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R2017-0042/1

February 21, 2017

Closing Date: Friday, March 10, 2017 at 6 p.m.

FROM: Vice President and Corporate Secretary

Angola - Second Water Sector Institutional Development Project

Project Appraisal Document

Attached is the Project Appraisal Document regarding a proposed loan to Angola for the Second Water Sector Institutional Development Project (R2017-0042), which is being processed on an absence-of-objection basis.

Distribution:

Executive Directors and Alternates
President
Bank Group Senior Management
Vice Presidents, Bank, IFC and MIGA
Directors and Department Heads, Bank, IFC and MIGA

Document of
The World Bank

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Report No: PAD1942

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF US$200.0 MILLION

TO THE

REPUBLIC OF ANGOLA

FOR A

SECOND WATER SECTOR INSTITUTIONAL DEVELOPMENT PROJECT

February 16, 2017

Water Global Practice
Africa Region

CURRENCY EQUIVALENTS

December 31, 2016

Currency Unit	=	AKZ
AKZ165	=	US$1

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AFD	*Agence Française de Développement* (French Development Agency)
AfDB	African Development Bank
AMU	Asset Management Unit
DA	Designated Account
DL	Disbursement Letter
DMA	District Metering Area
DNA	*Direcção Nacional de Águas* (National Water Directorate)
DPEAs	*Direcções Provinciais de Energia e Água* (Provincial Department of Energy and Water)
EMP	Environmental Management Plan
EMRP	Emergency Multi-Sector Recovery Program
EPAL	*Empresa Publica de Águas de Luanda* (Luanda Public Water Company)
ERR	Economic Rate of Return
ESIA	Environmental and Social Impact Assessment
ESMF	Environment and Social Management Framework
ESMP	Environment and Social Management Plan
ESSC	Environmental and Social Screening Checklist
EU	European Union
FCMU	Financial and Contract Management Unit (*Unidade de Coordenação de Projetos)*
FM	Financial Management
FMS	Financial Management Specialist
GDP	Gross Domestic Product
GoA	Government of Angola
GRS	Grievance Redress Service
IBRD	International Bank for Reconstruction and Development
ICB	International Competitive Bidding
IFR	Interim Financial Report
IMS	Information Management System
INRH	*lnstituto Nacional de Recursos Hidricos* (National Institute for Water Resources)
IPF	Investment Project Financing
IRBMP	Integrated River Basin Management Plan
IRSEA	*Instituto Regulador dos Serviços de Electricidade e Água e Saneamento de Aguas Residuais* (Regulatory Institute for Energy and Water Services)
ISP	Implementation Support Plan
IWRM	Integrated Water Resources Management
LCS	Least Cost Selection
MDGs	Millennium Development Goals
MINEA	*Ministério da Energia e Águas* (Ministry of Energy and Water)
NCB	National Competitive Bidding
NPV	Net Present Value

O&M	Operations and Maintenance
PFM	Project Financial Management
PEMFAR	Public Expenditure Management and Financial Accountability Review
PIM	Project Implementation Manual
PIP	Public Investment Program
PDO	Project Development Objective
PLR	Performance and Learning Review
PPIAF	Public-Private Infrastructure Advisory Facility
PWSU	Provincial Water and Sanitation Utility
REFURGH	*Regime Econômico e Financeiro de Utilização Geral dos Recursos Hídricos* (General Economic and Financial Framework for Water Resources)
QCBS	Quality and Cost-Based Selection
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
UFW	Unaccounted-for Water
WBG	World Bank Group
WRM	Water Resources Management
WSIDP	Water Sector Institutional Development Project
WSS	Water Supply and Sanitation
YLL	Years of Life Lost

Regional Vice President:	Makhtar Diop
Country Director:	Elisabeth Huybens
Senior Global Practice Director:	Guang Zhe Chen
Practice Manager:	Wambui G. Gichuri
Task Team Leader:	Luiz Claudio Martins Tavares
	Camilo Lombana-Córdoba

REPUBLIC OF ANGOLA

Second Water Sector Institutional Development Project

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PAD DATA SHEET

Angola

Second Water Sector Institutional Development Project (P151224)

PROJECT APPRAISAL DOCUMENT

AFRICA

GWA08

Report No.: PAD1942

Basic Information		
Project ID P151224	EA Category B - Partial Assessment	Team Leader(s) Luiz Claudio Martins Tavares, Camilo Lombana-Córdoba
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ] Financial Intermediaries [ ] Series of Projects [ ]	
Project Implementation Start Date 10-Mar-2017	Project Implementation End Date 30-Sep-2023	
Expected Effectiveness Date 30-Jun-2017	Expected Closing Date 31-Mar-2024	
Joint IFC No		

Practice Manager/Manager	Senior Global Practice Director	Country Director	Regional Vice President
Wambui G. Gichuri	Guang Zhe Chen	Elisabeth Huybens	Makhtar Diop

Borrower: Republic of Angola	
Responsible Agency: Ministry of Energy and Water	
Contact: Luis Filipe da Silva	Title: Secretario de Estado das Aguas
Telephone No.: (244-222) 339-988	Email: Lfsilva_4@hotmail.com

Project Financing Data(in USD Million)					
[X]	Loan	[ ]	IDA Grant	[ ]	Guarantee
[ ]	Credit	[ ]	Grant	[ ]	Other

Total Project Cost:	545.00	Total Bank Financing:	200.00
Financing Gap:	100.00		

Borrower	95.00
International Bank for Reconstruction and Development	200.00
FRANCE French Agency for Development	150.00
Total	445.00

Expected Disbursements (in USD Million)

Fiscal Year	2017	2018	2019	2020	2021	2022	2023	2024		
Annual	0.00	28.00	28.00	35.00	40.00	35.00	28.00	6.00		
Cumulative	0.00	28.00	56.00	91.00	131.00	166.00	194.00	200.00		

Institutional Data

Practice Area (Lead)

Water

Contributing Practice Areas

Proposed Development Objective(s)

The Project Development Objective is to strengthen the institutional capacity of selected water sector agencies and increase water service coverage in target cities.

Components

Component Name	Cost (USD Millions)
Water Supply Institutional Strengthening and Capacity Development	74.00
Water Resources Management	35.20
Rehabilitation and Expansion of Water Supply Production and Distribution	373.50
Management and Engineering Support	62.30

Systematic Operations Risk- Rating Tool (SORT)	
Risk Category	**Rating**
1. Political and Governance	Substantial
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Moderate
8. Stakeholders	Substantial
9. Other	Substantial
OVERALL	Substantial

Compliance		
Policy		
Does the project depart from the CAS in content or in other significant respects?	Yes [ ]	No [X]
Does the project require any waivers of Bank policies?	Yes [ ]	No [X]
Have these been approved by Bank management?	Yes [ ]	No [ ]
Is approval for any policy waiver sought from the Board?	Yes [ ]	No [X]
Does the project meet the Regional criteria for readiness for implementation?	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**	
Projects in Disputed Areas OP/BP 7.60		**X**

Legal Covenants			
Name	**Recurrent**	**Due Date**	**Frequency**
FM Management Requirements (Sch. 2.II.A.4)		29-Oct-2017	
Description of Covenant			
Within 4 months of effectiveness of the loan, the FCMU-WB/AFD shall: (i) contract a project accountant, (ii) contract project external auditors; and (iii) contract project internal auditors.			
Name	**Recurrent**	**Due Date**	**Frequency**
External Auditor to perform a project procurement audit (Sch. 2.II.A.5)	**X**		Bi-Annual
Description of Covenant			
The GoA shall cause an external auditor to perform a project procurement audit, under terms of reference satisfactory to IBRD, of the procurement for all Goods, Works, Consultants' Services, and Operating Costs. Each such audit of the project's procurement shall cover a period of two (2) calendar years, commencing with the calendar year in which the first withdrawal under the Project was made.			
Name	**Recurrent**	**Due Date**	**Frequency**
Mid-Term Review (Sch. 2.I.A.4)		30-Sep-2020	
Description of Covenant			
No later than September 30, 2020, or such later date as may be agreed upon by the GoA and IBRD, the GoA and IBRD shall carry out a mid-term review of the Project, covering the progress achieved in the implementation of the Project.			
Name	**Recurrent**	**Due Date**	**Frequency**
Project Annual Action Plan (Sch. 2.I.A.3)	**X**		Yearly
Description of Covenant			
The GoA shall, not later than July 1 of each year during Project implementation, or such later date as IBRD may determine, starting in calendar year 2017, furnish to IBRD for approval, an annual action plan (the Annual Action Plan).			
Name	**Recurrent**	**Due Date**	**Frequency**
Annual Audit Reports of PWSUs (Sch. 2.II.B.2)	**X**		Yearly
Description of Covenant			
Each year no later than six months after the end of the fiscal year, the FCMU-WB/AFD shall submit the annual audit reports of the PWSUs, prepared by independent auditors, to IBRD. This report will be prepared using agreed-upon terms of reference including: (i) any deviations to the existing tariff policy along with an explanation as to why the deviation was justified and (ii) evidence that each PWSU's collected revenue covers at a minimum an increasing share of their operating costs.			

Name	Recurrent	Due Date	Frequency
Safeguards Compliance			Continuous

Description of Covenant

With respect to any activities under sub-component 2(d) and component 3 of the Project, the Borrower shall refrain from starting any works until and unless: (a) the proposed activities have been screened in accordance with the ESMF and RPF; (b) the respective EMP and/or, RAP required for such activities pursuant to the ESMF or, RPF, respectively, has/have been prepared and implemented, in agreement with the Bank; and (c) the foregoing Safeguard Documents have been publicly disclosed.

Conditions

Source Of Fund	Name	Type
IBRD	Co-financing Agreement	Effectiveness

Description of Condition

The Co-financing Agreement with AFD has been executed and delivered and all conditions precedent to its effectiveness or to the right of the Borrower to make withdrawals under it have been fulfilled.

Source Of Fund	Name	Type
IBRD	Creation and Staffing of the FCMU-WB/AFD	Effectiveness

Description of Condition

The Borrower has created the FCMU-WB/AFD in a manner acceptable to the Bank and has hired a senior financial management specialist, a Project executive coordinator and two procurement specialists, with qualifications and experience, and pursuant to terms of reference, satisfactory to the Bank

Source Of Fund	Name	Type
IBRD	Project Implementation Manual	Effectiveness

Description of Condition

The Project Implementation Manual, including financial management and accounting procedures annexes, has been issued and adopted by the Recipient and is approved by the Bank.

Source Of Fund	Name	Type
IBRD	FM Management Requirements	Effectiveness

Description of Condition

The GoA has: (i) opened the Project Account in a commercial bank on terms and conditions satisfactory to IBRD, including appropriate protections against set-off, seizure or attachment; (ii) promptly thereafter has made a deposit of Kwanzas 250,000,000 to finance the GoA's initial contribution to the costs of the Project; and (iii) purchased and installed new automated accounting software.

Source Of Fund	Name	Type
IBRD	Performance Payments	Disbursement

Description of Condition

No withdrawal shall be made for Performance Payments for each PWSU unless the Borrower has submitted to the Bank the annual audit report for the respective PWSU, indicating that the targets were achieved or exceeded, in a manner satisfactory to the Bank. The performance targets will be measured after the first full year of audited financial statements; and will be specified in the PIM.

Source Of Fund	Name	Type
IBRD	MINEA and Provincial Government Agreement	Disbursement

Description of Condition

No withdrawal shall be made for sub-components 1.a, 3.a, and 3 for each Participating Province unless the Borrower has submitted evidence, satisfactory to the Bank, that with respect to said particular Participating Province, the Participating Agreement between the Borrower, through MINEA, and the respective Participating Province have been signed. Obligations for such agreements will be specified in the PIM

Team Composition

Bank Staff

Name	Role	Title	Specialization	Unit
Luiz Claudio Martins Tavares	Team Leader (ADM Responsible)	Lead Water and Sanitation Specialist	Water Supply and Sanitation	GWA03
Camilo Lombana Cordoba	Team Leader	Water Supply and Sanitation Specialist	Water Supply and Sanitation	GWA08
Mariana M. Montiel	Project Lawyer	Senior Counsel	Legal	LEGAM
Jose C. Janeiro	Project Finance Officer	Senior Finance Officer	Financial	WFALA
Antonio L. Chamuco	Procurement Specialist (ADM Responsible)	Senior Procurement Specialist	Procurement	GGO07
Joao Tinga	Financial Management Specialist	Financial Management Specialist	Financial Management	GGO26
Belinda Lorraine Asaam	Team Member	Program Assistant	Quality Assurance	GWA08
Alexander V. Danilenko	Project Economist	Senior Water & Sanitation Spec.	Economist	GWAGP
Kristine Schwebach	Safeguards Specialist	Senior Social Development Specialist	Social Safeguards	GSU07
Paulo Jorge Temba Sithoe	Safeguards Specialist	Environmental Specialist	Environmental Safeguards	GEN01

Extended Team

Name	Title	Office Phone	Location
Elisabeth Sherwood	Financial Analyst		Washington
Nuno Vilela	Safeguards Specialist - Consultant		Portugal

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
Angola	Uige	Uige	**X**		
Angola	Luanda	Luanda	**X**		
Angola	Cuanza Norte	N'Dalatando	**X**		
Angola	Malanje	Malanje	**X**		
Angola	Huila	Lubango	**X**		
Angola	Bie	Kuito	**X**		
Angola	Huambo	Huambo	**X**		
Angola	Lunda Norte	Dundo	**X**		
Angola	Moxico	Luena	**X**		
Angola	Namibe	Moçamedes	**X**		

I. STRATEGIC CONTEXT

A. Country Context

1. Angola has achieved remarkable growth after emerging from its 27-year civil war, especially during the oil boom years. Progress has been made in economic management and public finance, infrastructure development, and expansion of key services. Gross Domestic Product (GDP) grew at an average annual rate of 11 percent between 2002 and 2011. Sustained investment in the oil and gas sectors has yielded a steady stream of revenues that have been used to rehabilitate transport, energy, and social infrastructure. However, growth and its benefits have not been distributed equally, and there are wide disparities in income and wealth across the population and between regions.

2. The rapid economic growth seen until 2013 is now slowing due to the decline in oil prices. Oil prices fell 32 percent from January to July 2016, but this drop reached as low as 73 percent in February 2016. The initial effects were felt on government revenues and external accounts. 2016 government revenues are half the 2013 level, and the 2015 current account deficit was 8.5 percent of GDP, compared to a surplus of 6.7 percent in 2013. The initial Government of Angola (GoA) response to falling oil revenues was to cut expenditures and raise non-oil revenues to balance the budget in the medium term and to allow the currency to depreciate to reduce the current account deficit. As the cost of the adjustment was felt on a widespread basis, the Government halted the adjustment process, opting to pursue exceptional measures, such as administrative restrictions to access foreign exchange. These restrictions substantially reduced the country's imports and domestic production, which is small and heavily reliant on imported inputs. As a result, economic activity contracted even more, the wedge between the official and the parallel exchange rate skyrocketed, and inflation reached 40 percent in October 2016. The Government is curbing the growth rate of monetary aggregates and has repegged the currency to fight inflation. While this policy is working in the short term, it is not sustainable in the long run. The budget deficit is expected to be around six percent of GDP in 2016 and 2017. Capital expenditures, although expected to increase compared to 2015, are at a much lower level than in the past.

3. As a result of the oil boom of the past decade and the subsequent strengthening of the Angolan Kwanza, the cost of infrastructure development—including local and foreign labor—is particularly high. The oil boom led to an extended period of rapidly rising incomes while deepening reliance on imports. The Government was not able to insulate public income and expenditure from crowding out of other tradable goods and services from abroad. As a result, the growth of the oil-related parts of the economy resulted in a high and unsustainable level of unit labor costs relative to peer countries. While the recent fall in oil prices and resulting investment and economic slowdown has put pressure on the exchange rate and has increased inflation and unemployment, the net effect on labor costs and the cost of infrastructure is still not clear. The GoA faces a serious challenge in managing the economic downturn and the transition away from oil dependence.

4. While reasonable progress was made toward achievement of the Millennium Development Goals (MDGs), Angola did not meet its MDG targets for water and sanitation in 2015. Despite the positive progress made in poverty reduction, primary education, and gender equality since 2002,

progress in other key social indicators remains limited. For example, life expectancy at birth is only about 51 years. Maternal mortality is 450 out of 100,000 births, which is the highest in Sub-Sahara Africa. Malnutrition is also acute, with 30 percent of children under five years of age suffering from stunting; 16 percent are under-weight. Furthermore, Angola ranked 148 out of 187 countries in the 2013 Human Development Index. Despite the relatively high GDP per capita (US$5,170 in 2013), about 37 percent of the population still lives in poverty and without access to basic services, in particular water supply.

