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The World Bank

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Report No: 137066-AO

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED GUARANTEE

IN THE AMOUNT OF UP TO US$500 MILLION

IN SUPPORT OF THE

REPUBLIC OF ANGOLA

FOR THE

LUANDA BITA WATER SUPPLY GUARANTEE PROJECT

June 11, 2019

Water Global Practice

Africa Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective April 30 , 2019)

Currency Unit =	Angolan Kwanza (AKZ)
AKZ 323.08 =	US$1

FISCAL YEAR

January 1-December 31

Regional Vice President:	Hafez Ghanem
Country Director:	Elisabeth Huybens
Senior Global Practice Director:	Jennifer Sara
Practice Managers:	Maria Angelica Sotomayor Araujo, Sebnem Erol Madan
Task Team Leaders:	Pier Francesco Mantovani, Satheesh Kumar Sundararajan

ABBREVIATIONS AND ACRONYMS

ACS	Additional Cash Support
AKZ	Angolan Kwanza
AML/CFT	Anti-Money Laundering / Combating the Financing of Terrorism
AQR	Asset Quality Review
ATI	African Trade Insurance Agency
BNA	Central Bank of Angola
bpifrance	French Public Investment Bank *(Banque Publique d'Investissement)*
C-ESMP	Contractor Environmental and Social Management Plan
CD	Distribution Center *(Centro de Distribução)*
CE	Citizen Engagement
CLO	Community Liaison Officer
CPF	Country Partnership Framework
CPS	Country Partnership Strategy
CPSD	Country Private Sector Diagnostic
CRI	Corporate Requirement Indicator
DB	Design-Build
DPF	Development Policy Financing
DSA	Debt Sustainability Analysis
E&S	Environmental and Social
ECA	Export Credit Agencies
EFF	Extended Fund Facility
EHS	Environmental, Health, and Safety
EIRR	Economic Internal Rate of Return
EPAL	Luanda Public Water Company *(Empresa Pública de Águas de Luanda E.P.)*
ESA	Environmental and Social Audit
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
FIRR	Financial Internal Rate of Return
FM	Financial Management
FY	Fiscal Year
GBV	Gender Based Violence
GDP	Gross Domestic Product
GoA	Government of Angola
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
HCI	Human Capital Index
IDC	Interest During Construction
IAASB	International Auditing and Assurance Standards Board
IBRD	International Bank for Reconstruction and Development
IFAC	International Federation of Accountants
IFR	Interim Financial Report
IMF	International Monetary Fund
INRH	National Institute of Water Resources *(Instituto Nacional de Recursos Hídricos)*
IPF	Investment Project Financing

IRSEA	Electricity and Water Regulatory Agency *(Instituto Regulador dos Serviços de Electricidade e de Água)*
ISA	International Standards of Auditing
IT	Information Technology
LIBOR	London Inter-bank Offered Rate
M&E	Monitoring and Evaluation
MDG	Millennium Development Goals
MIGA	Multilateral Investment Guarantee Agency
MinEA	Ministry of Energy and Water *(Ministério da Energia e Águas)*
MinFin	Ministry of Finance *(Ministério das Finanças)*
NDP	National Development Plan
NGO	Non-governmental Organization
NPL	Non-performing Loan
NPV	Net Present Value
NRW	Non-Revenue Water
O&M	Operations and Maintenance
OP/BP	Operational Policy/Bank Procedure
PAP	Project Affected Person
PDISA	Water Sector Institutional Development Project
PDISA2	Second Water Sector Institutional Development Project
PDO	Project Development Objective
PEM	Macro Stabilization Program *(Programa de Estabilizacão Macroeconómica)*
PIP	Performance Improvement Plan
PMC	Project Management Consultant
POM	Project Operations Manual
PPP	Public-private Partnership
PSC	Project Steering Committee
RAP	Resettlement Action Plan
RfP	Request for Proposal
RPF	Resettlement Policy Framework
SCD	Systematic Country Diagnostic
SEA	Sexual Exploitation and Abuse
SOE	State-owned Enterprise
SSA	Sub-Saharan Africa
SSN	Social Safety Net
TA	Technical Assistance
TFS	Technical Feasibility Study
ToR	Terms of Reference
UGD	Debt Management Unit *(Unidade da Gestão da Divida)*
US$	United States Dollar
WASH	Water, Sanitation and Hygiene
WB	The World Bank
WRM	Water Resources Management
WSS	Water Supply and Sanitation
WTP	Water Treatment Plant

Angola
Luanda Bita Water Supply Guarantee Project (P163610)
PROJECT APPRAISAL DOCUMENT
Africa Region
Water Global Practice

Report No. 137066-AO

BASIC INFORMATION

Is this a regionally tagged project?	Country (ies)	Lending Instrument
No	Republic of Angola	Investment Project Financing

[ ] Situations of Urgent Need or Assistance/or Capacity Constraints
[ ] Financial Intermediaries
[ ] Series of Projects

Approval Date	Closing Date	Guarantee Expected Expiry Date	Environmental Assessment Category
June 27, 2019	December 31, 2023	September 30, 2034	B – Partial Assessment

World Bank/IFC Collaboration
No

Proposed Development Objective(s)
The Project Development Objective (PDO) is to improve access to potable water service in selected areas of Luanda by mobilizing commercial financing for the Government of Angola.

Components
The proposed IPF operation has one component, which consists of the first phase of the Bita Project water production, transmission and distribution investments, supported by a partial IBRD loan guarantee of maximum US$500 million.

Component Name	Cost (US$, millions)
Bita Project IBRD Loan Guarantee	500.00

Organizations

Borrower:	Republic of Angola acting through the *Ministério das Finanças* (Ministry of Finance)

Contact

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Ministry of Finance
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Ministry of Energy and Water
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Email: *jasalgueiro@yahoo.com*

Implementing Agency: *Empresa Pública de Águas de Luanda* E.P. (Luanda Public Water Company)
(on behalf of the *Ministério da Energia e Águas* (Ministry of Energy and Water))

Contact

Fernando Joao Cunha
Chairman of the Board
Empresa Pública de Águas de Luanda E.P.
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PROJECT FINANCING DATA

[ ] Counterpart Funding	[X] IBRD	[ ] IDA Credit [ ] IDA Guarantee [ ] Crisis Response Window [ ] Regional Projects Window	[ ] IDA Grant [ ] Crisis Response Window [ ] Regional Projects Window	[ ] Trust Funds	[X]Parallel Financing

Total Project Cost:	Total Financing:	Financing Gap:
US$1,090.00 million	US$1,090.00 million	0.00
	Of Which World Bank Financing (IBRD/IDA): US$500.00 million	

Financing (in US$, millions)

Financing Source	Amount (million)
Commercial Financing	**1,090.00**
- ECA Guaranteed Commercial Debt	160.00
- Government of Angola Financing	20.00
- IBRD Guaranteed Commercial Debt	910.00
IBRD Guarantee Amount for Commercial Debt	**500.00**
Commercial Debt uncovered by IBRD Guarantee	410.00

Expected Disbursements (in US$, millions)

World Bank Fiscal Year	2020	2021	2022	2023
Annual	470.00	429.00	180.00	11.00
Cumulative	470.00	899.00	1079.00	1090.00

INSTITUTIONAL DATA

Practice Area (Lead)
Water

Contributing Practice Areas
Infrastructure Finance, PPPs and Guarantees

Climate Change and Disaster Screening
This operation has been screened for short and long-term climate change and disaster risks

Gender Tag
Does the project plan to undertake any of the following?

a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF
No

b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment
Yes

c. Include Indicators in results framework to monitor outcomes from actions identified in (b)
Yes

SYSTEMATIC OPERATIONS RISK- RATING TOOL (SORT)

Risk Category	Rating
Political and Governance	Substantial
Macroeconomic	High
Sector Strategies and Policies	Substantial
Technical Design of Project or Program	Substantial
Institutional Capacity for Implementation and Sustainability	High
Fiduciary	Substantial
Environment and Social	Substantial
Stakeholders	High
Overall	High

COMPLIANCE

Policy

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

[ ] Yes [X] No

Does the project require any waivers of World Bank policies?

[ ] Yes [X] No

Have these been approved by World Bank management?

[ ] Yes [ ] No

Is approval for any policy waiver sought from the Board?

[ ] Yes [X] No

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	X	
Natural Habitats OP/BP 4.04	X	
Forests OP/BP 4.36		X
Pest Management OP 4.09		X
Physical Cultural Resources OP/BP 4.11	X	
Indigenous Peoples OP/BP 4.10		X
Involuntary Resettlement OP/BP 4.12	X	
Safety of Dams OP/BP 4.37		X
Projects on International Waterways OP/BP 7.50		X

Legal Covenants and Conditions

Conditions Precedent to Effectiveness of the IBRD Guarantee:
Usual and customary conditions of effectiveness for financing of this type including but not limited to the following: Provision of relevant legal opinions satisfactory to IBRD (including a legal opinion from the appropriate official of Republic of Angola relating to the Indemnity Agreement and the Project Agreement and any other relevant project documentation);

a) Payment in full of the Guarantee Fee, the Front-End Fee and the relevant instalment(s) of the Standby Fee and reimbursement of IBRD's external legal and due diligence expenses;
b) Establishment of an escrow account or other secure mechanism for compensating project-affected persons (PAPs) in accordance with the Safeguards Instruments (the "Resettlement Escrow Account"), for directly paying eligible resettlement expenditures against appropriate evidence of eligibility;
c) Execution of the Indemnity Agreement, the Project Agreement and any other applicable documentation, in each case acceptable to IBRD, including without limitation: (i) amendments to the Design-Build (DB) Contracts and Lot Supervision Contracts for Lots B1-B7; (ii) DB Contracts and Lot Supervision Contracts for Lots B8-B13; and (iii) the amended Project Management Contract reflecting, inter alia, the carve-out of Quilonga Grande tasks, and the inclusion of Lot B8-B13 tasks and other agreed additional tasks;
d) Delivery of a plan for the improvement of EPAL's performance satisfactory to IBRD (the "Performance Improvement Plan", PIP);
e) Completion of environmental and social audit for Lot B4 implementation to date and amendment of DB and construction supervision contracts for Lot B4 to include provisions for compliance with applicable World Bank safeguards requirements;
f) Preparation by EPAL and endorsement and confirmation of funding by MinEA of action plans for achievement of the Five Objectives (as defined below) as agreed with IBRD;
g) Satisfaction of any other conditions precedent under the financing documents;
h) A Project Operations Manual (POM) containing detailed arrangements and procedures for the implementation of the project including, without limitation, with respect to (a) the development of new connected service in peri-urban areas and (b) the introduction of pre-paid metering (the "Project Operations Manual"), has been prepared in form and substance satisfactory to IBRD and adopted by EPAL, MinEA and MinFin; and;
i) Establishment of a project implementation unit (PIU) within EPAL acceptable to IBRD;
j) Evidence satisfactory to IBRD that (i) the procurement process for the Independent Technical Auditor and Independent Environmental and Social (E&S) Auditor has been completed or is reasonably advanced and (ii) the resident technical advisers to EPAL have been hired or selected;
k) Evidence satisfactory to IBRD that the Implementing Entity has sufficient budgeted amounts (other than IBRD-Guaranteed Loan proceeds) to meet its responsibility for obtaining project-related permits and governmental authorizations in accordance with the DB Contracts.

Covenants:
Indemnity Agreement:
Usual and customary covenants included in agreements between member countries and IBRD, as well as undertakings to pay the fees and expenses of IBRD's external counsel and other advisors in connection with the Loan negotiation.
Project Agreement:
The Implementing Entity will covenant, inter alia, that it will:

a. Comply with applicable laws, including environmental laws, and the applicable E&S safeguards requirements under the World Bank E&S safeguards requirements, including, among other things, obligations to ensure that the project is carried out in accordance with the Environmental and Social Impact Assessment (ESIA) and the Resettlement Policy Framework (RPF) and any other E&S safeguards instruments (the "Safeguards Instruments"), including the establishment of capacity and mechanisms for payment of resettlement compensation;

b. Provide annual audited financial statements and other reports;
c. Provide certain periodic and other notices, progress reports and other information to IBRD, including, without limitation: (i) in relation to implementation of the PIP; (ii) reports on the status of compliance with the Safeguards Instruments; (iii) copies of progress and other reports provided by the project management consultant (PMC), Lot Supervisors, DB Contractors and/or other project contractors and subcontractors; (iv) notices of material incidents or accidents; and (iv) regular reports regarding the Five Objectives;
d. Provide access to the project sites;
e. Maintain and provide IBRD with access to records evidencing compensation to and eligibility of PAP in accordance with the Safeguards Instruments;
f. Not engage in (or authorize or permit any affiliate or any other Person acting on its behalf to engage in) any Sanctionable Practices in connection with the project;
g. Comply with World Bank requirements relating to Sanctionable Practices regarding individuals or firms included in the World Bank Group list of firms debarred from World Bank Group-financed contracts;
h. Ensure that the project is carried out in accordance with: (i) the DB contracts for the various components/lots of the project works between the Implementing Entity and respective DB contractors; (ii) the construction supervision contracts (the "Lot Supervision Contracts"), between the Implementing Entity and the construction supervision consultants for such lots (the "Lot Supervision"); (iii) a project management contract for the project (the "Project Management Contract"), between the Implementing Entity and DAR-Angola Consultoria Limitada as project manager or its successor or assignee acceptable to IBRD (the "PMC"), including agreed additions to the scope of work; (iv) the Project Operations Manual, the PIP, and all other material project-related plans, manuals and transaction documents (collectively, the "Transaction Documents");
i. Not make or agree to: (i) any modification to the Project Operations Manual or the PIP without IBRD's prior written consent; (ii) any modification to a Transaction Document without IBRD's prior written consent where such modification could have a material adverse effect on the Project, the ability of any other party to any such Transaction Document to perform any of its material obligations thereunder, or the rights or obligations of IBRD under the Guarantee-related agreements to which it is a party; or (iii) any material modification to any Transaction Document without the prior approval of the Project Steering Committee in accordance with the Project Operations Manual;
j. Use the proceeds of the disbursements under the IBRD-Guaranteed Loan exclusively for the project and in accordance with the terms and conditions of the IBRD-Guaranteed Loan Agreement;
k. Ensure that the construction and commissioning of Lot B4 (directly financed by the Government of Angola other than from the proceeds of the IBRD-Guaranteed Loan) are timely completed in accordance with the relevant Transaction Documents;
l. Implement the PIP (as defined above);
m. Achieve: (i) certain key project performance indicators and intermediate results indicators; and (ii) annual performance target levels for each agreed performance objective including for customer meter installation, bill collection ratio, operational cost recovery ratio (cash basis), launch of a non-revenue water reduction strategy, and annual customer satisfaction surveys (the "**Five Objectives**");
n. Establish and maintain certain implementation arrangements, including each of the following entities, in each case with terms of reference (ToRs), composition, staffing and qualification acceptable to IBRD and (as applicable) in accordance with the respective contracts with the Implementing Entity, approved by IBRD;

1) adequately funded and equipped PIU within EPAL covering the project implementation period, including at a minimum the following staff: (A) a project manager; (B) a construction management expert; (C) a procurement and contract administration expert; (D) an environmental safeguards coordinator; (E) a social safeguards coordinator; (F) a community relations specialist in charge of grievance redress mechanisms; (G) a FM specialist; (H) a project communications expert for institutional- and stakeholder-related outreach; and (I) a monitoring and evaluation specialist;
2) an independent technical auditor consisting of internationally reputed experts in relevant fields within MinEA (the "**Independent Technical Auditor**");
3) an independent environmental and social safeguards consultant (the "**Independent E&S Auditor**") to monitor, report on and verify compliance with applicable laws, including environmental laws, and applicable World Bank environmental and social safeguards requirements;
4) the PMC;
5) the Lot Supervisors;
6) the resident technical advisors;
7) a project steering committee (the "**Project Steering Committee**") chaired by MinEA and comprised of representatives of MinEA, MinFin, provincial government, EPAL and IRSEA and other relevant government stakeholders, to meet on a regular basis to be defined;
8) ad hoc technical working groups (to be defined) including representatives of the PIU, Lot Supervisors and/or the PMC, to meet on a regular basis to be defined and otherwise as necessary; and
9) at all times following the commencement of operation of the project, dedicated staff with responsibility for operation and maintenance of the project;

o. Take all action within its power to ensure that the foregoing entities carry out their respective responsibilities in accordance with the applicable Transaction Documents and respective agreed TORs;

p. No later than [10 days] before commencement of operation of the project, update the Project Operations Manual to include a staffing and operations plan satisfactory to IBRD for operation and maintenance of the project;

q. Minimize or avoid the turn-over of staff and consultants of the PIU;

r. Implement any recommendations of the Independent Technical Auditor and Independent E&S Auditor;

s. MinEA to support EPAL's implementation and achievement of the Five Objectives as needed; and

t. Ensure the availability of sufficient budgeted amounts to meet its responsibility for obtaining project-related permits and governmental authorizations in accordance with the DB Contracts.

PROJECT TEAM

World Bank Staff

Name	Role	Specialization	Unit
Pier Francesco Mantovani	Team Leader (ADM Responsible)	Lead Water and Sanitation Specialist	GWA08
Satheesh Kumar Sundararajan	Team Leader	Senior Infrastructure Finance Specialist	GIPFS
Prajakta Chitre	Team Member	Infrastructure Finance Specialist	GIPFS
Jonathan Kano Ikeda	Team Member	Senior Financial Specialist	GWA08
Luciana Guimaraes Drummond E Silva	Team Member	Contract Review Consultant	GIPPF
Gerhard Albert Soppe	Team Member	Senior Water and Sanitation Specialist	GWA08
Nadia Henriqueta Gabriel Tembe Bilale	Environmental Specialist	Environmental Specialist	GENA3
Cyrille Valence Ngouana Kengne	Environmental Specialist (ADM responsible)	Senior Environmental Specialist	GENA3
Brandon Enrique Carter	Environmental Specialist	Senior Environmental Specialist	GENA3
Santiago Estanislao Olmos	Social Specialist	Senior Social Development Specialist	GSU01
Mario Rizzolio	Social Specialist	Social Development Specialist	GSU01
Benjamin Burckhart	Social Specialist (ADM responsible)	Senior Social Development Specialist	GSU01
Alexandra Bezeredi	Social Specialist	Lead Social Development Specialist	GSU01
Monica Teresa Restrepo	Counsel	Chief Counsel	LEGSG
Mark Christian Sigrist	Counsel	Senior Counsel	LEGSG
Sofia de Abreu Ferreira	Counsel	Senior Counsel	LEGEN
Joao Tinga	Financial Management Specialist	Senior Financial Management Specialist	GGO26
Laurent Mehdi Brito	Procurement Specialist (ADM Responsible)	Senior Procurement Specialist	GGOPF
Ana-Maria Carvalho	Team Member	Senior Operations Officer	AFMAO
Elena Gagieva-Petrova	Team Member	Senior Operations Officer	GWA05
Isabel Duarte A. Junior	Team Member	Program Assistant	GWA08
Jesus Alberto Lino	Team Member	Program Assistant	AFMAO

Camilo Lombana Cordoba	Team Member	Senior Water and Sanitation Specialist	GWA08
Aleix Serrat Capdevila	Team Member	Water Resources Specialist	GWA08
Alexander McPhail	Team Member	Lead Water and Sanitation Specialist	GWA09
Berta Adelaide Da Silva Macheve	Team Member	Water Supply and Sanitation Specialist	GWA02
Antonio Chamuco	Procurement Specialist	Senior Procurement Specialist	GGOPF
Paulo Jorge Temba Sithoe	Environmental Safeguards Specialist	Environmental Safeguards Specialist	GENA3
Teuta Kacaniku	Peer Reviewer	Senior Infrastructure Finance Specialist	GIPFS
Luiz Claudio Martins Tavares	Peer Reviewer	Lead Water and Sanitation Specialist	GWA04
William Kingdom	Peer Reviewer	Lead Water and Sanitation Specialist	GWA01
Joel Kolker	Peer Reviewer	Lead Water and Sanitation Specialist	GWADR
Alexandra C. Bezeredi	Peer Reviewer	Lead Social Development Specialist	GSU01
Gustavo Saltiel	Peer Reviewer	Lead Water and Sanitation Specialist	GWA04
Vincent Launay	Peer Reviewer	Senior Infrastructure Finance Specialist	GIPFS
Victoria Rigby Delmon	Peer Reviewer	Senior Counsel	GWA09
Andreas Rohde	Peer Reviewer	Senior Water Resources Management Specialist	GWA06

Extended Team

Name	Title	Organization	Location
Igor Burazin	Consultant	Independent Procurement Expert	
Cristina Maria Ladeira Ferreira	Consultant	Legal Consultant	
Elisabeth Sherwood	Consultant	Financial Analyst	
Ana Paula Ramos	Consultant	Independent Safeguards Expert	

REPUBLIC OF ANGOLA
LUANDA BITA WATER SUPPLY GUARANTEE PROJECT
TABLE OF CONTENTS

I. STRATEGIC CONTEXT

A. Country Context

1. **Angola is a resource-rich, fast-urbanizing country of about 30 million people.** Thanks to its oil and mineral wealth Angola is the third largest economy in Sub-Saharan Africa (SSA). Its population of 29.7 million (2017) grows at an annual rate of 3.3 percent. Following the end of the war in 2002, the rural population, including many of the poorest, migrated to the cities in search of greater economic opportunities. As a result, the urban population now represents about 65 percent of the total population, and still grows at 4.5 percent per year, one of the fastest urbanization rates of the continent. About a quarter of Angola's population lives in the capital Luanda. The country is very young, with a share of population under 15 years of age as high as 45 percent.

2. **The Angolan economy is at a significant juncture.** The current growth model based on oil wealth is nearly exhausted and has not delivered inclusive growth and shared prosperity. In addition, over-dependence on oil has made growth and macroeconomic management highly vulnerable to external shocks. The challenge for the new Administration of President João Lourenco, the first new leader in almost four decades and in office since September 2017, is to lay the foundations for a new growth model that is more open and inclusive, and less dependent on oil. Prospects of persistently low oil prices and potentially diminishing oil reserves over the longer-term make the call for economic diversification and inclusion even more pressing. Within this context, Angola faces two broad policy challenges that need to be urgently addressed:

- Angola needs institutions that support more sustainable and less volatile growth. The sharp and prolonged decline in oil prices since mid-2014 has reduced oil revenues and caused gross domestic product (GDP) growth to contract over the past three years. The current account deficit stood at 8.8 percent of GDP in 2015, large fiscal deficits have been recorded since 2014, public debt has doubled over the last three years. There is also an urgent need to safeguard financial system stability as the undercapitalization of a systemically important state-owned bank, the loss of direct U.S. dollar correspondent banking relationship, and non-performing loans are inhibiting the banking sector's ability to provide needed credit for the private sector, especially for small and medium enterprises. Inflation escalated in 2016, reaching a peak of 40 percent in December 2016, before retrenching to 18 percent in February 2019.

- Angola needs a more inclusive growth model that promotes private-sector led diversification and protects the poor and vulnerable. Up to now, Angola has relied on the oil industry and high oil prices to drive economic growth and to rebuild a large part of its infrastructure, which was destroyed during the long Civil War (1975-2002). Inequality remains high, with a Gini coefficient of 0.43 in 2016. In the 2015, Angola ranked 150 (out of 188 countries) in terms of Human Development Indicators. The Human Capital Index (HCI) is at 0.36 and performs below income comparators and the SSA's average at all levels. In 2016, about 30 percent of the Angolan population remained below the international poverty line (at US$1.90/ day and 55 percent if US$3.1/day is considered). Investment in human capital, effective institutions and a favorable business environment are critical for economic diversification and job creation.

3. **The new Administration is aware of these challenges and has started to implement much needed reforms.** Decisive steps have been taken towards restoring macro-stability and the medium-term National Development Plan (NDP) (2018-2022) lays out a road map towards a more diversified and inclusive growth model that is open to supporting a young and growing population. The new Administration has also shown willingness to tackle entrenched interest and has undertaken several critical reforms, including the passage of laws for greater private sector investment and transparency. The Administration is establishing plans to open up important sectors to competition, including through privatizations of large-scale state-owned enterprises. Macro-economic policies have been adjusted to reflect market realities and address imbalances; these include greater exchange rate flexibility; the

modernization of monetary policy; plans to reform and better target subsidies; more effective management of natural resource wealth through the creation of a sovereign wealth fund with the dual objective of fiscal-stabilization and long-term saving; and a commitment to restructure state-owned banks. The World Bank will be proposing financing for a programmatic Development Policy Financing (DPF) series (P166564), and a Social Safety Net (SSN) Project (P169779) that intend to support Angola in its ambitious and urgent reform strategy.

4. **The proposed DPF series will support the Government of Angola (GoA) to achieve more sustainable and inclusive growth**, through (i) a macro-financial and institutional environment that is conducive to private-sector led growth; and (ii) financial and social inclusion. The DPF builds on extensive policy dialogue and analytical work, which includes the recent Angola systematic country diagnostic (SCD), a broad range of technical assistance (TA), and several ongoing and planned World Bank operations[1]. The SCD identifies (i) improving governance and macroeconomic stability; (ii) creating productive opportunities for economic diversification; and (iii) building human capital, to support Angola's transformation from an oil-based, state-led economy to a more inclusive, diversified private sector-led economy. The DPF also supports the GoA's fiscal consolidation agenda through prior actions in state-owned enterprise (SOE) reform, and tariff and subsidies reform. GoA's SOE reform agenda aims at (i) strengthening SOE oversight and management and (ii) restructuring the sector. Better oversight, through more active monitoring of fiscal risks, and more effective SOE management are expected to deliver efficiency gains and cost savings at the SOE level, which, in turn, would reduce SOE losses and operational subsidies to SOEs.

5. **Angola is also implementing the recently approved International Monetary Fund (IMF) US$3.7 billion Extended Fund Facility (EFF) program.** The EFF, approved on December 7, 2018 supports macro-economic stability to pave the way for sustained and inclusive growth. The key objectives of the program are: (i) to entrench fiscal adjustment in 2018 and 2019, followed by gradual fiscal consolidation to reduce public debt to sustainable levels; (ii) to liberalize the foreign exchange market, while gradually unwinding exchange restrictions and multiple currency practices; (iii) to modernize the monetary policy framework; (iv) to strengthen financial sector resilience; and (v) to foster private sector-led growth and economic diversification by improving governance and the business environment. The EFF also supports reforms that target improvements in governance, such as enhancing transparency in debt management; restructuring the state oil company Sonangol[2]; improving public financial management; and strengthening Angola's anti-money laundering / combating the financing of terrorism (AML/CFT) framework.

6. **The macroeconomic framework in Angola is sustainable over the medium term and adequate for the proposed operation**. The depreciation of the currency and the removal of foreign exchange restrictions has allowed the current account to reach equilibrium and brought the real effective exchange rate close to fundamentals. The adoption of a market-based exchange rate will allow the exchange rate to respond to oil price fluctuations bearing most of the adjustment in the future. Domestic equilibrium has not yet been achieved as inflation and debt levels are still high. However, the policy response since late 2017–anchored in the macro stabilization program *(Programa de Estabilização Macroeconómica,* PEM) – has been adequate and effective in reducing these imbalances. If implemented successfully, the PEM is expected to strengthen fiscal and debt sustainability, reduce inflation, and improve financial sector stability over the medium term. The economic diversification agenda – backed by the NDP 2018-2022 – will be instrumental to enhance private sector-led growth and competitiveness over the medium term, which will help reduce the volatility and pro-cyclicality from commodity dependency and support macroeconomic stability.

[1] The following recent analytical work also informed the preparation of the DPF: the Financial Sector Development Strategy (2017); the Policy Notes to the New Administration (2018); Angola Social Protection Public Expenditure Review (2018); the Angola Country Economic Memorandum: Towards Economic Diversification (2018); and the Angola Country Private Sector Growth Diagnostic (CPSD) (2018).
[2] Group Sonangol is the state-owned oil company responsible for the management of oil and natural gas exploration in Angola.

7. **Public debt is expected to peak in 2018 and then to gradually decline over the medium-term.** Public debt (including Sonangol) increased to 89.1 percent of GDP (US$77.1 billion) in 2018 due to the currency depreciation, higher borrowing needs, and recognized liabilities from government arrears and SOE capitalization. Around 80 percent of debt is denominated in foreign currency, which makes the debt stock vulnerable to currency depreciation. Debt dynamics are also sensitive to growth and contingent liabilities, related to state-owned banks or non-financial SOEs, pose additional risks. In 2018, the World Bank and the IMF have started to re-engage with the GoA on both domestic capital market development and the medium-term debt management strategy. The EFF program supports the implementation of Angola's macroeconomic reform plan (PEM), including fiscal consolidation, increased exchange rate flexibility, and financial sector stability.

8. **Central Bank of Angola (BNA) has been more proactive in addressing financial sector vulnerabilities**. The authorities have made significant progress in improving the legal and regulatory framework for bank regulation and supervision, as well as in addressing weakness in the banking sector. Banking regulation and supervision enhancements include the following: (i) a revised 2015 financial institutions law that includes improvements in corporate governance and internal controls; (ii) all domestic banks have migrated to the International Financial Reporting Standards (IFRS) accounting system; and (iii) an asset quality review (AQR) for the twelve largest banks is expected to be completed in 2019 (a structural benchmark under the IMF program)[3]. Non-performing loans (NPLs) remain high, at 28 percent at end-2018, but the bulk (almost 70 percent) are concentrated in the largest state-owned bank Banco de Poupança e Crédito (BPC), which depends on liquidity from BNA and requires recapitalization and operational restructuring to help resolve NPLs. A public asset recovery entity (Recredit) was set up in 2017, which has agreed to purchase BPC's distressed assets. As part of the IMF program, the GoA will limit Recredit's mandate to purchase NPLs from only BPC and will introduce a sunset clause to its operations. BPC is undergoing critical restructuring; several branches have been closed and staff has been laid-off. The restructuring plan will be updated in consultation with the IMF, to ensure it is sufficiently capitalized and viable by June 2020. Moreover, the BNA is strengthening the AML/CFT framework for the banking system and the Government has launched a National Risk Assessment (NRA) for AML/CFT in 2017.

9. **Angola's financial markets are relatively underdeveloped considering the country's oil wealth.** The health of banking system has been deteriorating, with number of banks undercapitalized and with declining capital adequacy ratios, thus severely constraining their ability to provide long term financing. At the sovereign level, Angola has been testing international capital markets in recent years[4]. Only two sovereign bonds were issued in the past. GoA's access to financing market has been largely limited through multilateral, bilateral (e.g., Chinese) and export credit agency (ECA) sources.

10. **The NDP (2018-2022) sets out the medium-term development objectives for Angola between 2018 and 2022.** Released in May 2018, it is aligned with the general planning system law and with the long-term plan Angola 2025, which will be revised and extended to 2050. The NDP contains 10 higher order objectives and is composed of six intervention axes or government priorities, 25 strategic policies, and 83 programs. The six government priorities are: (i) human development and welfare; (ii) sustainable, diversified, and inclusive economic development; (iii) infrastructure development; (iv) peace consolidation, strengthening democracy, good governance, decentralization and state reform; (v) harmonious territorial development; and (vi) ensuring Angola's stability and territorial integrity and strengthening Angola's role regionally and internationally. The GoA expects that the measures set out in the NDP will support an improvement in several benchmark indicators such as Angola's Human Development Index from 0.53 in 2015 (low human development) to above 0.7 (medium human development) by 2025.

[3] Following the AQRs, any bank with capital shortfalls will be required to submit a plan to raise capital from by end-2019 and complete the recapitalization process by June 2020.
[4] The two previous bond issuances were in 2018 and 2015, issued US$3.5 billion and US$1.5 billion, both 10-year Eurobond, with a trading at 7.82% and 7.08 % yield, respectively (as of March 4, 2019).

11. **Angola's infrastructure development continues to lag compared to peer countries.** The 2018 Global Competitiveness report ranks Angola 127th out of 140 countries for the quality of its infrastructure. Access to safe water and sanitation is exceptionally low, with Angola ranking 138 out of 140 for reliability of water supply. The total infrastructure investment requirements in the next 20 years, covering energy, telecom, transport and water is approximately US$364 billion. Based on the current low infrastructure investment trends in Angola, the investment gap may reach around US$97 billion. The water sector investment needs over 2017-2022 are estimated at US$22 billion[5]. With constraints on oil-linked revenues, limited public debt capacity and extremely weak domestic financing market, GoA relies on hard currency capital market and commercial bank financing. On the other hand, the current credit rating limits their ability to attract long term commercial financing without adequate credit enhancements.

B. Sectoral and Institutional Context

12. **Angola's water supply service indicators rank poorly in SSA and among peer upper middle-income countries.** Water supply and sanitation (WSS) infrastructure was dilapidated during the war. In 2001, only 27 percent of the population had access to improved drinking water (42 percent in urban areas). Progress since then has been slow and Angola did not meet its Millennium Development Goals (MDG) targets for water and sanitation. As of 2015, access to improved drinking water sources had grown to 54 percent (63 percent in urban areas), a very low rate for an upper-middle income country. Access to piped water service only averaged 29 percent nationally (55 percent urban, 9 percent rural), and access to sanitation averaged 35 percent (57 percent urban and 17 percent rural). The country still experiences a 33 percent incidence of open defecation, mostly in the rural areas. Inadequate investment levels, the loss of technical, operation and maintenance capacities, and fast demographic trends, are the main causes for the lack of progress.

13. **Angola is well-endowed with water, but its hydraulic infrastructure needs strengthening for reliability, capacity and resilience.** The country's water management infrastructure and institutional capacity are not yet resilient to climate change. As water demands grow driven by demography, urbanization and economic development, the country also faces significant climate change challenges and is already experiencing regional droughts that put pressure on water supplies. Floods in Angola are also a recurrent phenomenon.[6] Moreover, the risk of extreme temperatures is considered high for the country.[7] The expected increase in temperatures is likely to lead to more frequent and intense high-precipitation events. As warming accelerates the drying of land surface and raises the water-holding capacity of the atmosphere, more intense and heavy rainfall events are expected to occur, interspersed with longer, relatively dry periods.[8] Higher temperatures will also result in increased water consumption, while exposing people fetching water (typically women and girls) to heat-related health risks. Coastal cities, including Luanda, will also be increasingly vulnerable to storm surge and rising sea levels.

14. **The policy and institutional framework of Angola's WSS sector is decentralized and still developing.** WSS responsibilities are delegated to local or provincial authorities under the 2002 Water Law, with sector policy and oversight resting with the Ministry of Energy and Water (*Ministério da Energia e Águas,* MinEA. Following the war, utilities had to be rebuilt in all provincial capitals from the remains of prior municipal water services. By 2016, with the support from the World Bank-funded Water Sector Institutional Development Project (PDISA) (P151224), 16 such utilities had been created, and a water regulation capacity had been set up within the national electricity regulator, now known as Electricity and Water Regulatory Agency (*Instituto Regulador dos Serviços de Electricidade e Água*, IRSEA). These utilities and the regulator are still maturing and face capacity challenges-not unlike what is observed in many other countries undergoing decentralization. Also, infrastructure is still funded at the national level, through commercial loans or bilateral and multilateral financial cooperation, and this may continue for the

[6] The city of Luanda has been particularly affected since 2007 (source: Angola National Adaptation Programme of Action under the United Nations Framework Convention on Climate Change (UNFCCC). 2011. Government publication, page 16).
[7] ThinkHazard: In Luanda the extreme temperature risk is rated medium.
[8] Source: USAID. No date. "Climate Change Adaptation in Angola."

medium term. There is some important progress however, as IRSEA led the preparation of a water utility tariff reform, enacted in August 2018, aimed at promoting efficiency and reducing the need for GoA operating subsidies (see Textbox 1). Further improvements in water tariff regulation policy are being pursued, including with the support of the DPF series.

Textbox 1: Tariff and Subsidies Reform in Angola and World Bank support
According to GoA, general price subsidies represent a heavy burden on public finances and mostly benefit the wealthiest segments of society (IMF, 2018). The GoA started to reduce subsidies by adjusting water tariffs in August 2018 and plans to adjust electricity and public transportation tariffs as well as gasoline and diesel prices over the course of the next few years. The GoA's strategy for the electricity and water sectors also targets measures to improve the operational efficiency of SOEs in these sectors.

In an ideal world, utility and fuel prices should be at the cost-recovery levels reflecting efficient operation; there are no sector-specific price subsidies; and assistance to the poor is integrated, sharply targeted, and designed to meet their essential needs. Angola is currently far from the ideal. The current legal and regulatory framework does not support sustainable financial performance of public utilities, because pricing and operational decisions do not reflect cost-recovery principles and are susceptible to political influence. Price subsidies have also not proven efficient and effective in protecting the poor, because they are universal, making them highly regressive and benefitting the rich disproportionally. Angola's SSN is currently too fragmented and limited in scope to mitigate the impact of subsidy reform. The absence of a poverty-targeted safety net limits households' capacity to manage risks and potentially makes the likely adverse social effects of pricing and subsidy reforms significant and increases the risk of civil strife and rejection of the reform.

Critical aspects of tariff and subsidy reforms in Angola are therefore: (i) a rule-based and transparent tariff- and price-setting process for utilities and fuel suppliers, and adequate tariff and price levels to cover efficient costs and gradually support investment; (ii) improved operational efficiency of public utilities and fuel suppliers; and (iii) replacing inefficient, universal price subsidies with effective poverty-targeted SSNs, and social service delivery to foster investments in human and productive capital to increase the opportunities of poor households to participate fully in the country's development.

World Bank engagement in tariff and subsidies reform in Angola:
With help of the World Bank, the GoA plans to develop and implement an automatic price adjustment mechanism to ensure that domestic prices of gasoline and diesel fuel are at cost-recovery levels based on import parity, while strengthening poor households' capacity to manage shocks -particularly those linked to the subsidy reform- through scaling up cash transfers. In the water and electricity sectors, tariff reforms are aimed at recovery of efficient costs and elimination of operating subsidies, coupled with policies to protect poor consumers or increase access to service in low income areas. The proposed DPF (P166564), the Bita Guarantee (P163610) and the SSN Project (P169779) form part of an integrated effort to support reforms that help move Angola towards an effective and transparent pricing-setting mechanism for fuel and utility prices to ensure more efficient operation and fairer access for poor households.

