that will be mainstreamed into the project's transport and energy investments. The GCA is also collaborating with African Development Bank (AfDB) to produce a National Transport Masterplan for The Gambia that embeds climate resilience within the future investment prioritization framework.
Green Climate Fund (GCF)	GCF will support the development of MEPS for room air conditioners and refrigerating appliances. This will complement demand side initiatives on the development of an energy efficiency framework for The Gambia. Focus areas will be on public awareness campaigns, capacity building, financing mechanisms and labelling. Additional support to GTSB is under consideration for the construction of testing laboratories for air conditioners and refrigerators.
Global Data Facility (GDF)	A World-Bank-executed GDF grant will provide analytical insights on urban mobility patterns, demonstrating the use case for Mobile Phone Data (MPD) for decision-making. In collaboration with The Gambia Bureau of Statistics, MOTWI, the Ministry of Lands, local government agencies and the University of The Gambia, high-frequency monitoring of MPD for mobility patterns is expected to inform urban transport planning and investment efficiency and equity. This data-driven approach enables government institutions to plan more effectively, ensuring that resources are directed where they are most needed, creating a more inclusive, sustainable, and well-planned urban environment for The Gambia's growing population.
Public-Private Infrastructure Advisory Facility (PPIAF)	Building on the foundation of the Energy Efficiency Strategy supported by ESMAP, PPIAF played a critical role in developing the enabling framework for its implementation, including capacity-building initiatives for key stakeholders. This support encompassed the development of institutional and governance frameworks for EE, as well as coordination mechanisms to streamline efforts. A draft Energy Efficiency law is expected to be adopted in 2025. Additional assistance included market sizing and design support for retrofitting 20 public sector buildings financed by Gambia Electricity Restoration and Modernization Project (GERMP; P163568).
Sub-Saharan Africa Transport Policy (SSATP) Program	The project can leverage the knowledge and experience of SSATP to support the GBA with developing appropriate institutional arrangements and universal access policy, advising reforms in the informal public transport sector, leveraging digitalization to improve the efficiency of public transport, and with capacity development for leadership and skills in urban mobility.

F. Lessons Learned and Reflected in the Project Design

35. **For the NRA's asset management to succeed, the Road Fund must operate effectively, transparently, and sustainably.** The project intends to enhance the governance and financing framework for road infrastructure maintenance and development. The road fund should have a distinct legal basis to function independently from other government budgets. Clear roles for the board, management, and road user representatives are essential for decision-making in the allocation of its dedicated resource base. Transparent, independent auditing and reporting will also be crucial to ensure accountability and build trust among stakeholders, including commercial markets and private sector interests.

36. **Successful public transport reforms entail long-term sector engagements that leverage broad government commitment, open and inclusive stakeholder consultations with the informal sector, and incremental approaches to catalyzing change.** The project design recognizes that institutional development is a cornerstone for public sector capacity to manage the provision of infrastructure and instill market discipline by establishing a conducive environment through appropriate regulation. This approach involves strengthening national ministerial mandates to

manage a vehicle useful-lifecycle program that can remove hazardous and polluting vehicles from the stock, while simultaneously setting a foundation for local government authorities to organize, plan and enforce public transport service standards, routes, and operator concessions. The vehicle inspection and emission testing center will be crucial to the fleet modernization efforts, which must also be accompanied by innovative financial solutions to motivate industry consolidation among the informal sector through access to capital for new, efficient vehicles. The activities enable a phased approach that allows for learning and adjustments over time.

37. **Climate smart investments in the energy sector will be prioritized to ensure the resilience of the power grid against adverse climate events.** The Gambia needs to invest in climate-adaptive infrastructure, promoting sustainability and reducing dependency on external factors that are subject to climate-related risks. The project builds on the successes of the World Bank-financed Jambur solar park. Lessons learned relate to scaling additional Solar PV generation through private sector participation at competitive rates. This will leverage on recent interventions to upgrade overloaded substations and the reconfiguration of power lines. From a customer perspective, beneficiary feedback surveys under GERMP have indicated difficulties in accessing customer centers in rural remote areas. Supporting digital delivery solutions and increased outlet presence will enhance the lived customer experience. Recent experience with NRA's operation and maintenance of solar street lighting installed in the GBA further supports the sustainability of the interventions. This will support addressing legacy issues of unpaid electricity bills from public lighting.

38. **The management of non-technical losses is vital to the energy sector's pathway towards financial recovery.** The deployment of smart meters and pre-paid meters has been a relative success in The Gambia, with over 95 percent of NAWEC's customer base on prepayment meters and billing efficiency above 97 percent in 2024. Despite these gains, issues of pilferage remain on the network in addition to lax payment discipline from "critical"[46] public sector entities on credit meters. The deployment of smart meters and prepayment meters for large consumers has significantly aided NAWEC's revenue collection efforts, particularly from industrial consumers. Increasing its deployment in tandem with remote monitoring capabilities further enhances NAWEC's transition to reduce total system losses.

39. **The project design builds on lessons learned through several World Bank-supported projects and technical assistance.** As the first infrastructure operation under the CPCU, technical coordination between sector institutions (NAWEC, NRA, PURA, TGSB, MoTWI and MOPEM) will be prioritized through a dedicated project implementation team lead by a designated operations manager for each agency. Due to limited technical capacity, an owners' engineer will be engaged to support management of contractors executing physical works for both transport and energy investments. Lessons from recent occupational health and safety incidents in energy projects include embedding robust environmental and social (E&S) monitoring and reporting requirements in the owner engineer assignments. Additional emphasis will be placed on ensuring technical designs minimize resettlement impacts to avoid delays owing to difficulties in addressing property rights and weak in-country land valuation mechanisms.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

40. **The Recipient is the MOFEA.** The implementing agency will be the CPCU, which has been established at MOFEA to oversee cross-sector coordination in the implementation of donor-financed projects.[47]

41. **Project Steering Committee (PSC).** The PSC will ensure overarching governance and policy oversight throughout the life of the project and provide strategic direction, oversight, and coordination with other line ministries. The PSC is

[46] Critical Installations – Ministry of Defense, Ministry of Health, Office of The President

[47] CPCU is currently implementing The Gambia Resilience, Inclusion, Skills, and Equity Project (P179233) financed by the World Bank, and an African Development Bank operation.

chaired by the Permanent Secretary of the MOFEA, co-chaired by the Permanent Secretaries of the MOTWI and MOPEM, and will include, amongst others, representatives of the implementing entities.

42. **CPCU.** The CPCU will receive strategic guidance from the PSC. A Project Coordinator is in place to lead the CPCU, tasked with managing the CPCU portfolio. A full-time Operations Manager financed by the project will be recruited by the CPCU with a direct line of reporting to the Project Coordinator to work exclusively on day-to-day management of the project. The Project Coordinator will serve as the main liaison for the World Bank during implementation and the Operations Manager will provide technical support to the Project Coordinator. The CPCU is responsible for the project's procurement, FM, E&S risk management, public relations, and M&E. The CPCU is staffed by key specialists handling FM, procurement and contracts management, E&S risk management, public relations, and M&E.

43. **Project Implementation Teams (PIT)**. Technical coordinators will be appointed by the line Ministries (MOTWI and MOPEM) and implementation entities (NRA, NAWEC and PURA) as focal points to liaise with the CPCU, in charge of managing the day-to-day operations of relevant project activities. To ensure adequate E&S risk monitoring, the NAWEC and NRA PITs will include each, one social specialist and one environmental specialist. Other relevant staff assigned from respective agencies are expected to be involved in activity design, contract management, payment approvals, and results measurement, as necessary.

44. Implementation arrangements require close collaboration among stakeholder entities:

    (a) **Component 1: NRA and NAWEC** will be responsible for infrastructure construction contract execution for their respective sub-projects. NRA will be responsible for managing the design and supervision of all road infrastructure and ancillary civil works; NAWEC will be responsible for managing the design and supervision of all energy infrastructure and ancillary civil works.

    (b) **Component 2: MOTWI, NRA, NAWEC, MOPEM, and PURA** will be responsible for contract execution for technical assistance to line ministries and agencies. This includes MOTWI technical inputs for the scope of services for transport sector policy, planning and regulation activities. NRA will provide technical inputs on the scope of services for technical assistance, and with specifications for road data management tools. NAWEC will be responsible for the management of the Escrow Account implemented under the CEM. MOPEM will provide technical inputs on the scope of services for energy efficiency and sector policy, as well as PURA technical inputs for energy sector regulation.

    (c) **Component 3: MOTWI and NAWEC** will be responsible for scope of services and contract execution for technical assistance activities. MOTWI technical assistance includes activities for safe and clean motorization management, and in the design of a fleet renewal scheme for paratransit operators. NAWEC will be responsible for technical input and contract management with the modernization of customer service center facilities and vendor support, including the deployment of prepaid meters, as well as implementation of its GAP.

    (d) **Component 4.** A capacity-building program, including technical assistance and training, will be put in place to enhance the stakeholder Ministries, SOE's and CPCU's competencies, as needed, in project management, fiduciary roles, E&S risk management, and M&E for performance measurement.

45. **Project Implementation Manual (PIM)**. A PIM will be developed by the CPCU before the project effectiveness. The PIM will contain institutional detailed arrangements and procedures for project implementation including inter alia: (i) elaborating the delineation of roles and responsibilities of various entities and agencies involved in coordination and execution of activities; (ii) procurement thresholds and procedures; (iii) disbursement arrangements, reporting requirements, FM procedures and audit procedures; (iv) procedures for preparing and reviewing a consolidated annual work plan and budget for each Fiscal Year; (v) project results indicators and M&E arrangements; (vi) contract management arrangements; (vii) arrangement and procedures for mitigating E&S risks and impacts; (viii) grievance redress mechanism (GRM); (ix) public information campaigns, citizen engagement and communication strategies; and

(x) other administrative, financial, technical and organizational arrangements and procedures as shall be required for the project. It will set out the format for the quarterly progress reports and the operating principles for decision making. The FM Manual, Procurement Plan, E&S risk instruments, project implementation agreements with IE's, SEA/SH Action Plan are appendixes to the PIM.

46. **Preparation Advance (PA).** A PA in the amount of US$2.8 million has supported implementation readiness, including: (i) consultant services for the preparation of technical and economic feasibility studies, detailed designs, and tender documents; (ii) preparation of E&S risk management instruments and their disclosure; (iii) organization of workshops, consultations, and surveys; and (iv) recruitment of experts in the CPCU to lead the preparation activities. Additionally, the PA allowed MOTWI to initiate the process of reviewing and advising recommendations for updating The Road Transport Bill, the assignment for which includes an accompanying institutional assessment to guide likely reform pathways across relevant stakeholders to support change management in the vehicle emission and inspection processes.

47. The proposed project will be implemented over a six-year period. A midterm review will be conducted at the beginning of year three in the implementation cycle or when project disbursements reach 50 percent, whichever comes first.

B. Results Monitoring, Evaluation and Verification Arrangements

48. **The results framework describes the development outcome indicators, component-specific intermediate results indicators, and their respective baselines and targets.** The project M&E will be conducted by the CPCU through periodic monitoring using semesterly reports that track progress in terms of distribution of inputs, disbursement of funds, and achievement of targeted indicators as outlined in the Results Framework. Each project status report will be submitted to the World Bank no later than one month after the end of each semester.

49. **The project will utilize appropriate digital tools for collection and analysis of geo-tagged data, including the World Bank Geo-Enabling Initiative for Monitoring and Supervision (GEMS).** GEMS will enable timely reporting and close follow up of project activities implementation and progress in the field. Given the wide geographic coverage of civil works contracts, and the number of local stakeholders potentially affected and benefiting from the project, the open-source digital platform will enable the use of geo-linked photographs, and videos with time and date stamps to enhance visibility of progress at transport and energy activities at sub-project sites. Using simple, low-cost applications such as Kobo Toolbox or Mapillary will allow project teams to systematically supervise interventions while improving the structure and accuracy of their M&E reporting.

50. **Implementation support missions and technical reporting.** The project will conduct biannual implementation support missions to assess progress and promptly resolve challenges, and may increase frequency, if required. Monitoring and supervision reports will cover all aspects of project implementation including design, construction, E&S standards, and review technical assistance deliverables developed under planned consultant services.