5. Rapid population growth, in particular in urban areas, imposes an additional challenge. Angola's population was estimated to be 24.3 million in 2014, with an average annual growth rate of 3.3 percent. The urban population represents about 60 percent of the total population, with annual growth of about 5 percent.

B. Sectoral and Institutional Context

6. The state of water supply infrastructure was understandably poor following independence from Portugal and the extended civil war. Lack of investment, rehabilitation, and service expansion during this period, compounded by other effects of the war, resulted in low levels of access and poor quality services. As of 2001, only 27 percent of the population had access to improved drinking water sources. Access was somewhat better in urban areas, with 42 percent of the population estimated to have access.

7. Since the end of the war, Angola has increased access to improved water services through public investment, largely through the construction of stand posts into previously unserved urban areas. Between 2006 and 2015, national access to improved drinking water sources remained roughly static, at 49 percent of the population. In urban areas, however, there was a significant increase in access to improved drinking water sources—from 58 in 2006 to 75 percent in 2011—driven mainly by expansion of stand posts. However, access to water through private household (yard-taps or internal plumbing) connections remains low, at 32 percent in urban areas. In addition, the data for access in urban areas may be overstated, as peri-urban areas—where density is often as high or higher than formal urban areas, and where water is largely non-existent—are not included in "urban" service estimates. There are also wide disparities in access to improved water sources *among* urban areas, in particular in provincial capital cities. For example, in the cities included as part of the proposed project, access to an improved drinking water source ranges from 5 to 60 percent.

8. In terms of water resources, Angola is a rich country, with 77 river basins, 43 hydrological basins, and important upstream positions in several international basins. However, water resource management infrastructure and capacity collapsed during the war. For example, 189 hydro meteorological stations existed in 1975; as of 2008, only a few were operating. Only a single river basin—the Cunene River Basin—has a formally constituted administration. Moreover, the country is vulnerable to floods and droughts. These severe weather events and climate change will not only heighten the tensions of water resource utilization and allocation, but could also pose additional challenges to the people who already have difficulties in accessing clean water.

9. The GoA has emphasized the institutional development of the water sector and has committed to establishing necessary policy and legal frameworks. Right after the end of the civil war the Water Law (2002) was enacted, mandating cost-recovery tariffs and professionalization of service delivery, and devolving the responsibility for service provision to provincial governments. In 2008, the Government approved Vision 2025, which included the goal of universal access to water supply in urban areas by 2025. Building on Vision 2025, the 2013-2107 National Development Plan and the 2013-2017 Energy and Water Sector Action Plan identified as a key priority the strengthening of urban water supply, in particular in provincial capitals, with special emphasis on expansion of water systems. With respect to water resource management, the National Strategic Plan for Water (2003) highlighted the need to identify and quantify water uses; identify water resources; and establish a water balance.

10. With the aim of improving urban water supply, between 2013 and 2016[1] sixteen Provincial Water and Sanitation Utilities (PWSUs) were created as a first step towards independent service providers. Twelve provincial capitals have prepared water master plans to address infrastructure requirements, and there is an on-going process to introduce performance-based management contracts in a number of these utilities. The GoA has, with support from the World Bank-supported Water Sector Institutional Development Project (WSIDP I), begun the separation of policy, regulatory, and service delivery functions necessary to promote equitable service delivery and the sustainability of investments, including the 2016 establishment of a regulatory office for water supply within the national electricity regulator—now known as the *Instituto Regulador dos Serviços de Electricidade e Água e Saneamento de Aguas Residuais* (IRSEA). In the area of water resource management, the GoA formally created the *Instituto Nacional de Recursos Hidricos* (INRH—National Institute for Water Resources) in 2010, also with the support of WSIDP I.

11. While these institutions—provincial water utilities, the water regulator, and the institute for water resources—have been established, they are not yet able to fulfill their mandates for service delivery, management, and regulation. The development of the policy and legal framework is still in process, in particular, measures to guarantee the harmonization of the investment program with policy and legal mandates. Staffing issues pose particular challenges, with understaffing a significant problem at the national-level agencies, and overstaffing and skills mismatches at the PWSUs. IRSEA has begun to review tariff agreements between PWSUs and their respective provincial governments, but there is not yet a regulatory framework to guide IRSEA responsibilities or the service or tariff expectations of the utilities. With respect to water resources, staffing and budgeting constraints have prevented INRH from becoming fully operational, and current operations rely largely on outside consultants. The INRH needs significant capacity strengthening before it can fulfill its mandate, collect and analyze relevant data for adequate water resource planning, and develop additional water basin plans.

12. The nascent nature of the PWSUs is perhaps the most urgent institutional challenge for the sector due to their responsibility for water service provision. While key infrastructure investments

[1] 2013 - PWSUs for Benguela, Lobito, Cunene, Cuanza Norte, Bié, Malanje and Uíge
2014 – PWSU for Huambo
2016 - PWSUs for Bengo, Cuanza Sul, Lunda Norte, Huila, Moxico, Cabinda, Namíbe and Lunda Sul

have begun—rehabilitation of water treatment plants, in particular—distribution and network infrastructure still provides only limited coverage within service areas. More importantly, the PWSUs have only recently begun to develop institutional structures with the capacity to manage the utilities appropriately, with a focus on service, asset management and planning, efficiency, comprehensive financial management, and cost recovery. In every area of operations, the utilities need investments in infrastructure and human resources to efficiently and effectively provide service. For example, utilities currently have no way to measure water treatment or sales—estimating system losses is impossible. Most of the utilities believe that they must still drastically increase production in order to meet current needs, but they have no means of accurately assessing usage, and in some cases treatment capacity is being added that may not be well integrated into existing networks, and fixed production costs may put additional stress on utility finances. Lack of reliable information in these areas prevents estimating future financial performance at this time.

13. In addition to capital investment needs, all the PWSUs need to strengthen their commercial and operating capacity, both "soft", human-resource capacity and system capacity, such as investment in financial management systems and billing software, operational reporting systems, etc. Most cities do not have billing systems in place—invoices may be estimated based on an assumed monthly consumption level, but bills are generally not provided to customers. In those few cities where there is a billing system in place, collection ratios are less than 60 percent of the billing. Information systems similarly need to be put in place for management to be able to accurately track operations, costs, and revenues as a first step toward preparing proposals for tariff adjustments. Currently, available information indicates that only two of six reviewed PWSUs are able to cover their operating expenses from their estimated billed revenues—no other PWSUs cover their costs. Factoring in what is actually received from customers, however, none of the PWSUs are able to cover their costs. Operating deficits are currently covered by subsidies from the provincial governments, often provided in the form of in-kind materials and staff paid by the governor's budget. These are likely to continue to be required for several years as information systems, cost accounting, and tariff adjustments are improved.

14. The following table presents the evolution of the Angolan water sector—including the institutional and legal framework, policy priorities, investment strategy and level of service, and World Bank involvement—over the previous decade and a half, as well as looking beyond the project period.

Table 1. Evolution of the Water and Sanitation Sector

CRITERIA	2000-2010	2010-2017	2017-2023	2023-2030
Legal, Governance and Institutional Framework	Water Law 6/02 and Law 9/95 for the Creation of Public Companies National Water Directorate (DNA) is responsible agency for policy making, management and governmental support to Water Resources Management (WRM) and Water Supply and Sanitation (WSS) sub sectors WSS delivered by provincial governments with support and oversight of DNA	DNA is the responsible agency for planning and implementing infrastructure projects. Creation of, 16 PWSUs, INRH, and IRSEA. However, institutions do not have enough capacity to fulfil their mandates. Economic Instrument for water Resource management – Raw water – created.	Development of tools for WRM Develop regulatory framework and instruments for water supply regulation Strengthening sector agencies Aspects of economic regulation of water services in place.	DNA role limited to policy maker and sector leader for the WSS sub-sector. IRSEA independently and effectively regulates WSS Creation of PWSUs in the remaining provinces. PWSUs improve efficiency and plan and implement capital projects
Sector Policy	Programme for the Development of the Water Sector (PDSA) commitment to MDGs and development of master plans "Water for All" program commits to ensuring access to basic services No cost recovery Flat tariffs determined by provincial governments but not always collected.	Expansion of household connections in peri-urban areas Evolving approach from flat tariff to volumetric consumption tariff	PWSUs organized and functioning as corporatized service providers. Implementation of cost recovery policies. Integrated Water Resources Management (IWRM) approach implemented in pilot river basins. Economic Instruments for water Resource management – Raw water charges– piloted in one river basin	Cost recovery policies in place (including pro-poor tariff guidelines) IWRM adopted country-wide Independent regulatory framework in place and operational, incentivizing performance improvements Economic Instruments for water Resource management – Raw water charges– adopted country-wide.
Sector Financing	Multilateral agencies finance WSS in rural areas and selected urban areas. Capital investments and recurrent costs in urban WSS financed by public funds	Capital financing from development banks and donors O& M costs of WSS mainly supported by public resources.	Capital financing continues from development banks and donors Public subsidies of O&M costs gradually decline	Capital financing for the WSS from the GoA O&M coverage through tariff revenues for WSS
Service Provision	Service expansion through construction of standposts. 11% coverage. Cooperative organizations in charge of peri-urban and rural service	Replacement of standposts with household (yard) connections in peri-urban areas. 30% coverage. PWSU service provided to urban and selected peri-urban areas.	Continued extension of household (yard) connections in peri-urban areas. 70% coverage. Customer care systems in place	Start of construction and operation of urban sanitation infrastructure
World Bank Involvement	Assistance address critical breakdowns:: IRE (1990s) Project prepares WSS and solid waste master plan for Luanda PRUALB (1992-2001) to improve WS&S in the cities of Lobito and Benguela; progress hindered by restarting of the war. EMRP-1 and EMRP-2 (2005-2009)	Rehabilitation and extension of WSS, with particular focus on distribution networks and service provision; Support for the creation of INRH, IRSEA and PWSUs Support DNA capacity in planning and execution of Government budgets	WSS expansion to peri-urban areas and technical assistance Support to capacity building of INRH, IRSEA, and PWSUs Technical assistance in urban sanitation infrastructure planning	Expansion of WSS and development of urban sanitation infrastructure Continued support to INRH, IRSEA, and PWSUs to address the new challenges on sanitation service provision.

15. The GoA has been supported in its efforts to rehabilitate water supply systems and expand access to improved water sources by several bilateral agencies as well as the World Bank Group. China, in particular, has been key in providing financing for investments made under the GoA's Public Investment Program (PIP), with approximately US$734 million over a period of 7 years. These PIP investments have primarily been in rehabilitation and reconstruction of water production and treatment, which were a key bottleneck to improving water services, in a number of provincial cities, as well in constructing boreholes and protected wells to serve public standposts in peri-urban areas in order to extend services to previously unserved areas. In addition, Brazil has provided limited credit for investments in Luanda, Lobito and Benguela, while the African Development Bank (AfDB) approved a project in 2015 to finance capital investments in Sumbe and technical assistance for the established PWSUs in seven provinces. Finally, various European bilaterals have provided limited assistance in the form of technical assistance, including the following:

Table 2. Donor Support to the Water Sector in Angola

Donor	Activity	Region (if applicable)
European Union	Human resource development; water quality monitoring	Country wide
UNICEF	Policy, strategy, and capacity building	Country wide
Norway	Institutional support in Water Resources Management	Country wide
Spain	Human resource strengthening and commercial capacity building for water systems (closed)	Province of Malanje
Germany/SADC	SADC Rehabilitation of Water Supply Systems	Province of Cunene

16. World Bank Group (WBG) assistance to the water sector in Angola began with the Emergency Multisector Recovery Projects I and II (P083333 and P095229), which supported the rehabilitation of water supply systems, and is ongoing with WSIDP I (P096360). WSIDP I, which was approved in July, 2008 for an amount of US$57 million equivalent,[2] was intended to be a seven-year project of rehabilitation of water supply and water rehabilitation assets, new networks and household connections, and capacity building of national- and provincial-level agencies involved in water supply, capital investment, and water resource management, including to the nascent PWSUs. Additional Financing of US$120 million equivalent was approved in June, 2011, with all additional financing going toward the expansion of water supply networks and new household connections in nine selected provincial capitals. At that time, it was estimated that only six percent of water production capacity was being used, pointing to an urgent need to rehabilitate and expand networks and to install connections.

17. Since the approval of the WSIDP I Additional Financing, cost escalations and unexpected new costs of planned investments (for example, the preliminary designs available at the time of

[2] This amount was complemented by US$56.2 million provided by the GoA, for a total project investment of US$113.2 million equivalent.

appraisal did not include a number of necessary works, while hydro meteorological stations that had expected to be rehabilitated turned out to require full replacement) increased the total cost of the project to nearly US$300 million. At the same time, an 11 percent depreciation of the SDR resulted in a US$25 million reduction in available funds. As a result the project was restructured in April, 2016. This restructuring reduced the number of PWSUs supported by the project (seven, instead of nine), the number of hydro meteorological stations (36, instead of 189), the number of Integrated Basin Management Plans (one, instead of two), and residential connections (110,000, instead of 132,000).

18. WSIDP I is scheduled to close on June 30, 2019; its implementation has facilitated significant learning about the water sector in Angola and implementation challenges and has built a high degree of trust between the GoA and the World Bank in the sector. The project has supported directly and indirectly the establishment of 16 PWSUs between 2013 and 2016, and performance-based management contracts for six of the PWSUs[3] have recently begun, providing commercial, technical, and financial support. These three-year contracts will expire in 2019, at which point WSIDP II will continue to provide support. In addition, WSIDP I supported the establishment, in 2016, of the water office within the electricity regulator, which is now known as IRSEA, as well as the establishment of INRH in 2010. While INRH is partially operational, consultants are providing institutional strengthening to the agency and are assisting in the preparation of the Integrated River Basin Development Plan for the Cuanza River and in the installation of 35 hydrometric stations supported by the project, while procurement of the water information management system has been completed. Most significantly, with respect to the rehabilitation of water supply systems, rehabilitation and expansion works are underway in the cities of Huambo, N'Dalatando, Malanje, Kuito, Uige, Lubango, and Luena.

C. Higher Level Objectives to which the Project Contributes

19. Water services are an integral part of the World Bank's support toward the twin goals of ending extreme poverty and promoting shared prosperity. More generally, there is a direct link between access to improved water services and the incidence of water-borne diseases and public health. Improving access reduces coping costs, leads to time savings, and increases productivity—wide economic impacts with disproportionate and direct benefits to the poor. Women and girls, on whom the burden of fetching water predominantly falls when on-site services are not available, are expected to particularly benefit from access to improved services—they are expected to be able to spend additional time on income-generating activities, childcare, and education. Furthermore, it is well recognized that the reliability of water infrastructure services is a key factor affecting industrial productivity, efficiency and competitiveness. As such, improved water supply as an infrastructure service will help to facilitate economic growth and the creation of jobs.

20. More specifically, the project's investments in the extension of water networks to peri-urban areas of provincial capitals has a clear poverty focus, as those areas house primarily internal migrants from the surrounding countryside, both those who arrived during the war and those who have arrived

[3] Huambo PWSU, serving the capital city Huambo; Bié PWSU, serving the capital city Kuito; Huila PWSU, serving the capital city Lubango; Malanje PWSU, serving the capital city Malanje; Cuanza Norte PWSU, serving the capital city N'Dalatando, and Uige PWSU, serving the capital city Uige.

after. Recognizing the low-income status of most residents, the project will not require application or connection fees for the new connections—all connections will be financed by the project. In addition, while recognizing that a large majority of the households of the provincial capitals are low-income, the tariff adjustments expected to take place during project implementation are expected to be structured in the most equitable manner possible. The cost of formal service will in any case remain significantly less costly—while providing higher-quality services—than existing water supply options in unserved areas.

21. The proposed project is fully aligned with Angola's Performance and Learning Review (PLR) (Report No. 100984-AO), which reflects changes in Angola's macroeconomic circumstances and aims to enhance selectivity and alignment with the WBG twin goals and to sharpen the strategy's poverty and shared prosperity focus. The PLR extends the FY14-FY16 Country Partnership Strategy until FY18 and reformulates its objectives as follows: (a) increase resilience to macroeconomic risks; (b) increase efficiency of social programs and access to services; and (c) support economic diversification. The project supports the second pillar through increasing water service coverage and access to services by the poorest peri-urban groups. The project also supports the Government's Vision 2025, which includes goals for universal access to water supply in urban areas, the 2013-2017 National Development Plan, and the 2013-2017 Energy and Water Sector Action Plan, which puts special emphasis on expansion of water systems.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

22. The Project Development Objective (PDO) is to strengthen the institutional capacity of selected water sector agencies and increase water service coverage in target cities.