15. **Access to piped water service in Luanda is inadequate and continually falling behind demand**. Growing at a rate of 4.5 percent per year, Greater Luanda's current population of 7.5 million could reach 13 million in 2030, and 17 million in 2040. The city's provision of water service has not kept up with the population growth. As of 2016, only 59 percent of the city's residents had access to piped water service (37 percent through an individual house connection and 22 percent through public standpipes). Another estimated 25 percent rely on tanker truck service that resells water provided by Luanda Public Water Company *(Empresa Pública de Águas de Luanda E.P.,* EPAL), urban water utility for the province of Luanda. The remaining population (16 percent) include illegally connected users, or people who get water from streams and canals, or who buy it from tanker trucks that carry untreated river water or water stolen from EPAL. Within Greater Luanda, the existing distribution networks only cover the densely-urbanized Luanda and Cazenga municipalities, and to a much lesser extent, the surrounding municipalities of Cacuaco, Viana, Belas and Icolo-e-Bengo. Vast stretches of Greater Luanda, including modern developments, recently urbanized areas, dense urban slums (*musseques*), and sprawling informal peri-urban settlements in the South and East of the capital, lack distribution networks and rely mainly on expensive private tanker truck service,

priced at 5 to 50 times the EPAL tariff. Over 3 million people in Luanda are without access to a piped water supply today, and must cope with unsafe, inconvenient, and largely unaffordable tanker truck service[9]. The proposed Bita Project[10] should transform water supply conditions in the unserved, mostly low-income southern peri-urban areas and suburbs.[11] Given urban growth trends, piped water access shortfalls will however persist in Greater Luanda.

16. **EPAL is a low performing utility, with a need for change.** EPAL has historically been a highly-subsidized, low-performing utility, with limited accountability for results. In 2015, the average hours of service were estimated at nine hours per day. NRW is estimated at over 30 percent, and the collection ratio is only 31 percent. EPAL is not financially healthy as its operations have long required substantial national subsidy support and still completely rely on the national budget for capital expenditures. Since 2017 however, EPAL has been pressed by GoA to improve its performance, as one of several SOEs targeted by efficiency programs, and has developed an ambitious 2018-2022 Performance Improvement Plan (PIP).

17. **To address these challenges, the NDP outlines three priority areas for government action in the WSS sector over 2018-2022.** These are: (i) the expansion of water service coverage in urban areas, municipal chief-towns and rural areas; (ii) the development and strengthening of water sector institutions; and (iii) the improvement of basic sanitation services. Under these priorities it is the Government's policy to, as quickly as possible, provide safe piped water supplies to all urban residents. The NDP sets targets of 60 percent urban piped coverage in 2018 and then 85 percent urban piped coverage by 2022. For Luanda the NDP estimates water capital investment needs in three phases over 25 years: US$1.1 billion for 2015-2020; US$1.5 billion for 2020-2030; and US$1.3 billion for 2030-2040.

18. **The proposed Bita Project is a first attempt for mobilizing commercial financing in the water sector since the oil crisis.** Given the substantial investments needed to meet urban water demand, the Government's policy is to seek private sector financing to the extent possible. Luanda's water supply masterplan, completed in 2012 with a 2040 horizon, determined that two large new water systems (S4, also known as Bita and S5 or Quilonga Grande) were urgently needed to meet the Greater Luanda's water demands. The Bita Project was pursued first, and was designed to be developed in two phases, with a first phase of 6 m^3/sec capacity. The original Water Treatment and Transmission Project would have cost US$600 million in 2014, to be financed by the Ministry of Finance (*Ministério das Finanças,* MinFin) through commercial loans. Based on the masterplan data, seven DB packages (lots B1-B7) were competitively procured using country procurement systems in 2014. However, due to the sharp decrease in world oil prices, the GoA was unable to secure the envisioned commercial financing without credit enhancement. In 2015, the contracts were amended, and their validity was extended, with a denomination in US dollars. In response to lenders' requests for credit enhancements, GoA then considered a Non-Honoring Sovereign Financial Obligations guarantee from the World Bank Group's Multilateral Investment Guarantee Agency (MIGA). After initiating due diligence through 2016, which required the rebidding of lots B1 and B7, MIGA was obligated to withdraw, as Angola's credit rating[12] fell below the threshold required for the Non-Honoring Sovereign Financial Obligations product support. In early 2017, GoA decided that two of the DB lots awarded to a Chinese firm, i.e., lots B3 and B4, would benefit from Chinese line-of-credit financing. Works started accordingly at B4 in 2017.

19. **IBRD guarantee identification**. By late 2016, the water crisis in Luanda was intensifying with frequent cholera outbreaks, and in early 2017, 215 cases and 11 deaths had been reported. By this time, GoA had turned to the World

[9] A household of 5, consuming 40 liters/person/day, and purchasing tanker truck water at AKZ 60 for a 20-liter jerrycan, incurs daily water costs of about AKZ 600 (approx. US$2).
[10] The Bita Project is named after a village along the Kwanza river where the water treatment plant of the Project is to be located.
[11] Including the Bita, Cabolombo, Mundial, Ramiros, Camama and Benfica-2 service districts.
[12] Angola credit rating- S&P: B-(negative) at February 8, 2019; Fitch: B (stable) at December 28, 2018; and Moody's: B3 (stable) at April 28, 2018.

Bank to request an IBRD guarantee[13]. World Bank due diligence however identified the need to optimize the investment scope and to improve project documentation if the project were to be appraised by IBRD standards and reach financial close. Specifically, the World Bank recommended that the installation of distribution systems be considered in the service areas of Bita, Cabolombo, Mundial and Ramiros, so that the Bita-produced water could effectively reach beneficiaries. The World Bank task team also recommended that the production capacity needs for the first phase of the Bita Project be reassessed. Accordingly, a complement of studies was required to:

- Establish the feasibility of a modified Bita Project inclusive of distribution systems and with an optimized Phase 1 capacity consistent with revised population and demand projections;
- Develop a preliminary design of necessary distribution systems; and
- Reassess the environmental and social impacts of the modified Project, and prepare a resettlement policy framework, consistent with World Bank safeguards policies.

20. **In early 2018, GoA opted to optimize the Bita investment scope in the context of overall growth and macroeconomic support.** GoA requested an IBRD guarantee to support the financing of an optimized Bita Project inclusive of distribution systems, with a production capacity reduced to 3 m^3/sec and with flexibility to accommodate future expansions. GoA committed to engage the relevant studies and furthermore asked for World Bank's support to help EPAL improve its performance as a utility. The evolution of the Bita Project, in the context of Angola's macroeconomic support programs, is roughly illustrated in Figure 1 below.

C. Relevance to Higher Level Objectives

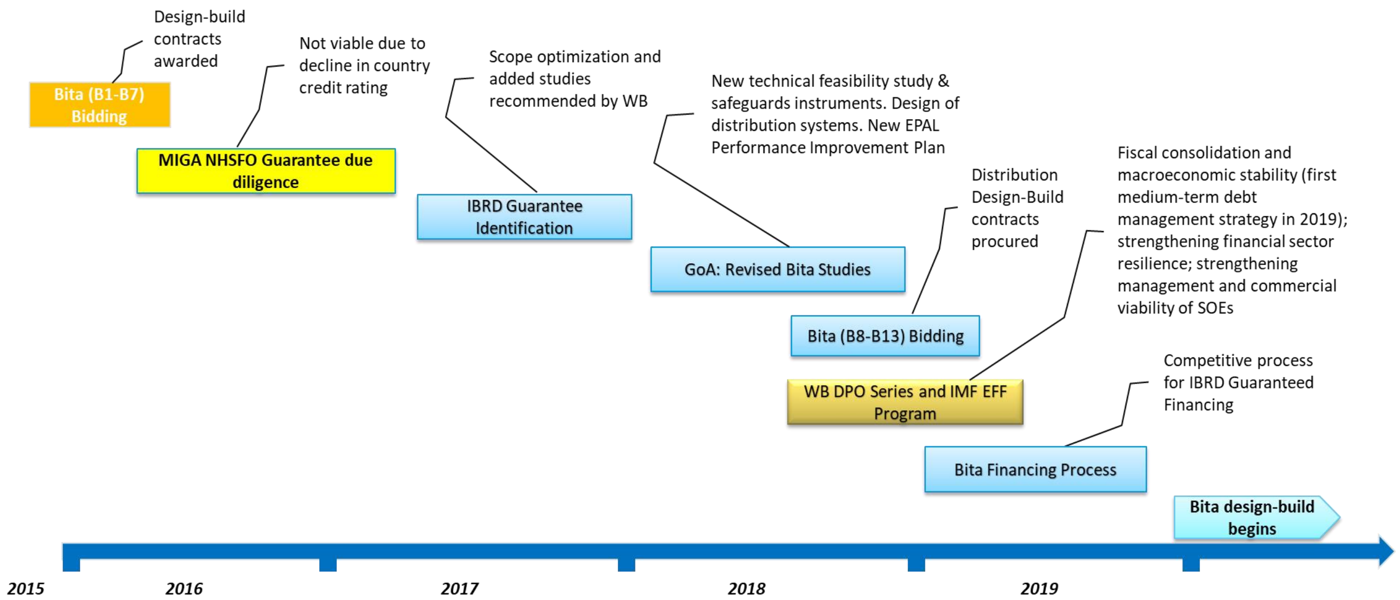
21. **The proposed Bita Project is aligned with the 2018 Systematic Country Diagnostic (SCD): Creating Assets to the Poor[14], as well as the current Country Partnership Strategy (CPS) for FY14–16[15].** The World Bank has a critical role to play in Angola's transformation, underpinned by a strong suite of critical knowledge work. The project provides a particularly innovative, boost to the modernization of the water sector and to the development of Greater Luanda. The SCD identifies the lack of growth in the private sector, particularly the lack of investment in infrastructure and service delivery, and the weak governance of SOEs, as key constraints to growth. It identifies expanded water and sanitation infrastructure as one of the priority pathways for creating productive opportunities and building human capital. The current CPS includes two pillars: (1) support integrated national economic diversification; and (2) enhance quality of service delivery and deepen social protection. In addition, the CPS includes a foundational plank for building human/institutional capacity and resilience to shocks. By supporting critical infrastructure investments in South Luanda, the Bita Project is directly contributing to Pillar 2 which includes expanding access to cost-effective water, education and health services. The Bita Project will contribute to the Foundational Plank through a significant enhancement of safe water supply and hygiene conditions in poor urban and peri-urban neighborhoods of Greater Luanda, which will support the development of human capital through improved health outcomes. In addition, Bita will improve the resilience of Luanda's water supply system to climate shocks.

22. **More broadly, the project will contribute to the World Bank's twin goals, as well as the development of human capital in Angola**. While 85 percent of the richest quintile have access to basic water supply or better, only 54 percent of the poorest have access to similar quality services. Addressing this gap is critical to building human capital in Angola. Rates of improved drinking water coverage and the World Bank's HCI are closely correlated. By

[13] With lots B3 and B4 financed by China, the original 2017 request was for the IBRD guarantee to support lots B1, B2, B5, B6 and B7. The proposed IBRD guarantee support was subsequently increased in 2018 to support lots B8-B13. Following cancellation of Chinese financing for lots B3 and B4 in early 2019, World Bank and GoA agreed that lot B3, for which implementation had not started, could be covered by IBRD-guaranteed financing, whereas the completion of lot B4 works, already underway since 2017, would be directly funded by GoA.
[14] Report No. 135196 dated December 1, 2018.
[15] The CPS was extended to FY19 by Performance Learning Review (P155810).

expanding EPAL's production capacity and distribution network across Luanda, with emphasis on establishing new service in vast low-income, peri-urban areas of South Luanda currently coping with expensive private tanker truck service, the project will contribute to the twin goals by increasing the number of households with access to safe, reliable and affordable piped water supply, with associated improved public health, productivity and gender outcomes.

Figure 1: Evolution of Bita Project Development and Financing



23. **As a first collaboration with Angola's largest water utility, the Bita Project will trigger a scaling-up of SOE reform in the water sector.** In the context of recent tariff reforms aimed at enabling efficient cost-recovery while phasing out operating subsidies, the Bita Project will indeed support necessary efficiency gains at EPAL with the help of TA funded by the PDISA2 (P151224) Project. Thus, while not influencing tariff policy nor requiring tariff increases, the Bita Project promotes the development of access to enhanced and more affordable water service, through more sustainable and less subsidized utility operations.

24. **The proposed guarantee Project also reflects World Bank's Maximizing Finance for Development strategy,** which aims to leverage development finance to "crowd in" new sources of commercial financing and use public resources more effectively. As the first IBRD guarantee in support of the water sector, the project will address a large financing gap by supporting commercial investment in water infrastructure, which is one of the five strategic axes under Angola's NDP for 2018-22. Commercial investments in water at scale have not materialized, due to the perceived risk of the sector. The project will provide a strong demonstration effect in the use of World Bank guarantee products for future water investments in Angola, Africa and other regions.

II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

25. The PDO is to improve access to potable water service in selected areas of Luanda by mobilizing commercial financing for the Government of Angola.

PDO Level Indicators

26. PDO achievement will be measured against key indicators, including:

- People provided with access to improved water sources, disaggregated by gender (corporate indicator);
- People with existing connections benefitting from safely managed[16] service disaggregated by gender;
- Percentage of tested water samples passing water quality tests; and
- Commercial financing mobilized.

27. Intermediate indicators are also applied for the new service areas, to monitor the number of people who will benefit from safely managed service (through individual connections) or from basic service[17] (through public standpipes), with respective preliminary target values to be firmed at the detailed design stage.

28. The Bita Guarantee is focused on financing increased access to water service, but TA funded through the ongoing PDISA2 Project will be integral to Bita Project implementation. The TA will aim at strengthening EPAL's capacities for the implementation of a large-scale project such as Bita, and at supporting EPAL in pursuing selected objectives under its PIP. While not part of the Project Results Framework, selected utility performance indicators will be monitored during the project including: (i) Number of new meters installed annually; (ii) Bill collection ratio; (iii) Operating cost coverage ratio (cash-basis); (iv) Launch of an NRW reduction strategy; and (v) Completion of annual customer satisfaction surveys.

B. Project Components

29. The proposed Investment Project Financing (IPF) operation has one component, which consists of the first phase of the Bita Project water production, transmission and distribution investments, supported by a partial IBRD loan guarantee of up to US$500 million.

30. **The Bita Project (Phase 1) will develop water supply infrastructure to supply currently unserved urbanized and urbanizing areas of South Luanda.** The proceeds of the IBRD guaranteed financing will be used to finance investments in the water production, transmission and distribution facilities and systems summarized below:

- ***Water production facilities*** comprising a water treatment plant (WTP) near the Bita locality, approximately 40 km southeast of Luanda, with a raw water intake in the Kwanza river. The production capacity will be of 3 m^3/sec, increasing and diversifying Luanda's water production and overall system resilience to climate variability.
- ***The transmission system*** will include about 82 km of trunk transmission lines, and four new distribution centers (*Centro de Distribução*, or CD) in targeted currently undeveloped peri-urban service areas of South Luanda (Bita, Cabolombo, Mundial, Ramiros CDs). The trunk lines will also be extended to feed two existing

[16] In order to meet the criteria for "safely managed drinking water service", people must use an improved source meeting three criteria: (i) water should be accessible on premises; (ii) water should be available when needed; and (iii) the water supplied should be free from contamination.
[17] Basic water service implies (i) drinking water from an improved source and (ii) the collection time is not more than 30 minutes for a round trip from premises.

under-supplied CDs (Camama and Benfica-2 CDs) in fully urbanized residential suburbs of Luanda, displacing the need for tanker truck service.

- ***The distribution systems*** will include the installation of new networks and metered connections across the mostly poor peri-urban Bita, Cabolombo, Mundial and Ramiros service areas, as well as the retrofitting of existing networks and connections, with meter installation, in the well urbanized Camama and Benfica-2 service areas. Such gravity-based distribution systems will allow increased efficiency, reduction of NRW, and elimination of thousands of daily tanker truck runs.

A map overview of the Project is provided in Annex 6. The need for a Phase 2 expansion to 6 m^3/sec is certain, within a timeframe to be confirmed between 2025 and 2030. The civil works under the project (such as intake, transmission pipelines, storage tanks, buildings, etc.) are being sized to accommodate such future expansion.

31. **These investments are to be implemented by EPAL on behalf of MinEA, through 13 DB contracting lots, spanning an estimated three-year construction period.** The first seven DB lots (B1-B7) pertain to the production and transmission systems. These were originally awarded between 2014 and 2016 and are being amended to reflect necessary scope and risk allocation changes as well as World Bank safeguards requirements. The remaining six lots (B8-B13) pertain to the new distribution works tendered in 2018 which are pending approval and award, expected by the end of June 2019. All lots were procured following Angola national procurement systems. Phase 2 of the Bita Project for expansion to 6 m^3/sec and increased distribution coverage remains to be designed and financed by GoA and is not considered in the present appraisal.

32. **Although dedicated to infrastructure financing, the Bita guarantee also sets the stage to support the medium-term performance turnaround of EPAL.** In conjunction with the Bita Project, and in response to GoA's request for support on EPAL's performance improvement agenda, EPAL will benefit from US$17 million of TA funded by PDISA2. Implemented in coordination with Bita supervision, such TA program will strengthen EPAL's Bita Project implementation capacities, and fund strategic studies and consultancies needed towards achieving selected PIP goals. This will include, among other studies and tasks, the preparation of public- private partnership (PPP) options for GoA to consider in case EPAL does not achieve significant efficiency gains. Further EPAL performance goals may be supported as triggers under future stages of the DPF.

33. **The proposed IBRD guarantee amount of up to US$500 million will be structured as a loan guarantee to backstop debt service payment obligations of the GoA**. The main risk that the IBRD guarantee mitigates is the debt service default by the Republic of Angola acting through the MinFin (Borrower) under the facility agreement with commercial financiers. The proposed IBRD guarantee is expected to provide adequate comfort to commercial financiers that the debt service payments will be made on time. Following the World Bank core principle of guarantees, the coverage on risk will only be partial in nature: Based on market sounding and following the recent examples in the region,[18] risk coverage of around 55 percent of loan principal amount[19] is considered essential to attract good competition from commercial banks under the current credit rating of Angola. Depending on the financing solutions offered by commercial banks, the level of risk coverage and degree of partiality will be finalized after negotiations with the commercial financiers, taking into account that Bita would be IBRD's first guarantee in support of water sector investments. The proposed IBRD guarantee will be structured in combination with a Government supported Additional Cash Support (ACS) account. The amount at the ACS account will be pre-funded as part of the overall financing amount under the project. The ACS amount will function as a first loss guarantee while the IBRD guarantee will function as a second loss guarantee (refer to Annex 2 for further details).

34. **Commercial banks are selected through a funding competition to attract competitive financing terms and conditions**. An expression of interest process led by the GoA and Standard Chartered Bank (GoA-appointed

[18] Kenya Electricity Modernization Project with a US$200 million IDA Guarantee (P145104) and the KenGen Guarantee Project (P162422).
[19] The total amount of guarantee, which is sized to be around 55 percent of principal, may be used by commercial banks to cover a proportion of principal and interest, depending on their risk appetite. Refer to the indicative term sheet in Section VII for further details.

coordinators of the financing process) confirmed interest from more than ten international commercial banks, including from seven banks new to Angola, to provide long term financing to the project through the sovereign. The first stage request for proposals (RfP) to select the Mandated Lead Arranger(s) was issued to interested banks on March 21, 2019 and indicative responses were received in April 2019.

35. **The indicative proposals received in April 2019 demonstrate a clear interest of commercial banks to provide financing on improved terms for GoA and the value added by World Bank guarantees through the application of the World Bank's Maximizing Finance for Development approach.** All indicative proposals received met the requirement of providing offers for both 12- and 15-year tenors with an oversubscription for both tenors. The 15-year tenor is almost double the loan maturity that Angola could achieve in the loan market. The indicative pricing of the proposals was also a significant improvement to Angola's current cost of borrowing, considering costs related to underwriting and structural complexity of this project. This result is achieved despite several banks having very limited exposure in Angola beyond Sonangol, thus demonstrating the importance of and clear value added by the IBRD Guarantee.

36. **The GoA roadshow with commercial banks in May 2019 reconfirmed the interest from the longlisted banks and presented them an opportunity to raise questions and provide feedback on their indicative proposals.** The competitive tension enabled GoA, its advisors and the World Bank team to encourage banks to further strengthen the indicative offers in terms of structure, hold amounts, and pricing. Considering the large financing need and the level of uncovered risk, the GoA also initiated discussions with African Trade Insurance Agency (ATI)[20] to explore potential credit insurance options. This puts the Government on track to reach financial close in Q4 CY2019.

37. **Under this structure, commercial banks will provide up to US$910[21] million in lending to the Republic of Angola acting through the MinFin**. MinFin will enter into a Facility Agreement(s) with the commercial banks selected through the RfP process. The commercial banks through an agent bank will enter into a Guarantee Agreement with the IBRD. The amount raised with the guarantee will be disbursed upon satisfaction of disbursement criteria to pay contractors and consultants in accordance with their contracts including, in the case of DB contractors, the respective agreed milestone payment schedules. Once payments are approved (refer to Annex 5 for invoicing approval process), MinFin will inform the World Bank and instruct commercial banks to pay directly the contractors and consultants. As part of the IBRD guarantee, IBRD will enter into a Project Agreement with MinEA represented by EPAL and an Indemnity Agreement with the Republic of Angola acting through the MinFin.[22]

38. **An ECA-supported loan facility and GoA will provide financing of approximately US$160 million and US$20 million respectively** in addition to the IBRD-guaranteed facility to meet the estimated total project cost of US$1,090 million. The ECA sizing and approvals are being processed in parallel by GoA and their Coordinator. The selection process for the commercial banks participating in this other facility will be conducted separately. The GoA financing will cover project costs under Lot B4. However, it is expected that the documentation process for the IBRD-guaranteed and the ECA-supported financing will be done simultaneously to ensure that financial close and subsequent construction of the project can proceed at the same time. A Common Terms Agreement will be entered into by the commercial banks participating in both facilities to ensure a coordinated processing timeline. The indicative financing and guarantee structure is presented in Figure 2 below.

39. **Under the guarantee structure, the GoA would establish an interest-bearing ACS account** to be maintained for the duration of the IBRD guaranteed debt facility in an amount equal to the highest six months of scheduled

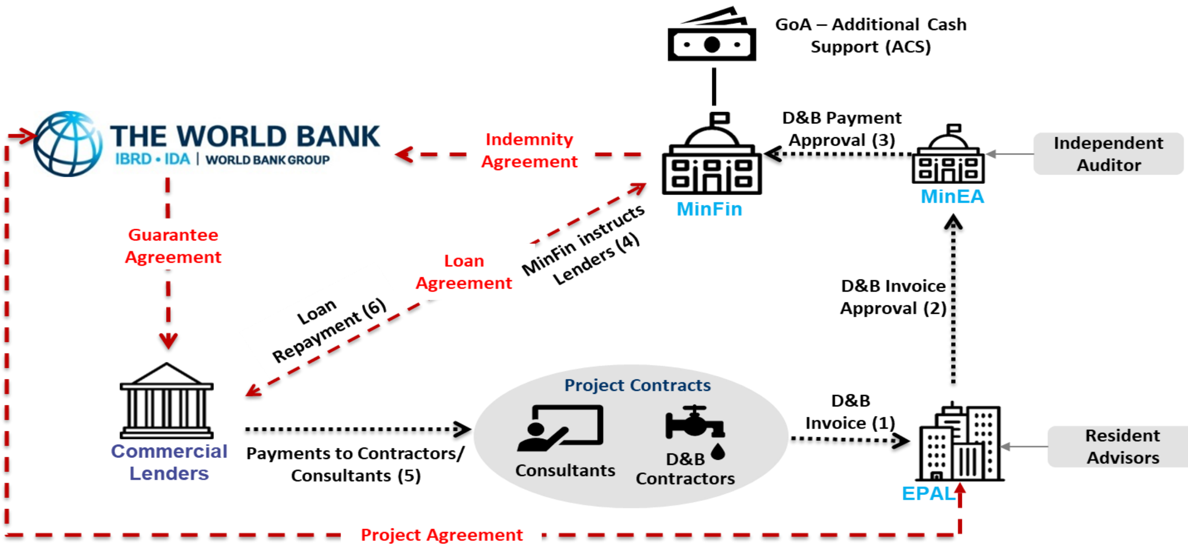
[20] If approved by the Government, a one-time minimum membership fee of up to US$[10] million will be paid by the GoA and will be funded as part of the IBRD guaranteed commercial debt.

[21] Only for IBRD Guaranteed Facility, including ACS amount, Interest During Construction (IDC), Fees for IBRD guarantee and Commercial Banks, ATI Membership Fee, Risk Contingencies and potential technical and E&S studies.

[22] Refer to the Indicative term sheet for the IBRD guarantee provided in Section VII for details.

principal and interest payments prospectively. The funds in this account would only be permitted to be used as payments of scheduled installments of principal and interest thereon under the IBRD-guaranteed facility. The Borrower would be obligated to replenish the balance of the Government ACS Account to the required minimum level within [three][23] months after any withdrawal thereunder. This reserve would allow for a more optimal use of the IBRD Guarantee by giving IBRD and GoA additional time to work together to resolve the liquidity issues that led to a draw on the reserve and potentially avoid a call on the Guarantee.

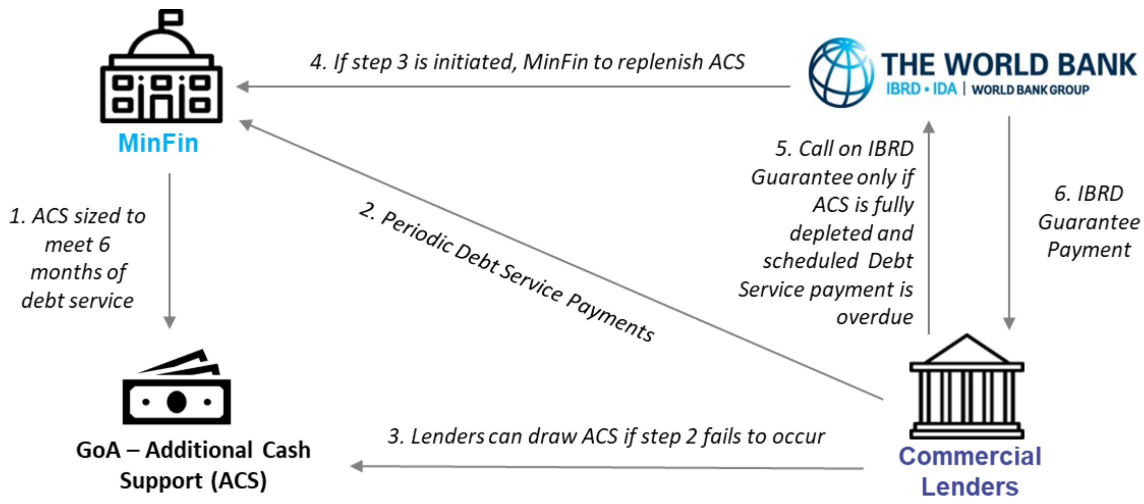
Figure 2: Indicative Financing and Guarantee Structure



40. **The proposed guarantee structure has been well tested in similar loan guarantee operations in the region**. Should there be a debt service default by the Borrower under the guaranteed loan facility and under circumstances where the ACS has been fully depleted and not replenished in a timely manner by the Borrower, the IBRD guaranteed commercial lenders, through an agent bank, can access IBRD for the amount of scheduled overdue principal and/or interest under the guaranteed loan facility. Any payment made by IBRD under the IBRD guarantee will trigger the obligation on the part of the Republic of Angola to repay IBRD under the Indemnity Agreement on demand or as IBRD may otherwise direct. Section VII provides an indicative Term Sheet for the IBRD guarantee. In addition to the structure in Figure 2 above, the steps involved in calling on the IBRD guarantee are explained in Figure 3 below.

[23] Indicative.

Figure 3: Process for Triggering IBRD Guarantee



C. Project Cost and Financing

41. **The estimated Project costs and financing structure are shown in Table 1 below.** The total project cost is expected to be around US$1,090 million.

Table 1: Project Costs, Project Financing and Guarantee Sizing

Description	Indicative Amount (US$ million)
Estimated Project Costs	**1,090**
Production and Transmission costs	554
Distribution costs	303
Consultancy Costs, Lender and Guarantee Fees, Global risk Contingencies, RPF/RAP Compensation Costs, ATI Membership fees and Project Technical and E&S Studies	153
GoA-ACS amount pre-funded during construction disbursements	80
Project Financing with commercial debt	**1,090**
Of which IBRD guaranteed commercial debt	Up to 910
Of which ECA guaranteed commercial debt	160
Of which GoA financing from budget	20
Guarantee Amounts	
IBRD Guarantee Amount	Maximum of 500
ECA Guarantee Amount (indicative)	160

Refer to Annex 2 for details on project costs and guarantee amounts.

D. Project Beneficiaries

42. **The ultimate beneficiaries will be the connected users in the Bita system, or System S4, service areas.** The Bita Project (Phase 1) will initially have about 900,000 direct beneficiaries (180,000 households) of new or enhanced water service. In particular, the project will bring new piped water service to about 400,000 people (80,000

households) in the low-income peri-urban Bita, Cabolombo, Mundial and Ramiros districts, through individual connections or public standpipes[24]. These vast areas, located south of Luanda's outer beltway, are mostly structured with existing street grids, but still feature unevenly dense, and prevalently poor neighborhoods and settlements. Coverage by water networks is practically non-existent, and residents rely on expensive tanker truck service. In their southern and eastern reaches, these areas become more loosely structured and sparsely built. The Cabolombo, Mundial and Ramiros districts are expected to experience particularly fast densification and growth in coming years. The project will also reestablish or improve service for about 500,000 people (100,000 households) in the Camama and Benfica-2 districts. These districts are located north of the beltway, closer to the city center, and are largely urbanized. They already have potable distribution networks, which, as part of EPAL's overstretched systems, only provide very unreliable if any service, with many residents, particularly low-income households, excluded. The project will prioritize the development of individually connected piped service, over public standpipe service.

43. **Additional beneficiaries of enhanced access to service are expected within and outside the project area**. The number of beneficiaries is expected to grow substantially in the project area with population increases and service densification in the years following commissioning, with potential for Phase 1 assets to serve the demand of 1.7 to 2 million people. As such, the project will transform living conditions in South Luanda, by providing reliable connected potable water service to users, displacing unsafe and unaffordable tanker truck service, thereby also reducing water supply fetching times and coping costs, enhancing public health, and reducing exposure to climate variability and rising temperatures during fetching hours. Furthermore, system interconnections will allow any surplus of water in the Bita/S4 system to flow into EPAL's S3 system, for supply to underserved connected users in the Talatona, Benfica 1 and Futungo districts. With the large number of low-income households living in peri-urban settlements in the project area, the project will promote greater inclusion for access to the benefits of affordable individually connected piped water service, as a cheaper, more convenient, and safer option than unregulated and unsubsidized tanker truck service. The shift to piped water supply is also expected to improve the resilience of water supply, in addition to substantially reducing the level of carbon emissions by conveying water through pipes rather than large fleets of tanker trucks. The metered supply for all new service areas and the retrofitting of meters on 50,000 of the existing connections in the Benfica-2 and Camama districts will also help reduce NRW, increasing efficiency and overall climate adaptation. Furthermore, by tapping the abundant and well-regulated flow of the Kwanza river and by interconnecting old and new networks, the Bita Project diversifies Luanda's water supply sources and increases service resilience across the entire EPAL service area. Finally, it must be noted that the Phase 1 investments include several assets already sized to convey the Phase 2 increased production (6 m^3/sec) likely to be needed between 2025 and 2030, thus contributing to ultimately meet the demand of 3.6 to 4 million people.

44. **Targeting poverty in project areas.** Although at inception the Bita Project design was not specifically targeted at the needs of poor communities, the addition of distribution networks in the low-income peri-urban Bita, Cabolombo, Mundial and Ramiros areas will allow more inclusive access to potable service across South Luanda. Inclusiveness will also be promoted by the project policy to maximize individual connected service, with no upfront connection fee. In such areas, despite EPAL's August 2018 tariff increase, the new connected service will also be radically more affordable (5 to 50 times less expensive) than the current high price of tanker truck service. Although available poverty data and maps for the Luanda province do not allow to more specifically measure poverty in project areas, it is expected that surveys underway in Greater Luanda as part of the World Bank-led Water, Sanitation and Hygiene (WASH) Diagnostic, combined with planned annual customer satisfaction surveys by EPAL, will help confirm and optimize the social targeting and monitoring of the Bita Project.

45. **The fact that the project area is forecast as vulnerable to climate change–induced extreme heat and relatively prolonged droughts,** will put local residents' health at risk and raise their demand for water, precisely at a time when water supplies will be under additional pressure (due to the higher rate of evaporation during extreme

[24] The Project will promote individually connected service through house connections and yardpipes but will resort to public standpipe service in areas where individual connections cannot be established, with relative targets to be determined at the detailed design stage.

heat). While project beneficiaries affected by very high temperatures would need to increase their water consumption, many only have access to water from tankers, in many cases untreated. Retrieving water from tankers requires trips on foot, which further increases beneficiaries' exposure to the heat and adds to their water demand. Women are more likely to make these trips to collect water, which affects their productivity and school attendance. In addition, existing water infrastructure is also vulnerable to climate-related supply shocks.

E. Results Chain

46. **Water is a critical natural resource that has significant impacts on economic growth, poverty reduction and human capital development**. The project will contribute to the Twin Goals of ending extreme poverty and supporting shared prosperity by improving access to potable water service in selected areas of Luanda. This will be achieved by mobilizing commercial financing for GoA. The current demand for potable water far exceeds existing capacity. Infrastructure investments supported by the project will address current and future household and industrial demand for water.

Activities/Outputs	Intermediate Results	Outcomes	Higher level outcomes
• Financing by commercial banks confirmed with IBRD Guarantee • Construction of treatment plant, transmission lines, distribution networks and household connections	• Installed water production capacity increases • Distribution network constructed or rehabilitated • Household connections constructed or rehabilitated in project area • Standpipes constructed/rehabilitated in project area • Installation of meters in new and existing areas promotes NRW reduction	• Competitive financing terms secured w/IBRD Guarantee. • People provided with access to improved water sources • People with existing connections benefit from enhanced service • % of tested water samples passing water quality tests increases	• Decrease of water-related diseases and improved human capital among vulnerable populations • Increase in consumer welfare due to cost savings from lower-cost water supply • Increased economic growth due to firms enhanced access to water supply

F. Rationale for World Bank Involvement and Role of Partners

47. **The key rationale for World Bank guarantees is to leverage IBRD resources by mobilizing a large amount of affordable commercial financing for the project**. The Bita Project is a national priority investment of high public interest. As such Angolan law requires GoA, acting through MinFin, to borrow required amounts needed to finance the investment. Given the size of investment required for this and other infrastructure projects, use of public credit, multilateral development banks or other development finance institutions lending was considered insufficient to meet the overall financing needs. Given the downgrading of the country's credit rating, commercial banks have indicated the need for credit enhancement from multilateral development institutions and ECAs. As a result, the GoA requested an IBRD guarantee as a credit enhancement to mobilize commercial financing. An informal market

sounding conducted by GoA's financing coordinator and the task team reconfirmed the need for IBRD credit enhancement as an essential factor for providing financing to the GoA. After fundamental optimization of the planned investments and mitigation of an unusual range of implementation risks, the proposed IBRD guarantee will mitigate the risk of government failure to make debt service payments under the loans for the project.

48. **Supporting the WSS sector represents a successful and well-integrated engagement for the World Bank in Angola.** World Bank support to the sector has focused on the pursuit of institutional development and infrastructure service objectives, through PDISA (2010-2017). The PDISA helped establish 16 provincial utilities, the National Institute of Water Resources (*Instituto Nacional de Recursos Hídricos*, INRH) as well as IRSEA. The on-going successor project, PDISA2, aims at expanding PDISA's achievements in the WSS and water resources management (WRM) subsectors, including through a consolidation of service delegation gains through PPPs, while also setting the foundation for the development of citywide inclusive sanitation in Angola. The PDISA2 and Bita Projects will be highly integrated, as PDISA2 will provide TA to strengthen EPAL's Bita Project implementation capacities, and, consistent with GoA's SOE reform agenda, to support EPAL's utility performance improvement objectives. World Bank's water sector engagement in Angola also seeks to promote better efficiency and equity of tariff regulation policies, pursued as a DPF series trigger and consistent with the World Bank's broader social protection engagement.

49. **The project will have significant positive impacts on both climate adaptation and mitigation, further providing a rationale for World Bank involvement.** Much of Luanda is currently served by a network of tanker trucks, resulting in a massive carbon footprint for the amount of water transported. By supporting the transition to piped water, the project will enhance the energy efficiency of water supply, resulting in reduced net carbon emissions. Regarding adaptation to climate change, increased temperatures are expected to result in greater household demand for water, which can be more effectively met through piped water supply while reducing hours of exposure from women and children fetching water. Several project design aspects are important contributions to climate adaptation and resilience to future variability and water scarcity, such as the metering of connections.

G. Lessons Learned and Reflected in the Project Design

50. The project will incorporate important lessons captured from the implementation of World Bank-financed projects in Angola and World Bank-guaranteed projects and across the globe. Specific lessons that have been incorporated in the project include the following.

51. **Due to weak institutional capacity and World Bank's involvement after the procurement**, there is substantial risk with implementation. As the procurement of contracts were made before the World Bank team became involved in the project, the World Bank did not have the opportunity to review and provide its non-objection (as in an IPF Loan) in advance. Experience indicates that poorly executed contracts may lead to high implementation risk. Similarly, implementation readiness risks such as land acquisition and licensing and permitting issues may impact the timely completion of projects. In the Pakistan Dasu Hydropower Stage 1 Partial Risk Guarantee Project (P150756), the time limit for resettlement was substantially delayed by the Government's inability to resolve land tenure issues and procedures, which in turn eventually required a World Bank restructuring of the project to accommodate this delay. The Bita Project seeks to reflect this lesson by reducing the uncertainties surrounding the EPAL-led implementation through: (i) identifying up-front all 13 project locations, thereby removing any site ambiguity; (ii) completing the ESIA and preparing a RPF to facilitate prompt resolution of safeguards issues; (iii) employing a full-time PMC to assist with procurement and contract management; and (iv) the availability of additional TA support under the on-going PDISA2 Project.