C. Disbursement Arrangements

51. **A designated account (DA) has been opened at the Central Bank of The Gambia for the purposes of the PA.** Disbursements under the project will be carried out in line with the World Bank Disbursement Guidelines. A detailed Disbursement and Financial Information Letter (DFIL) explaining all arrangements will be issued and will include the minimum size for withdrawal applications, the ceiling of the DA balance, documentation requirements, and the frequency of applications. The project will follow the transaction-based disbursement method. Direct payment, reimbursement, and special commitment methods will be available to the project and may apply as appropriate. The disbursement procedures, including paths for authorization of withdrawals, will be described in detail in the FM section of the PIM. The DA will function under the signature of the Project Coordinator and the Senior FM Specialist.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis

Technical Analysis

52. **A climate and disaster risk screening and a climate hazard assessment conducted for the project identified multiple hazards that present high-risk for the transport and energy sectors and the communities served**, including extreme temperatures, heavy precipitation, sea level rise, high storm surge, strong winds, dust storms, drought, wildfire, fluvial, pluvial and coastal flooding, and coastal erosion. The Preliminary Climate Risk Screening of the country's transport and energy infrastructure network, developed with support from the GCA[9], concluded that all sites considered for road investments are exposed to floods, particularly in the Upper River and Maccarthy Island regions. Climate projections indicate that flooding will persist as a major risk to infrastructure, exacerbated by rising sea levels and more frequent high-intensity rainfall events that increase the frequency and extent of fluvial, pluvial and coastal floods. The total length of roads exposed to flooding will consistently rise, with direct flood risks increasing by 20-42 percent compared to baseline conditions, indirectly affecting community access to essential services, food distribution, and trade. A road network analysis ranked roads by criticality level based on projected social and economic impacts from climate change. This will be a primary factor considered in the selection and prioritization of roads for investment. Furthermore, the assessment identified fluvial and pluvial flood hotspots where resilience measures will be prioritized. Projected extreme heat was identified as a critical risk factor for energy transmission and substation infrastructure as it decreases the operational efficiency (de-rating) and safety (sag) of energy systems and can lead to significant operational disruptions.

53. **Detailed designs for both rural and urban roads will integrate climate-resilient techniques during design, construction and maintenance phases, including nature-based solutions**. The proposed project will upgrade the 'last km' connectivity rural and urban roads from an earth surface to either a single surface treatment (SST) or double surface treatment (DST) road. Feasibility studies and preliminary design for 500 km of roads are under preparation.[48] These studies will be informed by Network and Asset-level Climate Risk and Adaptation Assessments, incorporating analyses of direct damage to road infrastructure, as well as indirect impacts on trade, food security, and access to essential services. The level of exposure is therefore a primary factor considered in the selection and prioritization of roads for investment, drawing upon the road network analysis, which ranked roads by criticality based on projected social and economic impacts from climate change. Furthermore, the assessment identified fluvial and pluvial flood hotspots where resilience measures will be prioritized. Hydrological studies on all drainage structures will evaluate catchment areas, run-off coefficient, hydraulic slope, design flood discharge and water elevation for the appropriate return period for each drainage and validated through field investigation. Detailed design of 150 km long-list of roads will then prioritize the upgrading of approximately: (i) 42 km of rural roads to all-season climate-resilient standards that improve access to both the primary road network and river jetties, facilitating the transport of ground nut harvest by inland waterways; and (ii) 18 km of urban roads to all-season climate-resilient standard to support road network resilience and public transportation access between suburban neighborhoods, and will include utility corridors (e.g., electric and digital cables). Design-stage road safety audits will be used to identify potential safety concerns and provide recommendations to minimize the likelihood or severity of crashes. Major deviations from the existing road alignments will be minimized.

54. **An assessment to evaluate the current system of motor vehicle technical inspections in The Gambia is anticipated in the early stages of project implementation.** An implementation roadmap for a GBA vehicle emission inspection center will need to be prepared. Consultation with MOI on change management, NEA on enforcement of emission

[48] The NRA *Technical Specifications for Road Works.* Volume II, November 2023, and NRA guidance on road geometric design criteria, are to be reinforced using references to United Kingdom's *Design Manual for Roads and Bridges (DMRB)* or other road design standards/manuals of international best practice that consider current and projected climate conditions.

standards and regulations, and with Ministry of Communication and Digital Economy (MOCDE) on data integration for cross-agency data exchange and systems integration are to be prioritized. The scope and cost estimates for a modern inspection center, its potential location, and inter-agency data management will be guided by a globally recognized framework for Assessments of Vehicle Inspection Systems (AVIS). This will provide a comprehensive diagnostic for defining a reform pathway for modernizing vehicle inspection and certification system, determining an appropriate country-specific implementation framework for road vehicles, and providing realistic and feasible options to ensure improvement in the quality of motor vehicle fleet.

55. **Energy sector investments prioritize unelectrified communities and support the integration of renewable energy sources.** Detailed engineering studies are under preparation. The technical specifications for the substation upgrades and GBA line reconfigurations, particularly on the 33 kV and 11 kV network, will leverage and rely on recently deployed, proven technologies in The Gambia. The reconfiguration of these lines and the substation upgrades will ease pressures on the medium voltage network and in tandem reduce losses. The primary substation upgrades will improve service delivery in the GBA and particularly limit the incidence of load shedding in isolated load centers due to congested substations. Secondary substation upgrades will be within existing NAWEC premises thus limiting land expropriation risks. Their design will be premised on the recently completed packaged substations financed by GERMP, including resilient measures to reduce the asset's climate exposure. The project will consider load data and safety considerations to ensure the adequate size of the secondary substations to be upgraded. Interventions through the project will potentially improve evacuation from the Jambur Solar Park into the new 225kV transmission line (Brikama- Jabang) thus improving service reliability in the load centers. Electricity meters deployed will be wholly prepaid to build on the gains made in improving collection efficiency. Design specifications for new meters under the project will align with existing NAWEC requirements on interfacing with the GERMP-financed information management system. The six-month funded Escrow Account will also allow for the successful financial close of the Soma solar park, a strategic project to increase affordability, energy security and higher renewable share in the mix.

Paris Alignment

56. **The project is aligned with the goals of the Paris Agreement on both adaptation and mitigation.** The project is consistent with and does not hinder achievement of The Gambia's Nationally Determined Contribution (NDC)[49] commitments and advances the country's LTS.[50] The Gambia's NDC and LTS identify mitigation and adaptation actions for the transport sector that are to be financed by this project, namely reducing the carbon footprint of The Gambia's transport sector through the implementation of standards on vehicle fuel efficiency and emissions, and in strengthening public transport systems, and the deployment of climate-resilient roads and drainage systems. The NDC also sets the goal of identifying 89-megawatt (MW) utility scale photovoltaic (PV) installations among its climate mitigation targets. This goal is enabled by the renewable energy sector policies and regulatory frameworks developed through the project, supporting the further penetration of renewable energy into the grid. The World Bank project team will ensure that all eligible activities included in the CERC Manual are aligned with the Paris Agreement. Typical CERC activities include immediate emergency preparedness and response activities that are temporary and timebound and are considered low risk.

57. **Assessment and Reduction of Mitigation Risks.** There are no lower carbon alternatives that can achieve the desired development objectives, and there is low likelihood of carbon lock-in from the project as it does not enable emissions-intensive assets. Most investment activities are assessed as universally aligned (UA), e.g., rural road rehabilitation with no risk of contributing to deforestation; upgrading of urban roads and streets on existing roads not leading to capacity

[49] Second Nationally Determined Contribution of The Gambia; December 2021. Available at: https://unfccc.int/sites/default/files/NDC/2022-06/Second%20NDC%20of%20The%20Republic%20of%20The%20Gambia-16-12-2021.pdf
[50] The Gambia's Long-Term Climate-Neutral Development Strategy 2050, 2022. Available at: https://unfccc.int/sites/default/files/resource/Long_Term_Climate_Change_Strategy_of_The_Gambia_Final.pdf

expansion; and electricity T&D and energy storage. The project also contributes to GHG emissions mitigation objectives and targets through deployment of NMT facilities, solar-equipped public ancillary infrastructure, and nature-based solutions that deliver on both mitigation and resilience objectives. Activities to strengthen the enabling environment for private sector participation, enhance the capacity of public administration, asset management, and public safety do not hinder mitigation goals. Public investment in electric mobility is not considered appropriate at this stage of The Gambia's just transition, where a lack of charging infrastructure, grid instability, energy production mix, low affordability and low access to finance are all impediments to wider adoption. However, e-mobility policy considerations will be explored as part of technical assistance activities to support universal access. The establishment of a Gele-Gele fleet renewal scheme to incentivize the formalization and modernization of The Gambia's public transport paratransit is a non-UA activity as newer vehicles may use more efficient, lower emission internal combustion engines and fossil fuels, but the risk of carbon lock-in is low.

58. **The project supports risk reduction measures aligned with the 'Avoid, Shift, Improve + Resilience' (ASI+R) Framework in the transport and energy sectors[51] to reduce mitigation risks to a low level.** The project supports motorization management and improvements in the country's vehicle fleet through the establishment of a vehicle inspection and emissions testing center in the GBA. The project will facilitate universal access and sustainable land-use strategies through investments in bus bays and NMT facilities, and the integration of solar-powered streetlighting to enhance the safety and attractiveness of walking and cycling, incentivizing shifts in transport demand to less emission-intensive modes like public transport and NMT. To achieve sustainable and resilient energy systems through ASI+R framework, the project aims to (a) avoid unnecessary energy consumption and reducing energy demand by promoting energy-efficient appliances and lighting; (b) enable a shift towards the use of renewable energy sources to provide clean and sustainable energy to rural communities; (c) improve energy infrastructure to reduce T&D losses; as well as explore smart grid technologies to optimize energy distribution and manage demand more effectively; and (d) enhance the ability of energy systems to withstand and recover from adverse climatic events through nature-based solutions, such as planting trees and creating green buffers around energy infrastructure, to protect against environmental hazards. The project is therefore assessed to be aligned with the Paris Agreement from a mitigation perspective.

59. **Assessment and Reduction of Adaptation Risks.** The project has been screened for climate change and disaster impacts. The Climate Adaptation Solutions Identification and Appraisal Study for the Energy and Transport Sectors, supported by GCA, is defining design solutions and targeted resilience measures to climate-proof road and energy infrastructure and to address climate risk hotspots. These measures will be incorporated in the feasibility studies, preliminary design and detailed engineering for the rehabilitation of rural and urban roads, and the deployment of energy infrastructure. These resilience-enhancing measures include the deployment of enhanced stormwater drainage infrastructure for flood protection, appropriate soil stabilization works, and the deployment of cost-effective structural and nature-based adaptation measures that reduce flood and extreme heat risks for energy and transport infrastructure. The project integrates climate resilience measures in its design reducing the residual climate risk to an acceptable level. The project is therefore assessed to be aligned with the Paris Agreement from an adaptation perspective.

Citizen engagement

60. **The project will adopt a robust approach to citizen engagement by involving all stakeholders including beneficiaries and affected people, inclusive of location, age, education, gender, disability, ethnicity and poverty.** It will undertake consultations with the beneficiaries and stakeholders regularly throughout the project cycle. To reach as many stakeholders as possible in an inclusive way, stakeholder engagement and public participation activities will use both

[51] Avoid, Shift, Improve + Resilience Framework. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, 2019 (In English). Available at: https://www.transformative-mobility.org/wp-content/uploads/2023/03/ASI_TUMI_SUTP_iNUA_No-9_April-2019-Mykme0.pdf

traditional (community meetings and focus groups) and innovative participatory tools (use of social media and web-based platforms). User satisfaction surveys will be conducted to capture beneficiary feedback on project supported investments. Feedback gathered from survey respondents will be used to inform and strengthen project implementation. Two citizen engagement indicators will track levels of satisfaction with project delivered services. The project's GRM will be open to register grievances of citizens from all groups and provide notifications and outcomes back to the concerned citizens.

61. **Grievance Redress Mechanism (GRM).** A project specific GRM will be established to allow affected stakeholders to raise grievances and seek redress when they perceive that a negative impact has arisen from the project interventions. GRM procedures will be formulated in consultation with relevant government and civil society stakeholders to handle complaints and issues related to project interventions. The project GRM will be designed to collect, review and address stakeholders' concerns, complaints, and grievances. This process will be carried out using dedicated communication materials, which will be developed to help stakeholders become familiar with the grievance uptake channels and procedures. The GRM will be accessible to all stakeholders throughout the project implementation and will also be applicable to any contractor that will provide services during the operations phase. The GRM will also include specific procedures to address complaints related to sexual exploitation, abuse, and harassment (SEAH); referral to gender-based violence (GBV) service providers and will include confidential survivor-centered complaint-management protocols. It will be operated by the CPCU on behalf of the implementing entities. Specific actions and tools are included in the project's Stakeholder Engagement Plan (SEP). Funding for operating costs is allocated for public and internal government consultation processes, when necessary.

Gender

62. **The project will contribute to closing some of the gender inequalities identified in the transport and energy sectors.** Under component 1, urban and rural road upgrades will generate increased physical access for women to existing markets and obstetric care facilities. Road upgrades will incorporate or improve walkability, providing lighting to foster personal safety in urban areas, particularly for women. Boosting access to clean and efficient energy and improving urban grid reliability will contribute to ease women's household chores and increase time savings. In addition, under component 2, the project will support the development of a Universal Access Policy for the transport sector, which will include approaches to making transport planning more inclusive for both genders, while Component 3 will directly support NAWEC with the implementation of targeted actions related to training and skills development identified in its GAP. Under component 3, the development of Ministerial-level GAPs will include international best-practices to foster women's employment, such as the introduction of family-friendly policies, dedicated childcare facilities and lactation rooms for young mothers, and promoting a safer workplace environment for women, which will lead to increase women's employment in both sectors. Under Component 4, to promote women's employment in both the transport and energy sectors, the project will finance the establishment of a training and apprenticeship program for women in technical roles, in partnership with a TVET institution providing certified technical training relevant to both sectors. Such interventions will leverage on the advocacy, mentoring and knowledge sharing platform of the Forum for Women in Energy network launched in March 2025 by enhancing outreach and visibility for trained women connecting them with job opportunities in NAWEC and beyond to promote a more inclusive energy sector. The project will also support GBV prevention through communication campaigns to prevent and respond to sexual harassment in the communities, as the share of women in The Gambia that have experienced intimate partner violence (25 percent) is comparable to the world average (27 percent).[52]

Economic Analysis

[52] World Bank Gender Data Portal. https://genderdata.worldbank.org/countries/gambia-the

63. **The project is expected to generate positive economic benefits**. Transport and energy infrastructure connectivity plays a key role in populations' access to jobs, markets, and social services, as well as businesses' access to investment opportunities.