23. Selected water sector agencies include the identified PWSUs, INRH, IRSEA, the Luanda water utility (*Empresa Publica de Água de Luanda* [EPAL]), and the National Directorate for Water (*Direcção Nacional de Águas* [DNA]). Most of these agencies are recently established or have recently incorporated new responsibilities for water and require technical assistance for defining responsibilities and human-resource development. Institutional capacity encompasses, for example: (a) the ability of the PWSUs to track and record operating costs, to identify their customers, to measure water consumption, and bill customers accordingly; (b) the ability of IRSEA to define and implement regulations, to track utility performance, and/or to review and approve tariff applications; and (c) the ability of INRH to receive and record hydrometric readings and/or to monitor the implementation of recommendations of dam safety assessments.

B. Project Beneficiaries

24. The project is expected to benefit more than 950,000 people residing within the project areas, who will be provided with access to piped water services through new household connections. As discussed in paragraphs 19 and 20, the project is expected to primarily benefit low-income households residing in peri-urban areas. Women and girls will benefit in a higher proportion from

water service expansion through reduced time spent collecting water. In addition to those who will benefit directly from the extension of water services, the following agencies will receive support from the project: DNA, INRH, IRSEA, EPAL, and PWSUs in nine cities.

C. PDO Level Results Indicators

- Number of people in urban areas provided with access to an improved water source under the project (core indicator);
- Direct project beneficiaries, of which female (core indicator)
- Number of independent audits of PWSU financial statements documenting PWSU financial performance;
- Percentage of hydrometric stations supported by the project providing information to INRH;
- Regulatory framework for water and sanitation services in place.

25. For the purposes of project results, it is understood that a regulatory framework for water and sanitation services includes the establishment of, for example, reporting standards, water supply and service standards, regulatory accounting guidelines, and tariff application procedures. Beneficiary assessments are necessary to calibrate the tariff structure, so are also included in the regulatory framework.

III. PROJECT DESCRIPTION

A. Project Components

26. The proposed project will finance strategic institutional development activities and priority water supply investments in the nine targeted provincial cities of Kuito-Kunje, Huambo, Lubango, Moçamedes, N'Dalatando, Malanje, Uige, Dundo, and Luena. Seven of these cities were included under WSIDP I; Moçamedes and Dundo, which have received institutional support from AfDB, are being added under WSIDP II. The project seeks to harness the momentum created under WSIDP I and will deepen and expand the development impacts of that project. WSIDP II will include activities designed to strengthen water sector institutions, including regulatory capacity, utility operations, and water resource management. The proposed institutional interventions will be coupled with infrastructure investments to address key physical challenges and constraints. Water supply infrastructure investments will focus on increasing the capacity of systems and expanding water service coverage, predominately in under-served, low-income, peri-urban areas.

27. The Government of Angola and the Bank have prepared an ambitious water sector reform program that allows for enlarged support as well as expansion of investments in recently created utilities on a scalable basis and as a means to attract additional resources to the program. Moving ahead with the project with a financing gap of USD 100 million allows timely implementation of the program, building on the current momentum. Several donors have already expressed interest and are exploring options to support the program. To complete all the activities included in the proposed project, the Government will endeavor to secure additional funds from other financiers and donors, or Government's own funds, before the end of the second year of project implementation. Should the

financing gap not be filled by the end of year two, the project would be restructured and the activities realigned.

28. The proposed project has been designed in coordination with the Government's water sector infrastructure investment program and is strategically aligned with AfDB's support to the Angolan water sector. The project is expected to include four components, as follows:

Component 1: Water Supply Institutional Strengthening and Capacity Development (US$74 million, IBRD Financing US$29.50 million, Financing Gap US$8.00 million). This component aims to strengthen the institutional framework for the water and sanitation sector and build capacity at the Borrower's water and sanitation agencies at both national and provincial levels, through:

(a) the provision of technical assistance and operational support for the strengthening of PWSUs' management capacities and customer services, including the provision of Performance Payments based on the achievement of key performance targets.

(b) the provision of technical assistance and capacity building to IRSEA to build its capacity to fulfil its responsibilities as the Borrower's water and sanitation regulator, including: (i) definition of IRSEA's organizational structure, staffing and skills requirements; (ii) a beneficiary assessment, (iii) development of water and sanitation regulatory instruments (including reporting requirements, service standards, cost accounting standards, and tariff application procedures); (iv) design and development of an information system/database for the water and sanitation sector; and (v) training and capacity building.

(c) the carrying out of a study on private sector participation in the water sector to assess the potential for such participation.

Component 2: Water Resources Management (US$35.2 million, IBRD Financing US$14.00 million, Financing Gap US$4.00 million). This Component aims to support the strengthening of the institutional framework for water resource management through the provision of support for:

(a) INRH central and regional directorates needed for the management of hydro-meteorological information.

(b) INRH at the central level, including: (i) direct advisory and training services to INRH and selected regional directorates; (ii) the preparation of the INRH Strategic Plan; (iii) design and implementation of a public awareness and communications campaign; and (iv) design and implementation of an economic instrument for water resources management.

(c) the design and implementation of an information management system for INRH, including specifications of hardware and software needed.

(d) the expansion of the Borrower's hydro-meteorological monitoring network consistent with the 2008 recommendations of the World Meteorological Organization (with coverage of 1,875 square kilometers per station), including: (i) the reconstruction of prioritized hydrometric

stations, including provision of equipment, services, goods and minor works; (ii) the upgrade of prioritized hydrometric stations to include meteorological monitoring capabilities; and (iii) support to manage the hydro meteorological monitoring network.

(e) INRH for: (i) the development and implementation of specific river basin plans, including the implementation of priority actions identified under the applicable plan; (ii) the piloting of the instrument for water resources management developed under Component 2(b)(iv) of the Project, with respect to the Cuanza River, including a comprehensive water user inventory, consolidation of procedures and instruments for water use permits, training and workshops with relevant stakeholders, dissemination materials, publications and evaluation of its impact; and (iii) the preparation of two additional integrated river basin management plans in the Borrower's southern coastal region.

(f) INRH for the preparation of a National Dam Safety Plan including: (i) the carrying out of a national inventory of existing dams and reservoirs, including a description of main characteristics; (ii) an assessment by a panel of experts of the safety status of prioritized dams, including the preparation of an investment plan and other activities; (iii) preparation of the legal and regulatory dam safety framework, including institutional responsibilities, standards and technical safety guidelines; and (iv) the development of a capacity-building program to support the dam safety related activities described above.

Component 3: Rehabilitation and Expansion of Water Supply Production and Distribution (US$324 million, IBRD Financing US$131.00 million, Financing Gap US$32.90 million; plus US$49.5 million for contingencies and fees, IBRD US$0.50 million, Financing Gap US$49.00 million). This component is to support the PWSUs in the development of priority infrastructure to expand system capacity, to increase service coverage and quality, and to improve the operating efficiency of the production and distribution systems in target cities through:

(a) the rehabilitation and expansion of production facilities, including: (i) the carrying out of civil and electro-mechanical works to improve water production in target cities required to support expanding service coverage; (ii) expansion and refurbishment of well fields and intake facilities, as well as expansion and refurbishment of water treatment facilities; (iii) construction of clear-water storage tanks and the rehabilitation and expansion of transmission infrastructure, including new pipelines, pump stations, telemetry/SCADA, and associated fittings.

(b) the rehabilitation and expansion of distribution systems, including: (i) the development of priority infrastructure to increase service coverage and improve operational efficiency of the water distribution systems in target cities; (ii) the rehabilitation of existing and construction of new distribution centers, including increasing storage with ground tanks and pressure through elevated water towers; (iii) water supply network expansion and rehabilitation; (iv) installation of district meters and pressure control valves within existing pipelines; and (v) installation of approximately 186,500 new household connections with meters.

<u>Component 4:</u> Management and Engineering Support (US$62.3 million, IBRD Financing US$25.00 million, Financing Gap US$6.10 million). This component provides goods, operational costs, engineering support, training and technical assistance for Project management, technical oversight, financial management, monitoring and evaluation, implementation of social and environmental safeguards, as well as other investments in the water sector, including: (a) the carrying out of engineering and other technical studies; (b) the design and supervision of works and performance contracts; (c) support for community consultation and communication activities; and (d) the update of Sanitation Master Plans in the capital cities of eight provinces, including stakeholder consultative processes.

B. Project Financing

29. Lending instrument: The proposed lending instrument is an Investment Project Financing (IPF) comprising an IBRD loan of US$200 million, to be implemented over six years. Selection of the IPF was based on its flexibility and suitability to incorporate financing for a broad range of activities, including a number of specific investments, technical assistance and capacity enhancement measures. This project is being presented to the Board with a financing gap of US$100 million. Specifically, the project has been prepared and appraised for a total amount of US$545 million, of which US$200 million equivalent has been allocated from IBRD 17. Retroactive financing will be made available limited to US$20 million, for eligible expenditures under components 2 and 4, and sub-components 1(b), and 1(c), starting on December 2, 2016 but not earlier than 12 months from the date of the IBRD Loan Agreement.

30. The project will be co-financed by the *Agence Française de Développement* (AFD) through a Euro-denominated loan of US$150 million equivalent, and by the GoA through a US$95 million counterpart contribution.

31. Project-supported activities will be financed in parallel by the three sources according to their share on the overall financing; IBRD: 45 percent; AFD: 34 percent; GoA: 21 percent.

C. Project Cost and Financing

Table 3. Project Cost and Financing (US$ Million)

Project Components	Project Cost	IBRD Financing	AFD Financing	GoA Contrib.	Financing Gap
Component 1: Water Supply Institutional Strengthening and Capacity Development	$74.00	$29.50	$22.40	$14.10	$8.00
Component 2: Water Resources Management	$35.20	$14.00	$10.00	$7.20	$4.00
Component 3: Rehabilitation and Expansion of Water Supply Production and Distribution	$324.00	$131.00	$98.60	$61.50	$32.90
Component 4: Management and Engineering Support	$62.30	$25.00	$19.00	$12.20	$6.10
Contingencies and Fees	$49.50	$0.50	$0	$0	$49.00
Total	**$545.00**	**$200.00**	**$150.00**	**$95.00**	**$100.00**
% Financing		45%	34%	21%	0%

D. Lessons Learned and Reflected in the Project Design

32. *In order to reduce potential delays in project implementation, technical information should be gathered in advance*: Construction contracts in WSIDP I included a stage for project design, which took more time than expected due to the lack of information and understanding of supported systems. For WSIDP II, required information has been collected in advance, and therefore there is a better understanding of the systems in the beneficiary cities. Furthermore, contracts will be flexible enough to accommodate changing conditions in the systems.

33. *Support for project implementation should be independent of capacity building to the responsible agency*: The implementing unit for WSIDP I (the Financial and Contract Management Unit [FCMU]) was responsible not only for implementing the World Bank supported project, but also, through support of the GoA's investment program, for strengthening the DNA to support the programs of other multilaterals and bilaterals. This arrangement diluted the attention of the FCMU staff, which prevented them from allocating enough time to the project. WSIDP II will continue to provide capacity building support to the DNA, but such support will be independent of the project implementing agency—the FCMU-WB/AFD. This will allow the FCMU-WB/AFD team to focus exclusively on project implementation.

34. *Proposed sector organizational structures may be amended with experience:* At the outset of World Bank assistance to the Angolan water sector, an institutional structure similar to the successful structure in Mozambique was planned—that is, an asset management agency responsible for capital planning and ownership of water supply assets, combined with independent water supply companies

operating the assets through leases. WSIDP I included assistance to establish an asset management unit (AMU). However, experience gained through project implementation indicated that independence from the government—a major feature of the AMU—was not a pre-requisite for successful implementation of a country-wide infrastructure program. Government commitment to investment in the sector and a strong project management unit has allowed the establishment of the PWSUs as state-owned companies that will both own and operate water supply assets, rather than as lease-based operators.

35. *Capacity building is conditioned on the availability of permanent employees*: Central agencies supported by WSIDP I are generally understaffed, and the capacity that has been built through project implementation has not been fully absorbed by the recipient agencies due to the lack of staff at the receiving institutions. While this lesson is widely recognized, adequate staffing of the sector agencies will not be in place until the current economic and fiscal crisis is resolved. In the long term, the project supports the development of a cadre of committed professionals through the establishment of a young professionals program for the sector.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

36. Institutional and implementation arrangements will replicate the arrangements under WSIDP I, building upon the capacity built in the existing FCMU at DNA. The FCMU supports the implementation of other programs for the water sector (that is, PIP, AfDB, European Union), and has proven implementation capacity; between 2011 and 2015 this unit procured and disbursed US$628 million for investments and activities in the sector.

37. Project management will be overseen by MINEA. Project implementation will rely on a dedicated FCMU for the World Bank/AFD project (FCMU-WB/AFD), which will report to the MINEA Project Director and will be mainly staffed by local and international consultants. The FCMU-WB/AFD will manage all WSIDP II activities, including procurement, financial management and accounting for project funds, as well as coordination with other agencies and institutes involved in the project.

38. Project beneficiary agencies at the national level—INRH, IRSEA, and DNA—will be responsible for establishing the agencies' priorities and for supporting the FCMU-WB/AFD throughout the procurement process related to each agency. Institutional support to the PWSUs, as well as all infrastructure investments under Component 3 in the target cities, will be closely coordinated by the respective PWSUs, the corresponding provincial government, and DNA. Beneficiary agencies shall provide periodic reports to the FCMU-WB/AFD on the progress of activities supported by the project for their respective components.

B. Results Monitoring and Evaluation

39. Results monitoring and evaluation for the project will be carried out by the FCMU-WB/AFD, which will include a part-time staff member responsible for monitoring and evaluation, including for integrating results monitoring into project implementation and supervision. Indicators regarding activities supported under Components 1.a and 1.b and the performance of the PWSUs will be provided by IRSEA and the PWSUs; monitoring and evaluation of the remaining components will be collected, analyzed, and reported by the FCMU-WB/AFD in conjunction with the recipient agencies where applicable. A key aspect of results monitoring will be with respect to recipients of piped water service; a beneficiary assessment will be undertaken as part of the project (under Component 1.b) in order to provide a baseline for later evaluations. A second key aspect of results monitoring will be with respect to operational and financial performance monitoring of the PWSUs. As part of institutional capacity building of IRSEA, a system for water utility data reporting will be developed and implemented, enabling comparison of PWSU performance across utilities and over time.

C. Sustainability

40. Nearly 70 percent of project costs are estimated to be allocated to investments and engineering services related to urban water treatment and distribution, and therefore a key aspect of sustainability of the project is ensuring the long-term sustainability of the provincial utilities. Currently, the PWSUs are at early stages of development and professionalization, having operated in recent years as provincial departments, with limited information on assets and operating costs and weak incentives to monitor operations or to accurately measure or bill for water services. The legal establishment of corporatized utilities—the PWSUs—and the hiring of consultants under performance-based contracts to assist in their initial management are key parts to ensuring both improvements in water services and the longer-term sustainability of existing and proposed assets.

41. The next steps toward ensuring the sustainability of the PWSUs and project investments will be undertaken during the project. These include the capacity building of the water regulatory office within IRSEA, which will regulate the PWSUs, including, over the course of the project, approving pro-poor and cost-recovery tariffs that, at a minimum, enable the PWSUs to recover fair operating costs. Equally important, the project supports managerial strengthening within the PWSUs through performance-based technical assistance contracts; PWSU management and staff will work side-by-side with experienced international operators in order to build skills, and progressively more challenging targets are set in order to incentivize more efficient operations. Finally, a key project indicator is the gradual improvement of cost-recovery ratios for the PWSUs. While it is not expected that all the PWSUs will be able to achieve full operational cost recovery over the course of the project, improvements in operational efficiency, the establishment of cost norms, and expansion of the customer base will contribute to significantly improved cost recovery.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

42. The overall risk is considered *Substantial* due to substantial country-wide risks related to macro-economic management as well as weak capacity within the project's counterpart agencies, including with respect to project fiduciary management. While the project aims to strengthen the

capacity of those agencies, and measures have been put in place to mitigate risks, their current level of capacity is a risk to project implementation. In addition, the risk rating takes into consideration the financing gap (under Other Risk). A summary of key risks identified at appraisal stage as being Substantial are presented below.

43. Political and Governance Risk: This Risk is considered *Substantial*. Political interference at the provincial level may prevent PWSUs from establishing cost-recovery tariffs. This situation could be aggravated by the general elections that will take place in August 2017. Support to IRSEA in promptly defining the regulatory framework and tariff guidelines and timely assistance to the PWSUs may facilitate the establishment of cost-recovery tariffs.