52. **Guarantee terms are often finalized substantially after the Board date.** Thus, upper limits, rather than specific amounts, are advised for the guarantee terms to be approved by the Board. World Bank experience has shown that the final financial terms of a guarantee are typically only finalized after Board approval, sometimes several months thereafter. For example, in the Seychelles Third South West Indian Ocean Fisheries Governance and Shared Growth Project (P155642), the Blue Bond (which the IBRD guarantee backed) was issued more than a year

after Board approval. During the time between Board approval and bond issuance, the guarantee's tenor and price were negotiated with the beneficiary(ies) in order to optimize the full benefit of the IBRD backstop in the market (which fluctuates). In this project, therefore, the project appraisal document (PAD) does not make specific commitments on the guarantee amount, tenor or price, but rather specifies upper limits and leaves the actual numbers to be decided once the commercial banks and the Government have confirmed what is required to achieve financial close.

53. **A large construction project with significant implementation challenges requires enhanced TA and supervision to mitigate reputational risk**. The project is expected to have significant interface and interrelated risks between various contract lots at various timelines during the implementation phase. In addition to technical and financial risks, adherence of safeguard policies, labor health and safety requirements would be critical for mitigating reputation risks, thus requiring adequate capacity building and supervision. For example, in the Botswana Morupule B Generation and Transmission Project (P116784), the Government struggled to implement several aspects of both the World Bank's and its own national health and safety policies when faced with an aggressive contractor and a large foreign work force. The result was a significant worker safety, and reputational, risk to both the World Bank and Government and that could not be resolved by suspending the project. Instead, these issues took many months and significant extra expense to remedy, resulting in serious implementation delays. Under this project, this lesson is reflected in: (i) the substantial environmental work done up-front to identify potential safeguards issues, and especially the identification of gaps and inconsistences between national legislation and World Bank policies and the design of related mitigation measures; (ii) environmental and social safeguards focal points within the PIU; and (iii) day-to-day technical support for the PIU E&S safeguards personnel from the PMC.

54. **Infrastructure investment without complementary capacity building of service providers is not sustainable**. While the Bita Project itself focuses exclusively on infrastructure development, the project will be closely linked with the PDISA2 Project, which will support EPAL capacity building efforts. In addition, the PIP adopted by EPAL for 2018-2022 will be monitored, with selected indicators required as part of the Bita Project. Sector experience shows nevertheless that the performance turnaround of a large utility such as EPAL is a medium-term process which requires dedicated efficiency investments, and which is unlikely to be fully completed by GoA within the Bita Project timeframe.

55. **Citizen engagement is a core part of service delivery.** More than just a requirement for World Bank projects, citizen engagement (CE) efforts should be used by service providers as a tool to improve performance. Feedback from customers on service quality and other concerns can be used as a management tool, to prioritize investments as well as operations and maintenance (O&M) improvements, and to manage operational performance. As part of the project, EPAL will conduct duly stratified annual customer satisfaction surveys (also counting as Intermediate Results Indicator) and set up a monitoring and tracking system for complaints through a strengthened call center and database functions. The PIU will also employ a community outreach specialist.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

56. **With prior experience in PDISA/PDISA2, MinEA is aware of World Bank implementation and oversight requirements.** The Bita Project will however be the first time EPAL collaborates with World Bank. Considering the complex contractual arrangements and EPAL's limited capacity and experience, the institutional and implementation arrangements have multiple approval levels to build-in appropriate checks and balances to facilitate the project being implemented as agreed and contractual payments being made on time. EPAL has entered into a number of DB contracts, a PMC contract and several construction supervision consultancy contracts using the country procurement systems. The World Bank team has reviewed the procurement process outcomes and contract risks and provided recommendations on good industry practices to manage the contract risks during the implementation

period. Details of the procurement process and review are included in Annex 5. An international PMC firm will ensure overall project management on behalf of EPAL, responsible within EPAL's PIU for the optimal quality, compliance, efficiency and integration of the proposed designs and their implementation.

57. **Invoice payment process.** As the design and construction milestones are completed, the DB contractors will submit the relevant invoices to construction supervision consultants and to PMC and EPAL for their review and approval. EPAL's PIU will be further supported by a set of resident project management and safeguards advisors to be procured under PDISA2. Once EPAL approves the invoice, it will be sent to MinEA which will also review the invoice and approve. Project compliance will also benefit from the periodic inputs of independent technical and safeguards auditors, funded by PDISA2 and reporting to MinEA, for quarterly auditing of project performance and payments. Following the approval by MinEA, MinFin receives the invoice for review and final approval for payment. Further MinFin informs the World Bank and instructs the agent bank to drawdown on the loan and pay the invoice directly to the contractors and consultants.

58. **The financing arrangements require flexibility to manage completion risks**. Due to a number of risk allocation issues identified in the underlying contracts, risks such as cost overruns, delays, and scope creep will require careful management by GoA and EPAL. Commercial lenders will provide financing only for a fixed amount and a fixed availability period.[25] Thus, the financing package will need to incorporate flexibility through an extended availability period and appropriate cost contingencies to accommodate a level of completion risks (refer to Annex 2 for further details).

59. **As EPAL's capacity to efficiently implement a large project such as Bita and an ambitious PIP is untested, special strengthening of EPAL's implementation and oversight arrangements will be required.** The project design contemplates a PIU to be established in EPAL to manage the project, with delegation of certain tasks to the PMC. The establishment of the PIU is a condition of effectiveness of the guarantee, with operating costs to be carried by EPAL. To assist EPAL in strengthening its capacity, two resident advisors[26] will be hired as part of the PIU. Additionally, EPAL has agreed to implement a PIP that will aim to improve its long-term financial and operational performance. As part of the Project Agreement[27], EPAL will have reporting obligations to the World Bank, including with respect to progress under both the Bita contracts and the PIP, until the expiry of the guarantee period.

60. **In addition, GoA will constitute a PSC to provide oversight of the project.** The PSC will be made up of senior representatives of EPAL, MinEA, MinFin, IRSEA, Provincial Government and other GoA stakeholders. The purpose of the PSC is to review the implementation progress and provide strategic guidance to EPAL in managing implementation issues. The independent technical and safeguards auditors will assist MinEA and the PSC members in assessing the progress of project.

61. **To implement the project, a detailed POM will be developed by EPAL before Guarantee effectiveness.** The POM will set out the implementation processes, FM procedures, compliance with E&S safeguards requirements, including gender and labor influx considerations, progress reporting, and monitoring and supervision of the project outputs. The POM will also include an Implementation Plan for planning, design review, coordination and implementation of each of the contracts. The POM will include updated guidelines, to be followed by the project, for development of new connected service in peri-urban areas as well as an implementation strategy for introduction of pre-paid meters and uniform prepayment systems across the Bita system and other EPAL systems.

[25] Availability period refers to the period during which the commercial loan will be available for disbursement. To accommodate completion delays, if any, the availability period will be extended by six months from the target Project completion date. Similarly, a cost contingency of 5% will be included in the Project financing amount to accommodate cost overruns.
[26] Terms of Reference for the resident advisors will be developed for further approval by EPAL and MinEA. The advisors will be hired before works commence under DB contracts and will continue until commissioning and commercial operation of the Bita water supply system.
[27] Indicative terms and conditions of the IBRD guarantee-related agreements, including the Project Agreement, Indemnity Agreement and Guarantee Agreement, are set out in the Term Sheet in Section VII.

B. Results Monitoring and Evaluation Arrangements

62. **Monitoring and evaluation (M&E) under the project will be integrated as much as possible with existing EPAL systems.** The PIU will have overall responsibility for project M&E. The PIU will prepare quarterly progress reports during project implementation in a manner and format acceptable to the World Bank as defined in the POM. These reports will describe the status of activities, progress towards achievement of the PDO, and other content specified in the M&E plan to be outlined in the POM. Within EPAL, the information technology (IT) department and marketing department will be responsible for M&E data collection and reporting, to inform overall project reporting by the PIU.

63. **Customer Satisfaction Surveys.** As part of broader CE efforts, which include providing feedback mechanisms to project beneficiaries, in addition to collecting data on performance improvement, EPAL will conduct an annual customer satisfaction survey. The surveys will cover all of EPAL's service domain, focusing on areas of existing service or to be served by the project, but also sampling water supply conditions in yet unserved areas. The initial survey will provide a baseline for current service conditions in the project areas, with attention to gender impacts. A qualified firm to conduct a statistically-valid survey will be hired and supervised by EPAL to this effect.

C. Sustainability

64. **Technical operational and financial capacity of EPAL.** The project relies on proven technologies and systems which EPAL already operates at equivalent scale in other parts of Greater Luanda (e.g., System S3 supplied by the Sudeste WTP). Accordingly, beyond construction and commissioning, the project may not involve critical operational challenges or risks for EPAL's technical capabilities. With PMC support, and well ahead of commissioning, EPAL will have developed a detailed start-up and O&M plan for the project, with staffing and budget requirements, including for the development of commercial functions in the new service areas. The first 12 months of Bita WTP operations will furthermore be supported by a resident engineer provided by the DB contractor. The maintenance of project assets will require adequate planning, staffing and budgeting to conduct necessary repairs and maintenance. EPAL will need to staff expanded distribution and customer service operations in the new service areas. EPAL will also need to increase its overall customer service, billing and collections efficiency in order to generate the revenue needed to fund ongoing and future O&M costs. While significant shortcomings in operational and financial capacity exist, the approved 2018-2022 PIP sets clear and comprehensive targets for improved performance. Complementary TA financed under the PDISA2 Project will support the PIP, and in particular five priority strategic objectives agreed with EPAL and covenanted in the Project Agreement. PDISA2 TA will concurrently also be applied to carry out feasibility studies to identify and prepare PPP opportunities, targeting specific areas of O&M, to be engaged in case EPAL proves unable to attain its key performance objectives.

65. **Improved customer service and CE capacity**. Feedback loops from project beneficiaries (who are often customers) are an important aspect of sustainability. When there are service interruptions, customers must be able to efficiently inform the utility and escalate the issue if it is not resolved in a timely manner. As part of the PIP, EPAL will conduct an annual customer survey to better understand customer demographics and collect feedback on customer satisfaction. As part of the project's feedback mechanisms, EPAL will also strengthen its customer service function through a centralized customer service call-center and database. The purpose of a centralized customer service call-center and database is to track all issues end to end, from the point that the customer raises the issue until it is finally resolved to track and address complaints systematically and provide management a tool to monitor staff follow-through.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis

Technical Analysis

66. **Early due diligence:** The Bita Project has been the object of an unusually challenging retroactive identification and preparation effort, given that the original investment scope had been designed and procured using country systems, with data and documentation limitations, long before World Bank's involvement. Starting in April 2017, early due diligence revealed that the original Bita Project scope of approximately US$600 million, which included production, transmission investments with a treatment capacity of 6 m^3/sec, required substantial optimization to meet IBRD appraisal criteria. In particular, it was determined that distribution systems would have to be added to effectively reach project beneficiaries. Furthermore, updated population and demand forecasts identified serious overcapacity risks. In January 2018, GoA agreed to launch studies to confirm the feasibility and assess the impacts of a revised first phase of the Bita Project, with a 3 m^3/sec capacity and including distribution systems.

67. **Updated project documentation.** The preparation of studies, including a Technical Feasibility Study (TFS), an ESIA, an RPF, and the preliminary design of distribution systems, was entrusted by GoA to Dar-Angola, the local branch of an international engineering-consulting firm, already experienced with the 2012 Luanda water masterplan, and retained for the project management of the Bita and Quilonga Grande projects. After significant delays, the TFS, ESIA and RPF reached substantial completion by December 2018. The TFS presented plausibly updated demand growth scenarios, confirmed the viability of the general project architecture, integrated the preliminary design of distribution systems in the new service areas, and established the opportunity of a staged investment approach, including a first phase with a capacity of 3 m^3/sec with readiness of civil works to accommodate a future capacity expansion to 6 m^3/sec.

68. **Project management challenges.** Because of its size and complexity, the project will carry significant implementation challenges and risks for EPAL, which will require the support of strong project management and coordination capacity. To meet these challenges, EPAL's PIU will need the leadership and expertise of a solid international PMC firm. The retained PMC firm, DAR-Angola, was deemed to have relevant capacities. It was however appraised that their existing contract, spanning the Bita and Quilonga Grande projects, carried undue risks of interference between the two projects, and did not cover the management of the newly added distribution network lots (B8-B13). A number of additional tasks are also required of the PMC, such as: (i) the management and monitoring of safeguards requirements, including the resettlement compensation mechanism and escrow account; and (ii) the development of: (a) the POM; (b) a peri-urban service expansion and connection plan; (c) a pre-paid metering roll-out plan; (d) Bita Project O&M and start-up plans; and (e) a pre-construction ESIA update.

69. **The need to accelerate service connections.** A particular challenge of the Bita Project lies in the need to maximize individual connected service in peri-urban, mostly poor, service areas. Individually metered service via house connections or yard-pipes (as opposed to public standpipe service) is required to optimize the project benefits. Individual connected service will indeed reduce water fetching chores, which are largely incumbent on women and girls, while also supporting increased water consumption, thus justifying the installed Bita production capacity and improving EPAL's revenue. To that effect, EPAL will not charge the cost of connection to households, only requiring that the household feature an adequate septic tank or drainage system. Guidelines will be developed by EPAL, to be reflected in the detailed design of lots B8-B13, aimed at maximizing household readiness for connected service and at optimizing network investments in areas of uneven residential density. A pre-paid metering strategy will also be developed ahead of B8-B13 detailed design, towards specifying uniform and robust technologies and a unified pre-payment system duly integrated with EPAL's customer service system.

70. **Wastewater management and drainage:** Like most of peripheral Greater Luanda, the project areas lack sewerage, and there are no plans for developing wastewater collection and treatment coverage. Households rely on individual on-site solutions such as septic tanks and pit latrines, which are periodically emptied by unregulated

private service providers. The collected sludge is only in part disposed of at municipal landfills or at one of Luanda's four wastewater treatment plants. Sanitary risks in the project areas are mitigated by restricting the installation of house connections and yardpipe connections to households with respectively septic tanks or adequately drained pads. New public standpipes will for their part include the installation of local drainage systems. It is assessed that such measures will prevent the spillage of wastewater and stagnation of greywater, as well as the discharge of sewage flows into the environment.

71. **EPAL's performance turnaround prospects.** GoA expects EPAL to rapidly improve its operational and financial performance by 2022. To that effect EPAL's has adopted an aggressive PIP with ambitious objectives but unclear implementation plans and budgets. In conjunction with the Bita Guarantee, World Bank has been asked to help EPAL performance improvements with PDISA2 TA. The World Bank team considers that the performance turnaround of EPAL is not a short-term prospect, and that while TA will help, it may not be sufficient. Indeed, EPAL's transformation will require, above all, strong leadership, with political and funding support, to advance a medium-term vision of organizational change, strategic investment, staffing and capacity building, aimed at better serving the people of the Province and at reducing the need for subsidies. This may also require an evolution of EPAL's culture towards stronger customer orientation and incentives for performance, at management and staff levels. Such changes could be helped by selective public-private partnerships to introduce new know-how and practices in EPAL's operations.

72. **Selected performance objectives covenanted under the Bita Project Agreement.** As part of the Bita guarantee preparation, five objectives have been agreed with EPAL for incorporation in the Bita Project Agreement, and special focus of World Bank TA and GoA funding support. The "five objectives" and their minimum annual target indicator values to be covenanted in the Agreement, are presented in Table 2. The minimum annual target values are substantially less demanding than the corresponding approved target values of EPAL's 2018-2022 PIP and are not intended to replace them. They are however considered feasible for a well mobilized EPAL with relevant GoA support. To that effect, EPAL must develop detailed action plans for each of the five objectives, including responsibilities, staffing, investment and procurement requirements, to be endorsed and budgeted by MinEA, as conditions of effectiveness. If EPAL were to consistently fail in meeting these minimum targets, World Bank will be in a position, under the terms of the Project Agreement, to ask GoA to remedy and accelerate EPAL's performance.

Table 2: Selected Performance Indicators ("Five Objectives")

	2019	2020	2021	2022	2023
Indicator 1: Meter retrofits on existing connections	15,000	40,000	40,000	40,000	40,000
Indicator 2: Bill collection ratio (aggregate)	34.0%	45%	55%	63%	69%
Indicator 3: Operating cost coverage ratio (cash basis)	0.70	1.00	1.20	1.35	1.50
Indicator 4: NRW reduction	Recruit consultant for NRW-reduction strategy	Complete the NRW-reduction strategy and budget a pilot	Complete installation of an NRW-reduction pilot	Complete NRW-reduction activities in the pilot	Update NRW-strategy for scale-up
Indicator 5: Annual systemwide customer satisfaction survey	Recruit firm to conduct survey	Conduct survey and publish results	Conduct survey and publish results	Conduct survey and publish results	Conduct survey and publish results

73. **PDISA2 TA.** While no TA or capacity building loan is attached to the Guarantee, a budget of US$17 million under the PDISA2 institutional strengthening component will support the Bita Project and EPAL for the following needs identified at appraisal, or for other priority needs arising during the project:

- **TA for Bita Project implementation**, including: (i) Technical auditing of Bita Project implementation; (ii) Safeguards auditor of Bita Project implementation; (iii) Resident advisor TA for capital improvement planning and project management; and (iv) Resident advisor TA for safeguards compliance; and

- **TA for EPAL performance improvement,** including: (i) Integrated master plan for water, sanitation and drainage in Greater Luanda; (ii) Capacity building and TA tasks to strengthen EPAL commercial and operational performance, including as relevant to support the "five objectives" (also see Annex 2); (iii) identification and design of potential PPP transactions to selectively improve service and performance in selected areas of EPAL operations; and (iv) identification of options to regulate the quality and pricing of tanker truck service.

Economic Analysis

74. **An economic analysis of the project was prepared as part of appraisal.** The analysis consists of a cost-benefit **assessment** focusing on the direct benefits to project beneficiaries as a result of the project. As in the financial analysis, the base-case analysis assumes a total of 180,000 beneficiary households at the close of the project, further growing each year after project implementation by one percent per year.

75. The economic analysis estimates the benefit to consumers using consumer surplus, calculated using the without project price of water and the difference in consumption between the with-project and without-Bita scenarios.[28] Economic benefits also include an estimate of the shadow price of carbon emissions averted by transitioning from tanker truck supply to piped water connections. The project costs include the all-inclusive capital costs (US$1,090 million), conservatively expensed over a four-year project period as well as the total annual operating costs associated with the treatment and delivery of water to the beneficiaries.

76. The net present value (NPV) of the stream of costs and benefits over a period of 30 years was calculated based on a discount rate of 6 percent[29], as well as the economic internal rate of return (EIRR) generated by the investments. The results of the economic analysis are presented below. Results of sensitivity analyses are presented in Annex 3.

Table 3: Base Case Economic Analysis

Base Case	
NPV (6 percent discount rate)	US$640 million
EIRR	11.3 percent

77. Analyses show that the economic returns are sensitive to the expected consumption of water in the with-project scenario, and somewhat sensitive to a reduction in the number of beneficiary households. In contrast, the results are not very sensitive to changes in investment or operating costs nor to a one-year implementation delay.

Financial analysis on impact of Bita on the Sovereign

78. Since Bita is financed through commercial borrowing as a public project at the sovereign level, the project financial analysis must also include the most recent Debt Sustainability Analysis (DSA) and the impact of Bita financing. The analysis presented in the Board package for the DPF series (P166564) shows that public debt (including Sonangol) increased to 89.1 percent of GDP (US$77.1 billion) at end-2018 due to the currency depreciation, higher

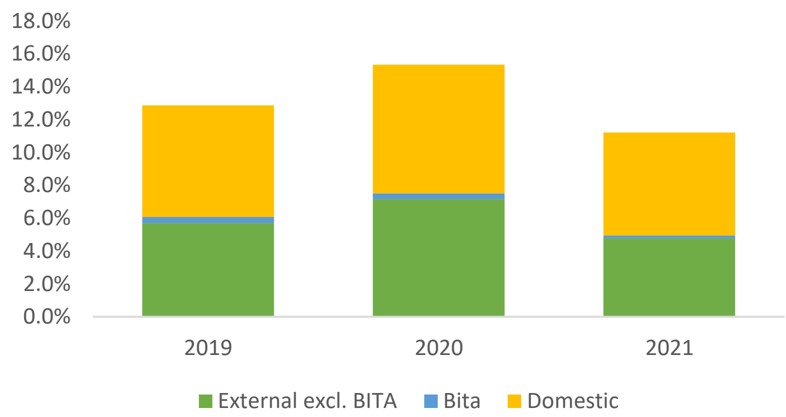
[28] Consumer surplus = ½ x without-project price of water x (with-project consumption less without-project consumption). In this case, the per-household consumer surplus equals ½ x US$10 x (18 - 6 cubic meters/month), or US$720 per household per year.
[29] A six percent discount rate was adopted accounting for growth prospects and long-term nature of the investment. World Bank Guidance Note: Discounting Costs and Benefits in Economic Analysis of World Bank Projects, 2016. The note provides guidance regarding selection of discount rates in World Bank borrowing countries for long-lived infrastructure projects through the use of the standard Ramsey formula applied to an estimated long-term per-capita growth rate for the project country, which the team has assumed is consistent with the average historical long run growth rate in World Bank client countries of approximately three percent.

borrowing needs, and recognized liabilities from government arrears and SOE capitalization. Debt is still deemed sustainable under the baseline scenario and expected to decline to around 45.4 percent of GDP over the medium-term due to prudent fiscal and monetary policies.

79. At the end of 2018, the GoA had US$77.1 billion of public debt outstanding, while the Bita Project would add US$1.09 billion between 2019-2023.[30] Figure 4 below shows the share of Bita on the new domestic and external debt issuance in the next three years.[31]

80. The figure illustrates the size of debt disbursements in each year, including the largest Bita disbursement amount equal to 0.4 percent of GDP in 2019[32]. The Bita Project is included in the 2019 budget and remains within the IMF debt sustainability limits, as confirmed by the Debt Management Office of Angola.[33]

Figure 4: Total Debt Issuance Including for Bita Project (as a Percentage of GDP)



81. The commercial financing raised with the IBRD Guarantee for the Bita Project is expected to follow a 15-year final maturity, almost double the maturity of commercial loans that Angola raises without credit enhancement. The principal repayments for the US$1.09 billion financing amount are expected to start following construction in 2023 and the loan to amortize from 2023 to 2034, resulting in spreading the debt service payment obligations over a long period.

Financial analysis on the impact of Bita on EPAL

82. The financial analysis on the impact of Bita on EPAL consists of two parts: (i) the expected impacts of the project on EPAL's financial performance; and (ii) a financial rate of return for the project, based on (a) the expected capital costs and (b) cash flows generated by the project over a 20-year operations period. It is important to note that the first analysis does not incorporate the capital costs of the project into the analysis, as EPAL will not be responsible for repaying those costs. The second hypothetical analysis – more indicative than strictly meaningful, as EPAL is not in charge of repaying the project-related debt – is presented to provide a sense of the financial returns of the project if EPAL were to take on responsibility for the capital costs.

[30] The disbursement of the loan for Bita will be spread over 36 months. Refer to Annex 3 for the profiling of estimated disbursements.
[31] Given the project borrowing is at the sovereign level, the IBRD Guarantee backstops the GoA's direct debt service obligations and therefore does not add any contingent liabilities.
[32] In 2019, GoA will enter into a debt facility agreement for overall Bita debt financing amount of US$1.09 billion. On a committed basis, this will be equal to 1.1 percent of GDP in 2019. As mentioned before, Bita disbursements will be spread over three years.
[33] Email confirmation from the Director General, debt Management Office, MinFin, sent on April 26, 2019.

83. The with- and without-Bita analysis of EPAL's financial results assumed EPAL's existing operational and commercial conditions, with the major exception that EPAL would carry out an intensive five-year metering program that would enable it to improve its commercial operations, including improving its collection ratio from its current ratio of around 35 percent to 80 percent. While EPAL's overall financial results depend heavily on those improved collection rates, the project will generate significant positive cash flows for EPAL even if EPAL fails to improve its general performance. Details are provided in Annex 3.

84. The project is expected to result in an estimated 180,000 new metered and billed customers receiving 24/7 potable service. This number includes 100,000 household which, although currently connected, are mostly unmetered, unserved and unbilled. Full metering of the 100,000 existing customers is an important input into the financial returns. Finally, it is assumed that almost immediately after commissioning, the Bita WTP will operate at full capacity, and that all water that is not sold to consumers in the Bita-related service areas will be available through interconnections to be sold in EPAL's under supplied S3 system. With such assumptions, the projections indicate that the project will generate highly positive cash benefits to EPAL, as well as a small bottom-line (after incorporating depreciation and taxes) benefit. Key net returns to EPAL of the project are presented in Annex 3.

B. Fiduciary

Financial Management (FM)

85. An FM assessment was undertaken to evaluate the adequacy of the EPAL FM arrangements. The assessment was carried out in accordance with the World Bank IPF Policy and Directives, the Instructions on Project-Based Guarantees, and the World Bank Guidance on FM in World Bank IPF Operations issued on February 28, 2017. The objective of this assessment was to determine whether FM arrangements of EPAL are adequate to ensure that the project contracts are managed within the agreed time and costs. It is important to highlight that the payments to be made to the contractors will require multiple layers of approvals before such payments are made. The IBRD guaranteed loan will be disbursed only against approved invoices for eligible project costs and will be made, upon instruction by the MinFin, directly by the commercial banks to the contractors and consultants. It will be important for EPAL to meet its obligations in this regard to ensure that disbursements from the commercial banks to pay contractors follow the contractually agreed payment schedules and to avoid GoA unnecessarily incurring negative carry costs under the loan facilities.

86. However, the assessment of EPAL as an independent entity revealed weaknesses in its FM arrangements including: (i) EPAL's annual budgets are not comprehensive and realistic and there is no adequate budget execution monitoring in place; (ii) the Planning and Investment Directorate make use of excel spreadsheets to account for funds and expenditures of investment projects; and (iii) the audit of the EPAL financial statements is not conducted in accordance with International Standards of Auditing (ISA) as issued by the International Auditing and Assurance Standards Board (IAASB) within the International Federation of Accountants (IFAC).

87. EPAL should prepare comprehensive and realistic budgets and implement an adequate monitoring mechanism for the project. The POM will include a monitoring mechanism for the project. To assess financial performance, EPAL should prepare bi-annual unaudited IFRs and provide such reports to the World Bank within 45 days of the end of each calendar semester. EPAL's financial statements should be audited by the independent auditor in accordance with ISA as issued by IAASB within IFAC.

88. Based on the assessment, EPAL's FM arrangements have an overall residual FM risk rating of substantial and satisfy the World Bank's minimum FM requirements under World Bank policy. The issues mentioned above will be addressed as contemplated by the agreed FM action plan (see Table A1.3 in Annex 1).

Procurement

89. **Procurement procedures.** The IBRD guaranteed loans will finance both (i) works for which contracts have already been signed (lots B1-B7) and are being amended to reflect scope optimization, incorporate safeguards requirements and address material risk mitigation issued identified and (ii) new distribution networks works (Lots B8-B13) for which the procurement procedure has started but contracts are not yet signed. All contracts will be procured using applicable Angola procurement law. The contracts for Lots B1 to B7 were procured using Procurement Law No. 20/10 dated September 7, 2010 (*"Lei da Contratação Pública"*). Lots B8-B13 for the water distribution networks associated with the Bita system are being procured using Public Contracts Law No. 9/16 dated June 16, 2016 (*"Lei dos Contratos Públicos"*).

90. **Procurement arrangements**. The procurement of the works and supervision services to be financed with the IBRD-guaranteed loans is being implemented by EPAL, with technical support from its already-contracted PMC, DAR-Angola. For the procurement of the works (awarded and ongoing), EPAL is using a Design and Build model. Towards identifying and mitigating fiduciary risks, three levels of retroactive procurement assessments have been conducted towards appraisal, including a review of compliance with national rules, an assessment of the competitiveness and value-for-money of the awards, and a legal review of the contracts for mitigation of non-performance risks. The compliance review did not identify any major deviations. The competitiveness and value for money assessment suggests that while opportunities for better documentation exist, the resulting awards and prices for lots B1-B7 do not raise major flags. Significant opportunities were identified to optimize selected contract clauses so as optimize risk allocation and mitigate client exposure in case of contractor under-performance. The proposed contract awards for works and supervision consultants for lots B8-B13 are consistent with the bidding documents previously reviewed by the World Bank and use the same models as those used for Lots B1-B7.

91. **Procurement capacity**. EPAL has experience in managing the procurement of large, complex works. For example, EPAL has managed works of other water supply systems similar to Bita such as System S3/Sudeste. The procurement risk associated with the project in view of the risks identified, including the complexity of the works and EPAL capacity, is substantial. EPAL's contract administration and management functions are being delegated to the PMC (DAR-Angola) and will be further strengthened with TA to be funded by the PDISA2 Project.

C. Safeguards

92. **Angola has a legal and regulatory framework for environmental and social safeguards but has limited human resources and technical capacity for implementation**. The Environment Framework Law and subsequent decrees establish the general conditions for public consultations, enforcement, and the prevention and control of pollution and lay down the requirements before environmental assessments. Common structural project management weaknesses within the Government and publicly-owned sector agencies observed in other World Bank financed projects include limited human and technical capacity. This is due to understaffing, poor financing, and underequipped staff of the National Environmental Assessment Directorate under the Ministry of Environment. This is the first World Bank-funded project for EPAL and while the company does have some environmental capacity within its existing staff, it is mostly concerned with water quality. The PIU will have in its structure, environmental and social safeguards specialists to oversee the implementation of safeguard instruments already prepared and consulted upon in September 2018. The PIU will need to build substantial capacity in terms of environmental and social safeguards preparation and implementation in order to manage safeguards requirements for the Bita Project. The PIU shall receive day-to-day technical support from the project management consultant (which will include environmental and social safeguards management). In addition, the World Bank team will make an extra implementation support effort and maintain a close working relationship with the PIU.

93. A review of safeguards instruments (ESIA and RPF) prepared by DAR-Angola in 2018-2019 for the Bita Project was undertaken by an independent consultant to ensure compliance with national legislation and the World Bank's safeguard policies and requirements. More specifically, the objectives of the review were to ensure that these

safeguards instruments: (a) have adequately identified gaps and inconsistences between national legislation and World Bank safeguards policies; and (b) to ensure that the safeguards instruments adequately identify the potential environmental and social impacts of the Bita Project as well as the required mitigation measures. The review revealed some inconsistences and gaps in the ESIA and RPF, mostly related to national legislation and national environmental requirements. Most of these issues have already been addressed, with remaining inconsistences to be addressed in a subsequent pre-construction ESIA planned to be updated and approved ahead of project implementation, after detailed design of works are available. The appraisal-stage[34] ESIA and RPF reports have been cleared by the World Bank on condition that (a) EPAL further conducts social and environmental audit (ESA) of Lot B4, which is currently stopped for lack of financing; and (b) clarify budgeting assumptions for safeguards related tasks under the project. An ESA is required for Lot B4 because although B4 works started in 2017 and will not be covered by the IBRD-guaranteed financing, they are associated with the project, as set out in OP 4.12 (Involuntary Resettlement). The ESA will assess any current gaps[35] and future requirements for compliance with World Bank safeguards policies. The Lot B4 DB contract is also expected to be amended for integration of World Bank safeguards requirements moving forward. The approved appraisal stage ESIA and RPF have been publicly disclosed in country in Portuguese on May 14, 2019 and by World Bank in English on May 13, 2019.

94. The DB, project management and supervision consultancy contracts are being amended to reflect requirements of World Bank safeguards policies and Environmental, Health, and Safety (EHS) Guidelines, as well as certain key requirements for managing risks of gender-based violence (GBV) and occupational accidents, and for consistency with the final ESIA and RPF that have been prepared and consulted upon. These amendments are expected to be made to the contracts for lots B1-B7, including lot B4 which is financed by GoA and not by the IBRD guaranteed financing. The DB contracts for lots B8-B13 for the distribution networks also include provisions to reflect requirements of World Bank safeguards policies and EHS Guidelines. Extraction of construction materials (e.g., from quarries) will be undertaken exclusively through licensed facilities. Each contractor will produce a site-specific Occupational, Health and Safety Plan and related procedures that refer to identifying and minimizing hazards to workers; providing appropriate equipment; identifying preventive and protective measures; training of workers; and documenting and reporting accidents, diseases, incidents, and near misses. Each DB contractor will have to submit its Environmental and Social Management Plans (ESMPs) (or, in the case of the Lot B4 DB contractor, revised ESMPs) consistent with the ESIA and RPF requirements for approval by the respective supervision consultant and the project management consultant. Such approval needs to be obtained prior to the commencement (or, in the case of Lot B4, recommencement) of construction works under the respective DB contract. With regard to Lot B4, the team will explore obtaining commitments from MinEA and EPAL to notify IBRD of any safeguards-related issues, incidents or noncompliance at the Lot B4 works and to consult with IBRD in exercising any contractual remedies under the Lot B4 DB contract arising from any such noncompliance under the Lot B4 DB contract. If agreed, these obligations will be included in the guarantee-related agreements between IBRD and MinEA represented by EPAL. The World Bank team will also explore obtaining a commitment from MinEA and EPAL under which the continuation of works under the Lot B4 DB contract will be subject to the condition precedent that the Lot B4 DB contract be amended to incorporate safeguards-related provisions satisfactory to the IBRD and the updating of the Lot B4 DB contractor's ESMPs in accordance with the ESIA and RPF, duly approved by the PMC.

(i) Environmental

[34] Final ESIAs will be prepared by the DB contractors for each of their respective lots once the final designs are completed, and will be consolidated into a final, integrated pre-construction ESIA by the PMC.

[35] It is understood that the B4 works to date have complied with the requirements of a 2014 ESIA/ESMP consistent with national law but possibly not with the requirements of the more demanding ESIA/RPF finalized in 2019 for the IBRD guarantee. An agreement for the free transfer of the land for the Lot B4 site was also only formally signed in 2019 with a Sonangol retiree cooperative, replacing a prior informal and unsigned agreement for land exchange against the construction of a primary school in the neighborhood. The ESA will seek to confirm that there are no further pending issues or claims, and to specify updated safeguards compliance requirements.

95. The project is expected to have overall positive environmental and social impacts by substantially improving living conditions reliable piped potable service, thus improving the health and environmental conditions of beneficiaries. It triggers three environmental safeguards policies: Environmental Assessment (OP/BP 4.01); Natural Habitats (OP/BP 4.04); and Physical Cultural Resources (OP/BP 4.11).

96. **OP/BP 4.01 on Environmental Assessment.** Project activities will involve large scale construction of water production, treatment, storage, transmission and distribution structures. The proposed investments will primarily affect localized areas at or around the sites of facilities subject to physical works. Environmental impacts will mainly result from construction activities but are not expected to have significant adverse or irreversible impacts. Thus, the project has been classified as category B under this policy. Some of the potential negative environmental impacts and risks the ESIA identified are related to soil erosion (due to removal of vegetal cover); increased risks of occupational accidents and incidents; increased traffic congestion; nuisances for the local population (dust, noise, vibration); water and mud runoff; and leakages and spills of chemicals. The ESIA report recommends ecological flow risks mitigation measures to be incorporated into the hydrological study. The provision of water supply may increase health risks of the communities due to poor sanitation conditions present in the project area.

97. There is a total of 13 subprojects (seven for water production and transmission component and six for the installation and retrofitting of distribution networks and customer connections). An ESIA has been prepared and consulted upon in September 2018, on the basis of feasibility study-level designs and assessments. The instrument was prepared to identify potential environmental and social impacts in project areas; capacity building needs, including implementation arrangements and associated costs. The final appraisal-stage ESIA/ESMP reports consider environmental impacts, health and safety, labor influx, and organizational capacity. ESIA updates shall be prepared by each DB contractor once detail designs are delivered and will be consolidated into an integrated pre-construction ESIA. Subsequent and relevant safeguard instruments such as ESMP, Contractor's-ESMPs (C-ESMPs) and RAPs shall also be prepared and submitted to the supervision consultant, the PMC and the World Bank for review and approval.

98. As part of the C-ESMPs, the following management plans will be prepared for consultations with affected groups and non-governmental organizations: Invasive Species Management Plan; Bushmeat Hunting and Wildlife Trade Management Plan; Soil Erosion and Sedimentation Plan; Emergency Response Plan (including Spill Response Plan); Waste Management Strategy; Waste Management Plan; Waste Water Management Plan; Cultural Heritage Management Plan; Traffic Management Plan; Community Liaison Plan; and an Occupational, Health and Safety Plan.

99. **Natural Habitats (OP/BP 4.04).** Project investments are not expected to directly affect the quality, or the status, of natural habitats as defined in the OP/BP 4.04. Nonetheless, this policy has been triggered, as some civil works, such as the intake in the Rio Kwanza may lead to some unforeseen negative impacts on natural habitats. Much of the remaining project areas (water transmission and distribution lines) have already been cleared of any direct impact on natural habitats. In addition, most of the project follows existing road alignments and as such habitats are not expected to be impacted. The ESIA has included provisions to ensure that likely negative impacts to natural habitats are adequately captured and considered during the design and construction of the various lots. For instance, the ESIA has considered the Indirect area of Influence, which includes the coastal mangroves within the Bita/S4 area, the Ilhéu dos Pássaros[36],and Kissama (South of Luanda).

100. **Physical Cultural Resources (OP/BP 4.11).** As part of the civil works, excavations and earth movements may unintentionally affect sites or encounter objects of significant archeological or cultural value. Hence, this policy is triggered to ensure that a "chance finds procedure", and any applicable national guidelines are followed should such artifacts or places be encountered during project construction. To ensure due diligence, chance find procedures have been included in the ESIA and will be included in the C-ESMPs to address OP/BP 4.11 basic requirements.

[36] Designated as Integral Natural Reserve under the Integrated Biodiversity Assessment Tool (IBAT), and as Category IV Species/Habitat Management Area by International Union for Conservation of Nature (UICN).