- The Roads Economic Decision model (RED model) was applied using typical rural and urban road sections included in the 500 km longlist proposed to be upgraded by the project. The 500 km includes 350 km of rural roads from which about 42 km will be selected for upgrading, and 150 km of urban roads from which about 18km will be selected. Both the rural and urban road selections from 500 km aim to provide 'last-km' connectivity and so have relatively low traffic levels.[53] This model uses time savings, vehicle operating cost savings, and road crash data as their measure of benefits and road construction and maintenance costs, as well as incremental costs for climate change adaptation, increase in GHG emissions, road safety interventions, E&S mitigation and expropriation costs. Cost-benefit analysis for the project roads indicates that the Economic Internal Rate of Return (EIRR) is 6.3 percent. The Net Present Value (NPV) is US$6.9 million at a discount rate of 6 percent, indicating that the project is marginally economically justified. However, the benefits of increased accessibility to markets, schools, and medical or other services have not been included. For rural and urban last mile connector roads such as those included in this project, these wider economic benefits could be expected to increase the EIRR by up to 50 percent (e.g., an EIRR between 9 – 10 percent). Sensitivity analysis shows that for the scenario with a 20 percent increase in construction costs, the EIRR is 5.8 percent. With a 20 percent decrease in benefits, the EIRR is 5.5 percent.
- An economic evaluation of the investments in expanding rural energy access and enhancing GBA energy grid resilience was conducted. The cost-benefit analysis for the energy investments includes construction and maintenance costs, as well as incremental costs for climate change adaptation, and E&S mitigation and expropriation costs. The main benefit of improved rural grid connectivity was assessed as 45 percent lower energy costs for the newly connected households against counterfactual diesel use. The additional benefits of reduced local emissions and indoor pollution from domestic wood and charcoal burning were not included as the extent of use of each of these is unknown. An EIRR of 11.7 percent and a NPV of US$6.3 million at a 6 percent discount rate is observed for rural energy access. Evaluation of enhancing the GBA grid resilience considered the benefits of reduced outages, transmission losses, and reduced T&D maintenance costs. The estimated EIRR was 6.2 percent and the NPV US$0.09 million at a 6 percent discount rate. The weighted average EIRR of these two subcomponents is 8.2 percent and the NPV is US$4.5 million. Sensitivity analysis shows that for a scenario with a 20 percent increase in construction costs, the weighted average EIRR is 6.6 percent. With a 20 percent decrease in benefits, the EIRR is 5.9 percent.

Financial Analysis

64. **A Fully Funded Escrow Account will be opened at an Escrow Bank jointly agreed by the private sector, NAWEC, The Government of Gambia (GoG) and the World Bank for the purposes of the CEM**. Through ESMAP/SRMI funding, a US$1.35 million grant has been provided to support the development of a 50 MWp solar PV plant with a 10 MW/40 MWh BESS in Soma, The Gambia. This support includes transaction advisory services under the Regional Solar Park Operation (P504421). With a total capital expenditure of US$60 million, the plant is key in accelerating the country's transition away from costly and polluting HFO generation, which has severely strained the financial position of the utility with a reported net income margins of –30 per cent in 2024. The forecasted levelized cost of energy (LCOE) is over 50 percent lower than the current average generation cost, which is above US$0.15/kWh. Using the World Bank's Electricity Planning Model, the PV+BESS project demonstrates profitability across multiple scenarios, with a positive NPV ranging from US$28 million to US$63 million, and a baseline NPV of US$34 million. Additionally, the project is expected to mitigate a total of 0.5 Mt of CO_2 emissions (see Annex 3). The CEM will help de-risk the

[53] Given these low traffic levels, they were excluded from both the Rural Regions Traffic Survey undertaken by the NRA in 2020 and the Greater Banjul Traffic Survey of 2022, as both surveys focused on major roads.

investment, with an expected US$5 million in support projected to enable an additional US$20 million in private capital.

65. **The Escrow Account will be funded out of the IDA grant for The Gambia Infrastructure Project and will cover the equivalent of six months of PPA payments from NAWEC to its private-sector partner.** The Account will be governed by an Escrow Agreement and will remain available for the entire 25-year term of the PPA, as required under the PPA. Funds will be disbursed to the Escrow Account on the basis of the Escrow Agreement. Both the conclusion of that Escrow Agreement and financial close of (that is, readiness for disbursement of the financing for) the Soma solar park project is a pre-condition to disbursement of the IDA grant for the initial funding of the Account. This will ensure that the Soma solar project is in fact ready for construction prior to disbursement of the IDA grant portion allocated to it.

66. NAWEC's private-sector partner under the Soma solar project may draw on the Escrow Account in the event of a delay in PPA payments to the partner on the part of NAWEC, following any applicable cure period and fulfilment of other requirements under the PPA and Escrow Agreement. In the event of such a draw by the private-sector partner on the Escrow Account, NAWEC is required to replenish the Account to its original balance within 14 days of such draw. If NAWEC fails to do so, The Government of The Gambia is then responsible for replenishing the Escrow Account within 30 days of that 14-day deadline. A lack of the minimum required balance in the Escrow Account beyond a certain period would result in a NAWEC default under the PPA and potential cause for termination of the Agreement by the private-sector partner.

Climate Change

67. **A GHG emissions analysis for transport and energy investments** was carried out to assess the level of emissions resulting from the project using the World Bank Group's approved methodology[54] and the Road Economic Decision (RED) Model.[55] The total net GHG emissions from transport activities are estimated to be 20,983 tCO2 during the economic life of the project. The increase in carbon dioxide (CO_2) emissions results from an increase in travel demand, which outweighs the emissions savings that result from the optimization of vehicle speeds that enhances fuel efficiency. The project gross CO_2 emissions (with project scenario) for transport activities are estimated at 344,093 tons and the baseline CO_2 emissions (without project scenario) are estimated at 323,110 tons. The GHG emissions analysis for connecting 5,000 rural households to the national electricity grid indicated a total net emissions reduction of 7,788 tCO_2 during the economic life of the project. The without-project emissions, based on electricity from diesel generators, are calculated to be 85,800 tCO_2 and the with-project emissions, based on electricity from the national grid, are calculated to be 78,012 tCO_2, during the economic life of the project (20 years). The assessment did not include the impact on emissions from other energy activities as the finance allocated is below US$5 million, making the activities exempt from the GHG accounting assessment requirement. When considering the Shadow Price of Carbon (SPC)[56], the project NPV is US$6.9 million and US$1.5 million, and the EIRR is 6.3 percent and 5.5 percent, with low and high SPC, respectively.

B. Fiduciary

(i) Financial Management

68. **The overall FM risk for the project is rated Substantial.** An FM assessment was conducted to evaluate the adequacy of FM arrangements at the CPCU. The scope of the assessment covered an evaluation of the existing FM systems for (a) recording all budgets, transactions, and balances; (b) supporting the timely preparation of reliable financial

[54] GHG emissions assessment was conducted using the World Bank Group approved methodology: Measurement for Mitigation – Greenhouse Gas Analysis for Low emissions Transport. Andreas Dietrich Kopp. 2016.

[55] Archondo Callao, Rodrigo. Roads economic decision (RED) model: software user guide and case studies (English). Sub-Saharan Africa Transport Policy Program (SSATP) working paper series, no. 78 Washington, D.C.: World Bank Group. Available at URL.

[56] The Shadow Price of Carbon in Economic Analysis – 2024 Guidance Note. World Bank.

statements; (c) safeguarding the entity's assets; and (d) ensuring effective auditing arrangements. The assessment complied with the FM Manual for World Bank-Financed Investment Operations that became effective on March 1, 2010, and was last revised in September 2021. The assessment revealed that: (i) the CPCU is well staffed with the relevant experience and expertise to lead World Bank-financed operations; (ii) the project's internal control framework is defined by a manual of procedures, which outlines satisfactory internal rules and controls; (iii) the existing accounting system, the Integrated Financial Management Information System (IFMIS), is adequate; (iv) the Internal Audit Directorate (IAD) of MOFEA conducts audits for CPCU's projects; (v) the CPCU is familiar with World Bank financial reporting and auditing requirements with no noted delays in report submissions; (vi) external auditors issued an unqualified opinion on the most recent financial statements; and (vii) the disbursements arrangement are functioning effectively. The overall conclusion of the FM assessment is that: (i) the FM arrangements for the proposed project are considered adequate; (ii) the funds flow, disbursements, reporting, auditing, and supervision arrangements have been designed to align with the implementation framework; and (iii) the residual FM risk associated with the project is rated as substantial. However, the assessment identified the following key risks: (i) the project complexity due to its multisectoral nature and numerous stakeholders, which can cause accounting errors and delayed financial reporting; and (ii) challenges related to replenishing the Escrow Account for the CEM.

69. **The following specific mitigating measures will be implemented to address the identified FM risks**: (i) a PIM will be prepared, prior to Effectiveness, including a section outlining FM arrangements acceptable to the World Bank. The manual will detail specific budgeting, fund flow, disbursement arrangements and eligible expenditure; and (ii) an Escrow Account agreement for the CEM will be developed (a disbursement condition). In addition, the following measures should be implemented no later than three months after project effectiveness: (i) customization of the existing accounting software to incorporate the project's bookkeeping and enable the generation of interim financial reports and financial statements; (ii) inclusion of the project within the scope of the IAD; (iii) recruitment of an external auditor to conduct the project audit or the signing of a Memorandum of Understanding with the National Audit Office to carry out the audit. Furthermore: (i) the recruitment of a Senior FM Specialist, a position currently vacant, should be finalized within one month of project effectiveness, ensuring that the FM team remains in place throughout the project implementation; and (ii) disbursements will be made through a DA, established at The Gambian Central Bank.

(ii) Procurement

70. **Procurement activities will be carried out by CPCU in accordance with (a) the World Bank's Procurement Regulations** for Investment Project Financing Borrowers (February 2025); (b) the "Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants," (revised as of July 1, 2016) and other provisions stipulated in the Financing Agreement (FA). The CPCU will use the Systematic Tracking of Exchanges in Procurement (STEP) system for planning, recording and tracking procurement transactions.

71. **A procurement capacity assessment of CPCU was carried out by the World Bank.** The assessment concluded that the CPCU has good track records managing projects financed by major international donors, including the World Bank such as the Gambia Fiscal Management Development Project (P166695) and the ongoing Gambia Resilience, Inclusive Skills, and Equity (RISE) Project (P179233). CPCU has more experience in implementing FM projects, while its experience in infrastructure projects is comparatively limited. The CPCU's workload is high, with only two procurement specialists and one assistant managing procurement for all projects, including RISE, IGPISP (funded by AfDB), the Debt Management and Domestic Revenue Institutional Support Project, and the BADEA Project. STEP is not updated on a regular basis and some important procurement documents are not uploaded, particularly for post review contracts as well as the contract management module. Delays are also noted in the implementation of the procurement plan.

72. **Procurement activities and Project Procurement Strategy for Development (PPSD):** The activities include complex procurement of works with high estimated costs for both transport and energy, for a total amount of US$34 million. The CPCU engaged a consultant to develop the PPSD. The World Bank reviewed the PPSD and agreed to the initial 18

month procurement plan discussed during negotiations. The PPSD will aim to advance the use of procurement as a means for sustainable development, taking into consideration social, environmental, and economic impacts. World Bank's sustainable procurement guidance documents will be followed, and international best practices will be integrated as much as possible. Infrastructure contractors can be required to meet: (i) multiple uses/benefits of construction works; (ii) environmental Co-Benefits; (iii) social Co-Benefits and job creation; and (iv) climate actions. During the preparation phase, the team liaised with beneficiaries to identify their sustainability priorities, such as policy screening and community needs and expectations; conducted market research; and initiated the relevant procurement process to be designed and reflected in the PPSD.

73. The PIM will include a detailed section on procurement, particularly on complaints management and contract administration. The PIM will also outline the working relationships between the CPCU and other key project stakeholders like the NRA, NAWEC, MOTWI, MOPE, and PURA. Due to the complexity of procurement activities, a Hands-on Expanded Implementation Support (HEIS) consultant will be enlisted to support the CPCU in handling the major procurement activities under the project. The role and responsibilities of the HEIS will be determined according to the rules and procedures outlined in the World Bank Guidance "Procurement Hands-on Expanded Implementation Support-HEIS" as of March 4, 2019.