44. Macroeconomic Risk: This Risk is considered *Substantial*. The oil price shock has adversely affected Angola's economy. Oil exports—the main source of foreign reserves—are slowly recovering, however, the economic situation throughout the project is likely to remain challenging, as international oil prices are not expected to recover to previous levels. Although the outlook for overall economic growth is stable, at three to four percent growth per year, persistent low international oil prices and the uncertain global environment pose considerable risks for non-oil sectors, including the water sector, where revenues are in local currency but where a large proportion of investment costs—as well as some operating costs—are tied to foreign currencies and international prices. This mismatch poses a risk for the sustainability of the water sector and its long-term development. Related to the macroeconomic, insufficient foreign exchange earnings pose a risk to project implementation due to the GoA's contribution requirement to project costs (17 percent of total project costs). This risk is mitigated, however, by (a) the local-currency nature of a significant portion of the GoA's contribution (local taxes, paid in AKZ) and (b) the GoA's initial contribution of AKZ250 million into a Project Account. It should be noted that GoA contributions to the ongoing WSIDP I have not been an issue.

45. Institutional Capacity for Implementation and Sustainability: This risk is considered *Substantial*. The FCMU is considered by the Government and the World Bank to be a strong, technically capable entity, with significant capacity for technical planning and design, procurement, financial management, and contract management supervision. In 2014, the FCMU implemented and disbursed about US$134 million in contracts. Considering the implementation timeline of WSIDP I and the proposed WSIDP II, the World Bank team considers the capacity of the planned FCMU-WB/AFD, including its financial management and procurement capabilities, to be sufficient for implementation of the project. However, there is a clear lack of capacity in the recipient agencies, especially in the PWSUs. Implementation of institutional reforms at the provincial level and improvement of utilities' performance requires strengthening the capacity of the PWSUs. This risk is to be monitored by the World Bank and mitigated by the support provided to PWSUs under WSIDP I and WSIDP II.

46. Ensuring the sustainability of existing and new water supply assets through capacity building and cost-recovery tariffs are important aspects of sector strengthening. Currently, service operators in the provincial capital cities are in the process of professionalization. Existing arrangements and tariff structures do not cover operations and maintenance costs in several PWSUs. For example, domestic

tariffs range from AKZ0.5 per cubic meter in Moçamedes to AKZ140 per cubic meter in Kuito (which benefited from the EMRP and WSIDP I). In addition, the PWSUs lack commercial and customer-oriented practices. The project will support service operators' capacity strengthening by introducing a second generation of performance-based management contracts. In addition, the proposed project will provide technical assistance for the regulatory agency to establish cost-reflective tariffs. Through this support, the project aims to promote the long-term sustainability of the proposed investments.

47. Fiduciary Risks: This risk is considered to be *Substantial*: Major risks associated with the implementation of the Project are related to the capacity of the FCMU-WB/AFD to secure and retain qualified and experienced financial management and procurement staff and other specialists. Current country practices for making payments abroad and limitations on the receipt of hard currency by local firms may also affect project procurement and financial management. In the last several years, securing work permits has been a lengthy process, affecting the ability of consultants to be available in a timely manner.

48. Stakeholder Risks: This refers to the risk that potential household customers will not connect to new networks supported under the project, and that existing and potential customers will not be able or willing to pay for water service. The overall Stakeholder Risk is considered to be *Substantial*. The risk of non-connection is significantly mitigated by the design of the project, as the project will cover the cost of materials and connection for customers, who will not be responsible for those costs. Although newly connected customers are expected to pay significantly less for water than they are currently paying, and are expected to be able to consume much more water, the risk of lack of willingness to pay may be high due to poor service provision and poor billing and collections on the part of water service providers in the past. In addition, households' irregular incomes are likely to be inconsistent with regular monthly billing for services. The project proposes to mitigate the risks of non-payment for services through a range of activities during the design and implementation of networks—including stakeholder workshops (including workshops for women), information campaigns, public hearings, distribution of posters and leaflets translated into the local language, interactive drama/theater groups, and community dialogues. Where appropriate mass media, folk groups and cell phone SMS messages will also be explored to build willingness to pay for safe water. At the same time, the management technical assistance contracts with the utilities include capacity building for customer communications, billing, and collection. The ability of the PWSUs to document and explain tariff adjustments will also be strengthened through the project, and tariff application procedures and guidelines established by IRSEA will encourage public consultation.

49. Other Risk: The risk associated with the financing gap has also been identified and rated as *Substantial*. The financing gap of US$100 million – necessary to complete the project – will be filled when further funds are made available. The financing gap is expected to be filled at the end of the second year of project implementation, and therefore is unlikely to impact the overall achievement of the project development objectives. The Government will endeavor to secure these additional funds. If these funds are not secured, the project will be restructured and activities realigned.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

A.1 Economic Analysis

ERR: 21.7%, NPV: US$386 million

50. Cost-Benefit Analysis. An economic analysis was undertaken for the infrastructure investments proposed under the project using a cost-benefit analysis, comparing with- and without-project scenarios. The with-project scenario includes the proposed investment program under Component 3, at an estimated cost of US$324 million, whereas the without-project scenario assumes no investments in water production or network expansion.

51. Two scenarios are assessed. Scenario 1: Operation and maintenance (O&M) costs of the water and sanitation services will grow proportionally to the number of connections. Scenario 2: newly constructed and rehabilitated connections will be more efficient than the old ones: Similar to WSIDP I, it is expected that the network expansion will be built according to proper design specifications and will include meters. As a result, operating the new connections are expected to cost at least 30 percent less than the current ones.

52. Additionally, a stress test was conducted in which the costs of Components 1 and 2 are included in the economic analysis to verify the overall project's economic viability. Both components include the development of institutional capacity at the national level, and their benefits will expand to the entire country.

53. Results: Scenario 1: The economic rate of return (ERR) for the Project is 21.7 percent, and the net present value (NPV) is US$386 million. Scenario 2: If O&M costs are reduced by at least 30 percent per new connection compare to current costs, the ERR is estimated to be 24.2 percent and the NPV US$463 million. The extension of improved water supply may also save lives—as many as 15,000 children, or 680,000 productive years—however, because of the difficulty of assigning an economic value to such benefits, they are not included in the calculation of economic returns.

54. Stress test: If the full costs of Components 1, 2 and 3 are included in the economic assessment, the ERR is calculated to be 16 percent, with an NPV of US$297 million; if O&M costs are increased by 30 percent, the ERR is calculated to be 19.1 percent, and the NPV US$304 million.

55. Conclusion: The project is economically viable.

A.2 Financial Analysis

56. The World Bank reviewed basic financial information provided by six PWSUs prior to project appraisal: the PWSUs of Bié (which serves the project cities of Kuito and Kunje); Huambo; Huila (city of Lubango); Malanje; Cuanza Norte (city of N'Dalatando); and Uige. The PWSUs have in general only recently been established, and technical assistance has in some cases begun in the

previous several months. The quality of the information provided therefore varied significantly; in some cases, neither financial (operating costs and revenues) nor operational information (number of connections, amount of water treated or sold, capacity or costs of treatment plants, etc.) could be considered reliable. Only one PWSU had financial or operational information prior to 2015; in two cases, there was no information even for 2015, and projected estimates for 2016 had to be based on a few months of information. In addition, as nearly none of the individual water connections serviced by the PWSUs have meters, billed revenues are based on estimated consumption levels that cannot be confirmed. Finally, even when payments for operating costs have been reliably tracked, subsidies to the PWSUs have often taken the form of in-kind provision of goods or materials, or staff paid by the provinces; reported costs therefore do not necessarily reflect true costs. For the above reasons, there is no reliable basis on which to estimate future performance of the utilities at this time.

57. At this stage of reform of and investment in urban water supply in Angola, the key financial objective is to work towards the PWSUs' coverage, through customer tariffs, of operational costs. It is not expected that most of the PWSUs will be able to generate revenues above and beyond that level and to contribute toward the cost of capital investments and major rehabilitation. The project, through investments in network and customer metering and in systems and technical assistance to improve billings and collections, is expected to significantly improve the utilities' ability to fully cover operating costs. Operating and financial performance will be reported and analyzed on an ongoing basis; targets have been set, and performance will be reviewed over time and against other utilities.

58. The following table provides a summary of core operational and financial information of the six reviewed utilities, although the caveats noted above apply. Information provided is for 2015 except for Huambo, Cuanza Norte and Uige, whose figures are 2016 estimates. Additional information is provided in Annex 5.

Table 4. Core Operational and Financial Information of the Six Reviewed PWSUs

	Bié	**Huambo**	**Huila**	**Malanje**	**Cuanza Norte**	**Uige**
Total connections	7,079	15,634	7,083	7,984	5,000	Unknown
Estimated water sales (m3/ day)	2,849	10,058	6,052	5,785	2,396	1,123
Unaccounted-for Water (estimated)	66%	18%	50%	50%	50%	90%
Water billings (AKZ million)	151	138	230	201	66	14
Water revenues (collections)	64	88	209	142	53	9.5
Collection ratio	42%	64%	91%	71%	80%	70%
Operating expenses (total, AKZ million)	74	156	267	192	171	385
Of which, staff expenses	32	85	200	142	95	371
Cost Recovery Ratio (based on collections)	86%	56%	78%	98%	31%	2%
Number of staff	77	196	315	76	25	40
Staff/1,000 connections	10.8	12.5	44.5	11.4	5.0	n/a

B. Technical

59. The project has been technically designed to address the most pressing challenges in the water sector in Angola; namely, the need for institutional strengthening and investments in infrastructure. On the institutional side, the project will provide support to recently established PWSUs to build their managerial and operational capacity. Building upon the successful experience of WSIDP I, management contracts will be used as a means to build capacity at the provincial level, as well as to provide hands-on support to utility operations during project implementation.

60. As the PWSUs start to work as independent, corporatized utilities, an effective regulatory framework will become necessary. The project will address this need through support to IRSEA, which will not only focus on developing the main regulatory tools but will promote stakeholder, including customer, participation.

61. The water resources management sector, which is at an early stage, will also be strengthened through the project. The policy-making function will be supported through the institutional strengthening of INRH. In addition to the establishment of the required information systems and the provision of capacity building programs and tools, the project also includes a dam safety program that will assess the status of prioritized dams and will prepare guidelines on safe dam operation and management.

62. The river basin plan will be the instrument used at the basin level to properly manage water resources; these plans will be accompanied by a monitoring system, which will allow a better understanding of the physical phenomena governing the hydrological cycle, as well as support decision-making processes at the basin level.

63. In terms of infrastructure, the project will support the GoA's efforts to increase service coverage through the rehabilitation and expansion of water supply production and distribution facilities. Infrastructure interventions have been based on existing master plans and confirmed through site visits to all beneficiary areas. Preliminary designs were technically validated and the scope was discussed with the provincial authorities. Subproject designs are appropriate to the Angolan context, and cost estimates were carried out taking into account the experience obtained in the implementation of WSIDP I. Most of the new connections financed by the project will be in peri-urban areas, where there is a high concentration of low-income residents.

64. An advanced procurement package accounting for 20 percent of project cost estimates has been prepared and reviewed in terms of technical aspects.

C. Financial Management

65. The FCMU-WB/AFD will have overall fiduciary responsibility for implementation of the proposed project. The FCMU-WB/AFD will have a dedicated Financial Manager reporting to the FCMU-WB/AFD Coordinator responsible for project financial management (FM) matters. The Financial Manager will be supported by an Accountant. The appointment (or continuation) of the

Financial Manager is a condition of effectiveness; the Project Accountant should be appointed within four months after the project effectiveness date. The project funds, expenditures and resources will be accounted for using computerized accounting software. The basis of accounting will be Financial Reporting under Cash Basis.

66. The proposed project will make use of reimbursement, advances, and direct payment disbursement methods for International Bank for Reconstruction and Development (IBRD) and AFD proceeds. To facilitate the implementation of the project activities, the FCMU-WB/AFD will establish and maintain: (a) a segregated Designated Account (DA) for deposit of IBRD funds in U.S. dollars, (b) a Dedicated Account for deposit of AFD funds in EUR, and (c) a Project Account for deposit of counterpart funds in local currency. The FCMU-WB/AFD will prepare quarterly single interim unaudited financial reports (IFRs) covering all project funds and expenditures and provide such reports to the World Bank within 45 days of the end of each calendar quarter. The project financial statements will be audited annually, and the audit report (covering all project funds and expenditures) will be submitted to the World Bank no later than six months after the end of each financial year.

67. The overall conclusion of the FM assessment is that the project's FM arrangements have an overall residual financial management risk rating of Substantial. The FCMU-WB/AFD should therefore take appropriate actions to ensure that the agreed financial management action plan is satisfactorily implemented within the established deadlines as stipulated in the action matrix to ensure that an acceptable project control environment is maintained throughout implementation. The FM action plan is provided in Annex 3.

D. Procurement

68. Procurement for the project will be carried out in accordance with the World Bank's "Guidelines: Procurement of Goods, Works and Non-consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" published by the World Bank in January 2011 and revised in July 2014 ("Procurement Guidelines"), in the case of goods, works and non-consulting services; and "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" published by the World Bank in January 2011 and revised in July 2014 ("Consultant Guidelines") in the case of consultants' services, and the provisions stipulated in the Financing Agreement.

69. Further, the "Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants", dated October 15, 2006, and revised in January 2011, will apply.

70. While procurement procedures and oversight will follow World Bank Procurement and Consultant Guidelines, bidding documents and/or proposals, documents and procurement notices will be amended to reflect the role of AFD as co-financier. Furthermore, AFD will not finance its respective part of a contract to a bidder or a consultant who is on any of the UN, EU, and French

financial and commercial sanctions lists; appropriate language will be included in relevant procurement notices.

71. The proposed procurement activities for the project will be managed by the FCMU-WB/AFD. The FCMU—the larger implementing unit under DNA and of which the FCMU-WB/AFD will be a part—is currently managing WSIDP I, in addition to operations financed by other development partners. The capacity of the FCMU was reviewed during preparation and found to be adequate for managing the procurement activities, as the FCMU is staffed with qualified and experienced personnel (international procurement specialists supported by two local procurement officers). Nevertheless, the assessment also highlights the need to enhance the capacity of the team through the securing of an additional international procurement specialist, in view of the large volume of transactions that are anticipated under the project, particularly for the selection of consultants' services. The FCMU-WB/AFD will have two international procurement specialists and two local procurement officers.

72. Major risks associated with the implementation of the Project are related to the capacity of the FCMU-WB/AFD to secure and retain qualified and experienced procurement staff and other specialists. Current country practices for making payments abroad and limitations on the receipt of hard currency by local firms may also affect project procurement. In the last several years, securing work permits has been a lengthy process, affecting the ability of consultants to be available in a timely manner.

73. The procurement risk associated with the project, as described above, is rated Substantial. However, if the FCMU-WB/AFD is able to secure the two internationally recruited procurement specialists in a timely manner, the associated risk for implementation will be reduced to Moderate. Securing qualified procurement personnel for the FCMU-WB/AFD is a condition of project effectiveness.

74. The procurement plan for the project was disclosed on August 19, 2016. The procurement plan includes contracts of about US$192 million that will be procured in the first 18 months of project implementation. Activities to be procured prior to effectiveness, through advance procurement, amount to approximately 20 percent of project costs. The Procurement Plan will be updated at least annually (or as required) to reflect project implementation needs.

E. Social (including Safeguards)

75. OP/BP 4.12 (Involuntary Resettlement) is triggered for this project due to the nature of the proposed investments; a Resettlement Policy Framework (RPF) has therefore been prepared that establishes the standards and procedures to follow in the event that individual investments have been determined to result in possible impacts on households and/or businesses. The project has been reviewed for resettlement issues, and procedures for activities that may require land acquisition have been agreed with the GoA. The RPF updating process was subject to broad public consultation in the nine beneficiary cities and has been disclosed in Angola and at the World Bank's external website on October 5, 2016.

76. During the detailed planning and design of individual sub-projects, a screening process will determine whether or not the resettlement policy is triggered due to land acquisition needs, impacts on assets, or impacts on livelihoods. It is expected that engineers will try to utilize unused government land and rights-of-way when designing distribution networks in order to reduce the number of affected households and businesses. For cases where project activities cannot find unused public land for project investments, a Resettlement Action Plan (RAP) will be prepared based on the guidance and standards set forth in the RPF. The RAP will be prepared by the Borrower, reviewed and cleared by the World Bank, and implemented such that affected persons will receive compensation prior to project activities.