(ii) Social Safeguards

101. **OP/BP 4.12 on Involuntary Resettlement** is triggered for this project as construction/rehabilitation of water supply systems may result in adverse impacts such as physical displacement of households and businesses, loss of crops/fruit trees, temporary or permanent loss of access to productive land, and/or temporary relocation of small (often informal) businesses. An RPF has been prepared to establish the principles and procedures to follow in the event that individual investments are determined to result in land take-related impacts on households and/or businesses[37]. The RPF has been consulted upon and has been disclosed by EPAL in Angola on May 14, 2019 and via the World Bank's external website on May 13, 2019. As part of pre-appraisal, preliminary land acquisition and resettlement activities planned or engaged by EPAL for all lots since 2014 were documented and reflected in the finalized ESIA and RPF reports, with particular focus on the arrangements in place for lot B4 where works have started. The design of a resettlement compensation mechanism was also agreed and reflected in the ESIA and RPF ahead of appraisal, including the responsibilities and fiduciary provisions for managing the corresponding escrow account. Specific investments or sub-projects may, subject to completion of detailed design, require the development of RAPs. The RAP will outline detailed arrangements for compensation of PAPs (including clear eligibility criteria, detailed entitlements matrices, procedures for identification of affected persons and valuation of assets, etc.) as well as organizational responsibilities for RAP implementation. Based on ESIA and RPF data, the resettlement impacts may be limited for a project of Bita's magnitude, mostly concentrated along the 82 km of transmission lines of Lot B2, affecting 16 hectares with currently 28 buildings (almost all residential), some 2.5 km of boundary walls and fences, and approximately 450 significant trees.

(iii) Grievance Redress Mechanisms

102. The project will set up a Grievance Redress Mechanism (GRM), building on both traditional conflict-resolution mechanisms as well as project-based steps to ensure that community members and other stakeholders have an opportunity and means to raise their concerns and/or provide suggestions regarding project-related activities. Initial grievances may be directed to local or traditional leaders, the *sobas*, or via other channels such as a project website or "hotline"; if not satisfactorily resolved, complainants may appeal in the first instance to the municipal administration and will have access to judicial remedies. Focal points appointed by EPAL will record and address grievances, queries and suggestions. A reporting line of received (and addressed) grievances will also be clearly defined, so that EPAL will have a complete database containing all grievances lodged. Grievances must be categorized and recorded by EPAL and consolidated periodically, and reports issued (for review by EPAL management and the World Bank) on a monthly basis. The database will also be an effective management tool to monitor grievances and their resolution, providing opportunities to improve project implementation. The project's GRM rules and communication steps, outlined in the ESIA and RPF (and to be further refined prior to implementation), will be explained during consultation meetings in order that all project -affected persons and other stakeholders are aware and encouraged to use the mechanism for transparency and better project implementation.

103. Communities and individuals who believe that they are adversely affected by a WB supported project may submit complaints via the project-level GRM, or to the WB's Grievance Redress Service (GRS). In addition, project-affected communities and individuals may submit their complaints to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the WB's attention, and Bank Management has been given an opportunity to respond. Information on how to submit complaints to the WB's corporate GRS is available at http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. Information on how to submit complaints to the WB Inspection Panel is available at *www.inspectionpanel.org*.

[37] An RPF is prepared in cases where the precise extent and location of land-take or expropriations is not known.

Gender

104. The project will significantly improve water supply conditions in South Luanda, with improvements such as the reduction of water fetching time expected to particularly benefit women and girls. As in other sectors in Angola, limited data are available. However, there is evidence of significant gender gaps in financial inclusion, agriculture and other sectors. As in many other countries, it is likely that women and girls generally bear the burden of fetching water. By displacing tanker truck service with piped service, the project will reduce the time spent for either attending tanker trucks deliveries, or for fetching water in jerrycans along scheduled tanker truck routes. Furthermore, a specific design feature introduced by the project, and a departure from prevalent urban water supply approaches in Angola and in Luanda, is the maximization of service delivery through household connections and yard pipes, by opposition to service through neighborhood public standpipes. This is expected to result in significantly improved convenience of service for the households, with elimination of the water fetching duty which is typically the responsibility of women and girls in the household. The expected benefit will be measured during project implementation, through annual household surveys in the Bita Project areas, assessing the evolution of water supply conditions, including changes in water fetching requirements by gender. Household surveys may include questions relating to: sources (e.g. rivers, tanks, lakes, communal wells or tanks, private water tanks, water pipes) used to secure water; what members of households are responsible for securing water; how long it takes to fetch water; what constraints exist in terms of distance, safety; roles of household members in managing water quality, its purification and how it affects men and women; scarcity and/or quality of drinking water and its effects on household members by gender.

V. KEY RISKS

105. **The overall risk for the proposed project is rated High**. The most perceptible risks at the time of project identification pertained to the fact that the Bita Project had already been designed and procured ahead of World Bank involvement. Under such unusual circumstances, the project could not benefit from a traditional sequence of World Bank-assisted design and preparation steps but instead required a series of ad-hoc retroactive studies, assessments, as well as legal, fiduciary and safeguards reviews, resulting in some design modifications. Although additional efforts taken by the World Bank team have resulted in a narrower delimitation and specific mitigation of risks, they still fall short of delivering a comprehensively optimized and controlled operation, and the overall risk of the operation is thus still rated high. This overall rating is primarily due to:

- the macroeconomic and fiscal risks;
- the fiduciary risks associated with pre-existing and new contracts awarded and to be administered per national rules;
- the residual risks associated with the scale of the investments, and the need for effective project management and mitigation of lot interface risks;
- EPAL's implementation capacity risks, including on fiduciary and safeguards aspects;
- the uncertainty on EPAL's ability to significantly improve its performance to meet project and utility financial performance requirements; and
- the relatively uncharted stakeholder risk associated with the displacement of tanker truck service by the project.

106. **Political and governance risks are rated Substantial**. The country continues to face massive developmental challenges, which include reducing its dependency on oil and diversifying the economy; rebuilding its infrastructure; and improving institutional capacity, governance, public FM systems, human development indicators, and the living conditions of the population. Large pockets of the population remain in poverty and without adequate access to

basic services, and the country could benefit from more inclusive development policies. While the new administration has been addressing the mitigation measures to provide political certainty and improve governance risks, the current situation merits a designation of substantial for these risks.

107. **Macroeconomic and fiscal risks are rated High**. Macroeconomic risks arise from the uncertainty in the external outlook and domestic developments. Mitigating factors include the Government's commitment to macroeconomic stability, which is supported by the World Bank's DPF series and the IMF EFF program. A significant increase in oil prices may also lessen reform momentum in the short-term, but long-term prospects of declining oil production provide strong incentives to pursue a less-oil dependent growth model.

108. **Sector risk is rated Substantial**. Despite MinEA's recent policy and regulatory initiatives, Angola's WASH sector still features weak governance and institutions, with uneven accountability for results or efficiency in areas of infrastructure development and service improvement, such as in the case of EPAL. The sector underwent some governance and regulatory shifts in 2018, with on one hand the requirement for increased accountability of service providers to provincial and local governments, and on the other hand the introduction of a new tariff policy aimed at promoting the recovery of efficient O&M costs, coupled with the elimination of government operating subsidies. Nevertheless, the feasibility of some of EPAL's aggressive commitments under the 2018-2022 PIP remains to be confirmed, and EPAL's performance turnaround is not a short-term prospect to be achieved with TA alone. Finally, the fact that EPAL is no longer being considered by GoA for the potential development of sanitation services in Greater Luanda is seen positively, as it will avoid overburdening the utility, and distracting it from its crucial water supply performance and cost-recovery goals. The responsibility for sanitation will rest with the provincial government and will be facilitated by the launch of an integrated masterplan supported by PDISA2 funded TA.

109. **Technical Design risk is rated Substantial**. Thanks to additional studies performed through preparation, the technical design risks are no longer considered high, but remain substantial. The retroactive TFS developed during preparation reassessed demands and optimized the technical design to a 3 m^3/sec production capacity and allowed the preliminary design of distribution systems in the Bita, Cabolombo, Mundial and Ramiros service areas. As part of the project launch, EPAL with PMC support must update its strategies for the development of connected service in peri-urban areas and for the large-scale introduction of pre-paid metering systems. The detailed design for distribution networks and connections under lots B8-B13 will be optimized consistent with these strategies, towards maximizing individual connections, optimizing investment costs, and ensuring successful pre-paid metering roll-out for EPAL and its customers. Final specifications for pre-paid meters will comply with a pre-paid metering strategy also to be developed by PMC. Implementation quality and compliance will benefit from the independent technical audit services to be funded by PDISA2, spanning all lots, including those not covered by the guarantee. Connected service will only be provided to households with adequate septic tank or drainage facilities. In the absence of any sewerage and wastewater treatment systems in the project areas, there are no increased wastewater collection or disposal risks associated with the increased supply of water. Existing fecal sludge management services will continue to apply for the emptying of septic tanks and pit latrines.

110. **The institutional and implementation capacity risk of EPAL to manage project construction and operation is rated High**. EPAL does not have prior experience in the preparation or implementation of an IBRD-supported project. EPAL features uneven management, operational and technical capacities, with ineffective incentives to efficiently develop and operate its water systems. With regards to implementation, EPAL will rely on a professional project management firm, complemented by construction supervision consultants for each lot. In addition, with PDISA2 funding, EPAL will be supported by a technical auditor, a safeguards auditor, as well as resident technical advisors to support Bita implementation and utility performance and operational needs. Finally, some flexibilities will be incorporated in the commercial financing arrangements to manage completion risks, such as cost overrun and time overrun risks.

111. **Fiduciary risks are rated Substantial.** Contract amendments spanning investment scope adjustments, risk mitigation measures, and World Bank safeguards requirements, have been developed by EPAL in consultation with the World Bank. These contract amendments have largely been negotiated with the respective contractors and consultants but

yet to be reviewed in their final form by the World Bank and yet to be executed by the Government. The risks related to contractual invoicing and payment processes have largely been mitigated through the adoption of transparent approval and auditing processes (refer to Annex 5 for further details). The FM assessment of EPAL systems and capacities identified opportunities for strengthening, with the residual FM risk rated as substantial.

112. **Environmental and Social risks are rated Substantial.** The overall Environmental and Social risk is rated substantial given the scale of works undertaken by the Bita Project, and the fact that EPAL does not have prior experience of World Bank safeguard requirements. Environmental impacts will be localized, mainly resulting from construction activities, and are not expected to have significant adverse or irreversible consequences. Project activities may lead to soil erosion (due to removal of vegetal cover), increased pollution (due to construction waste), as well as health and safety risks to construction workers and communities. Regarding Social aspects, although impacts foreseen during the construction phase are of moderate magnitude (loss of crops/ fruit trees and temporary relocation of small informal businesses), the overall social risk is substantial due to large-scale works with potential negative impacts on host communities (e.g., due to labor influx). The PIU will mitigate GBV-related risks through the conduct of a GBV risk assessment, GBV service provider mapping, community consultations, internal and contractor capacity-building at project inception. The GBV assessment and risk rating will be established per World Bank guidelines and reflected in the updated pre-construction ESIA. This would include the implementation of an effective grievance redress mechanism with specific procedures for GBV-related grievances (i.e., GBV-sensitive approaches in GRM), establishing separate female and male facilities during works (with GBV-free zone signage). In addition, all contractors will be required to implement a Code of Conduct for the workers and capping the number of non-resident foreign workers at 30 percent.

113. The project could potentially have an impact on existing households and businesses within the pipelines' rights of way (water trunk line and distribution networks) and in the corridor of impact of some of the planned infrastructure (CDs, WTP, pumping stations, etc.). These impacts could result in physical relocation of households and businesses, or temporary impacts resulting in economic displacement, but are generally anticipated to be of small magnitude (e.g., loss of crops/ fruit trees and temporary relocation of small informal businesses). The RPF provides guidance on how these impacts will be managed through the implementation of specific relocation or compensation measures, including land-for-land compensation and/or payments. The RPF includes an outline of the RAPs to be prepared – both prior to implementation and on the basis of detailed design. To mitigate the risks related to payment for land acquisition and resettlement costs, a prefunded escrow account, to be financed through the IBRD guaranteed financing, was agreed to be established and to be professionally managed as part of PMC tasks. An ESA of lot B4 - associated facility under implementation with GoA financing - will be conducted to assess safeguard management performance to date and confirm the application of World Bank safeguard instruments through necessary amendments to the lot B4 contract.

114. **Stakeholder risks are rated High.** A relatively uncharted stakeholder risk exists in relation to the fact that the project will displace private water tanker truck service in Bita service areas, which is likely to be resented and resisted by well-established commercial interests. EPAL and IRSEA recognize that tanker truck service will long remain a necessity across other parts of Greater Luanda, and plan to conduct an assessment of regulatory options to promote the quality and affordability of such service with the help of PDISA2 funded TA. It is likely that Bita Project may only displace demand over time for the service. In such evolving context, the stakeholder risk associated with tanker truck service displacement is assessed as high.

VI. RESULTS FRAMEWORK AND MONITORING

COUNTRY: Angola
Luanda Bita Water Supply Guarantee Project

Project Development Objective

The PDO is to improve access to potable water service in selected areas of Luanda by mobilizing commercial financing for the Government of Angola.

Project Development Objective Indicators

Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			Year 1	Year 2	Year 3	Year 4	
1. People provided with access to **improved water sources** (CRI[38], Number)		0.00	0.00	0.00	240,000	660,000	900,000
1a. People provided with access to improved water sources - urban (CRI, Number)		0.00	0.00	0.00	240,000	660,000	900,000
1b. People provided with access to improved water sources - Female (CRI, Number)		0.00	0.00	0.00	120,000	330,000	450,000
2. People with existing connections benefitting from **safely managed** service (Number)		0.00	0.00	0.00	120,000	380,000	500,000
2a. People with existing connections benefitting from safely managed service - Female (CRI, Number)		0.00	0.00	0.00	60,000	190,000	250,000
3. % of tested samples passing water quality tests (Percentage)		0	0	0	98	99	99
4. Commercial financing mobilized (US$)		0.00	470,000,000	899,000,000	1,000,000,000	1,070,000,000	1,070,000,000

[38] World Bank corporate requirement indicator.

Intermediate Results Indicators[39]

Indicator Name	DLI	Baseline	Intermediate Targets				End Target
			Year 1	Year 2	Year 3	Year 4	
5. People provided with new access to **safely managed** water service (*)		0	0	0	84,000	196,000	280,000
6. People provided with new access to **basic water** service (*)		0	0	0	36,000	84,000	120,000
7. Number of female and male person hours per day per household saved due to the water connection (*)		0					TBD
8. Installed water production capacity (cubic meters per second)		0	0	0	3.00	3.00	3.00
9. Length of distribution network constructed or rehabilitated (Kilometers)		0	0.00	1,000	2,000	914	3,914
10. New metered household connections constructed in project area (Number) (*)		0	0.00	0.00	60,000	120,000	180,000
11. Household connections retrofitted with meter in project area (Number) (*)		0	0	0	25,000	25,000	50,000
12. Standpipes constructed or rehabilitated in project area (Number) (*)		0	0	0	100	200	300
13. Customer grievances addressed satisfactorily within stipulated time frame (Percentage)		0	0	25.00	50.00	50.00	50.00

[39] Missing or preliminary (*) intermediate indicator values will be firmed in Year 1 upon completion of distribution system designs and initial customer surveys.

Monitoring & Evaluation Plan: PDO Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
1. People provided with access to **improved water sources**	This indicator measures the annual and cumulative numbers of people who benefited from improved water supply services that have been constructed through the project, including beneficairies of new individually connected or public standpipe service, as well as of existing connected customers benefitting from restored or enhanced service.	Annually	EPAL customer database	PIU will work with contractors, EPAL operations and EPAL IT/Commercial to collect data on new connections with effective service in the Bita Project area, for presentation in quarterly progress reports, for presentation in quarterly progress reports	EPAL PIU
1a. People provided with access to improved water sources - Female (RMS requirement)	Same as above				EPAL PIU
1b. People provided with access to improved water sources – urban	Same as above				EPAL PIU
2. People with existing connections benefitting from **safely managed service**, disaggregated by gender	This indicator measures annaul and cumulative numbers of existing EPAL customers who benefited from enhanced water supply services that have been constructed through operations supported by the WB. Enhanced service quality is defined as safely managed service.	Annually	EPAL customer database	PIU will work with contractors, EPAL operations and EPAL IT/Commercial to collect data on rehabilitated existing connections with effective service in the Bita Project area, for presentation in quarterly progress reports	EPAL PIU
2a. People with existing connections provided with access to safely managed service - Female (RMS requirement)	Same as above				EPAL PIU
3. Percentage of tested samples passing water quality tests	Percentage of samples from the project area that meet or exceed EPAL's requirements for BOD and other aspects of water quality	Annually	EPAL operational records	PIU will review lab reports on water quality in the Bita Project area, for presentation in quarterly progress reports	PIU M&E specialists gather data from EPAL labs
4. Commercial financing mobilized	Total debt financing from commercial sources covered under the IBRD guarantee	Annually	Signed loan agreements	PIU will regularly liaise with MoF staff to document signed loan agreements under the IBRD guarantee, for presentation in quarterly progress report.	PIU M&E specialists coordinate with MinFIn

Monitoring & Evaluation Plan: Intermediate Results Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
5. People provided with new access to **safely managed water service**	Cumulative number of people who benefit from new safely managed water service as a result of the project, i.e. benefitting form an improved source, on premises, available when needed and e-coli free .	Annually	EPAL customer database	PIU will work with contractors, EPAL operations and EPAL IT/Commercial to collect data on new connections with effective service in the Bita Project area, for presentation in quarterly progress reports	EPAL PIU
6. People provided with new access to **basic water service**	Cumulative number of people who benefit from new basic water service as a result of the project, i.e. benefitting form an improved source, within a 30 minutes roundtrip from premises.	Annually	EPAL customer database	PIU will work with contractors, EPAL operations and EPAL IT/Commercial to collect data on new connections with effective service in the Bita Project area, for presentation in quarterly progress reports	EPAL PIU
7. Number of female and male person hours per day per household saved due to the water connection	Average estimates from sample of surveyed customers with or without service in project areas	Annually	Customer survey	PIU will work with EPAL Commercial to design and analyze project area sections of EPAL's annual customer survey	EPAL PIU
8. Installed water production capacity (cubic meters per second)	Maximum potential volume of water (in cubic meters per second) that can be produced by the Bita treatment plant	Annually	Contractor progress reports	The contractors will be responsible for recording construction progress as part of their contract implementation and recording system. dData will be verified by project supervision engineers and compiled by the PIU	Contractors, supervisor/PMC, EPAL PIU
9. Kilometers of distribution network constructed or rehabilitated	The total number of km of pipelines constructed through the project in Km, including both bulk transmission and distribution pipelines.	Quarterly	Contractor progress reports	The contractors will be responsible for recording kilometers of network constructed as part of their contract implementation and recording system. This data will be verified by project supervision engineers and compiled by the PIU	Contractors, supervision/PMC, EPAL PIU
10. Number of new metered household connections constructed in project area	Total number of new household connections that are constructed and associated with an active customer account.	Quarterly	Contractor progress reports	The contractors will be responsible for recording new connections constructed as part of their contract implementation and recording system. This data will be verified by project supervising engineers and compiled by the PIU	Contractors, supervision/PMC, EPAL PIU

11. Number of household connections retrofitted with meters in project area	Total number of existing household connections in operation retroffitted with a meter with an active customer account	Quarterly	Contractor progress reports	Contractors will record retrofitted connections Data will be verified by supervising engineers and compiled by the PIU	Contractors, supervision/PMC, EPAL PIU
12. Number of standpipes constructed or rehabilitated in project area	Total number of EPAL public standpipes that are constructed or rehabilitated in the project area.	Annually	Contractor progress reports	The contractors will be responsible for recording new connections constructed as part of their contract implementation and recording system. This data will be verified by project supervising engineers and compiled by the PIU	Contractors, supervision/PMC, EPAL PIU
13. Percentage of customer grievances addressed satisfactorily within stipulated time frame	Percentage of new customer support tickets opened during the year that are closed satisfactorally within an agreed number of days	Annually	EPAL customer service support system	IT generates a regular report on customer suport tickets	EPAL, PIU

VII. INDICATIVE TERMS AND CONDITIONS FOR THE PROPOSED IBRD GUARANTEE

Luanda Bita Water Production and Distribution Project - Guarantee Term Sheet

The Republic of Angola, through Luanda's water utility EPAL, has awarded seven DB contract lots for the Luanda Bita Water Production component ("Bita Water Production" component) and will be awarding six additional DB contract lots for the installation and retrofitting of distribution networks and customer connections ("Bita Distribution" component). EPAL has also awarded a project management consulting contract for management of the Bita Water Production component to DAR-Angola Consultoria Limitada, and separate construction supervision contracts for each lot of the Bita Water Production component. EPAL will also be awarding additional consultancy contracts for project management and construction supervision for the Bita Distribution component. The scope of the project that IBRD is considering supporting through the proposed Guarantee described below includes the Bita Water Production component, the Bita Distribution component, the consultancy contracts for project management and construction supervision for all thirteen lots, and financing costs and fees thereof ("Project").

This draft term sheet contains a summary of indicative terms and conditions of a proposed guarantee ("Guarantee") by IBRD for discussion purposes only and does not constitute an offer to provide a Guarantee. The provision of a Guarantee is subject, inter alia, to satisfactory appraisal by IBRD of the Project (including, without limitation, with respect to Project participants such as lenders, DB contractors, Project supervision and management consultants, and advisors), compliance with all applicable policies of the World Bank, including those related to environmental and social safeguards, review and acceptance of the ownership, management, financing structure, and project/transaction documentation by IBRD, and the approval of the management and Executive Directors of IBRD in their sole discretion.[40]

IBRD-Guaranteed Loan (the Financing)

IBRD-Guaranteed Loan Agreement:	Agreement among the Borrower, the Agent [on behalf of] [and the] Lenders and IBRD as Guarantor setting out terms and conditions of the Financing, mechanism for payment on the Financing [and containing the Guarantee][41].
Borrower:	Republic of Angola acting through the Ministry of Finance of the Republic of Angola (*Ministerio das Finanças*, MinFin)
Implementing Entity:	Ministry of Energy and Water (*Ministerio da Energia e Aguas*, MinEA) represented by Empresa Pública de Águas de Luanda (EPAL)
Guaranteed Lender/Beneficiaries of the IBRD Guarantee:	[Commercial bank lenders, or the Agent on their behalf, each to be identified]
Currency:	US$
Principal Amount:	Up to [US$910 million]
Term:	15 years
Repayment of the Financing:	[Annual] [Semi-annual] [Quarterly]

[40] Note: Text and terms between square brackets are subject to change or to be determined or confirmed.

[41] The Guarantee could be contained in the IBRD Guaranteed Loan Agreement or separately in an IBRD Guarantee Agreement between IBRD and the Agent on behalf of the Lenders.

Loan Interest Rate:	[Spread above LIBOR acceptable to the Borrower and IBRD] [Interest rate acceptable to the Borrower and IBRD]
Use of Proceeds:	The proceeds of the IBRD Guaranteed Loan will be used for the Project.
Conditions Precedent to Each Drawdown:	Usual and customary conditions for financings of this type, including but not limited to the following: a) Evidence satisfactory to the Guarantor that: (1) all project authorizations required at the relevant time have been obtained; (2) in the case of any advance payments, any conditions to such advance have been satisfied by the relevant contractor; (3) the relevant Lot Supervisor(s), PMC, EPAL, MinEA and MinFin, as applicable, have approved the invoice(s) based on satisfactory completion of scope covered under the relevant invoice(s) in accordance with the relevant milestone payment schedule(s) or other relevant provisions under the relevant contracts; and (4) [TBD]; b) No limitation/suspension notice (see Suspension below) has been issued by the Guarantor which has not been revoked; and e) [TBD]
Government Additional Cash Support Account:	An interest-bearing additional cash support ("ACS") account (the "**Government Additional Cash Support Account**") will be maintained at one of the Guaranteed Lenders or the Agent or another Eligible Financial Institution (as defined below) and pre-funded by the Borrower for the Term in a minimum amount equal to the highest of all scheduled debt service payment amounts for the remaining life of the loan[42]. During the availability period, the required amount will be set as equivalent to 10 percent of the loan amount drawn for Bita project costs to allow gradual build-up of the ACS balance. The ACS will be capped at US$[80] million and is proposed to be financed from the proceeds of the IBRD-Guaranteed Loan. The funds in the Government Additional Cash Support Account would only be available to meet the Borrower's obligation to pay scheduled instalments of principal and interest thereon under the IBRD-Guaranteed Loan Agreement. The Borrower would be obligated to replenish the balance of the Government Additional Cash Support Account to the required minimum level within [3] months after any draw thereunder.

[42] [The required amount will be computed at the beginning of each interest period (6-months) (at LIBOR fixing) and will be required to be in place within [x] Business Days after such computation date.]

IBRD Guarantee Agreement	
Guarantor:	International Bank for Reconstruction and Development (IBRD)
Parties:	IBRD and the Guaranteed Lender (if several Guaranteed Lenders, a Facility Agent or Trustee acting on behalf of the Guaranteed Lenders).
Guarantee Face Value:	Maximum of US$ [500] million
Guarantee Support:	IBRD would guarantee the payment, following occurrence of a Guaranteed Event, of [principal and interest amounts] [specific, pre-agreed debt service payments] due on scheduled payment dates, up to the Maximum Guaranteed Amount.
Guaranteed Event:	Failure by the Borrower to make any scheduled payment on the IBRD-Guaranteed Loan, and the Guaranteed Lender/Beneficiary has been unable to satisfy such payment in full by recourse to the Government Additional Cash Support Account.
Guarantee Period:	[15 years]
Maximum Guaranteed Amount:	A partial amount of financing not to exceed the Guarantee Face Value
IBRD Financial Exposure Limits	The average life of the financial exposure of IBRD under the Guarantee will not exceed 20 years and the Maximum Guarantee Period will not exceed 35 years. Financial exposure of IBRD under the Guarantee will start on the first disbursement date of the loan.
Signing:	If the Guarantee-related legal agreements are not signed within 24 months following approval by the Board of Executive Directors of IBRD, IBRD may withdraw the offer of the Guarantee.
Amendments, Waivers and Consents:	IBRD will be entitled to be kept fully informed about any proposed waiver or amendment to, or consent requested under, the terms of the transaction. Certain amendments and waivers to, and consents given under, the provisions of the transaction documents will require the prior written consent of IBRD, including, but not limited to, any material amendment or modification to, or any material consent given under, a finance document or any amendment, waiver or consent that relates to the IBRD Guarantee or affects the rights or obligations of IBRD.
Suspension:	IBRD may, during the availability period for drawdown of the IBRD Guaranteed Loan, inform the Agent that no further drawdown of the IBRD Guaranteed Loan, from the date of notification by IBRD up until such notice is revoked by IBRD, will be covered by the IBRD Guarantee upon the occurrence of certain limitation/suspension events, including, inter alia: (i) an event of default occurs under the IBRD-Guaranteed Loan Agreement; (ii) the Member Country has ceased or been suspended from its membership of the World Bank or International Monetary Fund; (iii) the Implementing Entity has breached a material obligation under the Project Agreement and such breach continues after any applicable cure period; or (iv) the Agent or any Guaranteed Lender has engaged in Sanctionable Practices[43] relating to the IBRD-Guaranteed Loan. If the event giving rise to a suspension has been waived

[43] "Sanctionable Practices" include corrupt, fraudulent, collusive, coercive, or obstructive practices, as defined in IBRD's Anti-Corruption Guidelines.

	by IBRD, or remedied to IBRD's satisfaction, then IBRD may revoke its suspension notice and let the Agent know which amounts are reinstated for coverage under the IBRD Guarantee. If such suspension continues for a period of [TBD] months, the Maximum Guaranteed Amount will be permanently reduced by the amount with respect to which IBRD had suspended coverage.
Withholding:	IBRD may withhold payment to a beneficiary of the IBRD Guarantee if, inter alia: (i) the Agent or any Guaranteed Lender has engaged in a Sanctionable Practice relating to the IBRD-Guaranteed Loan; (ii) the Agent or any Guaranteed Lender, inter alia, amends the guaranteed financing documents without IBRD's prior written consent, or transfers or assigns all or part of its interest in the financing to an entity that is not an Eligible Financial Institution (as defined below); (iii) the Agent or any Guaranteed Lender engages in Repackaging Arrangements (as defined below) in respect of the IBRD Guarantee.
Termination:	The Guarantee may be terminated, inter alia: (i) if an instalment of the Guarantee Fee or Standby Fee is not paid when due; (ii) if an amendment, waiver, consent, modification or other change is made or given relating to certain provisions of the finance documentation, IBRD’s rights or obligations, or the Guarantee without IBRD’s prior written consent; (iii) following full payment of all guaranteed amounts; or (iv) after the final date for payment under the Guarantee; or (v) solely in respect of any amounts withheld from payment under the IBRD Guarantee as described above, if IBRD has withheld such amounts for a period of [TBD] months.
No Discharge:	Neither the obligations of IBRD under the IBRD Guarantee nor the rights, powers and remedies conferred upon the Agent with respect to IBRD by the IBRD Guarantee or by applicable law or regulation shall be discharged, impaired or otherwise affected by: (i) any insolvency, moratorium or reorganization of debts of or relating to the Borrower; (ii) any of the obligations of the Borrower under the financing agreements being or becoming illegal, invalid, unenforceable, void, voidable or ineffective in any respect; (iii) any time or other indulgence being granted to the Borrower in respect of its obligations under the financing agreements; or (iv) any other act, event or omission (other than the failure of the Agent to make a timely and duly completed demand under the IBRD Guarantee) which might otherwise operate to discharge, impair or otherwise affect any of the obligations of IBRD under the IBRD Guarantee or any of the rights, powers or remedies conferred on the Agent by the IBRD Guarantee or by applicable law or regulation.
Reduction of Demand:	If, after the Agent has made a demand on IBRD for payment under the IBRD Guarantee, but before IBRD has made payment of the amount so demanded, the Agent receives payment in respect of such amount from the Borrower (or the Agent recovers otherwise than from IBRD) any sum which is applied to the satisfaction of the whole or any part of such amount, the Agent shall promptly notify IBRD of such fact and IBRD's liability under the IBRD Guarantee in respect of such demand shall be reduced by an amount equal to the portion so paid by the Borrower (or so recovered by the Agent) and so applied.
Non-Accelerability of Guarantee:	The Guarantee cannot be accelerated and become payable prior to the scheduled debt service payment dates under any circumstances, including if the underlying IBRD-Guaranteed Loan is accelerated as a result of a Guaranteed Event. In such

	instances, the IBRD Guarantee will cover payment of debt service up to the Maximum Guaranteed Amount in accordance with the original payment schedule.
Conditions Precedent to Effectiveness of the IBRD Guarantee:	Usual and customary conditions for financing of this type including but not limited to the following: Provision of relevant legal opinions satisfactory to IBRD (including a legal opinion from the appropriate official of Republic of Angola relating to the Indemnity Agreement and the Project Agreement and any other relevant Project documentation); a) Payment in full of the Guarantee Fee, the Front-End Fee and the relevant instalment(s) of the Standby Fee and reimbursement of IBRD's external legal and due diligence expenses; b) Establishment of an escrow account or other secure mechanism for compensating project-affected persons (PAPs) in accordance with the Safeguards Instruments (the "**Resettlement Escrow Account**"), for directly paying eligible resettlement expenditures against appropriate evidence of eligibility; c) Execution of the Indemnity Agreement, the Project Agreement and any other applicable documentation, in each case acceptable to IBRD, including without limitation (i) amendments to the Design-Build (DB) Contracts and Lot Supervision Contracts for Lots B1-B7, (ii) DB Contracts and Lot Supervision Contracts for Lots B8-B13, and (iii) the amended Project Management Contract reflecting, inter alia, the carve-out of Quilonga Grande tasks, and the inclusion of Lot B8-B13 tasks and other agreed additional tasks; d) Delivery of a plan for the improvement of EPAL's performance satisfactory to IBRD (the "**Performance Improvement Plan**"); e) Completion of environmental and social audit for Lot B4 implementation to date and amendment of DB and construction supervision contracts for Lot B4 to include provisions for compliance with applicable World Bank safeguards requirements; f) Preparation by EPAL and endorsement and confirmation of funding by MinEA of action plans for achievement of the Five Objectives (as defined below) as agreed with IBRD; g) Satisfaction of any other conditions precedent under the financing documents; h) A project operations manual containing detailed arrangements and procedures for the implementation of the Project including, without limitation, with respect to (a) the development of new connected service in peri-urban areas and (b) the introduction of pre-paid metering (the "**Project Operations Manual**"), has been prepared in form and substance satisfactory to IBRD and adopted by EPAL, MinEA and MinFin; and i) establishment of a project implementation unit (PIU) within EPAL acceptable to IBRD; j) Evidence satisfactory to IBRD that (i) the procurement process for the Independent Technical Auditor and Independent E&S Auditor has been

	completed or is reasonably advanced and (ii) the resident technical advisers to EPAL have been hired or selected; k) Evidence satisfactory to IBRD that the Implementing Entity has sufficient budgeted amounts (other than IBRD-Guaranteed Loan proceeds) to meet its responsibility for obtaining Project-related permits and governmental authorizations in accordance with the DB Contracts.
Subrogation:	If and to the extent IBRD makes any payment under the Guarantee, IBRD will be subrogated immediately to the extent of such unreimbursed payment to the Guaranteed Lenders' rights.
Right to Purchase:	Upon payment default by the Borrower, IBRD will have the right to purchase all rights, title and interests of the Beneficiaries in the Financing.
Assignment/Transfer:	Except as IBRD may otherwise agree, any assignment of the IBRD-Guaranteed Loan may be made only to an assignee established as a bank or financial institution duly licensed to carry out banking or financial business in its country of domicile. Such assignee may be a partly or wholly government-owned institution, but cannot be an export credit agency, multilateral institution or state entity. Such assignee must not have been declared ineligible to be awarded an IBRD- or IDA-financed contract in accordance with the World Bank Sanctions Procedures and must not be an entity included on the consolidated list of individuals and entities maintained by the United Nations Security Council Committee established pursuant to United Nations Security Council Resolution 1267. The assigning Lender shall provide advance notice of potential assignments to IBRD.
Repackaging Arrangements:	The Guaranteed Lenders will severally undertake for the benefit of IBRD that, provided the IBRD Guarantee remains in effect, they will not enter into or permit any of their affiliates to enter into any arrangement pursuant to which any security or other similar obligation is created or issued, the economic effect of which is the separation of rights of payment from IBRD under the IBRD Guarantee and of rights of payments from the Borrower under the financing, which is referred to as “Repackaging Arrangements”.
Front-end Fee:	25 bps of the Guarantee Face Value payable by the Borrower.
Standby Fee:	25 bps per annum, charged periodically and applied to that portion of the guaranteed amount that IBRD has contractually committed and for which IBRD does not yet have financial exposure under the guarantee. The IBRD standby fee is normally charged semi-annually and accrues sixty (60) days after the date of signing of the agreement providing for IBRD’s guarantee. Payment of the Standby Fee is the obligation of the Borrower and must be paid [in advance on regular payment dates] [upfront in a one-time lump sum].
Guarantee Fee (recurring):	[X] basis points per annum. The IBRD guarantee fee is charged on that portion of the guaranteed amount that IBRD has contractually committed and for which IBRD has financial exposure under the guarantee (including during any period when IBRD has limited coverage of the Guarantee pursuant to any limitation/suspension event). Payment of this fee is the obligation of the Borrower and must be paid upfront in a one-time lump sum.