74. **The risk associated to the procurement is assessed as "High" but reduced to a residual risk rating of "Substantial"** in view of the following articulated risk mitigation measures: (a) strengthening the procurement unit with the recruitment of an additional Procurement Specialist fully dedicated to the project; (b) having onboard at least one procurement assistant or intern to upload the procurement documents in STEP; (c) developing a PIM that will outline the working relationships between the CPCU key stakeholders (production of terms of references/technical specifications, evaluation of bids/proposals, etc.); (d) establishing a contract management team within the CPCU for the monitoring of contract execution; and (e) enhancing the internal control system of the CPCU at all stages of the procurement processes.

C. Environmental, Social and Legal Operational Policies

75. **The E&S risks are rated substantial.** These risks predominately relate to the major civil works for road rehabilitation and energy grid upgrades (under Components 1 and 3). Recipient capacity and contractor/sub-contractor familiarity with the Environmental and Social Framework (ESF) has also been factored into the risk rating. Key environmental risks include those associated with civil work and the exploitation of the proposed infrastructure, such as the loss of vegetation cover and wildlife habitat during civil works site preparations, and quarry areas for materials, ground and surface water pollution, increase of GHG, soil degradation and pollution associated with waste management (i.e., building, road and energy infrastructure construction wastes, and e-waste). Key social risks include loss of land and other assets or access to livelihood and communicable diseases, vulnerable and disadvantaged groups and individuals. Risks related to gender-based violence may be noted and exacerbated by the potential influx of workers from Senegal or other countries in the sub-region and the proximity of male workers to communities, especially vendors and young girls.

76. Other E&S risks encompass occupational and community health and safety hazards, including workplace and traffic dangers for workers and communities during civil works. These include nuisances such as noise and vibration, air pollution, exposure to extreme weather conditions, dust, and the transmission of communicable diseases. Due to the undefined scope and exact locations of the infrastructure projects and technical assistance activities, a framework approach has been adopted to guide the preparation of various instruments. The Recipient prepared and disclosed a Stakeholder Engagement Plan (SEP) on April 18, 2025, which includes a grievance mechanism. An Environmental and Social Management Framework (ESMF) was also developed, incorporating a Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) action plan. Additionally, a Resettlement Framework (RF) and Labor Management Procedures

(LMP) were created and disclosed[57]. The Environmental and Social Commitment Plan (ESCP) was disclosed prior to the Negotiation meeting. The ESCP outlines commitments to prepare site-specific Environmental and Social Management Plans (ESMPs) and Environmental and Social Impact Assessments (ESIAs), as well as capacity-building activities for managing environmental and social risks. The ESCP includes the commitment to prepare the site-specific Environmental and Social Management Plans (ESMPs) and Environmental and Social Impact Assessments (ESIAs), as well as capacity-building activities in E&S risk management. The ESMF includes procedures for E&S screening of future infrastructure subprojects; E&S management planning processes for addressing negative externalities during project implementation; a system for monitoring the implementation of mitigation measures; E&S risk management capacity building measures; a grievance mechanism with guidance on the reception, recording, handling, and reporting of complaints; inclusive of an estimated budget.

77. The oversight of any potential E&S risks and impacts that could be related to the implementation of the project's activities will be monitored by the E&S experts already recruited by the CPCU. The CPCU will work in close collaboration with the National Environment Agency (NEA) to ensure compliance with national environmental laws, policies, and regulations. The E&S experts at the CPCU have experience in implementing World Bank funded projects including The Gambia Resilience, Inclusion, Skills, and Equity Project (P179233) and The Gambia Public Administration Modernization for Citizen Centric Service Delivery (P176924). Those projects are active, and the overall performance rating is satisfactory. In January 2025 the CPCU participated in the ESF capacity building five-days training organized by the World Bank in The Gambia. The E&S experts within the CPCU will coordinate with the E&S experts from the implementing entities, including NRA and NAWEC. CPCU will hire an additional environmental and social assistant within one month of the Effective Date and maintain those positions throughout the Project implementation.

78. NAWEC has a well-established PIU staffed with E&S experts that are experienced in implementing and monitoring ESSs. To ensure adequate E&S risk monitoring, each of NAWEC and NRA will hire one social specialist and one environmental specialist within two months following the project's effectiveness. These positions will be maintained throughout the implementation of the project. The Recipient's capacity will be strengthened to meet the objectives of the World Bank's environmental and social standards.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Area OP 7.60	No

Grievance Redress Services

79. ***Grievance Redress.*** Communities and individuals who believe that they are adversely affected by a project supported by the World Bank may submit complaints to existing project-level grievance mechanisms or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the Bank's independent Accountability Mechanism (AM). The AM houses the Inspection Panel, which determines whether harm occurred, or could occur, as a result of Bank non-compliance with its policies and procedures, and the Dispute Resolution Service, which provides communities and borrowers with the opportunity to address

57 The documents are accessible via this link: https://operationsportal4.worldbank.org/esms/projects/P504762/documents

complaints through dispute resolution. Complaints may be submitted to the AM at any time after concerns have been brought directly to the attention of Bank Management and after Management has been given an opportunity to respond. For information on how to submit complaints to the Bank's Grievance Redress Service (GRS), visit http://www.worldbank.org/GRS. For information on how to submit complaints to the Bank's Accountability Mechanism, visit https://accountability.worldbank.org.

V. KEY RISKS

80. **The overall project risk rating is assessed as substantial.** The risk descriptions and mitigation measures are as follows.

- **Political and governance risk is substantial.** The Gambia faces a complex political economy, thin organizational capacity, and underlying political tensions. Institutional and fiscal reforms, particularly in the road sector and in urban transport management, will rely on coordination among several national and municipal government entities, parastatal organizations and SOEs. Vested interests among the political class, interference and a weak anti-corruption framework may compromise policy outcomes or result in policy reversals or inaction, which could jeopardize project results. The risk will be partially mitigated through dialogue and close collaboration with government entities, as well as proactive engagement by the World Bank, should issues arise.
- **Macroeconomic risk is substantial.** The Gambia is susceptible to external shocks, including those related to global economic conditions and geopolitical events, with the ensuing global commodity price volatility and disruptions of global supply chains. Together with an abrupt global slowdown, these shocks could weaken The Gambia's economic recovery, intensify fiscal pressures, adversely affect the debt profile, and heighten inflation and pressures on the balance of payments and currency, with impacts on the cost of imported fuel, NAWEC's cost recovery and construction materials. Localized climate shocks could also impact the macroeconomic implications on implementation. This risk will be partially mitigated by inclusion of price contingencies in project cost estimates, project interventions that directly support strategic planning and investment in climate-resilient infrastructure that are expected to improve the efficiency of investment in both sectors by ensuring adequate funding as a measure to increase fiscal resilience for asset management.
- **Technical design risk is substantial.** The technical design risks relate primarily to inherent complexities with activities that require multisectoral coordination, and an expectation of a transition of institutional mandates related to data integration of vehicle registration, licensing, and vehicle safety inspections. Technical assistance to mitigate this risk will inform investment requirements for construction and equipping facilities, including the enablers for private sector provision of services, as well as the institutional capacity considerations to administer the system, data platforms, communication and awareness-raising, fraud control and training requirements. NAWEC has extensive experience in deploying large scale infrastructure, which will be utilized to minimize attendant impacts in addition to leveraging on the expertise of supervising engineers.
- **Institutional capacity for implementation and sustainability risk is substantial**. The project interventions involve multiple implementing ministries and their respective agencies. This engenders risks in timely coordination, which will be partially mitigated by the recruitment of a dedicated operations manager and fiduciary specialists, as well as funding available to capacity development to strengthen knowledge and skills for enhanced implementation capacity. However, few residual risks persist, particularly with the limited experience of the CPCU on multi-sectoral operations, and the risk of low engagement and project ownership by the implementing agencies (NRA, NAWEC, MOPEM and MoTWI). In addition, the limited capacity of the NRA and NAWEC in integrating climate resilience aspects embedded in prioritization of road and energy infrastructure investments, as well as fiscal gaps for maintenance of additional asset inventories, imparts substantial residual risks on project sustainability.

- **Fiduciary risk is substantial.** The main risks emanate from the use of more sophisticated instruments (e.g. CEM) under Component 2. Government ownership of the Escrow Account, and responsibility for replenishment should NAWEC fail to meet the agreed time-bound commitments, may obfuscate accountabilities. Additionally, the return on investment from grant proceeds held in the Escrow Account may be negligible should replenishment ultimately fall on government and eroded by NAWECs diminished accountability. Further risks emanate from the multi-stakeholder nature of the project which may induce reporting errors and delays in the provision of accurate financial reports. The risk is partially mitigated by the involvement of the CPCU, which has procurement and FM experience with IDA-financed projects.
- **Environmental and social risk is substantial.** These aspects are addressed in the environmental and social section above, including the identification of associated risks and corresponding mitigation measures for each risk.
- **Stakeholder risk is substantial**. The Gambia Transport Union is an industry association that has become a powerful voice representing its members interests (e.g., public transport and truck drivers, and owners of transport businesses) on matters related to technical and economic regulation in the road sector. Activities supporting formalization and modernization of public transport services, including enforcement of vehicle inspections and professionalization of drivers, could be met with resistance. Proper citizen engagement and stakeholders' consultations will ensure reform timelines are appropriately calibrated to market dynamics.

II. RESULTS FRAMEWORK AND MONITORING

PDO Indicators by PDO Outcomes

Baseline	Period 1	Closing Period
Improved resilience of transport infrastructure access and capacity in the provision of transport services		
Direct users that benefit from improved access to sustainable transport infrastructure and services (Number of people) CRI		
Jul/2025	Jun/2028	Jun/2031
0	1,500	4,500
➢Direct users that benefit from improved access to sustainable transport infrastructure and services - Female (Number of people) CRI		
Jul/2025	Jun/2028	Jun/2031
0	750	2,250
➢Direct users that benefit from improved access to sustainable transport infrastructure and services - Youth (Number of people) CRI		
Jul/2025	Jun/2028	Jun/2031
0	500	1,500
Inferred beneficiaries of improved access to sustainable transport infrastructure and services (Number of people) CRI		
Jul/2025	Jun/2028	Jun/2031
0	52,500	105,000
➢Inferred beneficiaries of that benefit from improved access to sustainable transport infrastructure and services - Female (Number of people) CRI		
Jul/2025	Jun/2028	Jun/2031
0	26,000	52,000
➢Inferred beneficiaries of improved access to sustainable transport infrastructure and services - Youth (Number of people) CRI		
Jul/2025	Jun/2028	Jun/2031
0	20,000	40,000
Annual optimal periodic and routine maintenance programs prepared by NRA using asset management tools. (Number)		
Jul/2025	Jun/2028	Jun/2031
0	0	3
Improved resilience of energy infrastructure access and capacity in the provision of energy services		
People provided with direct access to electricity through new connections (Number of people) CRI		
Jul/2025	Jun/2028	Jun/2031

0	20,000	40,000
➢People provided with direct access to electricity through new connections - Female (Number of people) CRI		
Jul/2025	Jun/2028	Jun/2031
0	10,000	20,000
➢People provided with direct access to electricity through new connections - Youth (Number of people) CRI		
Jul/2025	Jun/2028	Jun/2031
0	7,600	15,200
Private capital enabled for renewable energy (Amount(USD))		
Jul/2025	Jun/2028	Jun/2031
40,000,000	60,000,000	60,000,000
Frequency of outages on MV network in The Gambia reduced (Days)		
Jul/2025	Jun/2028	Jun/2031
250	200	120
Authorized redistributed generators of renewal energy connected to the grid (Number)		
Jul/2025	Jun/2028	Jun/2031
0	2	10

Intermediate Indicators by Components

Baseline	Period 1	Closing Period
Resilient Access to Infrastructure		
Rehabilitated or upgraded rural and urban roads to all-season climate-resilient standards (Kilometers)		
Jul/2025	Jun/2028	Jun/2031
0	20	60
Proportion of urban roads with solar equipped street lighting (Percentage)		
Jul/2025	Jun/2028	Jun/2031
0	20	40
Beneficiary satisfaction with access to all season roads (Percentage)		
Jul/2025		Jun/2031
0		80
Transmission lines constructed (Kilometers)		
Jul/2025	Jun/2028	Jun/2031

0	30	175
Beneficiary satisfaction with improved access to resilient energy infrastructure (Percentage)		
Jul/2025		Jun/2031
0		80
Climate resilient substations constructed (Number)		
Jul/2025		Jun/2031
0		2
Policy, Planning and Management		
MOWTI adopts updated National Transport Policy and Universal Access Policy (Yes/No)		
Jul/2025	Jun/2028	Jun/2031
No	No	Yes
NRA road asset management software and data collection tools deployed (Yes/No)		
Jul/2025	Jun/2028	Jun/2031
No	Yes	Yes
MOPEM adoption of a renewable energy sector policy and regulatory framework with third-party access provisions of renewal energy (Yes/No)		
Jul/2025	Jun/2028	Jun/2031
No	Yes	Yes
Energy Sector Monitoring Dashboard developed for PURA reporting of key performance indicators (Yes/No)		
Jul/2025	Jun/2028	Jun/2031
No	No	Yes
Project Management and Capacity Building		
Number of civil service staff to receive training in technical, fiduciary, environmental and social management skills (Number)		
Jul/2025	Jun/2028	Jun/2031
0	250	500
➢Female staff trained (Percentage)		
Jul/2025	Jun/2028	Jun/2031
0	50	50
Women beneficiaries of the apprenticeship program (Number)		
Jul/2025	Jun/2028	Jun/2031
0	35	100
Share of women from the apprenticeship program employed as technical and managerial staff across all relevant agencies within 12 months of completing the program (Percentage)		
Jul/2026	Jun/2028	Jun/2031