77. When it is determined that a RAP is necessary, a baseline census will be conducted to determine who and what is affected as well as the nature of impacts. The date of the baseline census will serve as the cut-off date, after which time any person moving into the area, or assets being added to the area, will not be eligible for compensation or resettlement assistance. Any person using or occupying the land prior to the census will be eligible for assistance regardless of their ownership either by legal or traditional means. All data collection and monitoring will be disaggregated based on gender, age, and socioeconomic status. This information will be included in reporting.

78. During RAP preparation, consultations will be conducted with affected communities in order to ensure robust communications and to allow beneficiaries to be actively involved in the planning, preparation, and implementation process. Beneficiaries will also be informed of the grievance and redress mechanisms to be used if they have a complaint that is not being effectively handled by contractors, consultants, or the FCMU-WB/AFD.

79. For individual households receiving water connections, only those households requesting service will experience temporary disturbance within their property as part of the installation process. This will not require compensation, as it is requested by the household and is not an involuntary acquisition of land. The FCMU-WB/AFD and contractors' environment and social staff will work with beneficiaries to determine water supply locations as well as timing in order to reduce impacts on assets within household compounds, such as gardens or trees.

80. To encourage low-income households to connect to the water systems, and in order to better explain the benefits and responsibilities of obtaining water service, the works contracts for network extensions will include the carrying out of public consultation and education programs in each area of network expansion. Such campaigns may include a range of activities, as appropriate, including information campaigns, public hearings, distribution of posters and leaflets translated into the local language, interactive drama/theatre groups, and community dialogue initiatives with women and men. In addition, as an input into the design of network extensions, contractors will carry out a minimum of two information/consultation sessions in each sub-project area. The first one will be offered to the general population, while the second one will exclusively target women. The objective of these working sessions will be to inform and obtain feedback about: (a) an adequate interface with the community to develop principles for community involvement, a participative framework, and mechanisms for community awareness and education; (b) identification of community preferences and priorities with regard to the provision of water services, including target groups such as small,

medium and large enterprises, groups with special needs such as low-income and vulnerable households (for example, the aged, HIV/AIDS-affected persons, and persons with disabilities), households outside the formal network, women, and the socially excluded; (c) the role of the communities in construction oversight, as well as recurrent operation and maintenance of the systems; and (d) an assessment of water-related education needs of the community.

F. Environment (including Safeguards)

81. OP/BP 4.01 Environmental Assessment is triggered for this project; as a repeater project from WSIDP I, and as the majority of project investments are expected to only have minor impacts on the environment, this project is classified as Category B in the World Bank's Environmental Assessment classification. Simple environmental management measures are expected to be able to adequately manage likely impacts resulting from the project (primarily pollution from wastes/residues on soil, eventual oil spills from generator filling, and health and safety risks).

82. Although the nature, scale and scope of the infrastructure investments proposed for the project are similar to those financed under WSIDP I, the precise location of project activities and their footprints will not be known prior to approval. The Environmental and Social Management Framework (ESMF) was therefore updated to reflect minor changes in the project nature and scope. The environmental safeguard tools available at different subproject stages, such as the Environmental and Social Screening Checklist (ESSC) and the Environmental Management Plan (EMP), have been reviewed, as well as the environmental clauses and penalties for non-conformity to the EMP. If needed for certain sub-projects due to foreseen negative environmental impacts, an Environmental and Social Impact Assessment will be prepared to identify, assess and adequately manage those impacts (also in accordance with Angolan Environmental Impact Assessment law - Decree 51/04, 23 July 2004). The ESMF updating process was subject to broad public consultation in the nine beneficiary cities and has been disclosed in Angola and at the World Bank's external website on October 6, 2016.

83. The Borrower's capacity to implement environmental safeguard policies during WSIDP I has proven to be acceptable. The existing FCMU includes two experienced safeguards specialists, and safeguard procedures are well established. The FCMU-WB/AFD will include the existing team and procedures, and the capacity to manage environmental impacts of WSIDP II is considered to be satisfactory.

G. Other Safeguards Policies Triggered

84. OP 7.50 International Waterways is applicable to the proposed project, as some of the water supply systems to be supported by the project rely on sources of water interconnected with the Congo/Zaire River and the Zambezi River, which are considered to be international waterways for purposes of the policy. However, the activities to be financed under the project in cities located in international basins (i.e., Dundo and Luena) do not entail the construction of additional treatment capacity, nor the expansion of production facilities. Existing water treatment capacity will be utilized to supply areas that will receive network extensions under the project. For the foregoing reasons, it

was determined that the project meets the criteria defined in paragraph 7 (a) of OP 7.50 and is eligible for an exception to notification requirements. That is: the project (a) will not adversely change the quality or quantity of water flows to the other riparian; and (b) will not be adversely affected by other riparians' possible water use. A Memorandum for Exception to Notification Requirements under OP 7.50, Project on International Waterways, was prepared for the project (dated August 20, 2015) and approved by the Bank's Africa Regional Vice President.

H. World Bank Grievance Redress

85. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the 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 World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org

Annex 1: Results Framework and Monitoring

Republic of Angola: Second Water Sector Institutional Development Project

Results Framework

Project Development Objectives

PDO Statement

The Project Development Objective is to strengthen the institutional capacity of selected water sector agencies and increase water service coverage in target cities.

These results are at | Project Level

Project Development Objective Indicators

Indicator Name	Baseline	Cumulative Target Values						
		YR1	YR2	YR3	YR4	YR5	YR6	End Target
Number of people in urban areas provided with access to Improved Water Sources under the project (Number) - (Core)	0	0	0	150,000	410,000	690,000	951,150	951,150
Direct project beneficiaries (Number) - (Core)	0	0	0	150,000	410,000	690,000	951,150	951,150
Female beneficiaries (Percentage - Sub-Type: Supplemental) - (Core)	50	50	50	50	50	50	50	50
Number of independent audits of PWSU financial statements documenting financial performance (annual) (Number)	0	2	4	4	4	8	9	9
Percentage of hydrometric stations supported by the	0	0	50	50	60	70	80	80

project, providing information to INRH (Percentage)								
Regulatory framework for water and sanitation services in place (Yes/No)	No	No	No	No	No	No	Yes	Yes

Intermediate Results Indicators

Indicator Name	Baseline	Cumulative Target Values						
		YR1	YR2	YR3	YR4	YR5	YR6	End Target
Number of water utilities that the project is supporting (Number) - (Core)	0	0	2	4	9	9	9	9
Average audited cost-recovery ratio for the 5 PWSUs supported by WSDIP I (Percentage)	0	40	60	80	80	80	80	80
Average audited cost-recovery ratio for 2 PWSUs to be supported by WSDIP II (Percentage)	0	0	20	35	50	70	80	80
Average audited cost-recovery ratio for 2 PWSUs to be supported by WSDIP II after year 3 (Percentage)	0	0	0	10	35	50	70	70

Indicator Name	Baseline	Cumulative Target Values						
		YR1	YR2	YR3	YR4	YR5	YR6	End Target
Integrated River Basin Management Plans supported by the Project (Number)	0	0	0	1	1	2	2	2
Assessment of the safety status of prioritized dams carried out by a panel of experts (Number)	0	0	0	2	4	6	6	6
New piped household water connections resulting from the project intervention (Number) - (Core)	0	0	0	30,000	80,000	135,000	186,500	186,500
Length of water supply network laid under the project (Kilometers)	0	0	200	500	900	1,300	1,675	1,675
Increased capacity of water treatment (production) (Cubic Meter (m3))	0	0	0	6,000	6,000	36,000	48,000	48,000
Number of studies carried out to confirm the availability of water resources with adequate quality (Number)	0	0	1	1	1	2	2	2
Number of sanitation master plans updated (Number)	0	0	0	8	8	8	8	8
Systems to receive and respond to customer complaints at the PWSU level in place (Number)	0	0	0	2	4	7	9	9

Indicator Name	Baseline	Cumulative Target Values						
		YR1	YR2	YR3	YR4	YR5	YR6	End Target
Percentage of registered grievances related to service delivery that are resolved.	0	0	0	30	50	60	60	60
Percentage of network expansion contracts that carry out information and consultation sessions.	0	0	100	100	100	100	100	100
Percentage of network expansion contracts that carry out information and consultation sessions specifically for women	0	0	100	100	100	100	100	100

Indicator Description

Project Development Objective Indicators				
Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Number of people in urban areas provided with access to Improved Water Sources under the project	This indicator measures the actual number of people in urban areas who benefited from improved water supply services that have been constructed under the project. Guidance on "improved water sources": Improved water sources include piped household connections (house or yard connections), public standpipe, boreholes, protected dug well, protected spring and rainwater collection. Hence, "Improved Water Sources" do not include, inter alia, water provided through tanker truck, or vendor unprotected well, unprotected spring, surface water (river, pond, dam, lake, stream, irrigation channel), or bottled water. The definition of what is considered an 'improved water source' follows the UNICEF-WHO Joint Monitoring Program definition. Note that "Improved Water Sources" does not refer to the question of new versus rehabilitated water sources, but is the standard definition used to track progress on the Millennium Development Goals. Guidance on people with access: The data on the number of people provided with access can be estimated by TTLs by multiplying i) the actual number of piped connections with an estimate of the number of people per household connection; and/or ii) the actual number of community water points with an estimate of the number of people per community water point. The assumptions made regarding number of people per connection made should be carefully documented in the 'comments' section of the indicator when data is entered in the ISR. Guidance on urban classification: The classification should follow the official definition used in the country.	Semi-annual	Reports	FCMU-WB/AFD
Direct project beneficiaries	Direct beneficiaries are people or groups who directly derive benefits from an intervention (i.e., children who benefit from an immunization program; families that have a new piped water	Semi-annual	Reports	FCMU-WB/AFD

	connection). Please note that this indicator requires supplemental information. Supplemental Value: Female beneficiaries (percentage). Based on the assessment and definition of direct project beneficiaries, specify what proportion of the direct project beneficiaries are female. This indicator is calculated as a percentage.			
Female beneficiaries	Based on the assessment and definition of direct project beneficiaries, specify what percentage of the beneficiaries are female.	No description provided.	No description provided.	No description provided.
Number of independent audits of PWSU financial statements documenting financial performance (annual)	This indicator reflects the extent to which the PWSUs are able to identify and record revenues and expenses and possess the required systems and organizational capacity to provide financial information about the utility's operations. Information in audited financial reports document PWSU performance, key financial challenges, and, over time, the evolution of improvements to operations and finances.	Annual	Reports	FCMU-WB/AFD
Percentage of hydrometric stations supported by the project, providing information to INRH	This indicator captures the extent to which the hydrometric stations supported by the project are in working condition, and whether all the prerequisites to information availability are in place. This indicator will measure progress towards the institutional strengthening activities of INRH and is related to the PDO.	Annual	Reports	FCMU-WB/AFD/ INRH
Regulatory framework for water and sanitation services in place	This indicator captures information about the progress of various regulatory instruments supported by the project needed to establish a sound regulatory framework for the water and sanitation sector. This indicator will measure progress towards the institutional strengthening activities of IRSEA and is related to the PDO.	Annual	Reports	FCMU-WB/AFD/ IRSEA

Intermediate Results Indicators				
Indicator Name	Description (indicator definition etc.)	Frequency	Data Source/ Methodology	Responsibility for Data Collection
Number of water utilities that the project is supporting	Total number of utilities providing water supply with which the Bank is working under the project.	Semi-annual	Reports	FCMU-WB/AFD
Average audited cost-recovery ratio for the 5 PWSUs supported by WSDIP I	This indicator measures the financial sustainability of the utilities by comparing collected revenues and operational expenditures, as a proxy variable to assess the overall performance of the utility (reducing costs and increasing billings and collections). This first group of 5 PWSUs received initial assistance under WSIDP I and therefore have a higher target ratio. The 5 PWSUs are Malanje, Cuanza Norte, Uige, Huambo, and Bié.	Annual	Reports	FCMU-WB/AFD/ IRSEA
Average audited cost-recovery ratio for 2 PWSUs to be supported by WSIDP II	This indicator measures the financial sustainability of the utilities by comparing collected revenues and operational expenditures, as a proxy variable to assess the overall performance of the utility (reducing costs and increasing billings and collections). Because these utilities will begin to receive assistance under WSIDP II, more modest targets have been set. The 2 PWSUs are Huila and Moxico.	Annual	Reports	FCMU-WB/AFD/ IRSEA
Average audited cost-recovery ratio for 2 PWSUs to be supported by WSIDP II after year 3	This indicator measures the financial sustainability of the utilities by comparing collected revenues and operational expenditures, as a proxy variable to assess the overall performance of the utility (reducing costs and increasing billings and collections). Because these utilities are currently being supported by AfDB and will only be supported by WSIDP II after year 3 of the project, a different timeline for target achievement has been defined. The 2 PWSUs are Namibe and Lunda Norte.	Annual	Reports	FCMU-WB/AFD/ IRSEA
Integrated River Basin Management Plans supported by the Project	This indicator will measure the completion of Integrated River Basin Management Plans for the prioritized basins.	Annual	Reports	FCMU-WB/AFD/ INRH
Assessment of the safety status	This indicator will measure the progress on the assessment of the	Annual	Reports	FCMU-

of prioritized dams carried out by a panel of experts	safety status of prioritized dams; a panel will analyze the dams in groups of four; it is expected to have this exercise repeated every 3 years.			WB/AFD/INRH
New piped household water connections resulting from the project	Number of new piped household water connections which result from the project intervention. A piped household water connection is defined as a connection that provides piped water to the consumer through either a house or yard connection. Hence they do not include, inter alia, standpipes, protected wells, boreholes, protected springs, piped water provided through tanker trucks or vendors, unprotected wells, unprotected springs, rivers, ponds and other surface water bodies, or bottled water.	Annual	Reports	FCMU-WB/AFD
Length of water supply network laid under the project	This intermediary indicator tracks progress through monitoring the number of kilometers of new water supply network installed under the project. The supervision consultants for each sub-project will collect the information of pipeline installed monthly and report it to the FCMU-WB/AFD.	Semi-annual	Reports	FCMU-WB/AFD
Increased capacity of water treatment (production)	This intermediary indicator tracks progress through monitoring the amount of additional water which can be treated (produced) as a result of rehabilitation and expansion works implemented under the project.	Semi-annual	Reports	FCMU-WB/AFD
Number of studies carried out to confirm the availability of water resources with adequate quality	This indicator will reflect the progress of studies on hydro-geological, geophysical investigations as well as on saline intrusion in selected cities. These studies shall be carried out during the first part of the project to inform follow-up investments.	Annual	Reports	FCMU-WB/AFD
Number of sanitation master plans updated	This indicator will provide information on the completion of sanitation master plans for eight of the cities supported by the project.	Annual	Reports	FCMU-WB/AFD
Systems to receive and respond to customer complaints at the PWSU level in place	This indicator will provide information on the development of systems within the PWSUs that enable customers to inform the relevant PWSU of service-related issues and for the PWSUs to respond to and follow-up with such complaints.	Annual	Reports	PWSUs/FCMU-WB/AFD
Percentage of registered grievances related to service	This indicator will provide information on the percentage of customer complaints received through the customer complaint	Annual	Reports	PWSUs/FCMU-WB/AFD

delivery that are resolved	systems established by the PWSUs that are successfully resolved.			
Percentage of network expansion contracts that carry out information and consultation sessions	This indicator will track information and consultation sessions carried out by contractors (with the participation of the relevant PWSU) carrying out civil works related to water supply network extension and customer connections to the network. The sessions will work to ensure the consideration of neighborhood and customer preferences in the design and implementation of networks and that all potential customers understand their rights and responsibilities with respect to water service, including the expectation of customer payment for services received. All contracts for network expansion and customer connections will include the requirement that such information and consultation sessions be carried out in the areas of expansion.	Annual	Reports	FCMU-WB/AFD
Percentage of network expansion contracts that carry out information and consultation sessions specifically for women	This indicator will track information and consultation sessions specifically for women carried out by contractors (with the participation of the relevant PWSU) carrying out civil works related to water supply network extension and customer connections to the network. As women (and girls) are expected to be key beneficiaries of the extension of water services, their participation in information and consultation sessions is especially important to promote the design of networks and location of connections that meet their needs. All contracts for network expansion and customer connections will include a requirement that a women-specific information and consultation session be carried out in each area of expansion, and therefore it is expected that 100 percent of contracts will include sessions for women.	Annual	Reports	FCMU-WB/AFD

Annex 2: Detailed Project Description

Republic of Angola: Second Water Sector Institutional Development Project

Component 1: Water Supply Institutional Strengthening and Capacity Development (US$74 million, IBRD Financing US$29.50 million, Financing Gap US$8.00 million).