External Advisor Costs:	Reimbursement of IBRD external advisor and legal counsel expenses by the Borrower.
Governing law:	English law
Restrictions on Assignment:	The Agent and the Guaranteed Lenders may not without IBRD's prior written consent assign any rights under the Guarantee Agreement, the IBRD-Guaranteed Loan Agreement or the IBRD-Guaranteed Loan except to an entity (other than an export credit agency or other governmental, quasi-governmental or multilateral agency) that engages in making, purchasing or investing in financial assets and that (A) is duly licensed to carry out banking or financial business in its country of domicile; (B) is commercially operated; (C) has not been declared ineligible to be awarded an IBRD- or IDA-financed contract in accordance with the World Bank Sanctions Procedures; and (D) is not included on the consolidated list of individuals and entities maintained by the United Nations Security Council Committee established pursuant to United Nations Security Council Resolution 1267 (an "**Eligible Financial Institution**"). The assigning Agent or Guaranteed Lender shall provide advance notice of potential assignments to IBRD.
Indemnity Agreement	
Parties:	IBRD and Republic of Angola (the "**Member Country**") acting through the MinFin.
Indemnity:	The Member Country will reimburse and indemnify IBRD on demand, or as IBRD may otherwise direct, for all payments under the Guarantee and all losses, damages, costs, and expenses incurred by IBRD relating to or arising from the Guarantee.
Covenants:	Usual and customary covenants included in agreements between member countries and IBRD, as well as undertakings to pay the fees and expenses of IBRD's external counsels and other advisors in connection with the Loan negotiation.
Remedies:	If the Member Country breaches any of its obligations under the Indemnity Agreement, IBRD may suspend or cancel, in whole or in part, the rights of the Member Country to make withdrawals under any other loan, credit or grant agreement with IBRD or IDA, or any IBRD loan or IDA credit to a third party guaranteed by the Member Country, and may declare the outstanding principal and interest of any such loan or credit to be due and payable immediately. A breach by the Member Country under the Indemnity Agreement will not, however, discharge any guarantee obligations of IBRD under the Guarantee.
Governing Law:	The Indemnity Agreement will follow the usual legal regime and include dispute settlement provisions customary for agreements between member countries and IBRD.
Project Agreement	
Parties:	IBRD and the Implementing Entity

Representations and Warranties:	The Implementing Entity will represent, among other standard and project-specific provisions, as of the effective date, that: a) it is in compliance with applicable environmental laws and the applicable World Bank guidelines, environmental and social safeguard requirements; and b) neither it (nor any other relevant project participants, as determined by IBRD), nor any of its affiliates has engaged in any Sanctionable Practices in connection with the Project.
Covenants:	The Implementing Entity will covenant, among other things, that it will: a. comply with applicable laws, including environmental laws, and the applicable environmental and social safeguards requirements under the World Bank environmental and social safeguards requirements, including, among other things, obligations to ensure that the Project is carried out in accordance with the ESIA and the Resettlement Policy Framework and any resettlement action plans and other environmental and social safeguards instruments (the "Safeguards Instruments"), including the establishment of capacity and mechanisms for payment of resettlement compensation; b. provide annual audited financial statements and other reports; c. provide certain periodic and other notices, progress reports and other information to IBRD, including, without limitation: (i) in relation to implementation of the Performance Improvement Plan; (ii) reports on the status of compliance with the Safeguards Instruments, including with respect to resettlement-related expenditures made from the Resettlement Escrow Account; (iii) copies of progress and other reports provided by the PMC, Lot Supervisors, DB Contractors, and/or other Project contractors and subcontractors; (iv) notices of material incidents or accidents; and (v) regular reports regarding the Five Objectives; d. provide access to the Project sites; e. maintain and provide IBRD with access to records evidencing compensation to and eligibility of PAPs in accordance with the Safeguards Instruments; f. not engage in (or authorize or permit any affiliate or any other Person acting on its behalf to engage in) any Sanctionable Practices in connection with the Project; g. comply with World Bank requirements relating to Sanctionable Practices regarding individuals or firms included in the World Bank Group list of firms debarred from World Bank Group-financed contracts; h. ensure that the Project is carried out in accordance with: (i) the DB contracts (the "**Design-Build Contracts**") for the various components/lots of the Project works between the Implementing Entity and the respective DB contractors (the "**Design-Build Contractors**"); (ii) the construction supervision contracts (the "**Lot**

	Supervision Contracts") between the Implementing Entity and the construction supervision consultants for such lots (the "**Lot Supervisors**"); (iii) a project management contract for the Project (the "**Project Management Contract**") between the Implementing Entity and DAR-Angola Consultoria Limitada as project manager or its successor or assignee acceptable to IBRD (the "**PMC**"), including agreed additions to the scope of work; (iv) the Project Operations Manual, the Performance Improvement Plan, and all other material Project-related plans, manuals and transaction documents (collectively, the "**Transaction Documents**"); i. not make or agree to: (i) any modification to the Project Operations Manual or the Performance Improvement Plan without IBRD's prior written consent; (ii) any modification to a Transaction Document without IBRD's prior written consent where such modification could have a material adverse effect on the Project, the ability of any other party to any such Transaction Document to perform any of its material obligations thereunder, or the rights or obligations of IBRD under the Guarantee-related agreements to which it is a party; or (iii) any material modification to any Transaction Document without the prior approval of the Project Steering Committee in accordance with the Project Operations Manual; j. use the proceeds of the disbursements under the IBRD-Guaranteed Loan exclusively for the Project and in accordance with the terms and conditions of the IBRD-Guaranteed Loan Agreement; k. ensure that the construction and commissioning of Lot B4 (directly financed by the Government of Angola other than from the proceeds of the IBRD-Guaranteed Loan) are timely completed in accordance with the relevant Transaction Documents; l. implement the Performance Improvement Plan (as defined above); m. achieve: (i) certain key Project performance indicators and intermediate results indicators; and (ii) annual performance target levels for each agreed performance objective including for customer meter installation, bill collection ratio, operational cost recovery ratio (cash basis), launch of a non-revenue water reduction strategy, and annual customer satisfaction surveys (the "**Five Objectives**"); n. establish and maintain certain implementation arrangements, including each of the following entities, in each case with terms of reference (TORs), composition, staffing and qualification acceptable to IBRD and (as applicable) in accordance with the respective contracts with the Implementing Entity, approved by IBRD: 1) adequately funded and equipped project implementation unit (PIU) within EPAL covering the Project implementation period, including at a minimum the following staff: (A) a project manager; (B) a construction management expert; (C) a procurement and contract administration expert; (D) an environmental safeguards coordinator; (E) a social safeguards coordinator; (F) a community

relations specialist in charge of grievance redress mechanisms; (G) a financial management specialist; (H) a project communications expert for institutional- and stakeholder-related outreach; and (I) a monitoring and evaluation specialist;

2) an independent technical auditor consisting of internationally reputed experts in relevant fields within MinEA (the "**Independent Technical Auditor**");
3) an independent environmental and social safeguards consultant (the "**Independent E&S Auditor**") to monitor, report on and verify compliance with applicable laws, including environmental laws, and applicable World Bank environmental and social safeguards requirements;
4) the PMC;
5) the Lot Supervisors;
6) the resident technical advisors;
7) a project steering committee (the "**Project Steering Committee**") chaired by MinEA and comprised of representatives of MinEA, MinFin, provincial government, EPAL and IRSEA and other relevant government stakeholders, to meet on a regular basis to be defined;
8) ad hoc technical working groups (to be defined) including representatives of the PIU, Lot Supervisors and/or the PMC, to meet on a regular basis to be defined and otherwise as necessary; and
9) at all times following the commencement of operation of the Project, dedicated staff with responsibility for operation and maintenance of the project;

o. take all action within its power to ensure that the foregoing entities carry out their respective responsibilities in accordance with the applicable Transaction Documents and respective agreed TORs;

p. no later than [10days] before commencement of operation of the Project, update the Project Operations Manual to include a staffing and operations plan satisfactory to IBRD for operation and maintenance of the Project;

q. minimize or avoid the turn-over of staff and consultants of the PIU;

r. implement any recommendations of the Independent Technical Auditor and Independent E&S Auditor;

s. MinEA to support EPAL's implementation and achievement of the Five Objectives as needed; and

t. ensure the availability of sufficient budgeted amounts to meet its responsibility for obtaining Project-related permits and governmental authorizations in accordance with the DB Contracts.

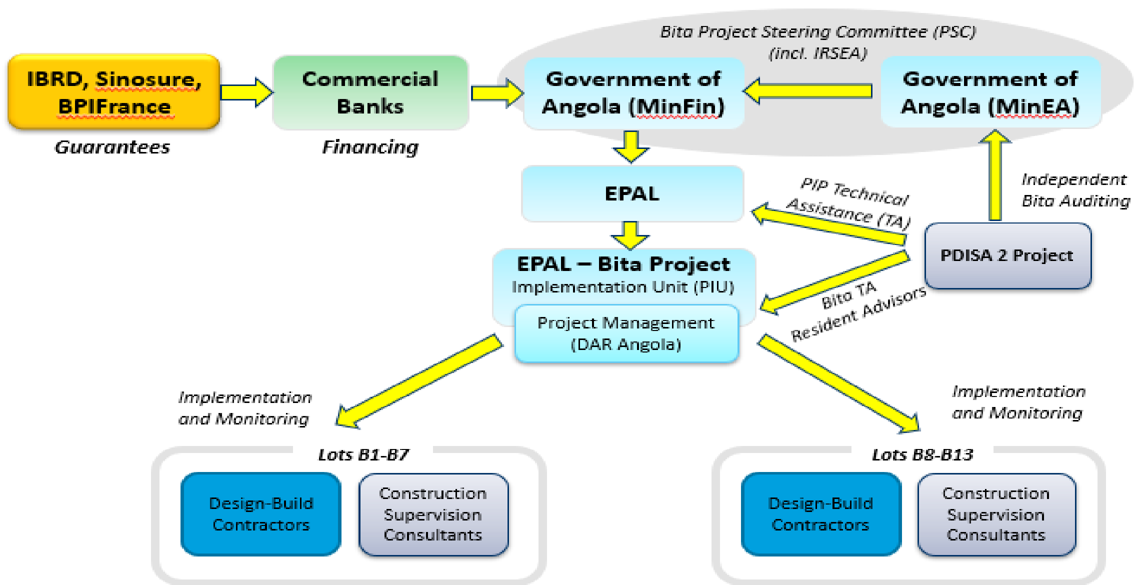
ANNEX 1: IMPLEMENTATION ARRANGEMENTS AND SUPPORT PLAN

1. **The implementation support details how World Bank will support project implementation, mitigate anticipated risks, and achieve objectives and targets.** The plan focuses on three critical areas: (a) supporting EPAL and MinEA in the implementation of the project; (b) supporting monitoring and management of safeguards risks; and (c) monitoring and supporting EPAL in their implementation of PIP. This plan anticipates that EPAL will continue to maintain a close relationship with World Bank after completion of Bita and will continue to meet its reporting obligations under the IBRD Guarantee-related agreements.

Implementation Support Strategy and Approach

2. **The project will be implemented by EPAL, representing MinEA.** The complex interrelationships between the various civil works contracts for the Bita water production, transmission and distribution facilities presents a significant implementation risk to EPAL. To manage the institutional capacity risks, the project design contemplates strengthening the capacity of EPAL and focuses their efforts to manage these contracts. As supervision and management of a large and complex set of contracts of this nature exceeds EPAL's capacity, EPAL has already procured a PMC (DAR-Angola) to complement its PIU, as well as a series of construction supervision consultants for each of the contract lots. In addition, EPAL's PIU will also benefit from 'resident advisors' funded through the PDISA2 Project, to support them in monitoring and supervision of the whole program, including the deliverables of all of the consultants. PDISA2-funded TA will also include the services of (i) an "Independent Technical Auditor" to support the Government in auditing the performance and payments under the civil works contracts for the Bita water production, transmission and distribution facilities, and (ii) an "Independent Safeguards Auditor" to audit the quality and compliance of environmental and social impact mitigation measures. This project design will require substantial supervision attention and implementation support by World Bank to ensure the project reaches successful completion. The details of overall implementation arrangements are illustrated in Fig. A1.1 below. With the exception of consulting contracts funded by the project, and TA funded by PDISA2, all PIU staff, equipment and operating costs, will be borne by EPAL. The ToR of Auditors were discussed and cleared with EPAL and PDISA2 at appraisal stage, and the recruitment of firms and experts will be conducted by PDISA2 before the Guarantee effectiveness.

Figure A1.1: Project Implementation Arrangements



3. **Amended PMC contract.** Based on World Bank's suggested scope requirements for project management from its due diligence, GoA has requested and obtained that the existing contract of the PMC, which originally spanned both the Bita and Quilonga Grande projects, with no oversight of distribution systems, be substantially amended, over current scope, to ensure:

- Separation of Bita and Quilonga Grande tasks, the latter to be managed under a distinct new contract, with its own, non IBRD-guarantee related financing.
- Validation review of all contractor invoices.
- Inclusion of project management responsibilities for the B8-B13 distribution lots, the implementation of which must be seamlessly coordinated with that of lots B12-B7.
- Addition of specific additional tasks, such as:
    - Preparation of the Bita POM.
    - Completion of the integrated pre-construction ESIA ("ESIA2"), based on the availability of contractors' detailed designs and consolidating their ESIAs and RAPs.
    - Management and monitoring of safeguards compliance, including the management of the resettlement compensation mechanism and escrow account.
    - Development of a service expansion and connection strategy tailored to peri-urban areas for maximizing the development of individually connected service in project areas, and for optimizing network investments, to be reflected in B8-B13 detailed designs and implementation.
    - Development of a pre-paid metering strategy for EPAL, with uniform and integrated recommendations to be reflected in B8-B13 final designs.
    - Development of a Start-up and O&M plan for the Bita System 4, including recruitment and training needs, O&M budgets, as well as investment needs to establish new O&M and commercial facilities and crews in the new service areas.

4. **The Government will constitute a project PSC to review and guide EPAL in project implementation.** The PSC will be made up of senior representatives of EPAL, MinEA, MinFin, IRSEA, Provincial Government and other GoA stakeholders. The purpose of the PSC is to review the implementation progress on a periodic basis and provide continued implementation support to EPAL during design and construction of the project and in effective implementation of PIP. The Bita Project may also face issues in design and construction coordination, interface risks between various contracts, environment and social issues, scope changes and other contractor-initiated variations that could affect both completion time, scope and costs. In such situations, EPAL would need continued guidance in technical, financial, legal and other procurement issues during the implementation phase. The PSC members will meet regularly and provide both such strategic guidance to EPAL with the support of independent technical and E&S auditors to be hired under PDISA2 Project. The PSC members will also review and provide guidance to EPAL on its implementation of the PIP. Detailed ToR will be developed to define the scope, roles and responsibilities of the PSC stage after all contract amendments are substantially agreed and awarded. The PSC will be constituted, and its members selected, to the satisfaction of IBRD, as an effectiveness condition of the Guarantee. Any subsequent change to the PSC members will be reported to the IBRD. The World Bank team will meet with the PSC members as part of the supervision missions and also receive periodic reporting on its activities.

5. **The World Bank's implementation support strategy allocates supervision resources in proportion to the anticipated risk and technical complexity of the project.** Implementation support during design and construction of the project will far exceed typical IPF operations. Contract management of the project will be technically challenging and requires specialized experience not available in the PIU. The World Bank's implementation support during this period will focus on helping EPAL manage the implementation of contracts and PIP along with safeguards compliance and operational performance. The contractual obligations under the IBRD Guarantee-related agreements will include

additional reporting obligations of EPAL. The World Bank corporate monitoring of guarantee exposure will continue until the end of the guarantee period.

6. **A detailed POM will be developed by EPAL before the Guarantee effectiveness.** The POM will set out the implementation processes, FM procedures, compliance with Environmental and Social Safeguards Management requirements, including gender and labor influx considerations, progress reporting, monitoring and supervision of the project outputs. The POM will also include an Implementation Plan for planning, design review, coordination, invoicing review and approval process and implementation of each of the contracts. The POM will be adopted by EPAL satisfactory to the World Bank, as such manual may be amended by EPAL from time to time with the prior written consent of the World Bank. The POM will contain operating procedures for the implementation of project, including guidelines on FM processes, documentation, monitoring and reporting, compliance requirements.

7. **Close supervision is planned during the implementation phase**. As explained in Section IV and Annex 3 Financial and Economic Analysis, EPAL's existing operational performance indicates serious inefficiencies, such as poor revenue collection, inadequate distribution connections, technical losses, etc. Without commercial and operational performance improvements, the addition of the Bita system expansions and likely Quilonga Grande system, could exacerbate EPAL's poor financial results. In addition, the overlapping implementation of two large complex projects now would present significant challenges and risks to EPAL. This supervision plan anticipates more than biannual World Bank supervision missions throughout the initial implementation years of the project. Supervision will also draw on engineering, safeguards, contract management, FM, guarantees and legal staff from the World Bank.

8. **The ongoing World Bank-funded PDISA2 project will not only help strengthen the implementation of Bita but also provide TA tasks to support EPAL's performance improvement needs.** In addition to the recruitment of auditors and resident advisors in support of Bita Project implementation, TA during the implementation phase and through the direct hiring of an independent external auditor as well as resident advisors to ensure the project implementation and invoice approvals are run smoothly. As design and construction milestones are completed, the DB contractors submit relevant invoices to construction supervision consultants and EPAL for their review and approval. The resident advisors will support EPAL in reviewing these documents and ensuring a timely approval of the invoices. Further invoicing review and approval processes are explained in Annex 5. This will require a coordinated implementation timeline for both the Bita and PDISA2 Projects. In addition, the PDISA2 Project will also support the capacity building required to improve the operational performance of EPAL through the PIP.

9. **The Government, through MinEA and EPAL, will create a ringfenced account for making payments for expropriation related resettlement expenditures**. Funds for the estimated resettlement expenditures[44] will be set aside in an escrow account to cover necessary payments across the project. EPAL will be advised by resident E&S advisors and the PMC in establishing the payment requirements as and when the need arises. This amount is set as a contingency amount to be raised as part of the overall financing amount.

10. **The GoA will be entering into financing agreements with lenders that will require additional flexibility on financing terms to manage completion risks**. As explained above, the project includes various contracts that will be implemented simultaneously or according to overlapping timetables, potentially causing a number of interface risks between the contracts. In addition, the World Bank team's contract risk review (refer to Annex 5) identified a number of risk allocation issues in the underlying contracts. Both of these factors require careful management of completion risks such as cost overruns, delays, and potential scope creep. Considering the commercial loan will be a direct sovereign loan with a deferred disbursement profile, the risk of mismatch between the loan utilization profile and actual contract payments has to be managed carefully by the MinFin. Commercial banks will also provide financing

[44] Currently estimated to be US$29 million to cover contingency for resettlement expenditures across the Project.

only for a fixed amount and fixed availability period, thus raising a risk of the disbursement period ending before the completion of construction. Thus, the financing package needs to incorporate additional flexibility through an extended availability period[45] and appropriate cost contingencies to accommodate a level of completion delays and cost overruns. To help mitigate completion delay risks, if any, the loan availability period in the financing agreement will be extended by 6 months from the target project completion date. Similarly, a global risk contingency of 5 percent of project cost will be included in the financing amount to accommodate a level of GoA/EPAL-initiated scope changes and unforeseen costs during the implementation.

Implementation Support Plan and Resource Requirements

11. Table A1.1 describes the anticipated need for World Bank support at various stages of project implementation.

Table A1.1: Skills Matrix and Resource Estimate

Time	Focus	Skills Needed	Resource Estimate	Mission Plan
First 12 months (from Board Approval through to Notice to Proceed, Design stage and initial stages of implementation)	Intense implementation support with focus on reviewing condition precedents in relation to the successful approval of amended contracts, establishment of the PIU, appointment of relevant advisors and auditors, initiation of PSC, approval of POM, safeguards compliance mechanism, design review and approvals, invoicing process, assisting EPAL and MinEA to establish the contract management process.	Engineering, FM and Guarantees; Procurement; E&S; Legal; and Gender.	Technical staff time: 100 staff-weeks.	Three missions comprising HQ, Field staff and supporting consultants.
12–36 months implementation phase	Significant support with a focus on contract implementation management to ensure completion of contracts works to the standards stipulated in the contract; implementation of PIP.	Engineering, FM and Guarantees; Procurement; E&S; Legal; and Gender.	Technical staff time: 50 staff-weeks per year.	Four missions comprising of HQ, Field staff and supporting consultants.
36–48 months commissioning phase	Finalization of construction completion, support focused on commissioning and commercial operation; monitoring of PIP.	Engineering, FM and Guarantees; Legal; E&S.	Technical staff time: 40 staff-weeks per year.	Two missions comprising of HQ, Field staff and supporting consultants.
After project closure	Monitoring risks associated with the PIP and Guarantee (including Corporate Monitoring).	Guarantees; Legal.	Staff time: two Guarantee staff-weeks per year and through follow-up projects.	One mission comprising of HQ, Field staff and supporting consultants.

Financial Management (FM)

12. **Appraisal summary**. An FM Assessment was undertaken to evaluate the adequacy of EPAL's FM arrangements. The Assessment was carried out in accordance with the Directives and Policy for IPF, the Instructions on Project-Based Guarantees, and the World Bank Guidance on FM in World Bank IPF Operations issued on February 28, 2017. The

[45] Availability period refers to the period during which the commercial loan will be available for disbursement.

objective of this assessment was to determine whether the fiduciary arrangements of EPAL are adequate to ensure that EPAL would continue operating and maintain the project assets. Based on the assessment, the EPAL's FM arrangements have an overall residual FM risk rating of Substantial, which satisfy the World Bank's minimum FM requirements under World Bank Policy and Directive for IPF, except for the issues mentioned in the agreed FM action plan.

13. **FM risk assessment and mitigation measures.** The World Bank concern is to ensure that EPAL will continue to meet its contractual obligations to ensure that the disbursements from commercial banks follow the contractually agreed milestone payment schedule and that the GoA does not incur negative carry costs due to project level delays. The risks and mitigation measure concerning this operation are described below.

Table A1.2: FM Risks

Risk	Risk Rating	Risk Mitigating Measures Incorporated into Project Design	Conditions for Effectiveness (Yes/No)	Residual Risk
Inherent risk	S	—	—	S
Entity level. EPAL may not maintain adequate FM for its operations due to weak FM capacity.	S	EPAL is working toward strengthening its FM arrangements. EPAL will ensure that: (i) there is adequate planning and budgeting (including budget execution monitoring); (ii) the financial procedures manual is revised and updated; (iii) the internal audit is strengthened; and (iv) the EPAL financial statements are audited in accordance with ISAs.	No	S
Project level. The project may not achieve its objective.	S	The EPAL Planning and Investment Department will ensure that adequate FM arrangements are in place for the Bita Project to be financed by commercial loans.	No	S
Funds flow. Payments to contractors may be delayed affecting the schedule of the works.	S	EPAL should work closely with the Debt Management Unit at the MinFin to ensure adequate payments to contractors are made in accordance with contracts payment schedule.	No	S
OVERALL FM RISK	**S**	**—**	**—**	**S**

Note: M = Moderate; S = Substantial.

14. **FM Action Plan.** To establish adequate EPAL FM arrangements to both improve EPAL's performance and operate the Project assets in an efficient manner, the following measures should be taken by the due date, as indicated in the FM Action Plan.

Table A1.3: FM Action Plan

#	Action	Responsibility	Completion date
1	Prepare comprehensive and realistic annual budget and ensure that proper budget execution monitoring	EPAL	Throughout the project implementation
2	The Planning and Investment Department or PIU make use of conventional existing accounting system	EPAL	Within two months after the signing of the Guarantee Agreement
3	EPAL should strengthen the internal audit department by ensuring it has internal auditors with required skills and competences (internal audit certification), including updated internal audit manuals.	EPAL	Within six months after the signing of the Guarantee Agreement
4	EPAL Financial Procedures Manual revised and adopted	EPAL	Within two months after the signing of the Guarantee Agreement
5	Prepare bi-annual interim financial reports of the Luanda Bita Water Supply Project and share with the World Bank	EPAL	Throughout the project implementation
6	Submit annual audited entity financial statements within six months after the end of fiscal year.	EPAL	Throughout the project implementation

15. **Budgeting**. The SOEs in Angola are required to prepare strategic plans and business plans in accordance with the law governing the SOEs in Angola (Law 11/13 of September 3, - *Lei de Bases do Sector Empresarial Público*). In addition, the law requires the SOEs to prepare annual budgets that comprise the planned investment expenditures and recurrent costs. EPAL is preparing an annual budget which is not comprehensive. The EPAL annual budget is approved by the board of directors and submitted to the line ministry, the MinEA. Furthermore, there is no budget monitoring system in place, however, the recently appointed board of directors instructed the company's financial team to put in place the budget execution monitoring. The company should continue with efforts to put in place adequate arrangements for budget preparation, execution, and monitoring.

16. **Accounting**. The law governing the SOEs requires them to be governed by principles of financial transparency and maintain adequate financial records and prepare reliable financial reports. EPAL's financial affairs are handled by the Finance Directorate, however, the FM matters of investment project is handled by the Planning and Investment Directorate. The funds and expenditures of investment projects are accounted for using excel spreadsheet. This Directorate does not handle the funds as they prepare the payment vouchers and submit them to the Debt Management Unit *(Unidade da Gestão da Divida,* UGD) at the MinFin for payment. The UGD forwards the proof of payment to EPAL upon the invoices settlement. The Finance Directorate makes use of a conventional accounting software (the SAP) for the financial accounting and reporting of the EPAL. We recommend that the accounting software used by Finance Directorate should be extended to Planning and Investment Directorate to be used to account of funds and expenditures of investment projects.

17. **Internal controls.** EPAL is required by the law governing SOEs in Angola to establish an adequate system of internal control procedures to ensure reliable financial reporting and the effectiveness and efficiency of its operations. EPAL financial and administrative procedures are documented in the company's Financial Procedures Manual, however, this manual is under review to be updated to reflect the current practices in the company and at the same time include good financial and administration practices. EPAL has an internal audit department (*Gabinete de Auditoria Interna*), which has seven staff with background in accounting and auditing out of the total of 11 staff. It has audit manuals, however these are not updated. We recommend that EPAL strengthen the capacity of the internal audit departments by providing training to its staff in internal audit certification and updating the manuals.

18. **Financial reporting.** SOEs are required to maintain adequate financial records and produce reliable financial reports. EPAL prepares the financial statements in accordance with the Chart of Accounts (*PGC – Plano Geral de Contabilidade*) issued by the by the Decree No. 82/01 of November 16, 2014. The decree requires that all companies, except banks and insurance companies, prepare financial statements using the basis and the format of this PGC. It was noted that some of the requirements in the Chart are outdated (as it was developed in 2001), inconsistent with other legislation governing the financial reporting in the country, and not aligned with IFRS. EPAL is required to submit the annual report, including annual financial statement to the MinEA. In addition, EPAL should submit to general tax administration (*AGT – Administração Geral Tributário*) the audited financial statements within five months after the financial year-end, that is May 31th of each following year. EPAL will be required to prepare bi-annual IFRs for the project in form and content satisfactory to the World Bank, which will be submitted to the World Bank within 45 days after the end of the calendar semester to which they relate.

19. **External audit.** The law governing the SOE requires them to be audited on an annual basis and observe mandatory audit firm rotation. This law does not specify the auditing standards to be applied to conduct audits. It is also not establishing the period for mandatory rotation. EPAL financial statements are audited annual by a private audit firm. The auditor expressed qualified opinion on the EPAL financial statements for the fiscal year ended December 31, 2017 due to: (i) significant balances of the bad debts and allowance for doubtful accounts due to inefficient billing and collection procedures; and (ii) an amount of tax payable not confirmed and reconciled. The audit was conducted in accordance with technical instructions issued by the Angola Profession Accountancy Organization, the Order of Accountants and Auditors of Angola (Ordem dos Contabilistas e Peritos Contabilistas de Angola). These technical instructions require companies' financial statements to be audited in accordance with International ISA as issued by the IAASB within IFAC. We recommend that EPAL audit report together with Management Letter should be submitted to the World Bank within six months after the financial year-end; that is June 30th of each following year. The audit report should include a specific opinion on the projects financial statements.

20. Funds flow and Disbursement arrangements related to the IBRD guarantee. The Luanda Bita Water Supply Project will be financed through loans to be mobilized through commercial banks (the IBRD guarantee beneficiaries). The fund flow for the project related payments are described in Annex 5.

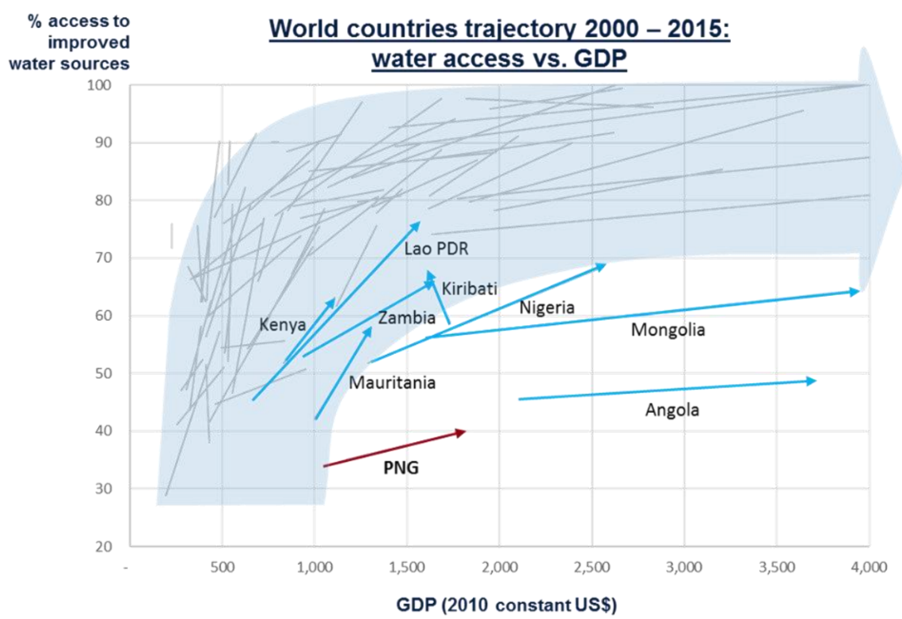
ANNEX 2: DETAILED SECTOR BACKGROUND AND PROJECT DESCRIPTION

Overview of Angola's Water Sector

1. **Angola is well-endowed with water resources, but its hydraulic infrastructure needs rehabilitation and strengthening.** With average annual precipitations of 1010 mm/year, and total per capita renewable resources of 5,931 m^3/year in 2014, Angola benefits from substantial water resources. The country encompasses 77 river basins, including important upstream positions in international basins. Angola's WRM infrastructure and institutional capacity have however suffered during the war and still call for rehabilitations and expansions. The country is furthermore vulnerable to floods and droughts, such as seen with ongoing droughts in the south of the country. The more severe weather events anticipated with climate change will heighten tensions in water utilization and allocation, making access to safe water services more challenging, and requiring more resilient and conservative WRM.

2. **Angola's water supply service indicators rank poorly in SSA and among peer upper middle-income countries.** WSS infrastructure was dilapidated during the war, with as of 2001, only 27 percent of the population having access to improved drinking water (42 percent in urban areas). Since then, despite the oil boom, the lack of adequate rehabilitation and expansion investments, coupled with loss of technical, operation and maintenance capacities, and fast demographic trends, have resulted into very slow progress in service development. Angola's underperformance in this regard is captured in the diagram below, where the progress of various countries in increasing access to safe water supply is tracked against GDP growth over the 2000-2015 period. Angola did not meet its MDG targets for water and sanitation in 2015.

Figure A2.1: World Countries Trajectory 2000-2016 – Water Access vs GDP (World Bank, 2018)



3. Through 2015, access to improved drinking water sources only grew marginally, with gains more tangible in urban areas, driven by the systematic expansion of public standpipe service ("fontenarios"). Table A2.1 and Table A2.2 below summarize Angola's WSS service access indicators as of 2015, depicting a situation of dire service deficit. Such national indicators hide a great diversity of situations, across urbanized and informal areas, as well as in between cities.

Table A2.1: Angola, Water Service Access Indicators (2015)

Access to Water	Basic water	On premises	Piped	Safely managed	Unimproved
Urban	**63%**	45%	55%	0%	15%
Rural	**23%**	6%	9%	0%	22%
Total	**41%**	23%	29%	0%	19%

Source: UNICEF-WHO Joint Monitoring Program, 2017.

Table A2.2: Angola, Sanitation Service Access Indicators (2015)

Access to Sanitation	Basic sanitation	Septic tank	Sewerage	Unimproved	Open defecation
Urban	**21%**	44%	13%	7%	3%
Rural	**62%**	16%	1%	17%	56%
Total	**39%**	28%	7%	13%	33%

Source: UNICEF-WHO Joint Monitoring Program, 2017.

4. **The policy and institutional framework of Angola's WSS sector is still developing.** Under the 2002 Water Law, sector policy and oversight rest with the MinEA, whereas provincial governments are responsible for WSS service, duly delegated to professional operators and remunerated through tariffs aimed at cost-recovery. Following the civil war, utilities had to be rebuilt in all provincial capitals from the remains of prior municipal water services. By 2016, with the support the World Bank-funded PDISA, 16 such utilities had been created, and a water regulator capacity had been set up within the national electricity regulator—now known as IRSEA. These young institutions still face serious capacity challenges and policy limitations in order to effectively fulfill their role. IRSEA nevertheless led the preparation of an important water tariff reform enacted in 2018, towards tariff setting for the recovery of efficient utility costs, aimed at eliminating the need for GoA operating subsidies.

5. **Given the deep investment backlog in the sector, infrastructure is fully funded by the national budget.** GoA's NDP for 2018-2022 lists three priority areas for government intervention in the WSS sector, including: (i) the expansion of water service coverage in urban areas, municipal chief-towns and rural areas; (ii) the development and strengthening of water sector institutions; and (iii) the improvement of basic sanitation services. The rehabilitation and expansion of water systems has historically been supported by GoA capital grants, funded through commercial loans or bilateral and multilateral financial cooperation. The main lenders include China, World Bank, and African Development Bank, as well as France, Brazil, Spain, Germany, European Union and Norway. As a result of the oil boom of the past decade and the subsequent strengthening of the AKZ, the cost of infrastructure development—including local and foreign labor—is particularly high.

6. **Support to the WSS sector represents a substantial and successful part of the World Bank's partnership with Angola**. Following emergency reconstruction operations in the immediate post-war years, World Bank support to the sector has focused over 2010-2017 on the pursuit of institutional development and infrastructure service objectives, through the PDISA. The project helped establish 16 provincial utilities, the INRH as well as IRSEA. The on-going successor project, PDISA2, aims at consolidating and expanding PDISA's achievements in the WSS and WRM subsectors, while also setting the foundation for the development of citywide inclusive sanitation in Angola.

Water service in Greater Luanda

7. **EPAL and its fast urbanizing service area.** Urban water supply service in the Province of Luanda is the responsibility of EPAL, a public corporation established in 1995, reporting to MinEA and accountable to the Luanda Province. The service area of EPAL spans the seven main urban municipalities of the Luanda Province, i.e., Luanda, Cazenga, Cacuaco, Belas, Viana, Icolo-e-Bengo, and Quiçama which constitute Greater Luanda. Based on the 2014 census, the total population in these municipalities was 6,542,944 inhabitants. Greater Luanda's population grows at

an estimated rate of 4.5 percent per year and could approach 17 million by 2040. The city's fast growth has been difficult to plan and manage, as suggested by vast areas of unstructured urban and peri-urban habitat and infrastructure deficits. Under the new Administration, EPAL has begun strengthening its reporting ties to the Province and the municipalities, including the appointment of staff and crews to be based in municipal compounds, for increased responsiveness on service needs and crises.

8. **Limited service coverage.** EPAL's water supply and distribution systems are vastly insufficient to cover Greater Luanda's extension and current demands. As of 2017, EPAL served about 465,000 connected accounts, of which 328,000 are active connections (covering about 37 percent of total urban population), as well as 783 standpipes used by 1,407,000 people (or 22 percent of the population). About 25 percent of the population are strictly dependent on private water tanker truck service, to either refill their home cisterns or to fill 20–liter jerrycans. Tanker truck service is also prevalent among connected customers of EPAL, as a way to cope with frequent utility service interruptions. The remaining population (18 percent) are not accounted as users of EPAL water, and are believed to comprise illegally connected users, as well as people getting water from rivers, or from tanker trucks that supply river water or water stolen from EPAL. Overall, EPAL's service access indicators are particularly low for the capital-city of an oil-rich country, with access to piped service capped at 37 percent, and access to improved sources of water at 61 percent. Table A2.3 shows how connected service is nevertheless significantly increasing since 2014, as a result of EPAL's efforts to establish new connections and to normalize illegal connections. Only about 67 percent of EPAL's connected customers benefit from a metered connection.

Table A2.3: Estimated Users of EPAL Water (directly or indirectly served) (Source: EPAL)

People Served	2014	2015	2016	2017
By connections	2,208,216	2,409,222	2,632,800	2,718,000
By standpipes	1,006,560	1,043,280	1,585,440	1,407,000
By tankers	1,560,000	1,692,000	1,692,000	1,725,840
Total	4,774,776	5,144,502	5,910,240	5,850,840

9. **Current system capacities.** Luanda's water supply currently relies on three main systems (S1, S2 and S3) and three other minor sub-systems with a total nominal production capacity of 7.7 m^3/sec. Due to operational, maintenance and power supply constraints, the effective production is commonly at less than 60 percent of the capacity. As of 2015 the above-mentioned systems provided water to about 21 CDs across the metropolitan area, comprising of reservoirs, elevated tanks, and/or pumping stations, from which the surrounding neighborhoods can be supplied through 8,219 km of distribution networks. Selected CDs are equipped with refilling ramps ("*girafas*") to refill private tanker trucks. Existing distribution networks only cover the densely-urbanized Luanda and Cazenga municipalities, and to a much lesser extent, the surrounding municipalities of Cacuaco, Viana, Belas and Icolo-e-Bengo. Vast stretches of Greater Luanda, including modern developments, recently urbanized areas, dense urban slums ("musseques"), and sprawling informal peri-urban settlements in the South and East of the capital, lack distribution networks and rely mainly on tanker truck service.

10. **Poor intermittent service.** In 2015, the average hours of service in areas covered by distribution networks supplied by systems S1, S2, and S3 was estimated at nine hours per day. This indicates the S1, S2, S3 production capacity is too weak to meet the current combined demands of connected customers, public fountains, tanker truckers, illegal users and leaks. Inefficient network O&M contribute to the shortages not only though significant water losses (distribution losses at 27 percent), but also through downtimes caused by pump maintenance, power outages, damaged valves, etc. Increasing production capacity and expanding connected service coverage are strategic priorities for EPAL. Opportunities for better integrated planning and implementation of such investments exist, as illustrated by

the fact that neighborhoods benefitting from the installation of new distribution systems and connections may have to wait for years before effectively receiving piped water.

11. **Tanker truck service everywhere.** Private water tanker truck service is a dominant form of supply in Greater Luanda across neighborhoods and social categories. Tanker trucks serve entire neighborhoods by filling 20-liter jerrycans hand-carried by users, or by replenishing the cisterns of houses and apartment buildings. Even in fully networked downtown areas, tanker truck service is often needed to cope with EPAL service shortages. The pricing and quality of tanker truck service are not monitored nor regulated. As of 2017, tankers who legally bought water in bulk from EPAL refilled their trucks at special EPAL filling stations ("*girafas*") and paid AKZ 137/m^3 (2017). They typically resold the water in bulk to fill residential cisterns at AKZ 1,000-1,500/m^3, or retailed it at AKZ 70/jerrycan, i.e. AKZ 3500/m^3 (a 2500 percent mark-up). At the time users reported prices of up to AKZ 90/jerrycan in remote areas or during periods of higher scarcity. Users linked recurrent illness (diarrhea) to poor quality of tanker water. Since households typically bought two jerrycans per person/day, a family of five people could spend up to AKZ 700/day or US$4.20/day, a staggering amount for scarce, unsafe, time-consuming water supply. In 2017, such retail pricing was also 60 to 75 times higher than EPAL's basic tariff of AKZ 59/m^3 for residential piped service. It is not yet clear how EPAL's 2018 tariff increases have affected resale pricing by tanker trucks, but it is estimated that whether refilling their residential cistern or their jerrycans, customers of tanker truck service pay between 5 and 50 times more than they would, for the same consumption, based on EPAL tariffs.