0	50	60
Service Delivery Modernization		
Implementation Roadmap for Vehicle Inspection and Emission Testing Center (Yes/No)		
Jun/2025	Jun/2028	Jun/2031
No	Yes	Yes
Design of a fleet renewal scheme for paratransit vehicles (Yes/No)		
Jun/2025	Jun/2028	Jun/2031
No	No	Yes
Customer Service Centers Rehabilitated (Number)		
Jul/2025	Jun/2028	Jun/2031
0	3	5
Contingent Emergency Response Component		

Monitoring & Evaluation Plan: PDO Indicators by PDO Outcomes

Improved resilience of transport infrastructure access and capacity in the provision of transport services	
Direct users that benefit from improved access to sustainable transport infrastructure and services (number of people)	
Description	Number of people who experience all season access to sustainable, climate-resilient, transport infrastructure or services that have been built or rehabilitated through the project.
Frequency	Mid-term and Project End
Data source	User survey reports and Traffic count data
Methodology for Data Collection	Traffic counts (Count the number of vehicles traveling on a road or in a specific area). User survey data should be disaggregated by factors such as gender and youth, location (urban/rural) to provide more detailed insights into the impact of the project.
Responsibility for Data Collection	Central Project Coordinator Unit (CPCU); National Roads Authority (NRA)
Inferred beneficiaires of improved access to sustainble transport infrastructure and services (number of people) Bank Score Card	
Description	This indicator measures the total number of people who benefit from improved access to sustainable transport infrastructure and services, because of the rehabilitation and improvement of roads and other transport infrastructure. The indicator considers access to climate-resilient roads. It is disaggregated by gender (male and female) and age group (youth).
Frequency	Mid-term and Project End
Data source	GIS mapping of road interventions and census data provided by
Methodology for Data Collection	Identification of localities located within (1) a 2 km of upgraded rural roads, (2) 400 meters of upgraded urban roads Then, calculate the cumulative population of these areas (disaggregate by male/female and youth).
Responsibility for Data Collection	CPCU; NRA
Optimized periodic and routine maintenance programs prepared by NRA using contemporary asset management tools (Number)	
Description	Reports whether NRA is utilizing new road asset management software and tools to generate annual work programs for periodic and toutine maintenance that optimizes available resources provided by the Road Fund.
Frequency	Project End
Data source	NRA Annual Reports
Methodology for Data Collection	Roads surveyed to classify and prioritize them based on their condition, importance, and required repair costs using detailed data collected on road conditions, traffic volumes, and other relevant parameter. NRA is to generate annual and three-year rolling plans for the priority and implementation of road network maintenance requirements. Apply lifecycle decision-making techniques to determine the optimal timing and type of maintenance activities.
Responsibility for Data Collection	CPCU; Ministry of Transport Works and Infrastructure (MOTWI)

Improved resilience of energy infrastructure access and capacity in the provision of energy services	
People provided with direct access to electricity through new connections (Number of people) CRI	
Description	The number of people who have gained direct access to electricity through new connections as a result of the project.
Frequency	Mid-term and Project End
Data source	Mid-term and Project End reports
Methodology for Data Collection	The indicator should be measured by counting the number of individuals who benefit from new electricity connections. The data should be disaggregated by factors such as gender and youth, location (urban/rural), to provide more detailed insights into the impact of the project. This can be done by tracking the number of households connected and multiplying by the average household size, or by directly counting the number of people in newly connected households.
Responsibility for Data Collection	CPCU; National Water and Electric Company (NAWEC)

Private capital enabled for renewable energy	
Description	The indicator measures the additional amount of private capital enabled (US$20 million) to construct and operate a US$60 million (equivalent) 50MWp PV plant with BESS located in Soma, The Gambia through the project's provision of a CEM.
Frequency	Once
Data source	Project Reports
Methodology for Data Collection	Ministry of Petroleum and Energy (MOPEM) commerical closing with IPP
Responsibility for Data Collection	CPCU; MOPEM
Frequency of outages on MV network in The Gambia reduced (Number)	
Description	Total number of interruptions in the GBA reduced
Frequency	Annual-From the second year of implemenation
Data source	NAWEC operational reports/ National Control Centre Logs
Methodology for Data Collection	The System Average Interruption Frequency Index (SAIFI); SAIFI is a reliability indicator used to measure the average number of interruptions that a customer experiences in a year. The methodology for calculating SAIFI involves the following steps: (i) determine the total number of customers served by the utility in the project area; (ii) monitor and record all failure events that lead to sustained interruptions; (iii) for each failure event, estimate the number of customers affected and sum the number of customers interrupted across all failure events in the year; (iv) divide the total number of customers interrupted by the total number of customers served.
Responsibility for Data Collection	CPCU/NAWEC
Authorized redistributed generators of renewal energy connected to the grid (Number)	
Description	The indicator measures the number of third party renewable energy generators that have been authorized and connected to the electrical grid. These generators can include solar, wind, hydro, and other renewable energy sources. The indicator reflects the progress in integrating renewable energy into the national grid, contributing to green, resilient, and inclusive development.
Frequency	Mid-Term Review and End of Project
Data source	PURA
Methodology for Data Collection	Identify and document the renewable energy projects that have received authorization from PURA obtaining necessary permits and licenses. PURA will track the progress of these authorized projects, which involves monitoring the installation and commissioning of third party renewable energy generators. PURA will maintain a registry of all authorized renewable energy generators, including details such as the type of renewable energy, capacity, location, and date of connection to the grid. Data from regulator, utility companies, and project developers to ensure comprehensive and accurate record is to be validated by field inspections and audits to verify that the renewable energy generators are operational and connected to the grid.
Responsibility for Data Collection	CPCU / PURA

Monitoring & Evaluation Plan: Intermediate Results Indicators by Components

Component 1: Resilient Access to Infrastructure	
Rehabilitated or upgraded rural and urban roads to all-season climate-resilient standards (Kilometers)	
Description	Measures reconstructed/upgraded and rehabilitated damaged road sections with: (i) climate-resilient materials {such as eco-friendly/ nature based solutions, as well as bio-based materials or recycled materials for reduced environmental impact, enhanced durability and water management} to withstand moisture, density and stress level; (ii) improved drainage to avoid erosion of road materials; (iii) stabilized slope structures such as dry stone wall, grass planting; and (iv) proper cross section and standard dimensions allowing all season access.
Frequency	Bi- annual
Data source	Construction Supervision Engineer Reports; Progress reports by CPCU

Methodology for Data Collection	Cumulative number of km of rural urban roads upgraded under the project
Responsibility for Data Collection	CPCU/NRA
Proportion of roads with solar equipped street lighting (Percentage)	
Description	Measures percentage of roads financed under the project that are provided with solar lighting.
Frequency	Annual – From the second year of implemenation
Data source	Construction Supervision Engineer Reports; Progress reports by CPCU
Methodology for Data Collection	NRA provides street lighting at approximately 300 meters. The methodology for calculating the indicator: (i) determine the total number of street lights that are required or planned for the entire urban area under the project; (ii) track the number of street lights installed; and (iii) divide the number of street lights installed by the total number of street lights required, and multiply by 100 to get the percentage.
Responsibility for Data Collection	CPC / NRA
Beneficiary satisfaction with access to all season roads (percentage)	
Description	Measures the percentage of beneficiaries satisfied with the level of access provided by project funded roads. Beneficiary satisfaction will be disaggregated by gender and disability to determine inclusion.
Frequency	End of project
Data source	Survey reports
Methodology for Data Collection	• Prepare a GEMS form to collect opinions from beneficiaries of related developments. • Collect opinions from a representative sample of beneficiaries in the project affected areas. • Calculate the satisfaction rate.
Responsibility for Data Collection	CPCU / NRA
Transmission lines constructed (Kilometers)	
Description	The indicator measures the total length of new or upgraded transmission lines that have been constructed under the project, measured in kilometers. Transmission lines are critical components of the electrical grid, responsible for transporting electricity from power plants to substations and distribution networks.
Frequency	Annual – From the second year of implemenation
Data source	NAWEC/ Owner's Engineer
Methodology for Data Collection	Progress reports by Owner's Engineer and consolidated by CPCU
Responsibility for Data Collection	CPCU; NAWEC
Climateresilient substations constructed (Number)	
Description	The number of substations constructed, upgraded or rehabilitated funded by the project
Frequency	Annual
Data source	NAWEC/Owner's Engineer
Methodology for Data Collection	The number of newly constructed and upgraded substations confirmed through
Responsibility for Data Collection	CPCU/ NAWEC/ Owner's engineer
Beneficiary satisfaction with improved access to resilient energy infrastructure (Percentage)	
Description	Percentage of beneficiaries satisfied with resilience of project implemented energy infrastructure, including solar systems throughout project corridors. In this context resilience is defined as the ability of the energy system to withstand and quickly recover from disruptions like power outages and continue to operate with electricity and other essential services even during a major disturbance, minimizing the impact of disruptions and restoring power rapidly after an outage. The data should be disaggregated by factors such as gender and youth, location (urban/rural), to provide more detailed insights into the impact of the project.

Frequency	Mid Term Review and End of project
Data source	Survey reports
Methodology for Data Collection	• Prepare a GEMS form to collect opinions from beneficiaries of related developments. • Collect opinions from a representative sample of beneficiaries in the project affected areas. • Calculate the satisfaction rate.
Responsibility for Data Collection	CPCU; NAWEC

Component 2: Policy, Planning and Management	
MOTWI adopts updated National Transport Policy and Universal Access Policy (Yes/No)	
Description	The policy positions will underpin the Ministerial objectives related to sustainable management of tranport sector infrastructure and services. The indicator reports whether MOTWI has established and adopted two key policies that set the institutional foundation for the fiscal and operational mandates for public and private sector service standards. The National Transport Policy will extend beyond the current 2027 expiry date, and outline mechanisms to integrate climate change and development pathways that reflect national sectoral contributions to better incorporate long-term strategies for decarbonization, climate resilience, road safety, FM and public expenditures in the sector, strengthening institutions and capacity building, and supporting market-based practices such as cost-recovery pricing, tariff and subsidy, among other objectives., including regulatory measures to enforce national techncial standards for roadworthiness and emission controls, capital investment, taxes, fees and tarriffs, and operating resources for planning, budgeting and management of the sector, including for land transport. Universal access policy aims to ensure that transport systems are safe, inclusive, equitable, and accessible to all individuals, including those with disabilities and limited mobility. The policy aims to support the travel needs of vulnerable groups, including persons with disabilities, older persons, women, and children, incorporates the concept of universal design principals in transport, emphasizes accessibility and the removal of barriers that hinder access, and ensures that transport options are affordable for all, particularly those from marginalized groups.
Frequency	Mid-term and Project End
Data source	Mid-term and Project End reports
Methodology for Data Collection	MOTWI adoption and publication of updated policy frameworks.
Responsibility for Data Collection	CPCU; NRA
NRA road asset management software and data collection tools deployed (Yes/No)	
Description	NRA employs a comprehensive Road Asset Management System (RAMS) to enhance the efficiency and sustainability of road maintenance and management. The RAMS integrates various software tools and data collection methodologies to ensure effective planning, monitoring, and execution of road maintenance activities.
Frequency	Annual after Mid Term Review
Data source	NRA Annual Reports to present annual work plans prepared using condition survey equipment and prioritzation programs that maximize Road Fund allocations.
Methodology for Data Collection	NRA is to maintain an up-to-date inventory of road and bridge assets. By leveraging these tools and methodologies, the NRA ensures that road maintenance activities are carried out efficiently, sustainably, and in compliance with established standards. The indicator also captures capacity-building programs for NRA staff on the use of asset management tools and best practices in maintenance management.
Responsibility for Data Collection	CPCU / NRA
Adoption of a renewable energy sector policy and regulatory framework with third-party access provisions for renewable energy	
Description	The indicator captures the confirmation that a comprehensive renewable energy sector policy has been officially adopted by MOPEM, providing details on the establishment of a regulatory framework that supports the development and integration of renewable energy sources. Specific provisions within the regulatory framework are to ensure third-party access to the energy market, including clear guidelines and mechanisms for third-party participation, presents a timeline indicating the key milestones and deadlines for the implementation of the policy and regulatory framework.