1. This component aims to strengthen the institutional framework for the water and sanitation sector as well as to build capacities at the recipient agencies at the national and provincial levels. The component will finance activities designed to support the PWSUs and the water office of IRSEA. The proposed activities under this component will support institutional strengthening and sustainability of the agencies responsible for policy-setting, regulation, sector information, and the provision of water and sanitation services. This component will provide goods, operational support, capacity building/training, and technical assistance to IRSEA and the PWSUs. Sub-components financed under this component include:

2. **Sub-Component 1.a: Technical Support for Utility Operations through Performance-Based Management Contracts, as well as operational support for Selected Cities (US$54.0 million):** The PWSUs have only recently been established. Prior to the implementation of the water sector reforms and restructuring supported under WSIDP I, water supply was provided by provincial government branches, known as *Direcções Provinciais de Energia e Água* (DPEAs; Provincial Department of Energy and Water). In nearly all provinces, the DPÉAs did not charge for water services (and in many cases had no agreed rates for services), could not accurately track the cost of service provision, could not measure production or consumption, hired and managed staff according to civil service guidelines, suffered from deteriorated, often inoperable, equipment, and had little control over funds available for repairs or capital investments. The establishment of autonomous public companies under the National Law for the provision of water and sanitation services was intended as a first step in strengthening management of water services, accounting for the true cost of services, reducing losses, and working toward, in the near term, operational cost recovery through user tariffs and fees, and, in the long term, full cost recovery.

3. Sixteen PWSUs have been formally established since 2013. While they exist, they are still largely embryonic. Three-member management teams (administrative boards) have been selected by the Ministry of Economy (as the responsible ministry for state-owned enterprises) for some PWSUs, but most have limited managerial experience. Most of the companies do not have an asset registry; there are sometimes no records of customers or connections; management may have no record of the cost of operations or materials; there is no way to measure consumption of water; and there is no straightforward way to charge customers for service.

4. In order to assist the PWSUs, WSIDP I is financing three-year management technical assistance contracts for six utilities. Some additional utilities have similar assistance financed under an AfDB project, but with shorter contractual terms. Under the contracts financed by WSIDP I, full-time international consultants are placed within each of the utilities to provide

direct assistance to the administrative boards in establishing policies and procedures and installing management systems (including billing, financial management, technical management, and customer service software). In addition, the consultants will train staff and undertake vital initial work in water supply management—undertake system and customer cadaster surveys, prepare tariff proposals, establish initial accounts and prepare operational budgets, and identify emergency and longer-term works.

5. Financing will be provided under WSIDP II to continue management technical assistance contracts to a total of nine utilities—the seven utilities supported under WSIDP I, and two utilities currently supported by the AfDB. As the current three-year contracts began primarily in late 2015 and early 2016, the WSIDP II-supported contracts will begin in early 2019 and are expected to be for four- to five-year periods. The contracts will build upon the experience and accomplishments of the existing contracts and investments made in the utilities and will have more ambitious operational and financial performance targets than could exist in the first series of contracts. The contracts will be structured in a way to incentivize improved operational and financial performance of the utilities, including performance-based bonuses for the firms.[4] The assistance will also provide on-the-job training and mentoring to management and staff of the utilities.

6. Under WSIDP II management contracts will include required measures to consistently improve customer service as well as a sound social communication strategy and support throughout the duration of the contract. A customer complaints office will be established in each supported utility to receive and respond to customer complaints. Records will be kept so as to ensure that requests received are properly addressed in a manner consistent with the standards set by the regulator.

7. In addition, this subcomponent will finance needed operational support to ensure that the management contracts have the means to deliver services and improve the PWSUs' operational and financial performance, including goods, fuel, electricity, and services.

8. **Sub-Component 1.b: Capacity Building and Technical Assistance to IRSEA for Water and Sanitation Regulation (US$18.0 million).** The responsibility for regulation of water and sanitation services was taken on by the Institute for Regulation of Electricity Services (*Instituto Regulador dos Serviços de Electricidade*) following Decree 59-16 of March 16, 2016. The new agency—IRSEA—has since established an office responsible for the regulation of water and sanitation, but pending the establishment of the PWSUs, has not had regulatory responsibilities for the sector. As the PWSUs are established, IRSEA will simultaneously develop its capacity for oversight, evaluation, information gathering, tariff approval, and performance benchmarking in the water and sanitation sector.

[4] The incentive payments and calculations are expected to be based on key operational indicators, such as: (a) system operational time; (b) percentage of operating costs covered by collected revenues; (c) percentage of produced water metered and billed; and (d) percentage of billed water collected.

9. Sub-Component 1.b. of WSIDP II aims to assist IRSEA in defining a sound regulatory framework, as well as to build its capacity to fulfil its responsibilities as the water and sanitation regulator. The sub-project will finance technical assistance and capacity building, including, but not limited to, the following

- Technical Assistance: The project will support a long term technical assistance to strengthen IRSEA's capacity to fulfill its mandate; specific activities under this activity include: (a) Assessment of the current regulatory activities carried out by the regulator; (b) proposal of the overall regulatory framework for the water sector in Angola, including required regulatory instruments; (c) development of ToRs for activities to be supported under this sub-component, (d) advisory and training services to IRSEA.
- Organizational structure, staffing and skills definition: Assistance will be provided to advise the regulator with respect to departmental and staffing /skills requirements given IRSEA's mandate for water and sanitation regulation.
- Development of water and sanitation regulatory instruments: This activity will include the review of the existing legal framework to confirm applicability to both water supply and wastewater services. While implementation of all areas of regulation is likely to be phased in over time, assistance will be provided to develop key regulatory instruments and to train staff in their use. This is expected to be developed through consultancies and a long-term technical assistance contract, including on-the-job training and mirroring for the first few years of the implementation of regulations. The key regulatory instruments to be supported by the project include:
    - Utility license applications;
    - Regulatory accounting and reporting standards;
    - Cost-recovery tariff policies and guidelines;
    - Guidelines for social, pro-poor tariffs;
    - Tariff code and tariff filing regulations;
    - Utility operational and financial auditing standards;
    - Customer relations and service standards;
    - Quality of service standards; and
    - Technical regulations.
- Design and development of an information database for the water and wastewater sector within IRSEA, as an input into the improvement of the tracking of key performance indicators and of data availability for policy and investment decision-making. WSIDP II will assist IRSEA in the design and development of an information system for the sector that will include, among others, utility data and performance indicators (for example, energy consumption and non-revenue water).
- Training and capacity building: In addition to the on-the-job training to be provided by the Technical Assistance consultant, selected training to IRSEA's staff will be

supported by the project in order to enhance their capacity to implement the regulatory framework.

- Beneficiary Assessment: A beneficiary assessment will be carried out to better identify existing and future customers, their socio-economic condition, service preferences, and the capacity and willingness to pay for the water and, when possible, sanitation services. The assessment will be gender disaggregated and will include gender specific aspects. Feedback obtained through the beneficiary assessment will be utilized to inform measures at the utility and project level.

10. **Sub-Component 1.c: Study on Private-Sector Participation in the Water Sector (US$2.0 million).** Assistance funded by a Public-Private Infrastructure Advisory Facility (PPIAF) grant, ongoing in Cabinda province, is reviewing alternatives for private-sector participation in the water sector in that province. This sub-component will support (a) additional studies and workshops needed to complete the study recommendation in Cabinda or any suitable province; (b) the preparation of studies on the potential for private-sector participation in additional provinces; and (c) depending on the findings of the studies in (a) and (b), the hiring of a transaction advisor(s) to draft bidding documents and model contracts, assist in the management of the bidding process, and advise on bid evaluations, negotiations, and contract finalization.

Component 2: Water Resources Management (US$35.2 million, IBRD Financing US$14.00 million, Financing Gap US$4.00 million).

11. This Component supports the strengthening of the institutional framework for water resources management, including continuing support and activities initiated under WSIDP I. Key activities will focus on: (a) strengthening and support to INRH; (b) development of systems for water resource monitoring and management; (c) support for the development of new river basin plans; and (d) support for the preparation of a National Dam Safety Plan.

12. Specific activities include analysis of infrastructure investment requirements; preparation of two new river basin management plans; development of policy and monitoring frameworks; and installation of hydrometric stations and monitoring systems. This Component will provide goods, works, and operational support, capacity building/training and technical assistance to INRH. Component 2 includes the following sub-components:

13. **Sub-Component 2.a: Support to the INRH Central and Regional Directorates.** This sub-component will support the strategy for the regionalization of the INRH by providing services, goods, computers, office equipment, and the software licenses (Hydstra) needed for the management of the hydro-meteorological (hydromet) information in two Regional Directorate Offices to ensure that they are fully operational. The priority will be placed in the newly created Northern and Central Regional Directorates.

14. **Sub-Component 2.b: Capacity-building, Training, Communications, and Operational Support to the INRH.** WSIDP I has provided technical assistance to INRH that

has strengthened its capacity and ensured the quality of outputs under INRH's responsibility. However, the INRH is an emerging institution that still needs assistance to implement its mandate. Specific activities under this sub-component include: (a) direct advisory and training services to INRH and the regional directorates, with special attention to WSIDP II activities and the sustainability of actions initiated under WSIDP I; (b) working jointly with INRH personnel, elaboration of the INRH Strategic Plan; (c) design and implementation of a public awareness and communications campaign; and (d) support to the implementation of a pilot for the *Regime Econômico e Financeiro de Utilização Geral dos Recursos Hídricos* (REFURGH—General Economic and Financial Framework for Water Resources – Presidential Decree 82/14), which established the right of INRH to charge for the use of water resources. Such elaboration will involve studies to define charging methods, allocation of revenues across agencies, implementation of the REFURGH, and management of funds.

15. **Sub-Component 2.c: Information Management System**. Under this sub-component, a consultancy will be contracted for the design and implementation of an information management system (IMS) for the INRH, including the specification of the hardware and software needs. The activity will also finance the acquisition of related goods and services to support the implementation of the IMS.

16. **Sub-Component 2.d: Water Resource Monitoring.** This sub-component will assist the expansion of Angola's hydromet monitoring network consistent with the 2008 recommendations of the World Meteorological Organization (with coverage of 1,875 square kilometers per station). Full implementation would result in 665 hydromet stations in Angola, and would allow the monitoring of overall hydrologic conditions nationally. Under this sub-component, the project will finance the reconstruction of 30 stations, including equipment, services, goods and minor works. The selection of the hydromet station locations will prioritize filling in gaps in data while taking into consideration the current and medium-term expected national capacity to operate and maintain the network. The component will also include: (a) the upgrade of nine hydromet stations to include meteorological monitoring capabilities; and (b) a contract to manage the hydromet station network.

17. **Sub-Component 2.e: River Basin Planning.** This sub-component will assist the INRH to develop and implement specific river basin plans. The sub-component will support follow-up activities of the integrated river basin management plan (IRBMP) for the Cuanza River (prepared under WSIDP I), including priority actions identified under the plan and implementation of a pilot project for the application of the REFURGH with respect to the Cuanza River. The pilot project will include a comprehensive water user inventory, the consolidation of procedures and instruments for water use permits, training, discussions and workshops with relevant stakeholders, dissemination materials and publications, specific applications of the REFURGH, and evaluation of its impact. In addition, the sub-component will support the preparation of two additional IRBMPs in the southern coastal region: (a) Keve and Longa; and (b) Cubal da Hanha, Catumbela, Cavaco, Quicombo, Ngunza, Dui, Evale, Balombo and Coporolo (known as Benguela Region).

18. **Sub-Component 2.f: Dam Safety.** INRH is responsible for dam safety in Angola, through the National Dam Safety Authority, which reports to INRH. Initial work was undertaken under WSIDP I: (a) to define a plan of action for dam safety; (b) to prepare the draft legal framework for the National Dam Safety Authority; and (c) to prepare TORs for the National Dam Safety Plan, for an inventory of dams, and for the preparation of dam inspection guidelines. The following activities supported under this sub-component follow up on those outputs: (a) carrying out of a national inventory of existing dams and reservoirs, including a description of main characteristics; (b) an assessment by a panel of experts of the safety status of prioritized dams, including the preparation of required investments and other activities (those investments and activities would not be financed under the project); (c) elaboration of the legal and regulatory framework, including institutional responsibilities, standards and technical dam safety guidelines; and (d) a capacity-building program to support the above activities.

Component 3: Rehabilitation and Expansion of Water Supply Production and Distribution (US$324 million, IBRD Financing US$131.00 million, Financing Gap US$32.90 million; plus US$49.5 million for contingencies and fees, IBRD US$0.50 million, Financing Gap US$49.00 million).

19. The objective of Component 3 is to support the targeted PWSUs in the development of priority infrastructure to expand system capacity, increase service coverage and quality, and improve the operating efficiency of the production and distribution systems. Through this component, PWSUs will expand their customer and revenue base, thereby strengthening their ability to cover their fixed costs. Furthermore, all the household connections to be built and rehabilitated by the project will include meters, which will provide some of the tools required to measure consumption and bill customers accordingly. The proposed investments have been selected to build upon the works implemented through WSIDP I and complement the GoA's and the AfDB's water sector investments. While improving utilities' operations is an important element of WSIDP II, service coverage within the selected systems is low (on average less than 34 percent), and therefore proposed interventions under the project focus substantially on necessary infrastructure investments to expand systems, especially in poorer peri-urban communities. Through project implementation, coverage is expected to increase to as high as 75 percent in some of the project cities. This component will provide goods, works, and technical assistance to PWSUs. Component 3 includes the following sub-components:

20. *Sub-component 3a: Rehabilitation and Expansion of Production Facilities (US$76.4 million, including supervision costs).* Investments will include civil and electro- mechanical works to improve water production in targeted cities where required to support expanding service coverage. Key activities will include expansion and refurbishment of well fields and intake facilities and expansion and refurbishment of water treatment facilities. The sub-component will also include construction of clear-water storage tanks and the rehabilitation and expansion of transmission infrastructure, including new pipelines, pump stations, telemetry/SCADA, and associated fittings.

21. *Sub-component 3b: Rehabilitation and Expansion of Distribution Systems (US$247.6 million, including supervision costs).* Investments under this sub-component will include the development of priority infrastructure to increase service coverage and improve operational efficiency of the water distribution systems in selected cities. Investments will include rehabilitation of existing and construction of new distribution centers, including increasing storage with ground tanks and pressure through elevated water towers, water supply network expansion and rehabilitation, installation of district meters and pressure control valves within existing pipelines, telemetry, and approximately 186,500 new household connections with meters—directly benefiting some 951,000 people. Network investments (estimated to be around 1,675 kilometers of pipeline) will be predominantly directed towards expanding coverage to underserved, low-income, peri-urban areas (mostly with un-paved roads). Public education campaign and community consultation will be included in all works contracts that will implement new networks in peri-urban areas. These investments will have substantial development impacts by providing services to the poor. In addition, they complement WSIDP I-supported network rehabilitation of the urban centers in the targeted cities, which was critical for supporting the sustainability of services and economic growth and development within the provincial cities.

22. For selected cities (i.e., Lubango, Kuito-Kunje and Uige), project-supported works have been divided into phases; the first-phase investments will rely on existing production capacity. Works proposed for the second and third phases will be undertaken beginning around the third year of implementation, depending on the status of implementation of new production and the availability of water for the expansion of networks and customers.

23. A more detailed description of the context, technical issues and proposed investments in each of the targeted systems is provided below.

Lubango

24. ***Background***: The city of Lubango, the capital of Huila Province, with a population of approximately 585,260 inhabitants, is one of the most important in Angola. It is the economic and population center of southern Angola, and has significant education, health, and tourist assets. Its water supply assets lag significantly behind the development of the city, suffering from lack of investment and maintenance since independence. In addition, water access is still considerably low, even compared to other Angolan cities. Water resources are constrained by poor investments, and the distribution network suffers from both poor conditions, incomplete and/or un-connected networks within the core area, and lack of extension to large and otherwise well-developed peri-urban neighborhoods.

25. The system has two sources of underground water. The larger of the two is the well field of Nossa Senhora Do Monte, where ongoing rehabilitation works are expected to result in production of 21,600 cubic meters per day. The secondary source is the Tundavala spring, which produces 6,000 cubic meters per day. A borehole at the Lubango airport provides an additional, minor source of water for the formal system.

26. The distribution network consists of approximately 75 kilometers of distribution network, with approximately 8,000 connections. In addition, there are approximately 130 hand-operated standposts and 15 formal water kiosks. Outside of the public system, an estimated 40 boreholes are thought to serve private homes, hotels, and commercial facilities.

27. The system is receiving investments under WSIDP I, including approximately 50 kilometers of new distribution network and 4,600 metered household connections, which are expected to be completed in 2017. In addition, Lot 2 investments under WSIDP I will begin construction of 140 kilometers of network and 20,000 household connections in peri-urban areas.