12. **Lack of sanitation.** Sanitation is the responsibility of the Technical Management Unit and Sanitation of Luanda (UTGSL), an entity under the Civil House. Central neighborhoods benefit from sewerage connected to four wastewater treatment plants. With the exception of the Kilamba "new town" planned urban development south of Luanda, most of Greater Luanda relies instead on individual on-site sanitation systems (septic tanks, pit latrines) serviced by municipal or private sludge disposal operators. EPAL is not responsible for sanitation, but operates on a pilot basis, the Kilamba wastewater collection and treatment system. There are at present no known large scale programs for developing sanitation in Luanda, and a GoA's exploratory interest in 2017 for making EPAL also responsible for developing sanitation in the capital, was not confirmed.

Genesis of the Bita Project (2012-2017)

13. **Luanda's 2012 water supply masterplan.** Completed in 2012 and updated in 2015, with a 2040 horizon, Luanda's water masterplan determined that two large new water systems (S4, also known as Bita and S5 or Quilonga Grande) were urgently needed to meet Greater Luanda's unmet and booming water demands. Based on the best available population data and projections at the time, the Bita and Quilonga Grande systems were conceived as two similarly sized production and transmission systems, aimed at supplying unserved areas in South and Southeast Greater Luanda respectively. Each system was conceptually designed with a 6 m^3/sec production capacity in order to meet predicted 2020 and subsequent demands, with potential for expansion to 9 m^3/sec in an ulterior phase. Although intended to serve vast newly urbanizing service areas, the Bita and Quilonga Grande investment plans did not originally include the development of distribution networks. EPAL's masterplan assumption at the time was that such systems could be developed at a later time, and that until then the projects would deliver water in bulk at selected CDs, and the produced water would either reach the beneficiaries through private tanker truck service or be further piped, to augment deficient supplies in existing systems S3 and S2. At the time of planning in 2012, it was expected that the population in the Bita/S4 service area would reach 2.3 million people in 2020, growing up to 3.6 million by 2030 and 4.8 million by 2040 (or 29 percent of the total projected Luanda population). Such projections assumed the areas would urbanize and densify rapidly, propelled by structuring roads and services (2nd ring road, streets, electricity, water supply). The 2014 census proved such projections to be vastly overestimated.

14. **Evolution of the original Bita Project**. Along with the Quilonga Grande project, the Bita Project was pursued by GoA as a national priority investment, to develop substantial new water production, transmission and storage infrastructure that would allow to improve and expand water supply service in fast urbanizing areas of South and Southwest Greater Luanda. Through its subsidiary DAR-Angola, the international consulting-engineering firm DAR was retained as PMC for the implementation of the two projects. The Bita Project was to establish EPAL's new S4 water supply system, to be developed in three phases towards meeting 2020, 2030 and 2040 demands, with a first phase designed for a 6 m^3/sec capacity. The project was to be financed by MinFin through commercial loans. A conceptual design and specifications were prepared by DAR-Angola based on the masterplan data, towards its DB implementation. Seven DB bidding packages (B1-B7) were competitively procured and awarded in 2014, but placed on standby, as with the drop in oil revenue, GoA was not able to secure commercial financing as planned. In an effort to extend their validity, the contracts were amended in 2015 for denomination in US$. In response to lenders requests for credit enhancements, GoA sought a guarantee from MIGA in 2015. After performing significant due diligence through 2016, which included the necessary rebidding of Lots B1 and B7, MIGA had to decline proposing a guarantee following the continued downgrading of Angola's credit rating. By comparison, the Quilonga Grande Project underwent similar processing in parallel to Bita and was equally stalled. The World Bank team understands that a partial financing arrangement was however reached by the GoA with China in 2017 under an existing line-of-credit facility. Implementation of the Quilonga Grande project is thus ongoing, with however uncertainty as to when the project may become operational, as key transmission components are not financed to date. In 2017 the Chinese line of credit committed to finance the two Bita lots B3 and B4, both awarded to a Chinese firm. Works started at B4 in 2017.

15. **IBRD guarantee preparation.** In November 2016, GoA inquired with World Bank on the possibility of an IBRD guarantee for the Bita Project. Starting in April 2017, World Bank due diligence identified the need to optimize the investment scope and to improve project documentation if the project were to be successfully appraised under IBRD standards. In particular, the World Bank recommended that:

- Distribution systems be included in the investment plan so that the Bita-produced water could effectively reach beneficiaries in the target service areas of Bita, Cabolombo, Mundial and Ramiros.
- The capacity needs for the first phase of the Bita Project be reassessed, on the basis of actual 2014 census numbers which suggested that the Bita, Cabolombo, Mundial and Ramiros district population was only 360,000 people.
- Additional studies be conducted to: (i) Establish the feasibility of a modified Bita Project inclusive of distribution systems and with an optimized Phase 1 capacity consistent with revised population and demand projections (TFS); and (ii) Assess the E&S impacts of the modified project, consistent with World Bank safeguards policies (ESIA and RPF).

16. GoA agreed to these steps on January 5, 2018, and launched activities for:

- The preliminary design of distribution systems in the Bita, Cabolombo, Mundial and Ramiros service areas (performed by DAR-Angola)
- The tendering of DB lots for the implementation of distribution systems.
- The conduct of the TFS, ESIA and RPF studies (performed by DAR-Angola).

17. **Updated project documentation and phasing.** After significant delays, the TFS, ESIA and RPF reached substantial completion by December 2018. The TFS presented plausibly updated demand growth scenarios, confirmed the viability of the general project architecture, integrated the preliminary design of distribution systems in the new service areas. In a context of unreliable demographic forecasts, and lack of visibility for the growth of distribution coverage and connected demand, the TFS also established the opportunity for a more gradual investment approach, including a Phase 1 with a capacity of 3 m^3/sec with readiness of civil works to accommodate a future capacity

expansion to 6 m^3/sec. While there is no doubt that such Phase 2 expansion will be needed, there is uncertainty as to when it will be needed, likely between 2025 and 2030.

18. **Financing adjustments for lots B3 and B4.** As per GoA initial representations in 2017, lots B3 and B4 were being financed by the Chinese line of credit. Accordingly, the two lots considered integral to the Bita Project, duly covered in the TFS, ESIA and RPF studies, but not part of the IBRD guaranteed financing scope. Works were underway for lot B4 (Cabolombo CD), but their start was deferred at B3 pending the need to revise B3 design for optimal integration with adjacent lots B1 and B7. In early 2019, upon confirmation that Chinese financing would no longer be available for lots B3 and B4, GoA asked the World Bank team to include the B3 and B4 financing needs within the scope of the IBRD guarantee. After technical due diligence, considering the need for better B3 design integration with lots B1 and B7, and the fact that B3 works had not been started yet, the World Bank team accepted the inclusion of B3 under the guarantee, on condition that the B3 scope, design and contract be amended for seamless integration with lots B1 and B7. GoA accepted and proceeded with negotiating the assignment of the B3 contract to the B1 contractor and its amendment to meet design update requirements. With regards to B4 however, the World Bank team deemed that the lot could not be financed under the guarantee, given the fact that the works were already underway, with at the time, insufficient documentation of safeguards management to date. GoA agreed to directly fund the completion of B4 works in 2019, and EPAL agreed to conduct an Environmental and Social Audit (ESA) of lot B4 to complement the ESIA and RPF, to review safeguards management to date and requirements for compliance with World Bank policies moving forward.

Scope of Bita Project

19. **Bita Phase 1 investments.** The Bita Project investments include:

- A raw water intake along the Kwanza river, with a pump station and 6 km of conduits to lift water to an elevated nearby locality named Bita (Lot B1).
- A water treatment plant located in Bita, designed to produce 3 m^3/sec (also in Lot B1), with readiness for a future doubling of capacity to 6 m^3/sec. A filter backwash and sludge treatment plant will also be built (Lot B7).
- Adjacent to the WTP site, the Bita CD (Lot B3), including a 50,000 m^3 storage tank, pumps station and equalization tower, to serve as headworks for pressurization and bulk transmission of water to Luanda, as well as secondary storage and pumping local distribution in the Bita district service area.
- From the Bita locality to South Luanda, a 82 km gravity transmission pipeline (Lot B2) serving new distribution centers (Cabolombo CD, Mundial CD, and Ramiros CD) as well as to existing ones (Camama CD, Benfica 2 CD).
- The Cabolombo CD, Mundial CD and Ramiros CD (Lots B4, B5, B6), each including a storage tank, a pump station and a water tower for gravity supply to neighborhoods or to water tanker filling stations. Lot B4 is already under implementation with GoA funding, as associated facility not included in the IBRD guarantee.
- New networks and metered connections (Lots B8, B9, B10, B11) in the Bita, Cabolombo, Mundial, and Ramiros CDs service areas, as well as hydraulic retrofits to existing distribution systems, and installation of meters on existing connections in the Camama and Benfica-2 CD service areas

20. The Bita Project financing requirements include contract costs for each of the DB contracts, project management and construction supervision consultancy contracts, resettlement related provisions, additional studies, risk contingencies, fees related to financing and guarantees and potential ATI membership cost. The following Table A2.4 provides estimation on financing and guarantee requirements.

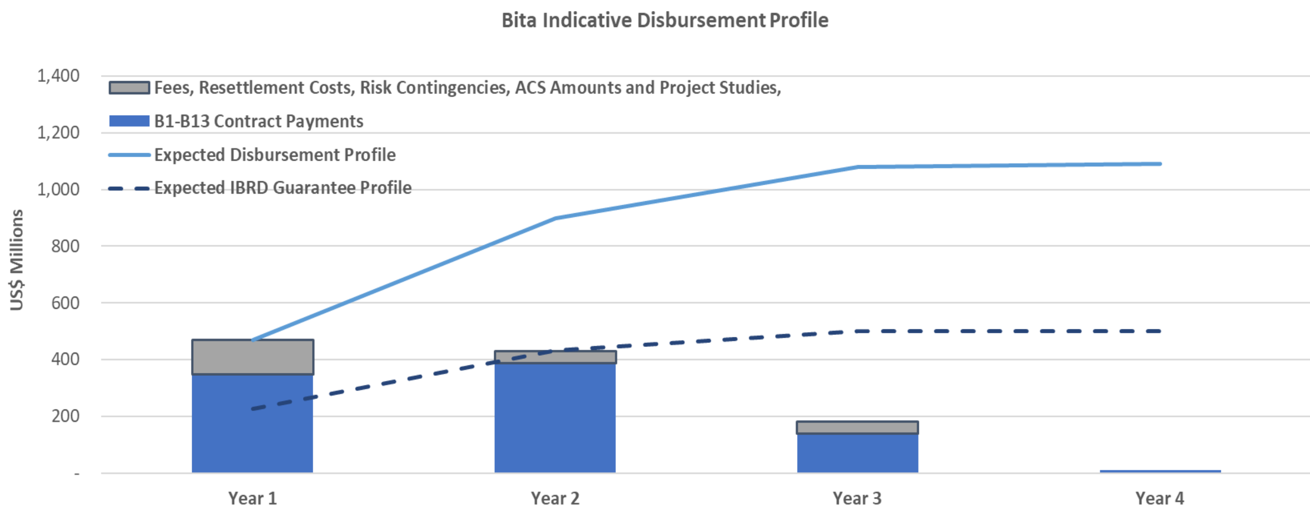
Table A2.4: Bita Project Costs, Financing and Guarantee Requirements

Item	Lot	Contractor and Scope	Cost (US$ Million)	Guaran-tors	Financing and Guarantee Amounts (US$ Million)			
					Required Guaran-tees	Required Guaran-teed Financing	bpifrance Backed Financing	GoA Financing
1	B1	Suez Consortium– River intake, pump station and conduits; 3 m^3/s Bita water treatment plant (civil works ready for a future expansion to 6 m^3/s)	240	bpifrance IBRD	100	180	60	0
2	B2	Centro Cerro– Bita-to-Luanda gravity bulk water transmission pipeline	182	bpilfrance IBRD	62	112	70	0
3	B3 (1)	Suez Consortium - storage and headworks for transmission pipeline, and for distribution in Bita CD district.	70	bpifrance IBRD	22	40	30	0
4	B4	Sinohydro Angola - Cabolombo CD	20	GoA	0	0	0	20
5	B5	Somague Consortium - Mundial CD	14	IBRD	8	14	0	0
6	B6	Centro Cerro Angola - Ramiros CD	17	IBRD	9	17	0	0
7	B7	Suez Consortium – Water sludge treatment plant, attached to Lot B1.	10	IBRD	6	10	0	0
8	Design, Project Management Consultancy; Supervision and Monitoring Consultancy; ESIA		14	IBRD	8	14	0	0
Bita without Distribution Network investments			**567**		**213**	**387**	**160**	**20**
9	B8-B13	Distribution networks and connections Bita, Cabolombo, Mundial, Ramiros, Benfica-2 and Camama areas.	305	IBRD	168	305	0	0
10	Design, Project Management Consultancy; Supervision and Monitoring Consultancy; ESIA		9	IBRD	5	9	0	0
Distribution Network investments			**314**		**173**	**314**	**0**	**0**
11	Proposed Studies and Licensing		3	IBRD	2	3	0	0
12	RPF/RAP Compensation and RPF Escrow Account Management		30	IBRD	17	30	0	0
13	Global Risk Contingency (5 percent of B1-B13)		44	IBRD	24	44	0	0
14	Financing Arrangement and Guarantee Fees (5 percent)[46]		42	IBRD	23	42	0	0
15	ATI Membership Fee		10	IBRD	6	10	0	0
16	GoA - ACS		80	IBRD	44	80	0	0
Total - Bita + Distribution + RPF + Contingencies + Fees + ATI Membership + GoA-ACS			**1090**		**500**	**910**	**160**	**20**

(1) Following withdrawal of Sinosure financing and opportunity for scope optimization, Lot B3 has been assigned to Suez-Consortium.
(2) Above figures are rounded off to the nearest decimal.

21. The indicative disbursement profile and associated guarantee commitment over the construction duration of 36 months is illustrated in the following Figure A2.2. As part of the lot B1 contract, the fourth year includes a 12-month operation responsibility after the end of construction where a nominal operation period payment will be made to the contractor. Considering the complexity of the Bita Project, there could be differences in actual disbursement profile based on how the construction progresses evolve and the need for contingences, etc. arises.

Figure A2.2: Indicative Disbursement Profile and IBRD Guarantee Commitments (Cumulative)



Climate Co-Benefits

22. By transitioning water supply in the project area from tanker truck distribution to formal piped supply, Bita is in essence a brownfield project, eliminating carbon emissions from a large fleet of polluting trucks having to transport water for two million people every day. In addition to the public health benefits, increased convenience, reduction in household labor for fetching water, and cost savings for households which are anticipated as a result of the project, the project will also contribute to climate mitigation efforts.

23. In order to provide 50 liters per person per day to the two million people in the project area, a total of 3,125 water tanker trucks with a capacity of 16 m^3 making two trips per day are needed. Emissions from these trucks represent a significant share of the city's carbon footprint. The trucks also spend much of their time during the day idling while waiting to refill, and contribute to increased traffic jams in Luanda, further increasing the carbon footprint of non-piped water supply. The Bita Water Supply Project will provide more than twice this amount of water at 1/20 to 1/50th of the cost with much higher water quality through a piped system. This system will improve the energy efficiency of water supply in Luanda and dramatically reduce the carbon footprint of the tanker trucks, resulting in net emissions of -2,113,491 tCO2-eq. Improvements in NRW due to metering and modern equipment is also expected to improve energy efficiency by reducing the amount of water lost in distribution to customers and encouraging less wasteful water consumption by households that are currently connected but unmetered, resulting in net emissions of -237,887 tCO2-eq. In total, the net emissions of the project are estimated at -2,351,378 tons of CO2-equivalent (tCO2-eq) over the life of the project, while the gross emissions are estimated to be 1,302,577 tCO2-eq. On average, the project will generate estimated net emissions of -111,970 tCO2-eq annually.

[46] Includes both IBRD guarantee fees and arrangement fees of commercial banks

24. Angola is expected to face significant climate change challenges and is already experiencing regional droughts that put pressure on water supplies. Floods in Angola are a recurrent phenomenon. Moreover, the risk of extreme temperatures is considered medium for Luanda but high for the country. The expected increase in temperatures is likely to lead to more frequent and intense high-precipitation events. Climate change will intensify climate variability and the magnitude and frequency of extreme events, leading to more intense floods and droughts. In addition to mitigation of carbon emissions, Bita will also support enhanced resilience in the project area and in the greater EPAL system in the following ways:

- **Safe and reliable water supply through household connections** will provide protection against higher temperatures for low-income populations. Beneficiaries now pay for expensive water delivered through tanker trucks, with many households unable to afford a sufficient amount. In addition, the tanker trucks in many cases sell untreated surface water. Both the quality and quantity of this water is likely to decline as a result of climate change. At the same time, demand for water for drinking, cleaning and cooling will increase. Higher temperatures will also expose people fetching water (typically women and girls) to climate health risks. Lower-cost, treated piped water supply will address this risk.
- **Bita Project design includes infrastructure to increase resiliency of water supply.** The higher likelihood of heavy rainfall events and dry periods will negatively impact the stability of Luanda's water supply. Climate variability is likely to affect EPAL's existing water production sources, which rely on much smaller rivers than the Kwanza. Bita will improve the resilience of the overall system by increasing overall production capacity and providing additional large storage tanks at critical nodes.
- **Reduced reliance on electricity and pumping due to gravity distribution**. Higher temperatures are likely to result in higher demand on the electrical grid due to increased use of air conditioning. In addition, much of Angola's energy is produced through hydropower dams, some on rivers smaller than the Kwanza that could be adversely affected by climate-induced floods and droughts. In the design of the Bita Project, delivery of treated water from the treatment plant to the CDs in each neighborhood will be through gravity systems. This limits the overall energy demand of the system, avoiding additional strain on the electric grid and enhancing resilience of water supply.
- **Improved utility performance through NRW reduction**: Approximately 50,000 households in the project area currently receive some water from EPAL household connections but are not metered. Although consumption is often constrained due to low overall water availability, when water is available they are likely to overconsume since the amount they use is not closely linked to what they will pay. The addition of meters for all connections in the project area will lead to an important reduction of NRW. The metered connections within the Bita Project will enable efficient water delivery, use, and cash flow into EPAL's billing accounts, providing additional resources to support resilience for climate adaptation.

Guarantee and Financing Structure Processing

25. The selection process for the selection Mandated Lead Arranger(s) for the IBRD guaranteed commercial loan facility to finance the project has been initiated through the release of the first stage RfP document. The RfP process has two stages: stage 1) submission of an initial proposal, which will include an indicative offer; and stage 2) submission of a final, credit approved proposal. The proposals received following stage 1 indicate positive results for the GoA in the form of a longer tenor and improvement in pricing. The proposed tenor is at 15 years, which is a significant improvement from the tenor of six-seven years that Angola can achieve without credit enhancement. The commercial banks have also stressed the importance of IBRD guarantee in proposing competitive financing terms for the project. With high level of oversubscribed offers, the competitive RfP process also confirmed significant appetite from the market to finance up to US$910 million thereby eliminating the risk of the GoA not being able to raise such financing for the Bita Project.

26. A lender roadshow was conducted in May 2019 that reconfirmed the interest from the longlisted banks and presented an opportunity to raise questions and provide feedback on their indicative proposals. The competitive tension also enabled the GoA and its advisors to encourage banks to further strengthen the indicative financing offers in terms of structure, hold amounts, and pricing. The GoA is also in initial discussions with ATI to explore potential insurance options to compliment the IBRD Guarantee and improve the final pricing of the IBRD guaranteed financing facility. The GoA requested and it was agreed that a one-time minimum membership fee of approximately US$10 million is included as part of the Bita financing amount to be covered under the IBRD Guarantee.

27. The second stage of the RfP will be released by end of May for receiving final credit approved proposals from the shortlisted commercial banks. The process to select the Mandated Lead Arranger(s) (a commercial bank or a group of commercial banks) will be finalized by the end of June 2019. The second stage RfP will primarily be focused on the following elements: (i) minimizing execution risk for the Government in order to achieve financial close in Q4 CY2019. This will require confirmation of the underwriting capacity and hold appetite of the banks; (ii) the terms and conditions of the borrowing are in line with GoA's requirements, IBRD guarantee structure and legal requirements; (iii) the offers are competitively priced and adequately value the IBRD guarantee; and (iv) they meet the tenor requirements of the GoA.

Risks and Mitigation

28. **Several project development and implementation risks require clear mitigation arrangements**. Table A2.5 below shows the key risk categories that will affect project development and implementation and describes the individual risks and associated mitigation measures.

Table A2.5: Project Risks and Mitigation Arrangements

Risk Category/Rating	Risk Description	Proposed Risk Mitigation
EPAL Implementation Capacity Risk Risks arising from very limited capacity of EPAL in implementation of the project. High	Bita is one of the largest investments that EPAL will be implementing in the next few years, alongside the Quilonga Grande project. Bita is also the first project that EPAL is implementing with IBRD support in compliance with World Bank requirements. EPAL has limited technical and managerial capacity to manage a complex set of underlying contracts. Despite mitigation through capacity building and strengthened Bita Project implementation arrangements, the institutional and implementation capacity risks remain high, to be carefully monitored and managed during supervision.	The contract design includes additional set of consultants – a PMC for the entire project and set of construction supervision consultants for each of the underlying contract lots. In addition, through PDISA2 project, EPAL will benefit from a set of resident advisors to work closely with EPAL-PIU staff during the project. These consultants and advisors will provide capacity support to EPAL in managing the complex implementation challenge. In addition, the World Bank implementation support and supervision efforts will continue to support EPAL in monitoring the progress and provide adequate direction to comply with World Bank requirements.
Project Completion Risk Risks arising from time overrun and cost overrun risk in implementation of the project. High	*Time overrun risk*: risk that the project is not completed on time. The target date for completion of the last contract lot, the largest contract (Lot B1), would be 36 months. *Cost overrun risk*: risk that the project financing requirements exceed available financing amount.	The availability period of financing would include a buffer of 6 months from the maximum contract length. This would allow a maximum availability period of 42 months. If additional delays occur beyond 42 months, the GoA may request a waiver from the commercial banks to extend the availability period. The available amount of financing would include a global risk contingency of 5 percent. This would allow mitigation of cost overrun risks within the IBRD guaranteed financing amount. Any excess amount of financing needs will have to be raised by the GoA. As mentioned before, the World Bank team will have increased supervision during the initial 12 months of implementation to ensure EPAL receives sufficient

		guidance, in addition to the external consultants and resident advisors.
Political Economy challenges, Stakeholder and Governance Risks Risks arising from political economy challenges in supporting the project outcomes, governance risks and stakeholder risks in developing and implementing the project. Substantial	Bita, as one of the largest public investments, requires continued support from political champions and other stakeholders in delivering the project outcomes. In particular, the risks related to managing the existing tanker truck services also requires careful considerations. The new EPAL management has established dialogue with the two main associations of tanker truck owners and drivers, towards better coordination of mutual services, including more effective refilling stations, control of water theft, and better water quality. The regulator IRSEA is also engaged in assessing options of a licensing system for regulating the quality and price of the ubiquitous but largely informal tanker truck service, and a study is proposed to this effect for PDISA2 funding.	The political economy and stakeholder challenges are expected to be managed through establishment of a Project Steering Committee (PCS). The PCS members will provide strategic guidance and support to EPAL in mitigating stakeholder risks that may affect the outcomes of the project. For example, regulator IRSEA, who will be part of the PCS, is also engaged in assessing options of a licensing system for regulating the quality and price of the informal tanker truck service, and a study is proposed to this effect for PDISA2 funding during the implementation stage. The World Bank team will also receive reports of PCS activities and will coordinate with PCS members
E&S Safeguard Risk Risk arising from lack of compliance of E&S safeguard on project corridor, communities and end-users Substantial	In addition to water treatment and transmission facilities, the project will include extensive rehabilitation and construction of water distribution and connection systems. The scale of works for the construction of some of the infrastructure poses a risk in terms of safety for workers and communities due to increased vehicular traffic and use of heavy equipment. Moreover, risks related to health may arise linked to the increased supply of potable water through standpipes in communities with poor sanitation conditions. A large number of temporary workers, with potential for including foreign workers, will likely be predominantly single males – creating the risk of sexual exploitation of women and girls and GBV. A preliminary GBV risk screening suggests that GBV risk for the project may be low, partly due to the fact that an urban and peri-urban location imply that project contractors and workers can be supervised with relative ease and services for GBV survivors may be more readily available.	EPAL shall mitigate this risk by appointing E&S safeguards focal points to oversee the implementation of safeguard instruments (ESIA and RPF) as well as a community relations specialist in charge of the GRM. The project management consultant hired by EPAL will provide day-to-day technical support to the EPAL PIU (which will include E&S safeguards management specialists). In addition, World Bank team shall make an extra supervision effort and maintain a close working relationship with the EPAL staff. Both the ESIA and RPF benefited from an independent expert review for quality control and compliance prior to finalization and disclosure ahead of appraisal. An ESIA update is planned for project implementation, after detailed design of works are delivered by the DB contractors. Refer Annex 4 for further details. Sanitary risks under the project are mitigated by restricting the installation of house connections and yardpipe connections to households with respectively septic tanks or adequately drained pads. New public standpipes will for their part include the installation of local drainage systems. It is assessed that such measures will prevent the spillage of wastewater and stagnation of greywater, as well as the discharge of sewage flows into the environment.
Technical Design Risks Risk arising from inadequate and inefficient technical design of the project. Substantial	The early Bita design without distribution network investments had not been updated after actual populations measured in the 2014 census, which were found much lower than assumed. It is to be noted that while the awarded DB contracts respond to formal specifications, they provide a contractual opportunity to revise and optimize designs prior to construction. Implementation through 13 DB contracts, including lot B4 financed by GoA, presents some integration risks.	In the context of uncertain population and connected demand growth rates in the service areas, the World Bank asked GoA to conduct a detailed technical feasibility study (TFS). The TFS confirmed the opportunity to implement the project in two independent phases, limiting the first phase to a 3 m^3/sec production capacity. Uncertainties on investment costs have been substantially reduced, Project costs can be further optimized by PMC under the DB process.

Financing and Fiduciary Risks Risk arising not able to attract commercial finance for the project; and that the amounts raised are appropriately used for the intended objectives of the project Substantial	Given the downgrading of the country's credit rating, commercial banks have indicated the need for credit enhancement from multilateral development institutions and ECAs. The risk is that the required amount of commercial finance is either unavailable or delayed, impacting the timely need for financing of the project. Fiduciary assessment of EPAL also revealed weaknesses in its FM arrangements to manage a complex project such as Bita.	To mitigate financing risk, GoA and the coordinator, with World Bank assistance, have been actively engaging commercial banks through market soundings to consider financing the project. The recently conducted Expression of Interest and first stage RfP process confirmed interests from more than ten banks to provide the required financing. To mitigate fiduciary risks, the IBRD guaranteed loan will be disbursed only against approved invoices for eligible project costs. Payments to contractors and consultants will be made, upon MinFin instruction, directly by the banks to the firms. The POM will include relevant monitoring mechanisms.
Macro-Economic and Fiscal Impact Risk Risks arising from the broader macro-economic environment and fiscal impact High	Angola has faced decline in macroeconomic growth due to a sharp decline in oil prices. A stronger than expected reduction in oil production and tighter global financing conditions could dampen growth prospects and increase the need for additional fiscal consolidation.	Mitigating factors include the government's commitment to macroeconomic stability, which is supported by the IMF EEF program. The World Bank is also proposing a DPF Series to support Angola in its ambitious and urgent reform strategy. The GoA also confirmed that the project financing is already included in 2019 budget projection.

EPAL organization and performance

29. **Organization**. *Empresa de Pública de Águas de Luanda* (EPAL-E.P.) is a public company with administrative, financial, management and patrimonial autonomy. EPAL was created by Decree 72-A/01 of October 5, 2001 upon dissolution of the pre-existing *Empresa de Provincial Águas de Luanda*, (EPAL U.U.E.). In 2017, EPAL had 1,736 employees (down 4 percent from 2016) of which 24 percent are women and 11 percent are in management positions. This equates to a relatively low productivity ratio of about 4 employees per thousand customers. About 500 staff attend internal or external training in technical, scientific and professional areas every year.

30. **Data and reporting:** EPAL activities are generally well documented, conveying the importance given to monitoring and transparency. EPAL publishes comprehensive annual reports, summarizing operational developments and investment programs, with audited financial statements. EPAL participates in the IBNET benchmarking database. The evolution of EPAL's main indicators, as self-reported to IBNET over 2014-2017 is detailed in Table A2.6 below[47].

31. **Production and distribution**. EPAL operates 12 WTPs and 26 CDs. By end 2017 the nominal production capacity of all WTPs was 732,700m^3/day, but only 432,158 m^3/day (59 percent) were produced on average, or 157 million m^3/year. Of this water produced, 108 million m^3 were distributed to customers, of which 96 million m^3 were billed, a 1.8 percent increase over 2016. NRW is thus estimated at 39 percent. Due to losses, breakdowns, preventive maintenance and power outages, service is discontinuous in most areas, with average availability of 9 hr/day.

32. **Billing and collection, customer service.** EPAL customers are billed monthly based on a block tariff approved in January 2018 and enacted in August 2018. In 2017, EPAL had approximately 465,000 customers, 74 percent of which were billed. Out of the billed customers, 67 percent were billed based on actual metered consumption and the remaining based on estimates. The total water volume sold was 98 million m^3/year and total billed amount was AKZ 19,275,676,700, of which only AKZ 6,759,825,489 were collected (35 percent). The collection outcomes are particularly poor for estimated bills of unmetered customers, which are often and easily contested. EPAL's offers a modern range of payment options to its clients, has active public relations and community outreach campaigns, and has set up 17 commercial agencies. EPAL is a very involved social partner, sponsoring a range of community and youth programs.

[47] Data reported by EPAL to IBNET does not strictly match the data published in EPAL's audited annual report.

Table A2.6: EPAL Basic Utility Service Performance Indicators (IBNET and Annual Reports)

Indicator	Units	Year			
		2014	2015	2016	2017
No. of connections	No.	382,365	417,626	454,316	465,000
Coverage	%	49	50	59	59
Hours of supply	hour/day	9	9	9	9
Length of network	Km		8,219	8,897	10,677
Pipe breaks	No.	6,427	5,257	5,169	
Volume produced	Million m^3	154.5	149	146.7	157
Volume distributed	Million m^3	93.7	93.6	108	108
Volume billed	Million m^3	90.1	82	98	98
NRW	Percentage	42	45	33	39
Revenues billed	Million AKZ	7,806.90	7,345.80	19,108.20	19,275.67
Revenue collected	Million AKZ	3,599.20	3,377.30	5,898.90	6,759.83
Collection ratio	%	46	46	31	35
Total income	Million AKZ	15,411.90	15,186.80	17,295.50	15,273.30
Total operational costs	Million AKZ	13,129.70	12,567.90	8,766.70	10,793
Staff	No.	1,765	1,666	1,814	1,736

33. **Operating performance.** As shown in Table A2.7 below, EPAL's distribution, billing and collection losses result in a very low overall efficiency of 21 percent. This result is strongly influenced by EPAL's poor collection efficiency (35 percent). The poor collection efficiency is the result of the lack of customer service focus which can be.

Table A2.7: EPAL's Efficiency Chain (2017)

	Unit	Production	Distribution	Billing	Collection	Resulting efficiency
Volumes	m^3/yr	157,000,000	108,000,000	96,000,000		
Amounts	AKZ/yr			19,275,825,700	6,759,825,489	
Efficiency	%		69%	89%	35%	21%

34. **Tariff structure and reform.** As summarized in Table A2.8, EPAL's current block tariff grid, enacted in August 2018, represents a major increase over the previous tariffs in place since 2015. Such increase embodies IRSEA's regulatory policy to promote utility recovery of efficient costs, coupled with GoA's imperative need to reduce recurring operating subsidies. Typically, the water bill for a family of 6 who consumed 7.2 m^3/month (assuming 40 liter/person/day (i/p/d)) would be AKZ 842/month or US$2.6/month, before fees and taxes. With consumption of 150 l/p/d the family would pay AKZ 5430/month, or US$17/month. Although substantial, the August 2018 tariff increase does not appear to have had drastic social impacts nor triggered any protests, but resulted in a very significant drop in collections in the second half of 2018 (the average annual collection rate went from 38 percent in 2017 to 31 percent in 2018). Concerns on the affordability of EPAL's new tariffs can be mitigated by the consideration that households

lacking EPAL service and coping with tanker truck service pay between five and 50 times the amount that they would be billed by EPAL for the same consumption under the new tariff.

Table A2.8: Evolution of EPAL Block Tariff Grid from 2015 to 2018

EPAL previous water tariff structure (2015)					
Item	Tariff category		Variable tariff (AKZ/m³)	Fixed monthly fee (AKZ)	Applies to
1	Domestic	Basic tariff	59	0	0 – 10 m³
2	Domestic	Transition tariff	94	0	10 – 15 m³
3	Domestic	General tariff	137	332	>15 m³
4	Commercial and Services		137	3,900	All consumption
5	Industry		124	11,700	All consumption
6	Standpipe		42	0	All consumption
7	Bulk supply, «girafas»		137	0	All consumption

EPAL new water tariff structure (August 2018)					
Item	Tariff category		Variable tariff (AKZ/m³)	Fixed monthly fee (AKZ)	Applies to
1	Domestic	Basic tariff	117	250	0 – 10 m³
2	Domestic	Transition tariff	211	400	10 – 15 m³
3	Domestic	General tariff	267	760	>15 m³
4	Commercial and Services		287	1900	All consumption
5	Industry		301	2090	All consumption
6	Standpipe		105		All consumption
7	Bulk supply, « girafas »		258		All consumption
8	Raw water		287	3000	All consumption

Improving EPAL's performance

35. **EPAL's 2018-2022 PIP**: In January 2018, GoA appointed a new Chairman and Board to head EPAL, with a mandate to achieve a performance turnaround in five years. The new leadership engaged the preparation of a comprehensively ambitious five-year PIP for the period 2018-2022. The PIP was approved by the GoA in October 2018, with however no specific action plans, budgets nor funding commitments for the main PIP investments. An excerpt of key PIP objectives indicators and targets is provided in Table A2.9 to illustrate EPAL's comprehensive ambition.

Table A2.9: Excerpts of EPAL's 2018-2022 PIP

Indicator	Units	Year		
		2018	2020	2022
Population served	million	7.8	8.3	8.8
Clients	Number	471,794	599,039	740,411

New meter installation	Number	60,000	60,000	60,000
Commercial losses	%	20	15	5
Technical losses	%	20	19	17
Total losses	%	40	34	22
Bill collection ratio	%	38	70	80
Average demand	l/person/day	115	115	115
Utilization of water treatment capacity	% average	80	90	90
Staff	Number	1735	1650	1560

36. **EPAL performance turnaround prospects.** As part of the Bita guarantee preparation, the World Bank team performed a selective review of EPAL operations, coupled with financial model projections. Clear priorities for improved service and efficiency were identified in areas of: (i) commercial and customer service functions (metering, meter reading, billing, collections); (ii) water loss and theft reduction, in both transmission systems and distribution networks; and (iii) improved availability of production capacity at existing water treatment plants. The team found that such areas were generally well reflected in EPAL's 2018-2022 PIP, with very fast and ambitious improvement targets, without however clear plans and budgets for the necessary O&M or investment actions. The World Bank team also understood that even with funded action plans to achieve specific operational efficiency gains, a durable turnaround of EPAL would also require the organization to undergo a gradual corporate culture transformation, affirming a better customer orientation, with stronger accountability and incentives for performance, at both the management and staff levels. Despite GoA's pressing interest in reforming an SOE such as EPAL, the probability of success of a fast turnaround, such as envisioned in the 2018-2022 PIP, is low in the absence of better governance and new capacities. The World Bank team thus considers that EPAL's turnaround is not a short-term prospect and will not be achieved with just the support of PDISA2 TA. EPAL's transformation will require, above all, steady leaders at both the political and managerial levels, capable of articulating and advancing a medium-term vision of organizational change, strategic investment, staffing and capacity building, aimed at better serving the people of the Province and at achieving autonomy from GoA's subsidies.

37. **Selected performance objectives covenanted under the Bita guarantee Project Agreement.** In such context, it was determined that the Bita guarantee and the PDISA2 TA could only be used to incentivize and support EPAL's progress against a limited number of performance objectives. It was agreed that five priority objectives would be selected for their impact on EPAL's financial projections or for their strategic transformational value. It was retained that such objectives could not only be a focus of PDISA2 management and operational TA but would also be formally incorporated in the Bita guarantee Project Agreement. Each objective will be covenanted in the Project Agreement between World Bank and MinEA/EPAL, with minimum annual target indicator values to be achieved. The "Five Objectives" agreed with EPAL are regrouped in Table A2.10 below and pertain to: (i) meter installation on unmetered connections; (ii) bill collection efficiency; (iii) cost recovery; (iv) initiation of an NRW reduction strategy, and (v) annual customer satisfaction surveys. The proposed minimum annual target values for the first three indicators are substantially less demanding than the corresponding approved target values in EPAL's 2018-2022 PIP. The "Five Objectives" are considered feasible for a well mobilized EPAL with relevant GoA support for corresponding investments and embody strategic change for the utility. To that effect, EPAL must develop detailed action plans for each indicator, including responsibilities, staffing, investment and procurement requirements, to be endorsed and budgeted by MinEA, as conditions of Bita guarantee effectiveness. If subsequently EPAL were to consistently fail in meeting these minimum targets, World Bank will be in a position, under the terms of the Project Agreement, to ask GoA to remedy and accelerate EPAL's performance improvement.