Frequency	Once
Data source	Ministry of Petroleum and Energy (MOPEM)
Methodology for Data Collection	Status reports by the CPCU
Responsibility for Data Collection	CPCU; MOPEM
Sector Monitoring Dashboard for transparent reporting of salient indicators established (Yes/No)	
Description	Reports whether sector monitoring dashboard is operational recording the agreed indicators. In this context, sector monitoring dashboard is a set of metric groups or custom views that allows to monitor the performance of the indicators to track: (i) sector performance; (ii) Monitor RE penetration targets; (iii) NAWEC financial performance overview; and (iv) energy efficiency interventions.
Frequency	Mid-term and Project End
Data source	PURA Quarterly Dashboard Report presenting key performance indcators.
Methodology for Data Collection	Presentation of a functional dashboard that produces sectoral reports
Responsibility for Data Collection	CPCU

Component 3: Service Delivery and Modernization	
Implementation Roadmap for Vehicle Inspection and Emission Testing Center (Yes/No)	
Description	The indicator measures whether a comprehensive implementation roadmap for establishing a Vehicle Inspection and Emission Testing Center has been developed and adopted by the MOTWI. The roadmap ensures that a structured and systematic approach is being followed to achieve the goal of improving vehicle safety standards and reducing vehicle emissions and improving air quality, including the transition of institutional mandates, the requisite regulatory framework, data integration requirements, and a phased approach to enforcement of standards are available to guide the process and responsibilties for operationalizing emission testing in The Gambia.
Frequency	End of Project
Data source	Consultant Reports
Methodology for Data Collection	Contract management for consultant services engaged to underake the Assessment of Vehicle Inspection System, with a final deliverable outlining the necessary steps, timelines, responsibilities, and resources required to set up and operationalize an inspection center in the GBA.
Responsibility for Data Collection	CPCU/MOTWI
Design of a fleet renewal scheme for paratransit vehicles (Yes/No)	
Description	The indicator measures whether a comprehensive fleet modernization program has been developed, including an options analysis for establishing a conducive environment through regulatory reforms, service contracts with adequate duration for vehicle investment recovery, paratransit management systems, and public provision of depots and technical facilities. The program design is to evaluate mechanisms to consolidate operators from individual entities into a formal legal organization capable of entering financial or route concession contracts, identify detailed route concessions that clearly delineate the duties and rights of the operator as well as the regulatory authority, financial mechanisms to support the acquisition of new vehicles, either by reducing initial capital costs or through favorable leasing options that bundle maintenance with vehicle financing and enhancing the capacity of the operating entity to assume full operational responsibilities.
Frequency	End of Project
Data source	Consultant Reports
Methodology for Data Collection	Contract management for consultant services engaged to design a fleet renewal scheme, with a final deliverable outlining the necessary steps, timelines, responsibilities, and resources required to set up and operationalize the scheme.
Responsibility for Data Collection	CPCU/MOTWI

Customer Service Centers Constructed (Number)	
Description	Measures the number of customer service centers rehabilitated under the project
Frequency	Annual Mid-term and Project End
Data source	Construction Supervision Engineer Reports; Progress reports by CPCU
Methodology for Data Collection	Progress reports by Owner's Engineer and consolidated by CPCU
Responsibility for Data Collection	NAWEC/CPCU

Component 4: Project Management and Capacity Building	
Civil service staff to receive training in technical, fiduciary, E&S management skills (Number)	
Description	This indicator measures number of government staff employed to manage project supported transport and energy systems and are trained in the designated technical, fiduciary, E&S management skills as agreed in thr project operation manual, and each annual work plan and budget.
Frequency	Annual – From the first year of implementation
Data source	Progress reports with records of training minutes
Methodology for Data Collection	The number of staff identified by respective agencies in the approved annual work plan and budget, disaggregated by technical, fiduciary, E&S management skills
Responsibility for Data Collection	CPCU
Women beneficiaries of the apprenticeship program (Number)	
Description	This indicator measures the number of female participants enrolled in the apprenticeship programs in partnership with a TVET center. The latter will first train women to equip them with the necessary technical skills to perform technical (non-administrative) jobs within the transport and energy sectors then transfer them to the apprenticeship program to be managed by NAWEC and NRA which will be responsible to dispatch participants in relevant agencies.
Frequency	Annual
Data source	Progress reports by NAWEC and NRA
Methodology for Data Collection	Cumulative number of women participants in the program dispatched by NAWEC and NRA in relevant agencies.
Responsibility for Data Collection	CPCUs NAWEC and NRA
Share of women from the apprenticeship program employed as technical and managerial staff across all relevant agencies within 12 months of completing the program (percentage)	
Description	This indicator measures the percentage of female graduates from the apprenticeship program who are subsequently employed in technical and managerial positions in transport and energy related agencies.
Frequency	Annual starting 12 months after the program set up.
Data source	Employment records from all relevant agencies
Methodology for Data Collection	Conduct follow-up tracking of apprenticeship program graduates by cross-checking with HR records from participating agencies to confirm employment placement.
Responsibility for Data Collection	CPCUs NAWEC and NRA

Annex 1: Climate Mitigation and Adaptation Considerations

1. Subcomponent 1.A: Last mile rural connectivity

IDA allocation: US$22.9 million, of which US$13.0 million for transport accessibility, and US$9.9 for rural energy access

Adaptation and mitigation: The project finances the rehabilitation and upgrading of 42 km of rural roads to climate-resilient standards, providing all-season connectivity for remote villages to access crucial markets and social services, even during extreme climate-related events (i.e., floods). A climate risk assessment and road network analysis developed with the support of GCA will be a primary factor informing the prioritization and selection of roads for investment, to enhance the resilience of the road network at system's level. In addition, targeted resilience measures will be deployed to address exposure and vulnerability hotspots along the road network. Preliminary cost estimates indicate that 25 percent of the investment will be exclusively dedicated to climate resilience, while the remaining 75 percent of the investment will contribute to the overall system's resilience at the road network level. Targeted resilience measures pertaining to the 25 percent of the investment include upgrading drainage infrastructure to accommodate higher rainwater runoff, raising the elevation of road sections susceptible to flooding, planting of drought resilient trees to provide shade and cooling effects. The road rehabilitation works also incorporate enhanced design standards and materials to improve climate resilience covering the remaining 75 percent of the cost, including: (i) using a layer of high-grade asphalt or concrete to accommodate increasing high temperatures; (ii) replacement of existing bridge joints to allow for sufficient expansion room to accommodate high temperatures; (iii) stabilization of road reserves with concrete blocks; (iv) application of the Green Roads for Water approach to improve water management and strengthen the resilience of road infrastructure and of the communities served.[58] The project also finances the extension and densification of the electricity grid to improve electricity access for 80 rural communities. The Gambia electricity energy mix is estimated to include 13 percent renewable energy sources from domestic and regional imports and the renewable energy target for 2030 is 30 percent of installed capacity and 26 percent of total generation including imports[59]. Investments in energy transmission infrastructure will include the deployment of measures to reduce risks associated with extreme heat and floods.

2. Subcomponent 1.B: Resilient GBA Infrastructure

IDA allocation: US$12.3 million; of which US$6.3 million for GBA urban road resilience, US$1.8 million for GBA active mobility corridor pilot, and US$4.2 million for GBA energy grid resilience

Adaptation: The project finances the rehabilitation and upgrading of 17 km of urban roads to climate-resilient standards. The selection of urban roads for investments will be informed by the road vulnerability and climate risk assessment developed by GCA. The project will adopt the recommended climate resilience measures, including upgrading drainage systems to accommodate higher rainwater runoff, using a layer of high-grade asphalt or concrete to accommodate increasing high temperatures and tree planting to improve soil rainwater permeability, provide cooling and reduce the heat island effect. The project finances two active mobility corridors also integrating climate resilience considerations such as enhanced drainage system and tree planting. The project finances upgrading of energy infrastructure to a higher design and construction standard to be able to withstand strong winds and high temperatures, therefore improving the climate resilience of energy infrastructure and the reliability of energy services. The project also deploys flood protection for road and energy infrastructure to reduce flood risks.

Mitigation: Urban road upgrades include integration of NMT and public transport facilities, namely sidewalks, pedestrian crossings, bus stations, and deploying solar-powered street lighting to improve access and attractiveness of low-carbon

[58] Green Roads for Water – Guidelines for Road Infrastructure in Support of Water Management and Climate Resilience. World Bank Group. 2021. Available at: https://documents1.worldbank.org/curated/en/102951623742853259/pdf/Green-Roads-for-Water-Guidelines-for-Road-Infrastructure-in-Support-of-Water-Management-and-Climate-Resilience.pdf

[59] Strategic Roadmap 2021-2040. Universal Access by 2025 and transforming the Gambia electricity sub-sector. Nawec. November 2021. Available at: The-Gambia-Strategic-Electricity-Sector-Roadmap.pdf

transport modes. The project also supports the construction of two active mobility corridors which will be dedicated to NMT while integrated with public transport system to provide last-mile connectivity. The active mobility corridors include NMT facilities and solar-powered streetlighting to improve their attractiveness and use. The project also finances the upgrading of transmission lines and primary electrical substations and systems to reduce T&D technical energy losses and inculcating additional redundancy on the medium voltage network. In this way, the project will improve efficiency, limit climate related impacts on infrastructure and reduce GHG emissions.

3. Subcomponent 2.A: Sustainable Road Maintenance and Management Systems.

IDA allocation: US$3.1 million; of which US$1.4 million for MOTWI and US$1.7 million for NRA

Adaptation: The project provides TA to support the development of climate-resilient design and construction standards for rural and urban roads, and to study road construction materials, including an assessment of materials characteristics and climate resilience properties. The TA supports quarry mapping including materials suitable for climate-resilient construction. The project finances the development of a climate risks module for integration in The Gambia's road asset management system to enable the consideration of climate risks in transport planning and the prioritization of investments. The project supports the establishment of data collection guidelines for inventorying road assets and associated hydraulic infrastructure (bridges, drainage), their conditions and vulnerability to climate risks. This is essential for keeping the climate-informed road asset management system updated and relevant.

Mitigation: The project supports the development and implementation of new-vehicle road worthiness and emissions testing standards, including development and enforcement of more stringent energy efficiency regulations for vehicles.

4. Subcomponent 2.B: Sustainable Energy Enabling Environment

IDA allocation: US$6 million; of which US$0.5 million for the development of energy performance standards, US$5 million for private capital enabler for a solar park, US$0.3 million for renewable energy grid integration study, and US$0.2 million for updating regulations to facilitate integration of energy imports and sector performance monitoring

Mitigation: The project provides TA to support the establishment of an energy efficiency agency to enable the enforcement of more stringent energy efficiency standards. It supports the development of renewable energy sector policy and regulatory framework to provide third-party access and in this way supports continued penetration of renewables in the energy network. It also supports a CEM through an Escrow Account to enable the construction of a privately financed 50 MWp PV plant with BESS, critical in accelerating the transition from HFO-based generation.

5. Subcomponent 3.A: Motorization management

IDA allocation: US$2.5 million

Mitigation: The project provides TA for developing an implementation roadmap and essential studies for the establishment of a vehicle inspection and emissions testing center to enable the enforcement of more stringent vehicle efficiency and emissions standards.

6. Subcomponent 3.B: Digitalization and Skills for Energy Services

IDA allocation: US$1.1 million

Adaptation and Mitigation: The project finances the construction and modernization of customer services centers to climate-resilient standards. This includes the rollout of smart meters (advanced Metering Infrastructure, pre-paid meters, maximum demand metering). The project also finances the development of a smart-grid feasibility study on integrating fiber optic and energy system technologies such as the installation of Advanced Metering Infrastructure, prepaid meters, and smart meters for remote monitoring of large customers. This activity aims to measure and incentivize the reduction of commercial losses and will help actively manage and reduce energy consumption.

Annex 2: Economic Analysis

Economic evaluation of rural and urban roads

1. Economic evaluation has been undertaken for typical rural and urban road sections included in the 500 km from which the roads to be upgraded by the project will be selected. The 500 km 350 km of rural roads from which about 42 km will be selected for upgrading 150 km of urban roads from which about 18km will be selected. Both the rural and urban road selections from 500 km will be aimed at providing 'last mile' connectivity and so have relatively low traffic levels. Given these low traffic levels, they were excluded from both the Rural Regions Traffic Survey undertaken by the NRA in 2020 and the Greater Banjul Traffic Survey of 2022, as both surveys focused on major roads.

2. The proposed project will upgrade the 'last km' connectivity rural and urban roads from an earth surface (mostly in poor condition) to either a single surface treatment (SST) or double surface treatment (DST) road. Economic evaluations were undertaken for both types of upgrades and an overall average result based on 60 percent of rural roads being upgraded to a single surface road and 80 percent of urban road to the same standard, with the balance in both cases being upgraded to a DST road. For comparative purposes, evaluations were also undertaken of upgrading to an asphalt surface road.

3. For all evaluations, the RED (Roads Economic Decision) model was used as the basis of the evaluations. This model uses time savings, vehicle operating cost savings and road accident reductions as their measure of benefits and road construction and maintenance costs and GHG emissions as the measure of costs. The RED provides the economic rate of return (ERR), modified economic rate of return (MERR) and the NPV as the indicators of merit of the projects.