28. ***Project Investments***: Project investments are intended to increase water production from the two main water supply sources, to network main pipelines to ensure water supply into each neighborhood and to link the Quilemba and Eywa reservoirs into the overall water supply system, to expand the distribution network and supply metered water connections to unserved urban and peri-urban areas, and to improve the efficiency and effectiveness of the transmission systems. The project support to Lubango will also include expansion of services in the neighboring towns of Jamba and Quipungo.

29. The following investments, totaling approximately US$90.0 million, are proposed:

Water Distribution (First Phase), including:

- Installation of 255 kilometers of distribution network and 25,500 domestic connections (yard taps), including meters, in the cities of Lubango, Jamba, and Quincungo;
- Construction of a distribution center, including an elevated tank (2 x 1,000 cubic meters) and chlorination system;
- Rehabilitation of 7,000 existing residential connections in Lubango;
- Installation of District Metering Areas (DMAs), including bulk meters and pressure-reducing and flow-control valves;
- Supervision of works; and
- A public education campaign regarding meter installation.

Water Production (Second Phase), including:

- Development of a new well field of between 20 and 30 boreholes for production capacity of up to 30,000 cubic meters per day. This would include the provision of electrical transformers necessary for operation of the boreholes and telemetry equipment;
- Telemetry equipment for the existing (Nossa Senhora do Monte) well field;
- Construction of a 2,000-cubic-meter storage reservoir near the well field, approximately 55 kilometers of DN 160-315-millimeter HDPE pipelines connecting

the new boreholes to the reservoir, and construction of 3 kilometers of DN 500-millimeter transmission main; and
- Supervision of works.

Water Distribution (Third Phase), including:

- Installation of 200 kilometers of distribution network and 20,000 domestic connections (yard taps), including meters, in Lubango;
- Construction of a second distribution center, elevated tank, and chlorination system; and
- Supervision of works.

30. These proposed investments have been informed by technical diagnostics carried out by consultants and the World Bank team during project preparation. Feasibility studies, including consideration of alternatives, have been prepared by Jiangsu and Gauff, along with concept designs for the key infrastructure components.

N'Dalatando

31. ***Background:*** The city of N'Dalatando is the capital of Cuanza Norte Province, in the north of Angola, with a population of approximately 132,670. Agriculture is the main economic activity, including production of corn, peanuts, coffee, cotton, peas, beans, citrus fruits, cassava, sisal, palm, and sorghum. The city is along the main road between Luanda and economic centers further east.

32. N'Dalatando's water supply system is faced with several challenges. First, the water supply is insufficient during the dry season—both in terms of meeting the operating capacity of the treatment system and the demands of the population. Water supply constraints during the dry season regularly result in the operation of only one or two of the four sand filters of the water treatment plant, leading to significant restrictions in consumption and low pressure in the distribution network. Second, the system effectively has no meters in the production or distribution systems, nor on customer connections. There is therefore no way to measure the production or use of water or technical or commercial losses.

33. Investments under WSIDP I include installation of 65 kilometers of tertiary network and 6,400 associated household connections, including meters, in the urban area. Following the completion of these investments, Lot 2 of WSIDP I will install 50 kilometers of network and 5,000 household connections, including meters, in peri-urban areas.

34. ***Project Investments***: Investments under WSIDP II are intended to (a) augment water supply in order to reduce constraints during the dry season and (b) improve water flow rates and pressures in the distribution network in order to improve distribution throughout the city, in particular to the area of the hospital. Proposed investments totaling an estimated US$40.0 million include:

Water Production[5]

- Construction of a new river intake and raw-water pump station on the Lucala river;
- Construction of a new 36-kilometer raw water transmission main from the new intake to the Mucari water treatment plant (DN 300 - 350 millimeters);
- Expansion of treatment capacity at the Mucari water treatment plant (within the existing footprint of the plant) to treat an additional 6,000 cubic meters per day; and
- Supervision of works.

Water Distribution

- Construction of 60 kilometers of tertiary network and supply and installation of 6,000 associated connections, including meters and materials;
- A public education campaign with regard to the installation of meters;
- Two booster stations with two storage water tanks for higher-altitude neighborhoods; and
- Supervision of works.

Dundo

35. ***Background***: Dundo is the capital of Lunda Norte province, with a population of approximately 156,532 inhabitants. The province is a primary center of mining activities.

36. Dundo is served by a water supply system built prior to independence, although several investments have been made in recent years, including construction of a new ground reservoir and elevated tank, replacement of some of the network with PVC pipes, and the construction of public standposts. The oldest pipes are ductile iron and were, similar to most of the system, out of service for several years, leading to significant damage.

37. The city's water supply comes from two springs feeding, respectively, the Mussungue river and the Cazunda river. There are two main supply reservoirs—an original 1,600 cubic meter reservoir and a new 6,000 cubic meter reservoir. The larger reservoir supplies the entire distribution network (the old reservoir connects with the system), but operation relies on a single pump, which limits supply into the system. A separate water intake on the Dundo river is designed to serve an independent part of the city, but is not operational. Finally, a separate water intake in the area of Sacavula supplies that area. Total production design capacity is 430 cubic meters per hour. However, pumping constraints limit production to 100 cubic meters per hour. The distribution network consists of approximately 32 kilometers of tertiary network, 41 standposts, and two standposts that include community laundry facilities. The system includes very few connections—only an estimated 464, most of them yard taps. Several neighborhoods have no network and are served only by public standposts. The entire system suffers from insufficient pressure, and water quality testing indicates source contamination.

[5] The simplified EIA for the production works in N'Dalatando was disclosed in the World Bank's external website on April 29, 2016

38. A "new centrality" (Nova Centralidade) has been constructed in Dundo and includes a water treatment plant, with production capacity of 20,000 cubic meters per day, as well as a wastewater treatment facility. In addition, the government's PIP is currently making investments in (a) a 300 cubic meter elevated tank in Samacaca; (b) 35 kilometers of tertiary network, 1,050 associated residential connections and 21 public standposts; and (c) rehabilitation of the Mussungue and Cazunda springs.

39. ***Project Investments***: Investments planned under Component 3 for the Dundo water supply system intend to: (a) extend network coverage to unserved peri-urban areas of the city; (b) rehabilitate existing pipes; (c) ensure storage capacity of treated water; and (d) rehabilitate the transmission and distribution systems to ensure consistent service across the system.

40. Investments proposed to be financed under WSIDP II for Dundo are estimated to cost approximately US$24.0 million, and include the following:

Water Distribution

- Construction of 150 kilometers of tertiary network and supply and installation of 15,000 associated connections, including meters and materials;
- Construction of a new distribution center, including a 2,000-cubic-meter ground reservoir, 200-cubic-meter elevated tank, and pumping and dosing equipment;
- A public education campaign with regard to the installation of meters; and
- Supervision of works.

Luena

41. ***Background***: Luena is the capital city of the province of Moxico, in east-central Angola, with a population of approximately 280,642, the majority of whom reside in peri-urban areas. Water is supplied through a relatively recently constructed intake and treatment plant with a capacity of 11,000 cubic meters per day. The original distribution network was built prior to independence, but has recently been entirely rebuilt. The distribution network is served from two elevated storage tanks—Cidade and Sangondo.

42. WSIDP I includes significant rehabilitation and construction of the distribution network, including the construction of 92 kilometers of network and 6,200 household connections in the central urban area. In addition, the project is augmenting production capacity, including construction of a new water intake on the Luena river, a raw-water pumping system and pipeline to a new water treatment plant, a pumping system connecting the treatment plant to the Sangondo tower, and a pumping system to the Cidade distribution center. These works are expected to be completed in 2017.

43. ***Project Investments***: Investments under the proposed WSIDP II are intended to expand water supply to unserved areas of the city. Proposed Investments of US$19.0 million include:

Water Distribution

- Construction of 150 kilometers of tertiary network and supply and installation of 15,000 residential connections, including meters and materials;
- A public education campaign with regard to the installation of meters; and
- Supervision of works.

Moçamedes

44. ***Background***: Moçamedes is the capital city of Namibe province, in the southwest of Angola, with a population of approximately 225,645. The province and the city have a desert climate, and are dry throughout most of the year. The city's water system is supplied by boreholes along the left bank of the Bero river. Water is pumped to reservoir tanks that serve the distribution network. The distribution network dates from before independence and has been poorly maintained; it serves the core urban area but suffers from frequent breakages. Significant improvements to the existing distribution system are currently being financed by the government's PIP and include drilling three new wells at the existing Bero river well field. The investment includes additional raw-water transmission from the well field; construction of a new water treatment plant for removal of iron and manganese and chlorine treatment; expansion of existing and construction of new treated water storage reservoirs to ensure a total of 45,000-cubic-meter storage capacity; and expansion and rehabilitation of the distribution network. These works are expected to be completed in 2017. In addition, the Moçamedes water utility is receiving institutional strengthening from the AfDB's ongoing water project.

45. ***Project Investments***: After completion of the PIP investments above, studies on saline intrusion in the Moçamedes well fields will be undertaken to define the limits of safe groundwater use and priority investments will be confirmed. It is expected that WSIDP II investments will target expansion of the network and connections to unserved areas of the city. Expected investments of approximately US$18 million include:

Water Distribution

- Construction of 140 kilometers of new tertiary network and supply and installation of 14,000 new residential connections, including meters and materials;
- Distribution Center, including a new reservoir 10,000 m3 capacity
- A public education campaign with regard to the installation of meters; and
- Supervision of works.

Kuito-Kunje

46. ***Background***: Kuito city is the capital of Bié province, in the center of Angola and extending through the plateau region of the Upper Zambeze massif. Kuito (and its neighboring city, Kunje) received significant population inflows during the civil war, and is estimated to have a total population of around 340,500. Works financed under WSIDP I to improve the city's water supply were completed in 2015, including: construction of a water intake in the Cussola river;

construction of the Cussola water treatment plant (as well as the raw water pump station between the intake and the plant); construction of treated water reservoirs and associated transmission pipelines; and construction of a distribution center with capacity to supply the core urban area and peri-urban areas of Kuito. WSIDP I also financed the construction of nearly 50 kilometers of tertiary network and 6,000 associated residential connections. An additional 40 kilometers of tertiary network and 4,000 associated residential connections will be undertaken under Lot 2 of WSIDP I.

47. In addition, the government's PIP is undertaking rehabilitation of the intake and treatment at the Cuquema water treatment plant and expanding the capacity of reservoirs. After completion, Phase 2 investments expected to be financed under WSIDP II will be designed.

48. ***Project Investments***: Proposed investments under WSIDP II are intended to complement the improvements in supply made under WSIDP I (Phase 1 of investments) and the government's PIP (Phase 2 of investments). WSIDP II investments will (a) rehabilitate existing networks and provide formal connections in currently networked areas of the city in order to reduce system losses; and (b) extend piped water service to currently unserved peri-urban areas of the city. Investments are estimated to cost approximately US$18.0 million, to be undertaken in two phases, and include:

Water Distribution

Under Phase 1

- Construction of an interconnection between Kuito and Kunje and reconfiguration of 50 kilometers of network;
- Installation of 6,000 meters on existing residential connections and supply and installation of 5,000 residential connections, including meters and materials, within the existing network;
- A public education campaign with regard to the installation of meters;
- Rehabilitation of distribution network control systems; and
- Supervision of works.

Under Phase 2

- Installation of an additional 5,000 new residential connections, including meters and materials;
- Construction of 50 kilometers of tertiary network within Kuito and Kunje;
- A public education campaign with regard to the installation of meters; and
- Supervision of works.

Huambo

49. ***Background***: Huambo is the capital city of Huambo province, a largely agricultural province located in the center-west of Angola. It is the second-largest city in Angola, with an estimated population of 532,500. The city and its economy were significantly affected by the civil war and are still in the process of rebuilding. Significant portions of the population—many

of whom fled to the city during the war—live in unplanned peri-urban areas, some of which are prone to flooding.

50. Huambo has a single source of water—a diversion of the Kulimahala river, with an intake at a small weir that is often obstructed by vegetation and refuse. The source is subject to biological and agricultural pollution. The water treatment plant was built prior to independence; treatment consists of flocculation/clarification, filtration, and chlorination. Treated water is piped to distribution centers in the city center.

51. WSIDP I has financed water network extensions and residential connections, including, under Lot 1, 45 kilometers of tertiary network and 19,000 connections, primarily in the formal city. Lot 2 of WSIDP 1 will construct 95 kilometers of tertiary network and 21,000 residential connections, primarily in peri-urban areas.

52. The government's PIP is considering the construction of significant new water treatment and supply, including new production along the Cuando and Cunhangâmua rivers. Total production capacity of 45,500 cubic meters per day is planned (approximately half at each location); investments include intakes, treatment, transmission, and storage reservoirs and distribution centers. The government's PIP investments are not considered in the project calculation.

53. ***Project Investments***: The proposed WSIDP II investments for Huambo are intended to complement the investments under WSIDP I, in particular, expanding the distribution network to unserved areas and increasing the utility's customer base. Investments are estimated to cost approximately US$37.0 million and include:

Water Distribution

- Construction of 200 kilometers of tertiary network and supply and installation of 20,000 associated connections, including meters and materials;
- Emergency rehabilitation of the Kulimahala treatment plant in order to ensure its continued functioning;
- Construction of two new distributions centers, including a 2,000-cubic-meter ground reservoir, a 250-cubic-meter elevated reservoir, pumping station and dosing equipment;
- Rehabilitation of distribution network control systems;
- Supervision of works; and
- A public education campaign with regard to the installation of meters.

Malanje

54. ***Background***: Malanje is the capital city of Malanje province with a population of approximately 400,000 inhabitants. The traditional city is located southeast of the Guiné River, which flows through the city. New residential areas of the city—some formal, some peri-urban—

have expanded around the original city on the southeast side of the river, as well as across the river, north-west of the original city. The city's sole water source is the spring feeding the Guiné river.

55. Malanje's treatment capacity is an estimated 11,000 cubic meters per day, and the utility has approximately 8,000 customer connections. Under WSIDP I, investments have been made in ensuring the maintenance of the water treatment capacity, as well as in extension of the tertiary network (55 kilometers) and the installation of 3,800 new residential connections, primarily in urban, but unserved, areas. In addition, the government's PIP is considering augmenting water supply for Malanje through the construction of an intake on the Cuije River, a raw-water pipeline to a new water treatment plant, and treated-water storage facilities. In addition, the PIP intends to extend the tertiary distribution network and install residential connections. The investments by the government's PIP are not considered in the project calculation.

56. ***Project Investments***: The proposed investments under WSIDP II for Malanje intend to complement the existing investments in water production and to support the sustainability of the utility through extensions of the distribution network, new residential connections, and metering of new and existing connections. Investments as designed are estimated to cost approximately US$18.0 million and include:

Water Distribution

- Construction of 120 kilometers of tertiary network and supply and installation of 12,000 residential connections, including meters and materials;
- Rehabilitation of 6,000 existing connections, including meters and materials;
- Supervision of works; and
- A public education campaign with regard to the installation of meters.

Uíge

57. ***Background***: The city of Uige is located in north-eastern Angola and is the provincial capital of Uige province. The province is largely agricultural. The city has an estimated population of 394,823 inhabitants.

58. Uige's water supply is treated in two water treatment plants—an older plant, recently renovated and with a maximum treatment capacity of 4,800 cubic meters per day, and a plant built after independence with a maximum treatment capacity of about 9,600 cubic meters per day. The city has approximately 40 kilometers of tertiary network; connections may total 5,880, but the utility is currently undertaking a cadastral survey of connections and has confirmed, so far, 2,132 connections. However, only 1,366 of those connections have signed water supply contracts with the utility. An additional 120 kilometers of network are being built under Lot 1 of WSIDP I, as well as 9,400 residential connections in urban areas. These investments are expected to be completed and commissioned shortly. Investments under Lot 2 of WSIDP I

include an additional 100 kilometers of network and 10,000 residential connections, primarily in peri-urban areas.

59. ***Project Investments***: After completion of Lot 2 of WSIDP I, a new study will be undertaken to define the scope of the intervention under WSDIP II. The potential project investments intend to alleviate water supply capacity constraints and to extend distribution networks and residential connections to unserved areas. Investment costs under WSDIP II are estimated at US$59.0 million and include:

Water Distribution (First Phase)

- Under Phase 1 of the project, construction of 100 kilometers of tertiary network and supply and installation of 10,000 associated residential connections, including meters and materials;
- Supervision of works; and
- A public education campaign with regard to the installation of meters.

Water Production (Second Phase)

- Under Phase 2 of the project, construction of an intake, water treatment plant, related pumping systems, and a treated water storage reservoir;
- Supervision of works; and
- A public education campaign with regard to the installation of meters.