Table A2.10: Selected Performance Indicators ("Five Objectives")

	2019	2020	2021	2022	2023
Indicator 1: Meter retrofits on existing connections	15,000	40,000	40,000	40,000	40,000
Indicator 2: Bill collection ratio (aggregate)	34%	45%	55%	63%	69%
Indicator 3: Operating cost coverage ratio (cash basis)	0.7	1.0	1.20	1.35	1.5
Indicator 4: NRW reduction	Recruit consultant for NRW-reduction strategy	Complete the NRW-reduction strategy and budget a pilot	Complete installation of a NRW-reduction pilot	Complete NRW-reduction activities in the pilot	Update NRW-strategy for scale-up
Indicator 5: Annual system-wide customer satisfaction survey	Recruit firm to conduct survey	Conduct survey and publish results	Conduct survey and publish results	Conduct survey and publish results	Conduct survey and publish results

38. **PDISA2 TA.** While no TA loan is attached to the Guarantee, it is agreed that that US$17 million of PDISA2's institutional component will apply to EPAL, for selected Bita management and EPAL performance needs. At Appraisal, the selected proposed activities are as follows:

- **TA for Bita Project implementation**
  - Technical auditing of Bita Project implementation.
  - Safeguards auditing of Bita Project implementation.
  - Resident advisor TA for Project management and investment planning
  - Resident advisor TA for safeguards compliance
- **TA for EPAL performance improvement**
  - Integrated masterplan for water, sanitation and drainage in Greater Luanda.
  - Selected capacity building and TA tasks to strengthen EPAL commercial and operational performance against the "Five Objectives".
  - Design of PPPs to improve service and performance in selected areas of EPAL operations.
  - Identification of options to regulate the quality and pricing of tanker truck service.

39. **The opportunity for PPPs.** It is the World Bank's opinion that EPAL's service and financial performance challenges would be greatly facilitated by a selective introduction of new know-how and practices through PPPs. A range of PPP opportunities may be justified to address EPAL direst challenges, such as: (i) the outsourcing of meter reading, billing and collection functions, including accelerated meter installation programs; (ii) the performance-based contracting of NRW reduction campaigns; and (iii) the delegation of O&M service in one of EPAL's water systems, with one or several distribution centers and WTPs. The identification, selection and design of such PPPs could not be a focus of the Bita guarantee preparation but could be supported by PDISA2-funded TA during the project.

ANNEX 3: FINANCIAL AND ECONOMIC ANALYSES

Economic Analysis

1. An economic analysis of the project was prepared as part of appraisal. The analysis consists of a straightforward cost-benefit analysis focusing on the direct financial benefits to project beneficiaries as a result of the project. As in the financial analysis, the base-case analysis assumes a total of 180,000 beneficiary households – 80,000 households in new service areas, served by the Bita water treatment infrastructure, and 100,000 households in existing, but un- or poorly serviced, service areas. However, additional households that are expected to move into the project areas after the project are not included as beneficiaries in the economic analysis, as the benefit of having reliable piped water is assumed to be incorporated into the cost of purchasing land and/or homes in the newly served areas.

2. The financial benefits to households are high due to the very high cost of procuring water in the target areas at the present time. Households in built-up areas without access to piped water generally purchase water from tanker trucks, which in turn have purchased water from EPAL, although there are widespread reports that water theft from EPAL pipelines is common, as well as tanker trucks' use of untreated water. Regardless of the tanker's source of water, water is generally sold to consumers at a price of AKZ 1,600 per cubic meter – more than five times the price of piped water from EPAL. The per-cubic meter price is the equivalent of nearly US$10.00. At that price, consumption is constrained – average household consumption is estimated at only 6 cubic meters per month, or approximately 40 liters per person per day.[48] Even this low consumption results in monthly water costs for the average household of nearly US$60.00.

3. Under the project, it is estimated that monthly household consumption will increase to 22.8 cubic meters per month (approximately 150 liters per person per day), at a cost of AKZ 300 per cubic meter, or a total monthly cost of AKZ 6,840 (US$41.45 equivalent).

4. The economic analysis estimates the benefit to consumers using consumer surplus, calculated using the pre-project price of water and the difference in consumption between the with-project and without-project scenarios.[49] Benefits also include the shadow price of carbon emissions averted due to the transition from tanker trucks to piped water supply. The net emissions of the project are estimated at -2,351,378 tCO2-eq over the life of the project, while the gross emissions are estimated to be 1,302,577 tCO2-eq. On average, the project will generate estimated net emissions of -111,970 tCO2-eq annually. The project's introduction of a water treatment plant and expansion of the distribution system are estimated to experience net emissions of -2,113,491 tCO2-eq due to the fact that the reduction in tanker fuel use will lead to greater emissions reductions than emissions from electricity use to produce water through a more reliable piped system. The water treatment plant will be built directly on the river to reduce reliance on pumping through gravity use and the high use of gravity in the distribution network also helped to lower the project's gross emissions. Sourcing and conveyance will use 100 percent gravity and the large

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48 It was reported that many households who have the ability to purchase and store water from tanker trucks (e.g., households who can afford large, one-time purchases) re-sell water to neighbors in smaller quantities. Selling to neighbors was reported to be done generally at the same price – i.e., the equivalent of AKZ 1,600 per cubic meter. However, in some neighborhoods re-selling is done at a significant markup – up to the equivalent of AKZ 3,000 per cubic meter (US$18). This analysis assumes that all beneficiaries pay AKZ 1,600 per cubic meter, regardless of whether they purchase directly from a tanker truck or purchase from a neighbor.

49 Consumer surplus = ½ x without-project price of water x (with-project consumption less without-project consumption). In this case, the per-household consumer surplus equals ½ x US$10 x (22.8 - 6 cubic meters/month), or US$1,008 per household per year.

majority of the distribution system will be gravity-based. In addition, NRW reduction is expected to lead to net emissions of -237,887 tCO2-eq due to energy efficiency gains from metering existing connections that overconsume water in the Camama and Benfica-2 service areas that have been designated for retrofitting, representing an estimated 54 percent savings rate for both water and energy for these connections. The shadow price of carbon is based on the World Bank 2017 methodology and is estimated at US$39.10 per ton of CO2 (low scenario) and US$78.20 per ton of CO2 (high scenario) in 2019 prices, with an escalation factor in the price per ton of 2.26 percent per year.

5. The project costs include the all-inclusive capital costs[50] (US$1.09 billion) expensed over a conservative four-year project implementation period as well as the annual operating costs.

6. The NPV of the stream of costs and benefits over a period of 30 years was calculated based on a 6 percent discount rate used for long-lived assets, as well as the internal rate of return generated by the investments. [51] The results of the economic analysis are presented below.

Base Case	
NPV (6 percent discount rate)	US$640 million
EIRR	11.3 percent

7. **Sensitivity Analysis.** Sensitivity analyses were carried out, estimating the project's economic benefits based on changes in total beneficiaries, changes in with-project consumption amounts, and changes in the capital and operating costs of the project. The results are presented below.

Sensitivity Analysis 1: 20 percent reduction in beneficiary households	
NPV (6 percent discount rate)	US$ 278 million
EIRR	8.5 percent

Sensitivity Analysis 2: 20 percent reduction in with-project water consumption (18.2 m^3/hh/month)	
NPV (6 percent discount rate)	US$ 148 million
EIRR	7.4 percent

Sensitivity Analysis 3: 20 percent increase in capital costs	
NPV (6 percent discount rate)	US$451 million
EIRR	9.3 percent

[50] Includes cost of B1-B13 works and consultancies, contingencies, resettlement costs, fees, studies and additional cash support.
[51] World Bank Guidance Note: Discounting Costs and Benefits in Economic Analysis of World Bank Projects, 2016. The note provides guidance regarding selection of discount rates in World Bank borrowing countries for long-lived infrastructure projects through the use of the standard Ramsey formula applied to an estimated long-term per-capita growth rate for the project country, which the team has assumed is consistent with the average historical long run growth rate in World Bank client countries of approximately 3 percent.

Sensitivity Analysis 4: 20 percent increase in operating costs	
NPV (6 percent discount rate)	US$594 million
EIRR	10.9 percent

Sensitivity Analysis 5: One-year Implementation Delay	
NPV (6 percent discount rate)	US$552 million
EIRR	10.6 percent

8. The economic returns are sensitive to the expected consumption of water in the with-project scenario, and somewhat sensitive to a reduction in the number of beneficiary households. In contrast, the results are not particularly sensitive to changes in investment or operating costs or to a one-year delay in implementation.

9. While this analysis involves a straightforward calculation of the project benefits based on consumer surplus, other, non-quantified benefits are expected to result from the project. Foremost among these are benefits from reductions in water-borne diseases that may result from both the use of non-treated water sold by some tanker trucks and the unprotected transport of water from local storage facilities to currently unserved households. The incidence of such illnesses, while reported anecdotally, as well as the impact on income and health-care-related expenses, is not known with much certainty. In addition, the amount of time spent transporting water from neighbors' facilities has not been estimated, but the reduction in such labor costs, and the benefits to women and girls, who are most likely to carry out such labor, contributes to the overall economic benefits of the project.

10. That said, the most important benefit of the project is the direct financial benefit to households who will be able to purchase water from EPAL, as opposed to paying inflated prices charged for tanker delivery. If households purchase the expected 22.8 cubic meters per month once the investments are operational, their total expenditures on water – despite more than tripling water consumption – fall by one third, from nearly US$60 equivalent to US$41 equivalent. If consumption remains the same as current estimates (which is highly unlikely), expenditures on water would drop to approximately US$11 per month – just one-fifth of without-project expenditures for the same quantity of water.[52]

Financial Analysis

A. Bita Financing Impact on the GoA

11. The financial analysis for the Bita Water Supply Guarantee Project has two main parts. Considering that GoA, through the MinFin, is the direct Borrower for the Bita financing and the debt repayments are not dependent on the underlying revenues from water tariffs, the first part of financial analysis is conducted on the GoA's ability to meet the debt service costs. Consistent with the debt sustainability analysis prepared as part of the ongoing preparation of the World Bank DPF series and the recently approved IMF-EFF program, the impact of Bita financing on the GoA is assessed. According to the most recent DSA, public debt is expected peak in 2018 and then to gradually decline over the medium-term. Public debt (including Sonangol) increased to 89.1 percent of GDP (US$77.1 billion) as of end-2018 due to the currency depreciation, higher borrowing needs, and recognized

[52] Despite the high financial benefits to the beneficiary households in this scenario, a fall in with-project consumption to those levels would, of course, result in much lower project financial benefits to EPAL. The economic rate of return, however, remains close to that calculated using consumer surplus.

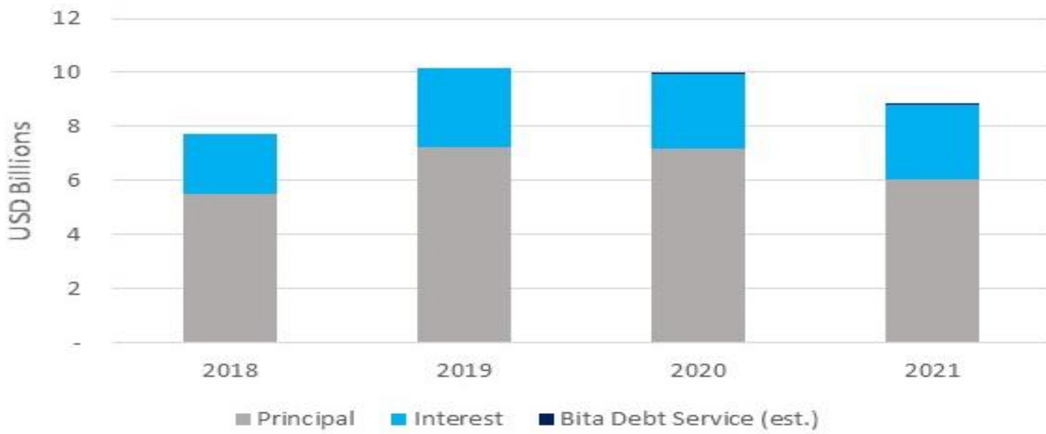
liabilities from government arrears and SOE capitalization. Debt is still deemed sustainable under the baseline scenario and expected to decline to around 45.4 percent of GDP over the medium-term due to prudent fiscal and monetary policies. The figures below show the public debt issuance in 2019-2021, including the Bita financing amount.

Figure A3.1: Total Public Debt Issuance including Bita (Percentage of GDP and Local Currency Billions)

12. The Bita Project will add US$1.09 billion of commercial debt between 2019-2023, with the disbursements spread over a period of 36 months, as illustrated in Figure A2.2 above. The Figure A3.1 above shows the share of Bita on the new domestic and external debt issuance in the next three years[53]. The maximum impact of debt disbursement from Bita debt is in 2019 at 0.4 percent of GDP. It is important to note that in 2019, the GoA will enter into a debt facility agreement for the total Bita debt financing amount of US$1.09 billion, including from the IBRD-guaranteed facility and French Public Investment Bank *(Banque Publique d'Investissement,* bpifrance)-supported facility. If the total commitment amount of US$1.09 billion is considered in 2019, this would be equivalent to 1.1 percent of GDP. The figure below shows the limited impact of Bita on the total public debt service in 2019 to 2021[54].

[53] Given the project borrowing is at the sovereign level, the IBRD Guarantee backstops the GoA's direct debt service obligations and therefore does not add any contingent liabilities.
[54] The loan is expected to have a final maturity of 15 years with a three year grace period to match the construction profile. The principal repayments are not expected to start until 2023, after which the loan will amortize over a 12 year period.

Figure A3.2: Total Public Debt Principal and Interest Payments (including Bita debt service)



B. Bita Financing Impact on EPAL

13. As the capital and financial costs associated with the investment are expected to be the responsibility of the GoA, the first part focuses on the likely financial effects of the project on EPAL. The analysis compares with- and without-project projections of operational and financial performance, calculating expected changes in future cash flows. Although GoA will pay for the capital costs of the project while EPAL will benefit from its operations (and therefore a financial rate-of-return analysis is unnecessary), the second part of the analysis provides an estimate of the financial rate of return of the project.

14. The analysis of the financial impact of the Bita Project on EPAL starts from the very poor state of EPAL's current operations and finances. EPAL relies on direct operational subsidies from the Government and sovereign level financing for capital investments. On an accounting basis, due to generous tariffs, EPAL had an operational cost coverage ratio in 2017 of nearly 1.5 and should have been easily able to cover its direct (i.e., not including depreciation) operating expenses and taxes. However, due to low levels of collections from customers, its operational cost coverage ratio is estimated to have been only 0.5, and therefore it could only meet half of its operational expenses through its operational revenues. In the short term EPAL has used cash savings from previous years (generated due to direct operational cash subsidies from the Government) to cover the shortfall, but these will be quickly depleted. The withdrawal of government-provided operational subsidies has made the problem evident, with EPAL straining to meet payroll costs.

15. The core of EPAL's financial challenges are primarily related to failures in commercial management, including (i) water-loss rates that likely exceed 50 percent (which is significantly higher than reported loss rates due to the use of consumption norms in billing, rather than metering)[55]; (ii) a metering rate estimated to be only 30 percent; (iii) a billing ratio of approximately 70 percent; and (iv) a collections ratio of under 40 percent. The rate of NRW will become more apparent in 2019 as a result of a significant adjustment in billing norms for non-metered customers, and this may result in EPAL management's providing more of a focus on loss reduction activities.

[55] Lack of meters on production and distribution facilities and low consumer metering, combined with the use of high consumption assumptions, have resulted in EPAL reporting NRW at about 35 percent. Given consumption levels that are likely much lower (due in part to frequent service cuts in many areas), real water losses are likely much higher. The 2018 tariff revision significantly reduced consumption norms for unmetered customers (while raising per-m3 tariffs). The calculated loss rates for 2019 will probably be above 50 percent.

16. The lack of production and customer meters is perhaps the largest impediment to both reductions in water losses and improvements in collections. EPAL's recently prepared PIP includes a statement that it will undertake a five-year program to comprehensively meter all customers. The analysis undertaken here includes an assumption that EPAL would install approximately 45,000 meters each year on existing connections over five years in non-Bita areas, as well as metering of existing connections in areas that will in part be served by the Bita water treatment works, resulting in effectively 100 percent metering by 2024. The installation of meters and associated improvements in billing and collections will, of course, also require a deep change in commercial culture at EPAL.

17. EPAL reports that some service areas that have 100 percent metering and good service have collection rates of nearly 100 percent. On a utility-wide basis, given an overall collection ratio of around 35 percent and a metering ratio of 30 percent, the assumption is that, on average, EPAL collects around 80 percent of billed amounts from metered customers, but less than 20 percent from non-metered customers. The assumption of an 80 percent overall collection ratio as EPAL's metering program goes forward is key to its financial sustainability – with or without the Bita Project. The converse is also true – the Bita water project, while easily generating revenues from customers receiving water from the Bita water treatment works, will not provide EPAL with enough revenues to compensate for its commercial losses elsewhere in the system if the rest of the system is not metered and commercial performance is not improved. Finally, this analysis does not include potential operating or financial impacts generated by EPAL's Quilonga Grande project. Quilonga Grande consists of construction of a large water treatment plant that would potentially provide water to EPAL service areas distinct from the Bita service areas. However, at this time arrangements have not been made for the transmission of water to customer networks, commissioning of the works has not taken place or been scheduled, and EPAL's current PIP does not incorporate the operations of the works.

EPAL Financial Projections

18. Financial projections for the with- and without-project scenarios were undertaken for a 25-year period based on the following assumptions, which have been taken from EPAL's existing operational and commercial profile, with projections based on EPAL's stated objective of 100 percent metering in approximately 5 years and associated improvements in collections. An assumption of limited reductions in NRW within EPAL's existing networks have also been made. The most important change from the existing commercial and financial performance is related to metering and its associated collection ratio – as EPAL moves toward 100 percent metering between 2019 and 2024, the overall collection ratio is assumed to increase from 38 percent to 80 percent. In addition, it is assumed that EPAL will be able to maintain a collection ratio of 80 percent within the Bita service area due to the new distribution and service networks, robust water production and transmission to the service area, the resulting high-quality service standards and 24/7 service, metered connections such that billing will reflect actual consumption, and lack of history of poor commercial practices in the new service area.

19. Projections have been calculated using current costs – i.e., no inflation has been incorporated into either revenues or costs. This allows a clearer analysis of the impact of the project.

Table A3.1: Assumptions used in the Financial Analysis

	EPAL assumptions	Comments
Water production	430,000 m^3/day	
Existing active connections	347,440	1 percent annual growth
Average tariff revenue per m^3	AKZ 300	US$1.80 equivalent
Average consumption	150 l/p/d, or 22.8 m^3/hh/month	The regulator assumes 18 m^3/household/month, or just under 120 l/p/d, for unmetered customers
NRW in existing distribution systems	52%	Annual reduction of half a percentage point
Metering ratio for existing customers	30%	Increasing to 100 percent by end of year 5
Collection ratio for metered customers	80%	
Collection ratio for unmetered customers	18%	
	Bita assumptions	**Comments**
Bita WTP production capacity	259,200 m^3/day	
Project implementation period	4 years	
New connections in Bita service areas	80,000	5 percent annual growth during first 10 years; 2.7 percent growth thereafter
Metering ratio for new connections	100%	
Share with household connections	80%	Increasing to 90 percent by the end of review period
Share with yard-tap connections	20%	Decreasing to 10 percent by the end of review period
Existing (inactive) connections to be served by Bita	100,000	Increasing between 2.5 and 3 percent during first 10 years
Metering ratio for existing connections	100%	To be achieved by the start of the Bita WTP
Metering ratio for new customers	100%	
NRW in Bita service areas	12.5%	Reflects average NRW in new and existing Bita areas; gradual increase to 15 percent by the end of the review period

Without-Bita Financial Results

20. Under the above assumptions, EPAL's commercial and financial performance is projected to be as follows:

Table A3.2: EPAL Projected Financial Results – Without Bita (not-adjusted for inflation)

	2019		2024	2029	2034	2039
Total active connections	347,400		365,200	383,790	403,400	423,900
Water sales (m^3/year)	75,121,000		80,045,000	83,968,000	87,892,000	91,816,000
Total Water Revenues, based on billings (AKZ million)	27,561		30,547	32,014	33,488	34,970
Direct Operational Expenses (AKZ)	11,639		12,195	12,417	12,653	12,830
Operational Cost Recovery Ratio*	1.93		1.98	2.02	2.05	2.08
Total Operating Revenues, based on collections (AKZ million)	12,419		24,438	25,611	26,790	27.976
Cash-based Operational Cost Recovery Ratio	0.87		1.59	1.62	1.64	1.66
Cost Recovery Ratio, including depreciation and interest	1.19		1.26	1.29	1.32	1.36
Cash-based Cost Recovery Ratio, w/ provisions, depreciation and interest	0.53		1.00	1.03	1.06	1.09
Net Profit (Loss)** (AKZ million)	(9,077)		1,147	1,392	1,704	2,218
In US$ million (318.8 AKZ/US$)	(28.5)		3.6	4.3	5.3	6.6

* *includes taxes (applied on billed revenues)*

*** includes 100 percent provisions against unreceived revenues – i.e., it is effectively presented on a cash basis. Note that Angolan tax law limits the amount of provisions that can be counted as an expense. Tax law, however, should not prevent EPAL management from presenting its regular financial statements with a full accounting of provisions against unreceived revenues.*

21. The above summary of projected performance indicates the importance of revenue collections. In 2019 – prior to implementation of the metering program – despite an on-paper operational cost recovery ratio of 1.93, on a cash basis it is projected to not be sufficient to cover its direct operating expenses (and generating significant losses after taking into account depreciation costs). In contrast, in 2024, and with the expectation of 100 percent metering and an 80 percent collection ratio, it is projected to have a cash-based operating cost recovery ratio of 1.59. In addition, it is able to fully cover depreciation. Improving performance in the years after 2024 is due to new customers in existing service areas, who generate revenues in excess of their costs, and slightly reduced NRW.

With-Bita Financial Results

22. The following table summarizes EPAL's operational and financial performance with the addition of the Bita Project, including delivery of water to 180,000 newly served connections in 2024, and increasing new customers in those areas each year after that. In addition, a significant factor in the project's impact on EPAL's results is the assumption that all water in excess of that provided to the Bita service areas will become available for delivery in other EPAL service areas. That is, the Bita WTP will operate at full capacity and all water will be sold to EPAL customers.

Table A3.3: EPAL Projected Financial Results – With Bita (not-adjusted for inflation)

	2019	2024	2029	2034	2039
Total active connections	347,440	545,200	601,650	660,900	725,027
of which, connections receiving water from Bita	0	180,000	217,860	283,500	301,100
Metering ratio (global)	43%	100%	100%	100%	100%
Water production (m^3/year)	156,950,000	249,070,600	251,558,000	251,558,000	251,558,000
Water sales (m^3/year)	76,121,000	167,582,000	177,461,000	189,695,000	196,891,000
NRW (global)	52%	33%	29%	25%	22%
Total Water Service Revenues, based on billings (AKZ million)	27,561	54,245	58,160	61,656	64,598
Direct Operational Expenses (AKZ)	11,639	15,314	15,848	16,479	16,917
Operational Cost Recovery Ratio*	1.93	2.20	2.23	2.24	2.26
Collection ratio (global)	45%	78%	79%	79%	79%
Total Cash Operating Revenues, based on collections (AKZ million)	12,419	42,553	45,738	48,653	51,307
Cash-based Operational Cost Recovery Ratio*	0.87	1.72	1.75	1.77	1.80
Cost Recovery Ratio, including depreciation and interest	1.19	1.43	1.48	1.52	1.55
Cash-based Cost Recovery Ratio, including depreciation and interest	0.53	1.12	1.16	1.20	1.23
Net Profit (Loss)** (AKZ million)	(9,077)	9,817	11,105	12,258	13,507
In US$ million (318.8 AKZ/US$)	(28.5)	30.8	34.8	38.5	42.4

** includes taxes (applied on billed revenues). ** includes 100 percent provisions against unreceived revenues.*

23. The project – with an estimated 80,000 new customers plus an additional 100,000 existing, but unserved customers as of 2024, significant growth in that customer base in the years following, and the full sale of excess water into other EPAL service areas – is projected to generate significant net financial benefits for EPAL. Key net (with-Bita v. without-Bita) returns to the project are summarized below.

Table A3.4: Net Projected Bita Operational and Financial Impacts

	2019	2024	2029	2034	2039
Project-related water connections	0	180,000	217,900	263,500	301,100
Net water production (m^3/day)	n/a	252,400	259,200	249,200	259,200
Net water sales (m^3/day)	n/a	185,250	198,000	211,700	221,500
Net operating revenues (operating revenues – direct operating expenses, cash basis) (AKZ million)	n/a	27,240	29,890	32,180	34,390
US$ equivalent (US$ million)	n/a	165.1	181.1	195.0	208.4
Net net profit (AKZ million)	n/a	8,670	9,713	10,554	11,390
US$ equivalent (US$ million)	n/a	52.5	58.9	64.0	69.0

Numbers above calculated by subtracting results with the project in Table A3.3 and EPAL operations without the project in Table A-3.2 to show the net impact of the project on EPAL's financials.

Project Financial Rate of Return (Hypothetical)

24. Because EPAL is not responsible for repaying the capital costs of the Bita investments, the calculation of a financial rate of return for the project may not be relevant nor required to EPAL. That said, the team has prepared a hypothetical analysis as a point of reference for a potential scenario in which EPAL could be responsible for the investment. Based on such notional analysis a financial rate of return is calculated to be 3.9 percent. The financial interim rate of return (FIRR) indicates that, while technically the investment generates a return, under the current tariff which do not account for debt servicing costs, it is lower than the likely cost of financing the project. Should the tariff cover debt service costs, the expected FIRR could be significantly improved.

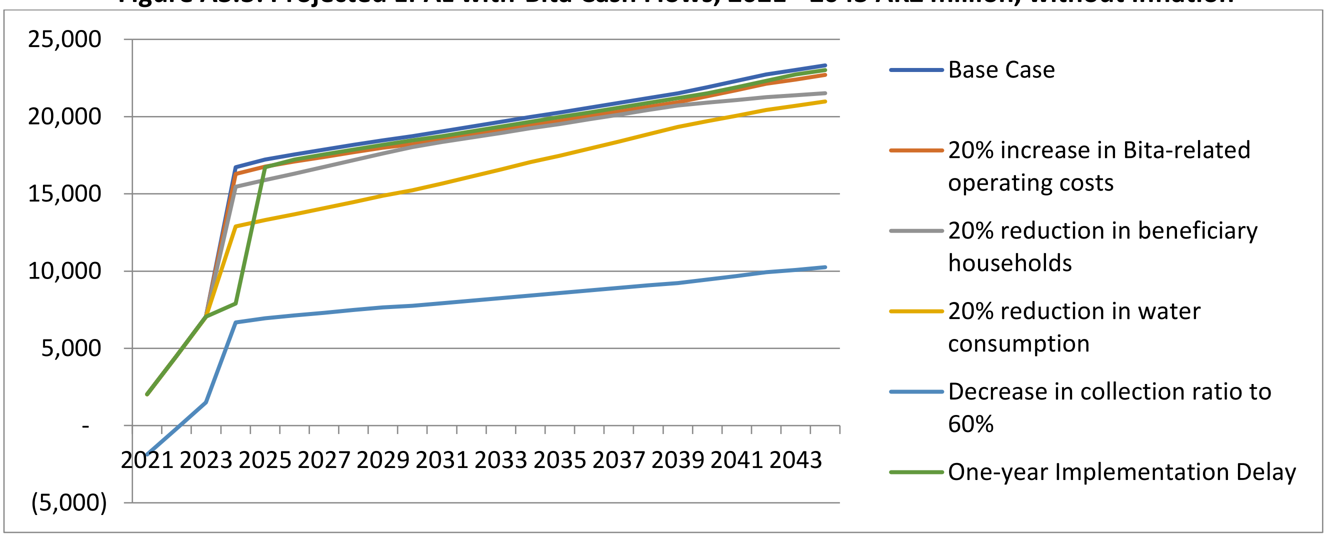
25. Reviewing the above scenarios, two assumptions stand out: the assumption of an 80 percent collection ratio in Bita service areas, and the assumption that project beneficiaries will consume an average of 150 liters per person per day. Reducing these assumptions, respectively, to a 60 percent collection ratio and to 120 liters per person results in a negative project return. While EPAL's current overall collection ratio is very poor (below 40 percent), there is evidence that service areas that are metered and have 24/7 (or close-to 24/7) service report quite high payment ratios, and the Bita service areas are highly likely to meet those criteria. Regarding consumption, because of the generally low levels of metering the true levels of consumption are not known; however, the regulator has recently re-defined the consumption norms for unmetered households at 18 m^3/month (approximately 120 l/p/d for a household of five), and that level is consistent with observed consumption in middle-income households in southern Africa. That said, 22 m^3/month/household are within a likely range of consumption levels.

26. **EPAL with-Bita Cash-Flow Analyses.** Cash flows for EPAL (with project) were projected under the same scenarios as the above rate-of-return sensitivity analyses, with the exception that the increase in capital costs was not analyzed, as it does not affect operational cash flows. The attached show the cash-flow impacts of the various sensitivity scenarios on EPAL's overall cash flows. The sharp improvement in cash flows in the early years shown in the chart below reflect (i) the rapid increase in customer metering between 2019 and 2023, which are assumed to

be accompanied by an improvement in the overall collection ratio and (ii) the commissioning of the Bita WTW and sale of Bita water beginning in 2024. The more gradual increases from 2025 onward primarily reflect the increases in customers in the Bita service areas.

27. The chart shows that there are relatively small changes in cash flows related to the reduction in beneficiary households, and the increase in operating costs.[56] The reduction in per-beneficiary water consumption has a somewhat higher impact, while the decrease in the collection ratio has the highest impact. In addition, because the decrease in the collection ratio affects all EPAL operations (and not just those related to the Bita investments), the impacts are evident both before and after the commissioning of the Bita works in 2024, including the fact that EPAL cash flows would continue to be negative until 2023 even if collections of metered households improves to 60 percent. This highlights the critical importance of EPAL's collection efforts (and, linked to that, the implementation of a comprehensive metering program) in its financial viability.

Figure A3.3: Projected EPAL with-Bita Cash Flows, 2021 - 2043 AKZ million, without inflation



[56] The relatively small change resulting from a decrease in direct beneficiaries is due to the fact that excess water from the Bita supply areas is assumed to be consumed by households in other EPAL service areas.

ANNEX 4: SAFEGUARDS POLICIES, IMPLEMENTATION ARRANGEMENTS AND MONITORING

1. The project is expected to have overall positive E&S impacts by substantially improving living conditions through the provision of reliable connected potable water service to users, thereby improving human and environmental health outcomes for the population to be served. The project falls in category B because no significant negative E&S impacts are expected, and because impacts may easily be mitigated using appropriate measures. As summarized in the Datasheet, four World Bank E&S safeguard policies are triggered: Environmental Assessment OP/BP 4.01; Natural Habitats OP/BP 4.04; Physical Cultural Resources OP/BP 4.11; and Involuntary Resettlement OP/BP 4.12.

Environmental and Social Safeguards

2. **Environmental Assessment (OP/BP 4.01).** An ESIA was has been prepared in 2018, reviewed by an independent reviewer in February 2019 and updated from March to April 2019. The objectives of the review were to ensure that these safeguards instruments: (a) have adequately identified gaps and inconsistences between national legislation and World Bank safeguards policies; and (b) to ensure that the safeguards instruments adequately identify the potential environmental and social impacts of the Bita Project as well as the required mitigation measures. The ESIA results were presented to the local population, non-governmental organizations (NGOs), Angolan administration and local authorities from May 21, 2018 to September 19, 2018. A total of 270 people attended the meetings, 58 of whom asked questions and/or gave their comments on the project. All environmental and social preliminary mitigation measures listed in the ESIA will be consolidated in an ESMP. This ESMP will clearly define: (i) E&S requirements; (ii) roles and responsibilities of each partner in the implementation and supervision of ESMP; and (iii) timeline and resources required for implementation. Suez Environment – Mota-Engil consortium, Centro Cerro, Somague, and Sinohydro were awarded construction contracts and the six (6) remaining DB contracts (lots B8 to B13) for the installation and retrofitting of distribution networks and customer connections are currently under tender and expected to be formally awarded soon.

3. Environmental and social mitigation measures linked to construction activities were incorporated in the bidding documents for the contractors. Contractors will submit their ESMP as part of tendering requirements. The ESMP will be revised prior to the commencement of construction works to ensure they have the capacity and procedures in place to manage identified E&S risks. Mitigation measures to be outlined by contractors for civil works in its ESMP will include, waste management plan, hazardous materials management plan and effluents management plan. A monitoring plan will be put in place by the civil works contractor to regularly monitor: (i) treated domestic/sanitary effluents; (ii) treated effluents from concrete batching plants; (iii) treated lixiviates from landfill station; (iv) treated drainage from mechanical workshops; and (v) particulate emissions along access roads and sensitive receptors. Results will be reported as part of the contractor monthly report to EPAL. Each contractor will produce a site specific Occupational, Health and Safety Plan and related procedures that refer to identifying and minimizing hazards to workers; providing appropriate equipment; identifying preventive and protective measures; training of workers; documenting and reporting accidents, diseases, incidents, and near misses.

4. EPAL will include a set of labor and working condition requirements in the construction contracts that provide the ability to terminate contractor relationship for serious or repeated violations of labor law. For example, specific contract clauses (i) describe penalties that can be used as leverage to address late payment of salaries of contractors' workers; and (ii) provide technical requirements for workers' accommodation aligned with

IFC/EBRD workers' accommodation guidance note (2009). EPAL will also monitor E&S performance of contractors and sub-contractors and undertake internal labor audits during the construction period. A grievance mechanism will be established covering all workers, including contractors and sub-contractors.

5. MinEA is planning to hire an Independent Safeguards Auditor (ISA) firm to assist MinEA and EPAL in meeting its responsibilities to bring the Bita Project through the detailed design and construction periods, to support implementation and monitoring of the ESMP. ToR for Independent Safeguards Audit (ISA) Services were reviewed and cleared by the World Bank in May 2019. The independent auditor will inter alia review the draft/existing ESIA documentation to determine the validity of the studies undertaken and identify where necessary additional studies or consultation need to be undertaken. The Auditor should also review the final ESIA prepared by each of the contract lots.

6. **Natural Habitats (OP/BP 4.04).** The project is not located in any of Conservation International's Biodiversity Hotspot or High Biodiversity Wilderness Area, or within an Endemic Bird Area. There are no Protected Areas or Internationally recognized areas for biodiversity within or near the project area, either upstream or downstream. However, the project indirect influence area includes the coastal mangroves within the Bita area, the the Ilhéu dos Pássaros[57], and Kissama (South of Luanda). All these critical or sensitive areas could be affected indirectly by the project. The ESIA prepared by the Borrower includes provisions to ensure that likely negative impacts to natural habitats are captured and taken into consideration during sub projects preparation and implementation.

7. **Physical Cultural Resources (OP/BP 4.11).** The policy has been triggered because the proposed project will involve excavations and earth movements for civil works and this may unintentionally affect sites or objects of significant archeological or cultural value. Chance Find procedures have been included in the ESIA to address OP/BP 4.11 basic requirements. Contractors will be contractually required to develop a chance find procedure as part of their integrated management system and to communicate EPAL, at least 15 days in advance, the perimeter of each new area to be stripped as to allow archeologists to evaluate the risk of chance finds and put in place the necessary procedures.

8. **Involuntary Resettlement (OP/BP 4.12).** The policy has been triggered as civil works involving water supply systems may result in physical or economic displacement affecting households and businesses. Specifically, anticipated impacts in some lots include loss of crops/fruit trees, temporary or permanent loss of access to arable land, and/or temporary (or permanent) relocation of business enterprises. A RPF has been prepared and outlines the principles and procedures to be followed in relation to land take, land restrictions, and impacts on households and/or businesses Specific sub-projects in various Lots may, upon completion of detailed design, require the development of Resettlement Action Plans (RAPs). The RAP will outline detailed arrangements for compensation of PAPs (including clear eligibility criteria, detailed entitlements matrices, procedures for identification of affected persons and valuation of assets, etc.) as well as organizational responsibilities for RAP implementation.

9. **Disclosure of safeguard documents**. The safeguard instruments (ESIA and RPF) have been prepared, consulted upon and finalized. The ESIA and RPF reports have been approved by the World Bank, with the condition that a) EPAL further conducts social and environmental audit of Lot B4; b) the project clarify budgeting assumptions for safeguards related tasks under the project. The approved appraisal stage ESIA and RPF have been

[57] Designated as Integral Natural Reserve under the Integrated Biodiversity Assessment Tool (IBAT), and as Category IV Species/Habitat Management Area by International Union for Conservation of Nature (UICN).

publicly disclosed by EPAL in Portuguese and by the World Bank on May 14, 2019 and May 13, 2019, respectively. The central ESIA authority on impact assessment will clear the current version and issue the license. The project is well placed to comply with all relevant World Bank safeguard and national policies and has met the requirements of the World Bank's Disclosure Policy.

Implementation arrangements

10. The PIU within EPAL will appoint one environmental, one social safeguards focal point to oversee the implementation of safeguard instruments, and one community relations specialist in charge of the GRM. All three focal points shall be full time and dedicated to the Bita/System 4 throughout the project life cycle. As EPAL has no experience with World Bank safeguards requirements, training and capacity building is required to ensure proper implementation of E&S safeguards instruments in compliance with the World Bank safeguard policies. An adequate budget shall be allocated under the project to ensure satisfactory implementation of the instruments as per the World Bank's safeguard policies, including requirements for compensation of PAPs under OP 4.12, implementation of measures relating to the management of GBV risks (including but not limited to the conduct of a GBV risk assessment and mapping of services, training of EPAL and contractor personnel), and implementation of an effective and transparent GRM.

11. A PIU structure has been proposed which will include a GRM Secretariat to oversee the development and implementation of a GRM acceptable to the World Bank. The GRM will be transparent, accessible, predictable, and fair. PAPs will be informed of their rights and will have access to multiple uptake channels to present their grievances. The GRM will address both non-land and land-related grievances, and specific procedures will be in place to address sensitive issues such as GBV and sexual exploitation and abuse (SEA).

12. A detailed POM will be developed by EPAL before the guarantee effectiveness. POM will set out the implementation processes, FM procedures, compliance with Environmental and Social Management requirements, including gender and labor influx considerations. Specific budgets for implementation of all subsequent downstream ESIAs will be included in specific ESIAs. However, as an approximation, the total budget estimated for ESMP implementation is 2 percent of total project costs. Safeguards implementation responsibilities are outlined in Table A4.1 below:

Table A4.1: Safeguards Implementation Responsibilities

Entity	Responsibility and Safeguards Capacity for ESMP Implementation
EPAL/PIU	Responsibility - EPAL is the lead government institution for implementation of Bita project and its PIU shall be responsible for oversight role and the implementation of mitigation measures and general compliance of the project with any permits, licenses and Approval Conditions and related regulations and standards on environment. Report on implementation of environmental and social aspects, including incidents and resolution of complaints and grievances regarding the project activities by the stakeholders. Include environmental, social, health and occupational safety requirements in the bidding documents and contracts. The safeguards specialists will train and guide other key stakeholders on management of environmental and social aspects including issues of health/occupational safety and vulnerable groups.