4. For the urban road evaluations, the additional benefit to pedestrians was included. This benefit was estimated based on the upgraded roads providing a faster and more convenient experience for pedestrians. Currently, in many of the residential areas of Banjul, it is difficult for residents to walk to the gele gele and other public transport services that operate on the more important urban roads. With the upgraded roads, pedestrian access to public transport will be greatly enhanced. Additional significant benefits of the upgraded urban roads potentially making the residential streets accessible to gele geles and conventional taxis were not assessed because of the lack of data.

5. The specifications of the RED model included allowing for the benefits of generated traffic (additional traffic resulting from the reduced travel times and costs) but not those of induced traffic (that deriving from higher levels of economic activity attributable to the project being evaluated) or to diverted traffic (as for last mile connectivity roads there is no expectation of their attracting diverted traffic from other roads).

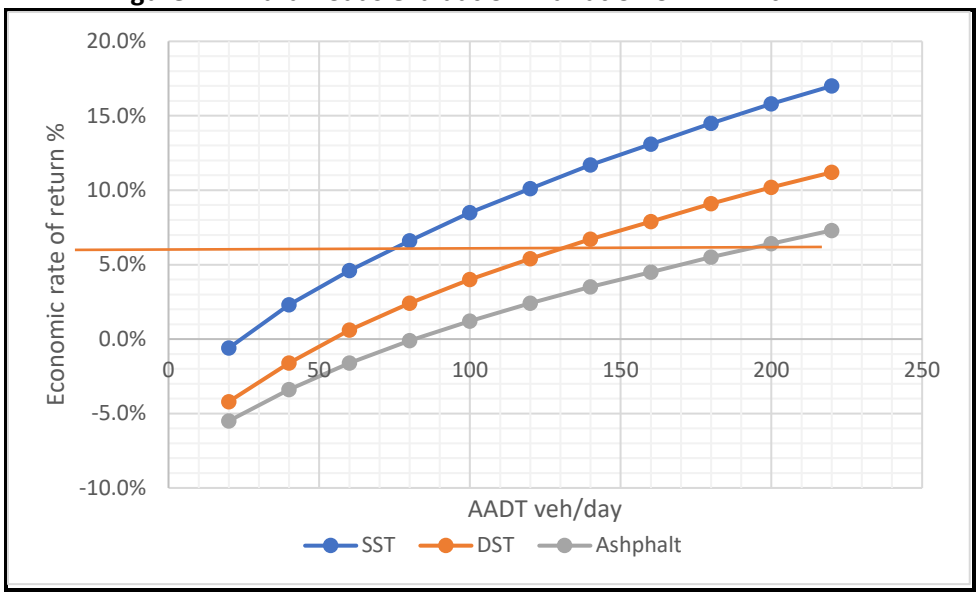
Rural roads

6. The RED model was used to evaluate improvements to roads with between 10 and 200 vehicles per day, with an expectation that the selected roads will have traffic levels towards the center of this range. For the weighted result, the 60 percent of upgrades to an SST were assumed to have an average of 60 vehicles per day and the roads upgraded to a DST to have an average of 140 vehicles per day. Sensitivity tests were made on all the assumptions of traffic levels.

7. The evaluation indicated that rural roads upgraded to an SST would need about 80 veh/day to achieve an ERR of 6 percent (the benchmark ERR rate for The Gambia), whereas upgrades to a DST would need about 130 veh/day and to an asphalt surface about 200 veh/day.

8. Using the combination of upgrade types and levels of traffic indicated above, the overall average ERR of upgrades of rural roads with the share of upgrade types and levels of traffic indicated above, just reaches the threshold value of a 6 percent ERR. The MERR, with the same threshold is about 6.8 percent and the NPV (with a 6 percent discount rate) is about US$0.8 million.

Figure 2.1: Rural roads evaluation: Variation of ERR with AADT



Urban roads

9. The evaluation of urban roads followed the same method of that for rural roads, with the addition of the benefits to pedestrians. The estimated pedestrian benefit was a constant value, independent on the volume of traffic, so it had a greater impact on the evaluations with lower traffic levels. With only 40 veh/day, an upgrade to a SST would provide an ERR of 6.5 percent but an upgrade to a DST would require at least 120 veh/day to reach an ERR of 6.1 percent. The weighted average result, using the share of upgrade types (80 percent SST and 20 percent DST) and traffic levels (60 veh/day for SST and 140 veh/day for DST) was 6.9 percent, the MERR was 7.1 percent and the NPV US$1.8 million.

Beneficiary populations

10. For both rural and urban roads, the direct beneficiaries were those who would use the upgraded roads, while the indirect beneficiaries would be the populations within the catchment areas (2 km either side of the rural roads and 0.4 km either side of the urban roads). Givern that the roads would provide last mile connectivity, there would be a large overlap between these two populations- the only direct beneficiaries who would not be included among the indirect beneficiaries would be those providing services to the latter. At one time or another nearly all the indirect beneficiaries would use the upgraded road as it would be their only means of connectivity to the rest of their community.

11. Based on the estimated population densities within 2 km of the 350 km of rural roads in the long list of 500 km of roads, there would be just over 40,000 indirect beneficiaries of the proposed 42 km rural roads to be upgraded, while there would be about 65,000 indirect beneficiaries of the 17 km of proposed urban road upgrades.

Economic evaluation of energy components

12. Economic evaluations have been completed of the two main energy components of the project, improving rural access and increasing the resilience of urban energy connectivity.

Expanded rural grid access

13. Improved rural access will provide access to the grid for about 40,000 beneficiaries which currently depend on wood and charcoal and diesel generators for their energy supply. The main advantages to them will be the reduced cost and increased reliability of energy supply and the reduced emissions from the household energy sources currently used. The estimated cost of generation, T&D of the grid energy supplied to the newly connected households is significantly

lower than their currently estimated cost of energy supply, US$0.21 rather than US$0.30 per kWh60. There will be additional benefits from reduced GHG emissions from the same sources, partly compensated for by additional GHG emissions resulting from the generation and transmission of the additional grid sourced energy they will use. In addition to the provision and maintenance costs of the extensions to the grid, the costs of the project include the land used for the transmission lines (a low cost as the lines mostly cross unproductive land). The estimated costs and benefits of the expanded grid connectivity result in an ERR of 11.7 percent, an MERR of 8.7 percent and an NPV of US$6.4 million.

Enhanced urban grid resilience

14. Enhanced urban energy resilience will be achieved through the upgrade of primary and secondary electrical substations with associated transmission line reconfigurations, which will enhance urban grid reliability and efficiency. The benefits to consumers arise due to more reliable grid connectivity and a reduced need for backup energy facilities. For NAWEC, benefits come from the reduction of transmission losses and maintenance costs, and for society overall there will be reduced GHG emissions because of these reduced energy losses and the displacement of diesel generators. Substation overloads and extended line lengths are affecting utility performance leading to peak load shedding of 2-4 hours per day in some densely populated urban areas. The economic evaluation takes account of the reduced transmission losses and maintenance costs and consequential lower GHG emissions. The estimated ERR is 6.2 percent, the MERR is 6.0 percent and the NPV is US$0.1 million.

Beneficiary populations

15. Expanded rural grid access will directly benefit about 40,000 people while the enhancement of urban grid resilience will directly benefit about 100,000 people.

[60] The estimated cost of current supplies is based on that for diesel generation and willingness to pay per The Gambia's electricity sector roadmap.

Annex 3: Credit Enhancement Mechanism for Solar and Battery Park in Soma

1. **The World Bank is supporting the GoG in the piloting of a sustainable solar and Battery Energy and Storage System (BESS) competitive bidding process.** Thanks to SRMI[61] funding, the World Bank has provided US$1.35 million in recipient executed trust fund (RETF), under the Regional Solar Park of The Gambia – RSPG (P504421), to support the GoG hire a transaction advisor who is working hand-in-hand with the GoG in the preparation, tendering and evaluation, up to financial close, of a privately developed 50 MWp solar and 10 MW/40 MWh BESS project in Soma, with potential expansion to 150 MWp with storage in a second phase. Although the first phase (50 MWp) of the solar park will be serving only the domestic market, a second phase (of 100 MWp) would be earmarked for exports leveraging on the newly deployed OMVG (Gambia River Basin Development Organization) infrastructure. The competitive tender was launched in October 2024 to select an IPP who will develop, finance, build and operate the solar and BESS project in Soma, then transfer it to NAWEC after 25 years. Technically and financially qualified IPPs have been pre-selected and the RfP (Request for Proposal) stage was launched in early March, with an expected commercial close in December 2025.

2. **This tender, which is the first of its kind in West Africa, is the result of continuous support from the World Bank.** The solar and BESS park tender is the result of six years of work between the GoG, the West African Power Pool (WAPP) and the World Bank. The solar and BESS sites (divided in the described two phases) are the result of the Regional Solar Park Project (P162580), US$21 million technical assistance to the WAPP which was approved in mid-2018 with the objective to support the uptake of solar projects at scale, beyond the mainstream bilateral deals, in four countries: Burkina Faso, Mali, Niger and The Gambia. Through the Regional Solar Park Project, the World Bank supported the GoG in conducting the relevant legal, financial and technical (feasibility and E&S) studies. World Bank support followed with the RSPG project (P504421), financing a transaction advisor to NAWEC and the MOPEM, who are responsible for the solar and BESS tendering. The Gambia Infrastructure Project (P504762) will provide the last level of support for the successful implementation of the solar and BESS project, through Subcomponent 2.B, which covers the funding of a six-months liquidity instrument needed to cover offtaker risk.

3. **The solar and BESS tender illustrates how the World Bank can work with governments in mobilizing finance for development (MFD)**. The solar and BESS tender follows the Jambur solar project, which entered in operation in 2024, being the first utility-scale project to be developed in the country. Jambur (with 23 MWp and 8 MWh of BESS) was publicly financed, through the Gambia Electricity Restoration and Modernization Project – GERMP (P163568). Adding endogenous least-cost sources, such as solar in the case of The Gambia, is key to support the country decrease its cost of service, which is among one of the highest in the region (at 25 US$c/kWh in early 2024). The Soma project is a natural progression from Jambur: public projects are generally cheaper when concessional funding is available, though not sustainable as a LTS given the growing competition for scarce public resources. Once a first utility-scale project is developed, and there is an enabling environment, countries are encouraged to procure private projects, which have a better allocation of risks. Under Soma, a solar-park strategy was chosen. This deployment scheme has pre-arranged comprehensive de-risking measures (that is, land, power evacuation and permits secured) meaning that most development risks are covered by the GoG. This procurement strategy is generally applied in countries that are starting to develop their IPP-led generation, and/or have a high risk for securing land and a small number of projects to be developed.

[61] Sustainable Renewables Risk Mitigation Initiative (SRMI) is a partnership of the World Bank's Energy Sector Management Assistance Program (World Bank-ESMAP), the French Development Agency (*Agence Française de Développement,* AFD), the International Renewable Energy Agency (IRENA), the International Solar Alliance (ISA), Sustainable Energy for All (SE4all), the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the African Development Bank (AfDB) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) via the GET.transform program.

4. **The solar and BESS project in Soma aims at mobilizing at least US$60 million in private capital**. The IPP is responsible for covering the generation CAPEX for the solar and BESS components, as well as the Soma substation extension (33/225 kV Substation with two 50 MVA 33/225 kV transformers) and connection facilities (underground cable to be implemented over 400m from the Solar Plant to the Soma Substation), which will then be transferred to OMVG for operation. The solar and BESS project in Soma illustrates how development institutions can support Governments in mobilizing private capital in the energy sector: through targeted funding and appropriate risk allocation, the expected private capital leverage to public funding is more than six times.

5. **Private actors identified offtaker risk as one of the main risks to be covered to ensure project bankability**. A market sounding was conducted by the transaction advisors during the tender preparation phase to gather views of private actors, in particular their respective risk assessment and recommendations on the main project features to ensure a successful project. A total of 23 entities were contacted, out of which 14 IPPs, 3 equity investors and 6 DFIs (representing lenders). Out of the key recommendations made by stakeholders, offtaker risk was a primary concern, emphasized through the following points: (i) greater assurance is needed regarding NAWEC's financial viability and management capabilities and (ii) State support is crucial, particularly in ensuring its capacity to independently provide financial backing for payments to the IPP, including PPA energy payments and termination payments.

6. **The World Bank team worked together with the Multilateral Investment Guarantee Agency (MIGA) and International Finance Corporation (IFC) to identify the optimal risk mitigation structure to cover offtaker risk**. Before settling for the Escrow Account alternative, the World Bank Group explored offering a Partial Risk Guarantee (PRG) to the project, which would be providing liquidity and a backstop in case of non-payment from NAWEC to the IPP. However, given the size of the project, it was decided that an IDA funded Escrow Account would be the best solution in terms of cost and risk allocation. It is increasingly difficult to find a commercial bank which is interested in providing a Letter of Credit (L/C) for less than US$50 million. The World Bank Group explored alternatives, such as having B- rated banks providing the L/C. Although conceivable, out of the eight commercial banks contacted, none had a viable offer: rates were either too high, turning the PRG option too expensive, or tenor of the L/C was too little, failing to provide the comfort needed by lenders and sponsors. The Escrow alternative was tested with different lenders who had noted their interest in the transaction. Most lenders noted they would feel comfortable with a six-month Escrow account funded by the World Bank. The importance of having it funded by the World Bank is that it provides similar comfort as to the PRG back stop, whereby the World Bank can use its cross-suspension in the event of a non-payment under the Escrow structure.

7. **The contractual framework for the Soma solar and BESS park is presented below.** The Soma project contractual scheme and overall payment risk shall be supported by (i) the definition of a six-month Escrow Account, funded by the World Bank, to cover liquidity risk and (ii) the engagement of the GoG regarding termination payment. Moreover, a term sheet for a MIGA Political Risk Insurance (PRI) has been included in the contractual framework as additional coverage in case required by sponsors or lenders.

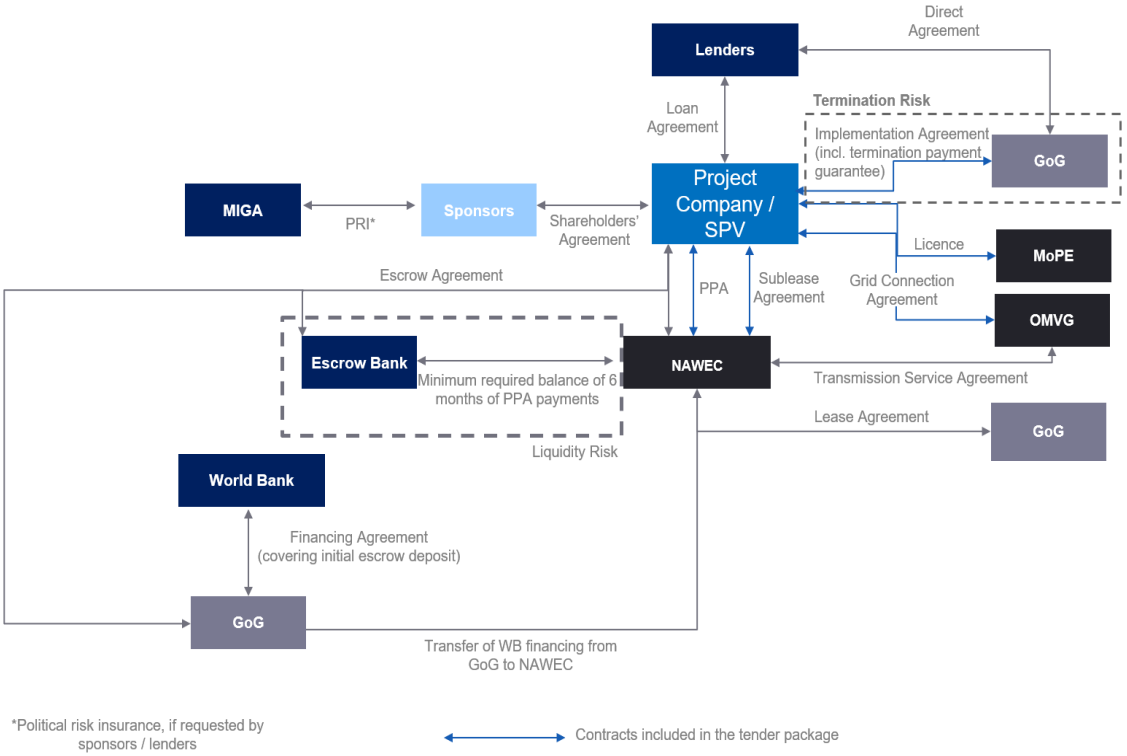


Figure 3.1: Contractual framework of the Soma solar and BESS park

8. **The Escrow Account provides liquidity coverage for IPPs, ensuring a bankable transaction**. As part of the obligations to be satisfied by the Gambia as a condition to the private investor's commitment to construct and operate the solar and BESS project located in Soma, the Gambia shall guarantee the payment obligations of the offtaker under a 25 year-PPA with the IPP. An amount equivalent to six months of payment under the PPA will be deposited into a commercial bank account of The Gambia, exclusively managed by an independent escrow agent and exclusively dedicated to make the payments owed to the IPP by the offtaker under the PPA, which have not been paid when due by the offtaker or the Gambia. In the event of any drawdown of the Escrow Account, NAWEC has an obligation to replenish the account within 14 days. If NAWEC fails to do so, The Government of The Gambia is then responsible for replenishing the Escrow Account within 30 days, at risk of an off-taker default and thus cause for termination. The six months of payment provided in the Escrow Account serves as a payment security that ensures the different parties have enough time to look for a solution to their difficulties to comply with their respective obligations. Should the IPP not be paid when due, it would constitute a government event of default under the contractual arrangements, which would allow the IPP to terminate the arrangement and be indemnified by the government. It is important to flag that the project follows a PPP arrangement where risks have been carefully allocated, and which cannot continue if the equilibrium is lost. It is important to note that some type of payment security is common market practice with utilities such as NAWEC that may have a limited track record of power purchase from IPPs.

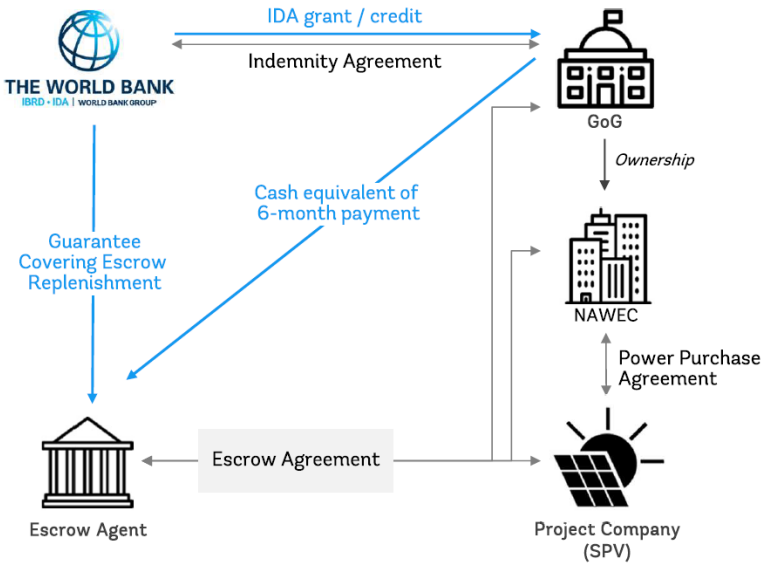


Figure 3.2: Structure of payment guarantee with the six months Escrow Account

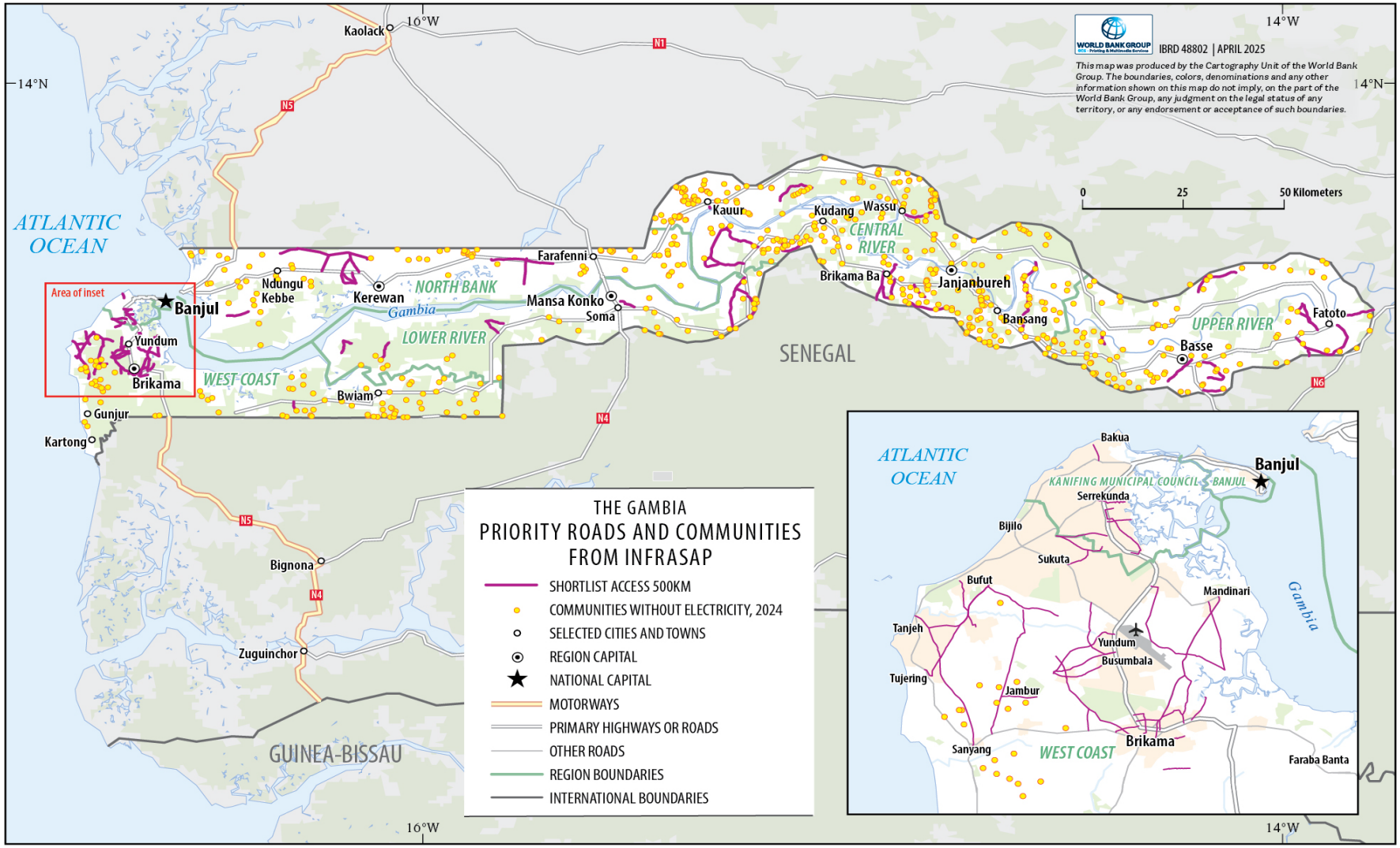
9. **Finds in the Escrow Account will be strictly used as a buffer to PPA payments, providing security to IPPs and lenders.** There is no risk that the funds in the Escrow Account be diverted from their intended purpose. The mechanism is established through an irrevocable agreement between The Gambia (as owner of the funds in the account) and NAWEC, the offtaker (both as debtors of the payment obligations under the PPA and corresponding guarantee), the IPP (as creditor under the PPA and beneficiary of the guarantee) and the commercial bank (as holder of the account and independent Escrow agent). The Gambia has the obligation to replenish the amount in the account as and when needed to maintain the six months cushion in the account, and the commercial bank has the exclusive authority to debit the account and pay amounts due under the PPA to the IPP only, until the IPP has been paid in full under the PPA . Once the PPA terminates, any funds remaining in the account, if any, are released to The Gambia.

10. **A planning analysis performed indicates that the solar and BESS project in Soma brings a sustained positive NPV to The Gambian economy under different scenarios, ranging from US$28 million to US$63 million**. An economic analysis was conducted to assess the economic benefit of the solar and BESS park in Soma. For this, the World Bank Electricity Planning Model (EPM) was used, with a yearly time step from 2025 to 2040. The objective of the analysis was to evaluate the feasibility and economic impact of a 50 MWp Solar PV + 10 MW / 40 MWh BESS project in The Gambia, comparing it against continued reliance on diesel generation and electricity imports. The EPM model was used to assess cost-effectiveness, emissions reductions, and system reliability under multiple scenarios. Across all scenarios, the solar and BESS project proves to be a profitable investment, with a NPV ranging from US$28 million to US$63 million, and US$34 million in the baseline scenario. The different scenarios explored are described below:

a. **Baseline**: based on The Gambia Strategic Electricity Sector Roadmap 2021.
b. **Optimistic Thermal Availability**: Kotu 5, 6, 7, and Brikama 3 remain operational until 2030 (instead of decommissioning as assumed in the baseline scenario).
c. **Pessimistic Thermal Availability**: No existing thermal power plants are available, increasing reliance on imports and renewables.
d. **CCGT Scenario**: A Combined Cycle Gas Turbine (CCGT) plant can be commissioned in The Gambia by 2035 instead of 2030 in the Baseline scenario.

e. **FullSolar-CCGT2035**: Additional imports of 10 MW from OMVG are available by 2030 for US$150/MWh instead of 2028 in the Baseline scenario.

Table 3.1: Resulting difference between Scenarios With and Without the Solar + BESS Project in Soma

	Baseline	Operational Optimistic	Operational Pessimistic	CCGT2035	FullSolar-CCGT2035
NPV of system cost: US$ million	-33.7	-28.2	-63.6	-40.5	-50.1
Unserved Energy: GWh	-7.7	0	-113.9	-17.7	-113.5
Investment: US$ million	33.6	33.6	41.1	36.4	4.7
Emission: mt	-0.5	-0.4	-0.4	-0.5	0

Annex 4: Location map of the full list of 500km Roads and the Unelectrified Communities