Entity	Responsibility and Safeguards Capacity for ESMP Implementation
Project Management Consultant Firm	Responsibility - on behalf of EPAL PIU, the PMC is responsible for oversight and coordination of project activities for compliance with safeguards policies, including monitoring and reporting and management of the resettlement compensation mechanisms and escrow account
Ministry of Environment, including devolved units	Responsibility – review and approve ESIAs and project briefs as well as monitoring project implementation in accordance with the national Environmental laws and the respective regulations. Capacity – Ministry of Environment does not have adequate capacity to monitor this project. Therefore, there is need for capacity building and close coordination with this Ministry.
Municipalities	Responsibility- To assist on: the dissemination of information about the safeguards instruments prepared and GRM; the preparation of consultation meetings and encourage all project -affected persons and other stakeholders to participate and use the mechanism for transparency and better project implementation.
Contractors	Responsibility – Actual implementation of the project on the ground including installations. The Contractor will also be responsible for planning, implementing and reporting on mitigation measures during the execution of the project works. Capacity – All Contractors are known at this point. Contractors shall be required to develop Contractor's ESMP ahead of start of works. All contractors will be required to appoint seasoned safeguards staff (at least 03) for the implementation of their ESMPs. Staffing will match scope of works.
Supervision consulting firms	Responsibility – all appointed supervision consulting firms will ensure that execution of works by all contractors comply with established cost, quality, delivery deadlines, as well as compliance with Environmental, social and occupational safety requirements. Supervision firms must have a sufficient number of EHS Inspectors to adequately monitor E&S performance of DB Contractors, and DB Contractors must have an adequate number of Safety Supervisors. Capacity: the supervision firms will retain one EHS inspector (36 months) to monitor contractors' EHS performance and one Environmental Engineer (39 months).
Non-Governmental Organizations	Responsibility – NGOs and other community-based organizations may, in formal coordination with PIU and PMC, contribute to facilitate information, participation, monitoring and grievance processes as part of project compliance with safeguards policies.
The World Bank	The World Bank will be responsible for review and clearance of ESIAs as well as offering implementation support supervision to the project's environmental and social performance through missions. The World Bank will also be responsible for reviewing regular monitoring reports and officially disclosing the ESIAs on its website. Technical guidance may also be provided by the World Bank to the PIUs as needed from time to time.

13. The safeguards focal points within the PIU shall be responsible for the following (however not limited to):

a) To oversee implementation of the project ESIA, RPF and the contractors' ESMPs and RAPs, coordinating the development of lot-specific ESIAs and RAPs once the design work for each is complete, and bringing the results together in a Final ESIA and RAPs;

b) To ensure that all contractors have obtained all the environmental licenses/permits prior to commencement of works and that the C-ESMP is approved by EPAL and World Bank;

c) To ensure full compliance with the World Bank's Operational Policies triggered by the project as well as applicable national legislation;

d) To supervise the implementation of the project's GRM. This includes active monitoring of all complaints received, TA for the resolution of complaints, and regular reporting to the PIU and the WB; and

e) To provide leadership and TA for the planning and implementation of all public participation and consultation processes required for the preparation and implementation of the safeguard instruments referenced above. This includes active participation in the events as well as the preparation of reports;
f) To undertake regular field visits to project sites to monitor compliance with the environmental and social safeguard measures and to identify gaps that need to be addressed. Reports of the field visits should be included in the regular project reports, and;
g) Actively participate in implementation support missions with the World Bank and provide timely and concise reports on the status of safeguards compliance and implementation of the GRM.

14. Under the responsibility of EPAL, DB contractors will prepare environmental and social (E&S documents for civil works planned in the respective Lots – which will be approved by a PMC firm and will be supervised during implementation by Supervision Consultants. The PMC firm will coordinate and be responsible for the QA/QC of the work being carried out in each of the Lots. The E&S Focal Points at the PIU (EPAL) will receive supervision reports from each of the Lots on a monthly basis, and will (a) provide feedback (advice and guidance) to D&B Contractors relating to E&S issues; (b) undertake field visits (audits and/or consultations) when necessary; and (c) inform EPAL management of critical unresolved E&S issues when escalation is deemed appropriate.

Resettlement Compensation Mechanism

15. It is the responsibility of the GoA, via EPAL, to compensate the affected parties for project-induced physical and economic displacement, whether this be via cash payments, replacement of lost or damaged assets, moving allowances and/or other entitlements. To ensure that resettlement is conducted in line with the Resettlement Policy detailed in Section 5 of the RPF and World Bank environmental and social safeguard policies, EPAL will recruit a professional consulting (PMC) firm with relevant experience and qualifications to manage resettlement implementation, including the payment of compensation and other eligible resettlement-related expenditures. In addition, the GoA, via EPAL, shall also be responsible for establishing secure compensation payment mechanisms. The full costs of resettlement activities to achieve the objectives of the project will be included in the total project costs.

16. The contract of the PMC firm should explicitly include the following specific tasks:
- Prepare the construction-stage ESIA (or "ESIA2"), based on an update of the appraisal-stage ESIA, and consolidation of contractor-generated ESIAs based on final designs.
- Support EPAL in relevant disclosure and communications.
- Manage and monitor the project's E&S requirements and compliance, including coordination, oversight and consolidated reporting of activities under ESIA/ESMPs, RPF/RAPs as conducted by D&B Contractors and Supervision, including environmental management, resettlement implementation, GRM implementation, GBV risk management, and CE activities.
- Manage a resettlement compensation mechanism and *escrow account*, for payments of land acquisition and compensation to affected persons on behalf of EPAL/MinEA (as per specific ToR to be approved by the World Bank). Indicative account management requirements are summarized in the paragraph below:

  An escrow account will be opened to facilitate the financing of resettlement costs under the Luanda Bita Water Supply Project. This account will be managed in accordance with the country's Public Financial Management rules and regulations, FM arrangements acceptable to the World Bank, and requirements of the financial agreements between the Republic of Angola and *commercial banks. For the management of this escrow account, a fiduciary agent (a firm) will be recruited under agreed ToR. The fiduciary agent should have a qualified and experienced certified financial accountant to handle the escrow account and it should maintain adequate accounting systems and procedures to record the transactions of the escrow accounting, including adequate supporting documentation. The accounting system should be capable of producing the required financial reports. The fiduciary agent should produce unaudited interim financial reports every six months and the escrow account should be audited annually by a private audit firm acceptable, in accordance with International Standards on Auditing as issued by the IAASB. The audit report should be available to the stakeholders within six months after the financial year-end.*

17. The above-mentioned tasks relating to the project's E&S compliance will require sufficient personnel to address situations on the ground and to ensure implementation on a day-to-day basis. The following is anticipated with respect to resettlement:

- With the DB approach, the project will entail an initial phase during which contractors will develop detailed designs, ESIAs/ESMPs and RAPs, to be approved by the PMC and EPAL. Lots B1, B2, B3, B7 will be developed first, with designs and plans expected to be approved within the first 6 months. Lots B5, B6, B8-B13 will start later, with designs and plans anticipated to be approved between months 8 and 12.
- Thus, the necessary PMC level of effort may entail:
    - In year 1: A resettlement coordinator (senior resettlement practitioner/expert) and a Certified Accountant, supported by five-six field technicians who would coordinate and supervise a team of consultants sub-contracted by the project. The technicians and sub-contracted consultants should be familiar with the affected communities and have experience in outreach/sensitization, facilitation, and mediation, and may be assigned to work on specific Lots.
    - In year 2: Only a resettlement coordinator and a Certified Accountant may be required, provided that the compensation process is largely complete. The resettlement coordinator may require additional support from field technicians.

Valuation and Compensation.

18. In implementing the RAPs, the valuation process will include:

- Measures to ensure PAPs are:
    - Informed about their options and rights;
    - Consulted on, provided with and offered choices from technically and economically feasible resettlement alternatives; and
    - Provided with prompt and effective compensation at full replacement cost for losses of assets attributable directly to the project.
- If the impacts include physical relocation, the project will ensure PAPs are:
    - Provided with assistance, such as moving allowances, during relocation; and
    - Provided with residential housing, or housing sites, or, as required, agricultural sites for which a combination of productive potential, location advantages, and other factors are at least equivalent to the advantages of the old site.
- Where necessary to achieve the objectives of the Resettlement Policy, the RAPs/ARAPs will also include measures to ensure PAPs are:
    - Offered support after displacement, for a transition period, based on a reasonable estimate of the time needed to restore their livelihood and standards of living;

- Provided with development assistance in addition to compensation measures; and
- Provided with land preparation, credit facilities, training, or job opportunities.

19. Preference will be given to land-based resettlement strategies for displaced persons whose livelihoods are land-based. Thus, compensation will include:

- Resettlement on public or private land acquired for resettlement;
- Where replacement land is offered, it must provide a combination of productive potential, location advantage, and other factors at least equivalent to those of the land taken; or
- If land is not the PAP's preferred option or sufficient land is not available at a reasonable price, non-land-based options giving opportunities for employment or self-employment will be provided as well as cash compensation for land and other assets lost. Lack of adequate replacement land shall be demonstrated to the World Bank.

20. Payment of cash compensation for lost assets may be appropriate where:

- Livelihoods are land-based but the land taken for the project is a small fraction of the affected asset and the residual is economically viable;
- Active markets for land, housing, and labour exist, PAPs use such markets, and there is sufficient supply of land and housing;
- Where livelihoods are not land-based. Cash compensation levels will be sufficient to replace lost land and other assets at full replacement cost in local markets.

21. In a situation where PAPs incur losses of income from business, the compensation calculation will include:

- Estimation of net monthly profit based on records or operator's statements and cross-checked by an assessment of visible stocks and activity;
- Application of this monthly profit to the period during which the business is prevented from operating;
- A disturbance allowance of 10 percent of total compensation.

Implementation Procedures

22. The project will identify all PAPs; not only those living on construction sites and rights of way (ROW), but also those located in close proximity to these sites and to any others that project activities may adversely impact.

23. Vulnerable groups and individuals will be identified via socio-economic surveys and preparation of the RAP. The following will be included: (a) identification of vulnerable persons and the causes and impacts of their vulnerability; (b) identification of required assistance at various stages of the resettlement process: negotiation, compensation, and relocation; (c) implementation of measures necessary to assist vulnerable persons; and (d) continued M&E, after resettlement and/or compensation has taken place, if needed with the potential participation of relevant NGOs/CBOs. .

24. Upon completion of valuation, each eligible PAP will sign a compensation certificate together with the authorized representative of GoA. The compensation certificate will clarify mutual commitments as follows:

- For GoA, through EPAL; commitment to pay the agreed compensation, including all its components (resettlement package, in-kind and cash compensation) and managing the resettlement process via a qualified consultant (PMC firm); and
- For PAPs, commitment to vacate the land by the agreed date.

25. The format of payment certificates must be easily understandable to PAPs. Compensation will be paid prior to the PAPs vacating land. The process of vacating land will be monitored by the project.

26. Several stakeholders may be involved in the resettlement implementation process. The financial resources to deal with resettlement will be determined from the detailed design and outlined in each RAP. The GoA will allocate the necessary resources to carry out this task.

Monitoring and Evaluation

27. M&E is generally divided into distinct areas of focus, based in part on the phases of resettlement implementation. *Activity monitoring* focuses on resources utilized and on immediate results (inputs and outputs). It starts at the beginning of the resettlement process and is done on an ongoing basis. *Impact monitoring* looks at various outcomes for PAPs, such as gaining access to suitable agricultural land or re-establishing businesses (results or outcomes). It should be done by an independent expert and carried out from the beginning of the resettlement process. *Compliance reviews* are to be conducted on an ongoing basis (by World Bank-appointed Consultant/s), should be based on monitoring indicators, and assess compliance of the resettlement program with World Bank policies.

28. Internal and external M&E are key components of the RPF and the subsequent RAPs that are to be prepared and have the following aims:

- To monitor specific situations or difficulties arising from implementation and of the compliance of implementation with the objectives and methods set out in the RPF and RAPs; and
- To evaluate medium and long-term impacts of resettlement on affected households' livelihoods, environment, local capacities and economic development.

29. The internal M&E of land take, asset loss, and resettlement activities will be undertaken by EPAL through the PIU, working closely with the affected urban district and municipality administrators, and the results reported to the World Bank. The purpose of monitoring land take, asset loss and resettlement, and the payment of compensation in cash or kind is to evaluate the progress of RAP implementation, thus ensuring that PAPs' standards of living are maintained or, preferably, improved. In particular, the evaluation should determine:

- Whether PAPs were duly consulted and compensated in full prior to the commencement of construction works;
- Whether PAPs have a higher standard of living than before, have the same quality of life or are worse off than before; and
- Whether there are any compensation payments still owed or grievances still to be resolved.

30. The affected communities will collaborate in identifying monitoring indicators that will allow vulnerable individuals, families, or wider groups to be identified in advance in order that any required additional assistance can be provided. The communities will also participate in the external evaluation of the results of the resettlement.

31. Evaluation indicators will be simple yet robust while also being visible and verifiable in respect of the nature of impacts. Generally, they will be based upon a comparison of land and assets lost with those with which they have been replaced. For households, this will include location, size and quality of accommodation, availability

of community and social facilities, distance travelled to work, residual impacts on women, on children and their schooling, on the elderly and infirm, and on household income. For business enterprises, indicators will include relocation in relation to customer base, suppliers, residual impact on labor and turnover. For agricultural holdings it will include area of tillable land, soil fertility, access to water, irrigation systems and to markets. For all types of PAPs land prices shall be monitored to measure and mitigate the impact of land speculation.

32. **M&E Monthly Reporting.** The Community Liaison Officer's (CLO) GRM Secretariat will keep records of the RAP implementation and progress and will submit short tabulated reports to each Monthly Progress Meeting. These reports will take the form of Table A4.2. GBV and SEA cases will be reported in summary under separate cover with restricted circulation.

Table A4.2 Indicative Format for RAP and GRM Monthly Reporting (By Lot)

Land Take and Asset Loss	• No. total plots to be acquired; • No. plots involving resettlement; • No. heads of household and family numbers; • No. special needs cases; • Summary of nos. of houses, other buildings, different assets, etc • No. acquired to end of reporting period; • No. awaiting EPAL valuation; • No. EPAL's offer accepted, pending, rejected and offer; • No. appealed via formal Angolan procedures, accepted, pending, refused; • No. appealed to Customary procedures, accepted, pending, refused; • No. submissions to CLO, pending; • No. sent to Grievance Committee, accepted, pending, refused; • No. passed to Appeals Committee, accepted, pending, refused; • Details of priority sites – those that are or may delay construction; and, • Details of corrective actions and outcomes.
Non-Land Grievances:	• No. total grievance submissions received; • No. plots involving resettlement; • Summary of nos. by different categories, e.g., damage, noise, dust, theft, etc; • No. inventoried and acknowledged; • No. investigated/ awaiting investigation or additional information; • No. sent to Grievance Committee, accepted, pending, refused; • No. passed to Appeals Committee, accepted, pending, refused; and, • Details of corrective actions and outcomes.

33. **Quarterly Monitoring**. In addition, there will be a Quarterly RAP Implementation Report that will:

- Summarize the progress reports for the reporting period;
- Discuss the degree to which targets are being met;
- Summarize payments to date of compensation for different purposes;
- Discuss long-pending issues and those that are or may delay construction;
- Assess the efficacy of the resettlement exercise;
- Report on the involvement of the community in decision making and the implementation of the project; and,
- Make recommendations for changes to current resettlement and GRM procedures.

34. **Resettled PAP Surveys.** Post-resettlement surveys of resettled PAPs will be conducted to determine:

- Whether the compensation sums and any additional non-monetary assistance were delivered as agreed within the agreed time frame;
- PAP and PAP household satisfaction with the compensation and assistance;
- Any need to deal with any unforeseen situations involving additional compensation or other resettlement measures;
- Satisfaction with the resettlement process; and
- Efficacy of treatment of grievances and other issues raised by PAPs.

35. These surveys should be undertaken on three occasions; 3-months, 12-months and 24-months after resettlement, by an independent team – i.e., a third party, such as an NGO – using a previously defined questionnaire. Where corrective actions are required, a follow-up survey to ensure they were adequate should also be carried out.

36. At 12- and 24-months, the team should also evaluate the positive and negative changes in the standard of living of the PAP households resulting from the project. The study should gather information on the viability and suitability of the homes, health and education, access to services such as water, public transport, schools and health centers.

37. An external evaluation should be conducted by a World Bank mission (or World Bank-appointed evaluation Consultant), whose task will be to monitor and evaluate the overall performance of the project. Specific E&S aspects such as resettlement, consultation, and GRM processes will be evaluated. In the case of the resettlement program, a Completion Audit will be carried out at the end of the program to establish whether livelihoods have been improved or at least restored (and whether these are sustainable).

ANNEX 5: PROCUREMENT AND CONTRACT RISK REVIEW AND MITIGATION

1. **Context**: In accordance with national procurement law, 20/10 of September 2010 (*Lei da Contratação Pública n. 20/10 de 7 de Setembro 2010*) (the "2010 Procurement Law"), MinEA, represented by EPAL, procured and awarded seven DB works contracts together with construction supervision contracts and an overall project management contract for the purpose of the Bita Project. These contracts were entered into before the involvement of the World Bank in the project.

2. **Procurement Review**: Consistent with the World Bank Procurement Regulations for IPF Borrowers, Section II. General Considerations – 2.2, the Procurement Regulations do not apply to the procurement of goods, works, non-consulting services, and consulting services under projects where the World Bank provides Guarantees. However, in such projects, consistent with IBRD's Articles of Agreement, the World Bank assesses the economy and efficiency of the contracts and analyzes risks and proposed mitigation arrangements. For this project, the World Bank undertook an independent procurement assessment and a detailed contract risk review of the DB and construction supervision contracts for the Bita water production component. However, the World Bank has communicated to EPAL and MinEA its expectation that to the extent the issues identified in the review of the Bita water production contracts also arise in the Bita water distribution network contracts, they should be addressed in a similar manner in those other contracts as well.

3. **Independent Procurement Assessment:** The World Bank engaged an independent consultant to review bidding documentation, procurement process and the awarded contracts for Lots B1-B7. Considering the ex-post nature of this assessment, the scope of review was limited to assessing the competitiveness and value-for-money of this procurement. The consultant reviewed the following aspects and provided recommendations for further consideration:

(i) General acceptability of applied procurement methodology: EPAL awarded the contracts based on an application of "the most economically advantageous offer" (*a proposta economicamente mais vantajosa*) award criteria under Article 99 of the 2010 Procurement Law. EPAL used the multi-criteria value measurement technique to combine 70 percent weighting score for technical and administrative content and 30 percent weighting score for the financial offer, thus considering different quantitative and qualitative considerations in bid evaluation.

(ii) Choice of bidding criteria: EPAL used open procurement procedures where calls for tenders were open for all interested bidders. There was no distinct pre-qualification or selection phase; instead, all the bids that satisfied the bidding criteria were evaluated for technical and financial parameters. The review identified certain inconsistencies in design of evaluation criteria, including that the minimum technical performance standards were not defined in the bid documents for a DB contract. Instead, the design guidelines (*Linhas Directrizes*) were referred to in the bid documents along with detailed specifications to guide the bidders in making bid responses. While DB contracts are not expected to have prescriptive technical specifications, the review noted that the bid process did not favor any particular type of technology and therefore was considered neutral to all bidders.

(iii) Methodological correctness of steps applied: The review raised some shortcomings in the understanding and application of evaluation criteria in terms of technical and non-technical attributes to be evaluated. This could have created different interpretation of scoring levels within the evaluators. In addition, the review also

noted the calculation of technical scores were not normalized. The consultant recalculated by normalizing the technical scores and concluded the evaluation results were not changed.

(iv) Contractual and contract management issues: The review identified that the original form standard bid documents omitted relevant minimum technical specifications, which were subsequently complemented through Linhas Directrizes to complete the technical content. Similarly, financial templates defining the schedule of payments were also missing from the standard form bid documents. However, the review noted that the bid responses were satisfactory, although the payment schedule was not detailed enough. The review also noted that even though the Bita contracts were supposed to be DB contracts, effectively they can be considered as re-measurement contracts due to the lack of minimum technical specifications and lack of a milestone payment schedule. This emphasizes increased risks for EPAL and its advisors in managing the delivery of Bita contract outputs. The review recommended that additional risks for EPAL, due to underlying Bita contracts, be reviewed and adequate management processes included as part of the guarantee preparation process.

(v) Optimal project design and price estimates: Lack of strong technical and financial studies was identified as one of the major weaknesses in the review. The reviewed Bita contracts were procured based on a Master Plan without detailed feasibility studies and optimal scoping of the project. The review recommended that the Bita Project design be assessed for optimal scoping and pricing, including technical, economic and financial feasibility.

(vi) Value for money considerations: An assessment of value for money was made through review of various parameters such as procurement methodology, cost estimation and price comparisons. The review noted that the Bita contracts were considered to have adequate value for money, subject to further confirmation of technical feasibility, optimization of project scope and better management of contract risks.

4. **Conclusion of Procurement Review**: The review concluded that salient features of the country procurement systems were generally observed in the procurement of the reviewed Bita contracts, in particular: (i) tenders were duly advertised in the local media; (ii) bidders applied within the time provided for bid preparation; (iii) evaluations were made based on criteria consistent with the law; and (iv) award recommendations and contract signings were consistent with the bid evaluation reports. However, the review identified some weaknesses in comparison to good industry practices. One of the major weaknesses was the lack of a proper feasibility study and optimization of scope and sizing that underpins the rationale for these Bita contracts. In addition, the review concluded that contract risks needed to be reviewed in detail and adequate mitigation and management processes prepared.

5. **TFS:** Following the recommendations of the independent procurement review, the World Bank asked EPAL to undertake a new TFS for the Bita Project, updating population and demand data and integrating the development of distribution systems. EPAL commissioned the project management consultant DAR-Angola to undertake the study. The TFS recommended, considering the revised current and projected demand for water, an optimization of the project scope and reduction of the Bita water production capacity from 6 to 3 m^3 per second. EPAL agreed to the recommendation and with the assistance of DAR-Angola, has prepared amendments to Bita contract lots B1, B3 and B7 to reflect the optimized scope and negotiated the optimized scope with the respective DB contractor.

6. **Contract Risk Review**: In addition to capacity optimization, the World Bank also undertook an independent assessment of contract risks in the project management contract and the Lot B1-B7 construction supervision contracts. The objective and scope of the review was limited to identifying the key contract implementation risks associated with these contracts and making recommendations as to how EPAL might consider addressing those

risks. The review identified a number of key risks that the contracts did not allocate in a manner consistent with good industry practice and recommended appropriate amendments to the contracts to more appropriately allocate and manage the risks. Below is a summary of the actions recommended to be taken by EPAL as identified in the risk review and the status of those actions:

i) **Recommendation**: EPAL should negotiate very precisely the price of contractor's studies and engineering design for all lots and each part of every lot, as recommended by the TFS, and values should be calculated from the bills of quantities (BoQs) included in the contractors' proposals.

Actions Taken: Where applicable, the technical scope of the Bita contracts has been renegotiated and the revised pricing has been included as part of the final project cost in the amended contracts, where applicable.

ii) **Recommendation**: EPAL should define technical milestones for each contract in question so that the contractors can transform their BoQs into milestone payment schedules, transforming the existing contracts into real design–build contracts. EPAL should have an overall payment schedule prepared to facilitate coordinated management of the multiple interdependent DB lots by EPAL through the project management consultant;

Actions Taken: Each DB contractor was asked to present a milestone payment schedule and the project management consultant has consolidated then into an overall payment schedule for the project.

iii) **Recommendation**: EPAL should improve (in favor of EPAL) and/or supplement certain contractual provisions, including in relation to performance security, limitation of liability, environmental and social safeguards compliance and reporting, permitting and licensing responsibilities, final acceptance of works, approval/rejection/dispute of invoices, establishment of target completion deadlines, and the process for consideration and approval of change orders. (Please see Table A 5.2 for a summary and timeline of the steps in the process for review, approval and payment of invoices under the DB contracts being supported by the IBRD-guaranteed financing. This summary and timeline are based on discussions with EPAL, the PMC, MinEA and MinFin and will be further refined in the POM.)

Actions Taken: The contracts are being amended to address material recommendations made by the World Bank team. These amendments are subject to final agreement by the contractors and the head of the executive branch.

7. **Contract Risk Management**: EPAL and its advisors have agreed to implement many of the recommendations of the independent contract risk review and EPAL has prepared and is concluding negotiation of amendments to the relevant contracts. At the Appraisal stage, EPAL confirmed that, with the exception of price changes related to the changes in scope under the DB contract for Lot B1, the assignment of the remaining scope under the DB contract for Lot B3 to the Lot B1/B7 DB contractor, and the addition of agreed tasks to the scope of work under the project Management Contract, the final contract prices have been confirmed, subject to presidential approval. The Table A2.4 presented in Annex 2 already reflects the final pricing of each contract.

8. **Procurement of Water Distribution Network**: From the recommendations of TFS and of the World Bank, the Bita system has been upgraded to include associated water distribution networks. Works and supervision will be procured using the Public Contracts Law No. 9/16 dated 16 June 2016 (*Lei dos Contratos Públicos n. 9/16* (the "2016 Public Contracts Law"). Bidding documents were prepared by DAR-Angola (project manager) for EPAL and were shared with the World Bank for review. The World Bank provided some comments in order to improve the compliance of the bidding document with the provisions of the 2016 Public Contracts Law. The procurement

procedure for these works is underway. The main recommendations provided by the World Bank, based on the already procured works for the Bita system, were as follows: (i) there is a need for studies justifying optimal project design; and (ii) to use (in the bidding document) and apply (in the evaluation) consistently the evaluation criteria as indicated in the bidding document. More generally, the World Bank team asked EPAL to take into account the recommendations made by the World Bank for the improvement of the already awarded contracts (lots B1-B7) for the water distribution network contracts (lots B8-B13).

9. **Contract Status**: The status of each of the B1-B13 contract lots and consultancy contracts are at different stages of award, execution and final approval by the head of the executive branch. The following table sets out the status of such contracts and outstanding issues at the completion of Appraisal stage. As indicated above, the final approval of all the contracts will be a condition precedent to the guarantee effectiveness, however, the team will continue to work with the GoA in advancing these prior to the effectiveness date.

Table A 5.1 List of Outstanding Actions as of Appraisal Stage

Contract/Amendment	Status at Completion of Appraisal	Outstanding actions
1. Project Costs and Timetable	PMC has informed IBRD that it has received draft milestone and payment schedules from DB contractors for each of Lots B1-B13 and has prepared a preliminary global project timetable, and milestone and payment schedule.	- EPAL to agree on final global implementation timetable and payment schedules; and individual milestone and payment schedules acceptable to IBRD.
2. Amendments to DB contracts for Lots B1, B2, B3, B5, B6 and B7	- IBRD has received the near-final drafts provided to the respective contractors (except for the amendment for Lot B3). Most risk allocation-related issues for which IBRD requested amendments have been addressed in these drafts.	- Incorporation of invoice revision/correction process satisfactory to IBRD. - Attachment/incorporation of list of ESHS Metrics provided by IBRD. - Provide final draft of amendment for Lot B3. - Confirmation from contractors (*i.e.,* for Lot B3, the B1/B7 consortium) that the final amendments are agreed. - Presidential approval of final amendments. - Signature of amendments.
3. Assignment of DB contract for B3 to consortium for B1/B7	- Not completed	- Obtain presidential approval of assignment. - Provide draft of assignment contract, to be satisfactory to IBRD.
4. Amendments to supervision contracts for B1-B7	- IBRD has received the near-final drafts provided to the respective contractors. Most risk allocation-related issues for which IBRD requested amendments have been addressed in these drafts.	- The draft amendments are titled "Amendment No. 2" but IBRD has not been provided with copies of Amendment No. 1. EPAL to provide for IBRD due diligence review. - Incorporation of invoice revision/correction process satisfactory to IBRD

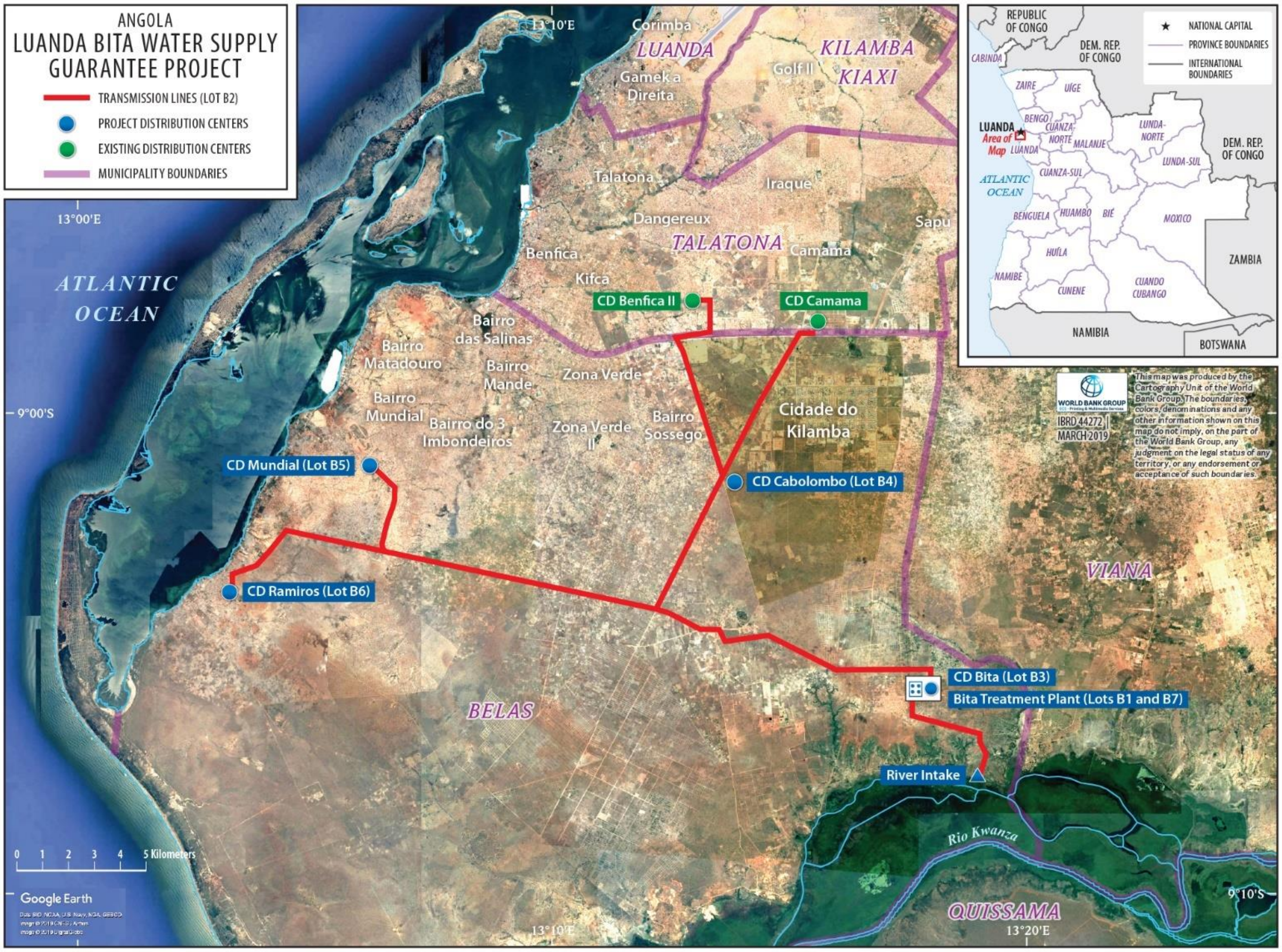
		- Deletion of references to ESHS metrics annex, which are only relevant for the DB contract amendments - Confirmation from contractors that the final amendments are agreed. - Presidential approval of final amendments - Signature of amendments
5. DB contracts for recently procured Lots B8-B13	- IBRD has received and commented on initial drafts provided by EPAL. EPAL informs IBRD that these drafts will be significantly revised to include missing scope and commercial terms and for conformity with key aspects of the DB contracts for Lots B1-B7.	- Obtain presidential approval of procurement evaluation report. - Provide revised drafts for review by IBRD and further revise same to address any comments raised by IBRD. - Confirmation from contractors that final drafts are agreed. - Signature of the contracts.
6. Supervision consultancy contracts for Lots B8-B13	- IBRD has not received drafts of these contracts, but expects them to be substantially identical (and to reflect the agreed amendments) to those for Lots B1-B7	- Provide initial drafts for review by IBRD and revise same to address comments raised by IBRD (if any). - Confirmation from supervision consultants that final drafts are agreed. - Signature of the contracts.
7. PMC for Lots B1-B13 and related tasks	- IBRD has received and commented on initial draft, including to recommend certain additions to the Project Manager's scope of work.	- Provide revised draft of PMC reflecting additional agreed tasks and addressing other IBRD comments. - Confirmation from DAR and EPAL that final drafts and contract price have been agreed. - Signature of PMC.
8. Amendment of B4 DB contract for compliance with World Bank safeguards requirements (*e.g.,* in relation to ESIA, RPF, ESHS metrics annex, etc.)	B4 is integral to the project and must meet applicable World Bank safeguards requirements	- Provide initial draft of amendment for review by IBRD and revise same to address comments raised by IBRD (if any). - Confirmation from respective DB contractor that final draft amendment is agreed. - Signature of the amendment.
9. Confirmation by MinFin of agreed total project cost and that all procurement processes, contracts and contract amendments for the Bita Project comply with Angolan law	- Not completed	- Certification of cost and compliance of all procurement steps as of date of Appraisal completion (May 14, 2019). - Certification to be confirmed after completion of all processes including contract and contract amendment signatures and Approvals from the head of the executive branch.

Table A 5.2 BITA PROJECT – DRAFT CONTRACTOR INVOICE APPROVAL PROCESS – April 30, 2019

	Step in invoice approval process	Time to complete step (assuming no corrections to invoice needed after initial approval by Fiscal)	Cumulative Days
1.	Under the DB contract, the Contractor (*Empreiteiro*) issues each invoice on the first business day of the month following execution of the relevant works.	n/a	n/a
2.	Under supervision contract (*Fiscalização*) the Supervisor (*Fiscal*) approves or requests correction of the invoice.	five calendar days	n/a
3.	Under the DB contract, the invoice must be paid within 40 calendar days after approval by the Supervisor. [***NOTE***: (a) The draft *empreitada* contract amendments propose changing this to 40 *business* days. (b) The amendments to the *empreitada* and *fiscalização* contracts should give EPAL the right, post-approval of invoices by the Supervisor, to request through the Supervisor that the contractor correct the invoice if necessary to meet *empreitada* contract requirements and extend the time period for each day after such a request until the contractor provides the corrected invoice *plus* two days for the fiscal to approve it.]	n/a	n/a
4.	PMC (*Gestor/Coordenador*) approves invoice [***NOTE***: New draft Project Management Contract should obligate the project manager to review and approve the invoice within 3 business days.]	three business days (appr. 5 calendar days)	7
5.	EPAL approves invoice	five calendar days	12
6.	MinEA approves invoice	five calendar days	17
7.	1. MINFIN approves invoice: (a) UTAP (*Unidade Técnica de Acompanhamento de Projectos*); and (b) UGD [***NOTE:*** MinFin to confirm whether it will apply this procedure, or instead rely on MinEA's approval and then audit the invoice post-payment.] 2. MINFIN issues disbursement request under IBRD-guaranteed loan facility (copied to IBRD) requesting that the agent pay the invoice directly to the contractor, with supporting documentation attached.	14 calendar days (provisional)	31
8.	Agent bank reviews disbursement request to confirm it is consistent with the requirements of the loan agreement and then pays the contractor directly.	seven calendar days	38

Note: *A working committee is proposed to meet regularly to track and facilitate invoice payments, consisting of approving entities representatives of DAR, MinEA, MinFin, EPAL.*
Note: *This process assumes firms submit invoices monthly only one disbursement request per month.*

ANNEX 6: MAP


ANGOLA
LUANDA BITA WATER SUPPLY GUARANTEE PROJECT
TRANSMISSION LINES (LOT B2)
PROJECT DISTRIBUTION CENTERS
EXISTING DISTRIBUTION CENTERS
MUNICIPALITY BOUNDARIES
ATLANTIC OCEAN
LUANDA
KILAMBA KIAXI
TALATONA
BELAS
VIANA
QUISSAMA
Corimba
Gameka Direita
Golf II
Talatona
Iraque
Dangereux
Sapu
Camama
Benfica
Kifca
CD Benfica II
CD Camama
Bairro das Salinas
Bairro Matadouro
Bairro Mande
Zona Verde
Cidade do Kilamba
Bairro Mundial
Bairro do 3 Imbondeiros
Zona Verde II
Bairro Sossego
CD Mundial (Lot B5)
CD Cabolombo (Lot B4)
CD Ramiros (Lot B6)
CD Bita (Lot B3)
Bita Treatment Plant (Lots B1 and B7)
River Intake
Rio Kwanza
13°00'E
13°10'E
13°20'E
9°00'S
9°10'S
0 1 2 3 4 5 Kilometers
Google Earth
REPUBLIC OF CONGO
DEM. REP. OF CONGO
CABINDA
ZAIRE
UÍGE
BENGO
LUANDA
Area of Map
CUANZA-NORTE
MALANJE
LUNDA-NORTE
LUNDA-SUL
CUANZA-SUL
BENGUELA
HUAMBO
BIÉ
MOXICO
HUÍLA
NAMIBE
CUNENE
CUANDO CUBANGO
ZAMBIA
NAMIBIA
BOTSWANA
NATIONAL CAPITAL
PROVINCE BOUNDARIES
INTERNATIONAL BOUNDARIES
WORLD BANK GROUP
IBRD 44272
MARCH 2019
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