Water Distribution (Third Phase)

- Under Phase 3 of the project, construction of 200 kilometers of tertiary network and supply and installation of 20,000 associated residential connections, including meters and materials;
- Supervision of works; and
- A public education campaign with regard to the installation of meters.

Component 4: Management and Engineering Support (US$62.3 million, IBRD Financing US$25.00 million, Financing Gap US$6.10 million).

60. Component 4 provides management and engineering support through goods and technical assistance to the various agencies of MINEA to support project implementation and other investments in the water sector. Specifically, the component includes support for engineering studies; design and supervision of works; performance contracts; project management; project audits; project monitoring and evaluation; implementation of environmental and social safeguards; economic and financial reviews of investments; support for community consultation and communication activities; and development of various other technical studies such as the Luanda Water Master Plan. This Component will partially finance the operations of the MINEA project implementation unit—the FCMU—which manages implementation of all projects in the sector regardless of the financing source (including PIP). A training budget will also be provided to support capacity-building activities at the national and provincial levels.

61. The component will finance consultant services, goods, and operational costs, capacity building/training, and technical assistance to DNA, Provincial Authorities, MINEA, and EPAL, including but not limited to the following activities:

- Preparation and implementation of EMPs and RAPs for the sub-projects of the project;
- Consulting services and operational costs to MINEA to support project implementation in DNA;
- Consulting services and operational costs to the FCMU-WB/AFD;
- Preparation of hydro-geological, geophysical studies, and water source investigations in Lubango;
- Preparation of studies on saline intrusion in the Moçamedes well fields in order to define the limits of safe groundwater use;
- Technical assistance to the Luanda water utility (EPAL) to support the implementation of the new water supply production system—the Bita Project;
- Technical assistance to EPAL to prepare an integrated Water Master Plan for Greater Luanda;
- Updating of existing sanitation master plans and defining investment priorities in approximately eight provincial capital cities included in the project. Preparation of a pilot project in the sanitation sub-sector, including the scope of the necessary investments with detailed costs, EMP, EIA, RPF and technical specifications. The original master plans were financed by the GoA under EMRP-I; the update will take into consideration the water supply network and other investments installed since then. The update will include consultations with stakeholders in each city, including separate consultations for women and men.
- Consulting services to support DNA, or any successor agency, to strengthen capacity to implement the government's PIP investments, which have averaged US$100 million per year over the last six years;
- Annual audit report of project financial statements;
- Annual audit of financial statements for all utilities receiving investments under the project;
- Preparation and implementation of a young professionals program in the water and sanitation sector, with the support of a local university, for approximately five to six recent university graduates; and
- Training activities, to be defined, but including support to the Onga Zanga training center (initially built with support from the European Union) with equipment and materials to support training activities related to water supply, sanitation, and water resource management.

Annex 3: Implementation Arrangements

Republic of Angola: Second Water Sector Institutional Development Project

Project Institutional and Implementation Arrangements

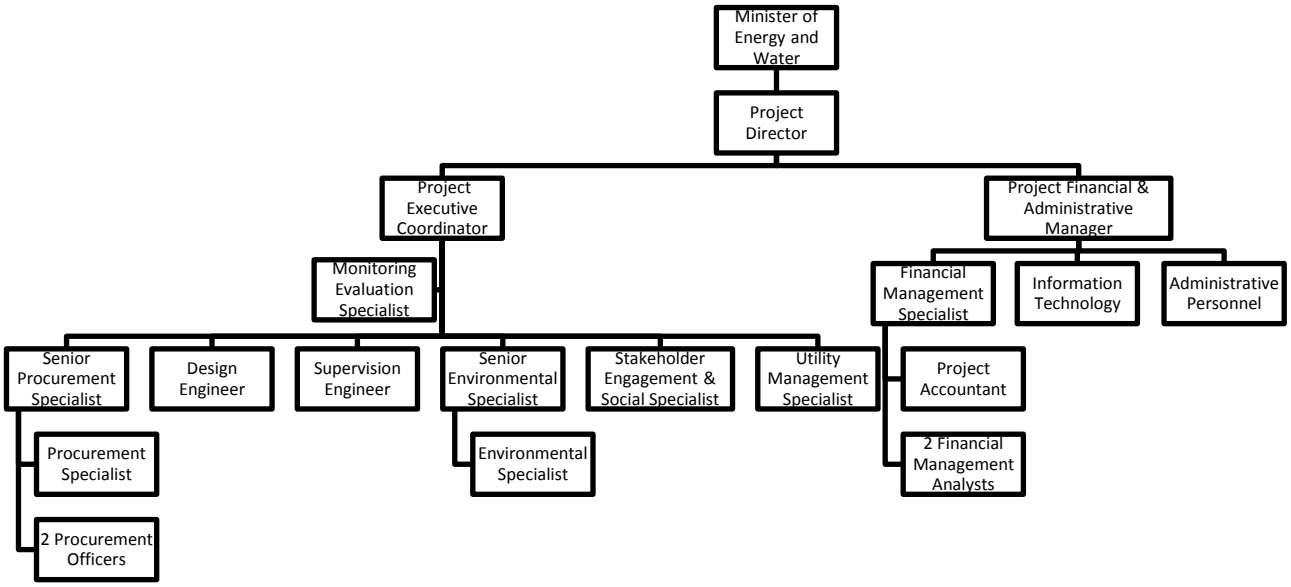
1. Institutional and implementation arrangements will replicate the arrangements defined for WSIDP1, building upon the capacity built in the existing FCMU at the DNA. The FCMU supports the implementation of other programs for the water sector (that is, PIP, AfDB, EU), and has proven implementation capacity; between 2010 and 2016 this unit procured and disbursed US$732 million, as follows:

- CY 2010 - $42 million
- CY 2011 - $89 million (including the first full year of WSIDP I)
- CY 2012 - $173 million
- CY 2013 - $143 million
- CY 2014 - $134 million
- CY 2015 - $89 million (decrease due to the fall in global oil prices)
- CY 2016 - $62 million (through May 2016)

Project Administration Mechanisms

2. Project implementation will be the responsibility of a dedicated project implementation unit for the World Bank/AFD project (FCMU-WB/AFD), which will be primarily staffed by local and international consultants. Project management will be overseen by MINEA, and the FCMU-WB/AFD will report to the MINEA Project Director. The FCMU-WB/AFD will manage all WSIDP II activities, including procurement, financial management and accounting for project funds; as well as coordination with other agencies and institutes involved in the project. The organizational structure for the FCMU-WB/AFD is presented below.

Figure 3.1. FCMU Organizational Structure



3. Project beneficiary central agencies—INRH, IRSEA, and DNA—will be responsible for establishing the agencies' priorities and providing the required inputs to the FCMU-WB/AFD throughout the procurement process related to each agency. Institutional support to the PWSUs, as well as interventions in the beneficiary cities, will be led by the FCMU-WB/AFD in close coordination with the respective provincial government and PWSU and DNA. Beneficiary agencies shall provide periodic reports to the FCMU-WB/AFD on the progress of activities supported by the project for their respective components.

4. The project will provide operational support to the PWSUs, FCMU-WB/AFD, INRH, and IRSEA, as well as the strengthening of government staff assigned to these units by financing local and international consultants, equipment, and needed operating costs. In addition, parallel support will be provided to DNA as required (independent of the support to the FCMU-WB/AFD), for the implementation of projects financed by AfDB, GoA, and other development partners. This will include support to the design engineer and the environmental safeguards specialist in order to ensure that WSIDP II investments will interconnect with investments supported by other financiers and that relevant RAPs, EMPs and ESIAs are prepared in accordance with the project ESMF and RPF, as necessary.

5. The FCMU-WB/AFD will prepare quarterly progress reports for the World Bank, including detailed comments on the execution of the project. The quarterly progress reports will include, among other items, information on project progress, procurement updates, financial management reports, and updated key performance indicators. These will highlight project achievements and also provide a detailed description of difficulties encountered and how these are being addressed. The FCMU-WB/AFD will be responsible for the project FM and for the preparation of project financial reports. It will ensure that all project activities are performed and quarterly progress reports and annual financial audits submitted on time.

6. The Project Implementation Manual (PIM) of WSIDP I will be updated describing the implementation and monitoring arrangements and the sequence of all project activities, including project management, procurement and financial management arrangements.

Financial Management, Disbursement and Procurement

7. An FM assessment was carried out in accordance with OP/BP 10.00, *Investment Project Financing*, and the Financial Management Manual for World Bank Investment Project Financing Operations issued by the FM Sector Board on March 1, 2010 and revised on February 4, 2015.

8. The objective of this assessment was to determine whether the FCMU, under DNA, has acceptable FM arrangements for the implementation of the proposed project. The arrangements are considered acceptable if the entity's planning, budgeting, accounting, internal controls, funds flow, financial reporting, and auditing arrangements: (a) are capable of correctly and completely recording all transactions and balances relating to the project; (b) facilitate the preparation of regular, timely, and reliable financial statements; (c) safeguard the project's assets; and (d) are subject to auditing arrangements acceptable to the Bank.

9. The overall conclusion of the financial management assessment is that the project's financial management arrangements have an overall residual financial management risk rating of Substantial. Therefore, the FCMU-WB/AFD should take appropriate actions to ensure that the agreed financial management action plan is satisfactorily implemented within the established deadlines as stipulated in the action matrix to ensure that an acceptable project control environment is maintained throughout its implementation.

10. **Strengths:** The project FM will be implemented by the FCMU-WB/AFD, which is experienced in handling FM and disbursements of Bank-financed projects. The FCMU-WB/AFD is implementing the ongoing WSIDP I. The recent review of ongoing project FM arrangements conclude that the FCMU-WB/AFD is taking appropriate actions to ensure compliance with FM requirements of Bank-financed operations and the overall FM performance rating is Satisfactory. In addition, the latest audited financial statements of this operation were unqualified, and no major issues were raised with respect to the project systems of internal control. Furthermore, the payments of providers of goods and services will be centralized at the FCMU-WB/AFD; there will therefore be no channeling of funds to third parties.

11. **Weakness**: The FCMU-WB/AFD Financial Manager and other finance staff are appointed under term contracts. The unit therefore may not be able to retain project finance staff capable of adequately performing their roles and responsibilities.

12. **Budgeting:** The FCMU-WB/AFD will prepare the annual budget on the basis of the agreed annual work plans and procurement plans. Planned activities for the project components have been discussed and finalized. These budgets contain details of objectives, expected outcomes and performance indicators. The project will also be responsible for producing variance analysis reports comparing planned to actual expenditures on a quarterly basis. The periodic variance analysis will enable the timely identification of deviations from the budget. These variance analysis reports will be part of the IFRs that will be submitted to the World Bank on a quarterly basis. The budget preparation and monitoring of budget execution will be described in the Financial Procedures Manual, and formats for annual budget and monitoring reports will be included as an annex.

13. **Staffing:** The FCMU-WB/AFD will be responsible for fiduciary aspects of the project. The FCMU-WB/AFD financial management unit includes a Financial Manager and three finance staff. The project FM matters will be handled by a dedicated Financial Manager and Accountant, while the overall responsibility of FM matters rest with the Financial Manager. FCMU-WB/AFD finance staff are appointed under term contracts; therefore, the appointment (or continuity) of the project Financial Manager will be a condition of effectiveness in order to ensure that qualified finance staff are on board at project effectiveness. A dedicated project Accountant should be on board no later than four months after project effectiveness. The costs of the Project Financial Manager and the Accountant will be funded by the project proceeds.

14. **Accounting:** The ongoing project accounting system is currently based on Excel spreadsheets. However, the FCMU-WB/AFD has purchased and installed a computerized accounting system package. This accounting system package is not in use, as the FCMU-WB/AFD faces technical challenges to customize it for the project needs. For the proposed operation, the FCMU-WB/AFD will make use of a computerized accounting system to account for project funds, expenditures and resources; the basis of accounting will be Financial Reporting under Cash Basis. Purchase, installation and customization of a new computerized accounting system will be a condition of effectiveness. The package should be capable of recording correctly and completely all project transactions by categories and components. It should include key controls and be capable of producing timely and reliable financial information required to monitor and effectively manage project progress.

15. **Internal Control:** The General Inspectorate of Finance (IGF-*Inspeção Geral das Finanças*) under the Ministry of Finance may conduct internal audits of the operations, as its mandate is to carry out internal audit reviews of all government entities. However, the carrying out of specific audits will depend on their work plans. For the purpose of this project, regular supervision through desk review and field visits will be carried out by the Bank to ensure that the FCMU-WB/AFD is maintaining adequate systems of internal controls and that key procedures are complied with by the FCMU-WB/AFD. The finance and administrative procedures to be

employed in the implementation of the project are documented in the existing FM Procedures Manual currently in use by the FCMU. However, this manual will be reviewed and updated to incorporate specific aspects of the activities of the proposed project; this should be completed by effectiveness.

16. **Financial Reporting:** The FCMU produces regular quarterly progress reports for the ongoing project, including financial reports. These reports provide financial information required to effectively monitor and manage the project. For the proposed project, this agency will produce and submit to the World Bank a single IFR covering all project funds and expenditures within 45 days after the end of the calendar quarter. The contents of these reports should consist of financial reports, including all sources and uses of funds by project components and categories, and uses of funds by project components and activities (comparing budget and actual expenditures). The FCMU-WB/AFD will also produce a single set of project financial statements on an annual basis, which will comprise the following:

(a) A Statement of Sources and Uses of Funds/Cash Receipts and Payments that recognizes all cash receipts, cash payments, and cash balances controlled by the entity for this project and separately identifies all payments by third parties on behalf of the agency.

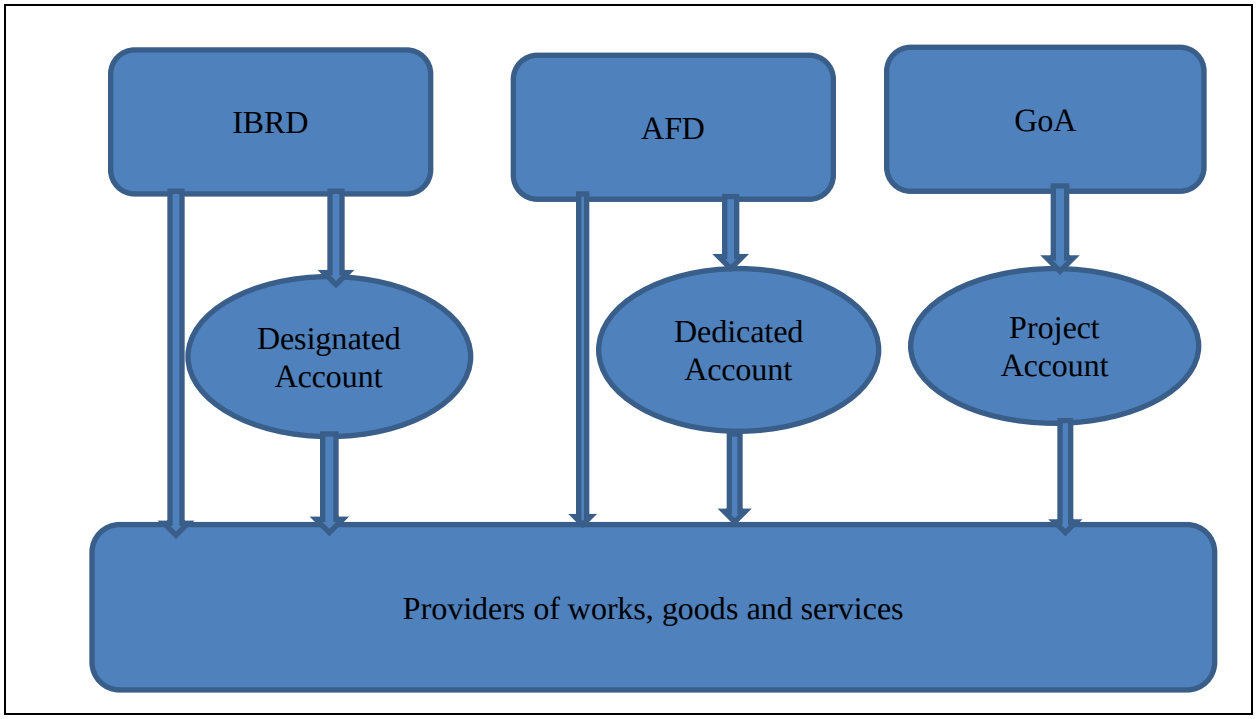
(b) The accounting policies adopted and explanatory notes. The explanatory notes should be presented in a systematic manner with items on Statement of Cash Receipts and Payments being cross-referenced to any related information in the notes. Examples of this information include a summary of fixed assets by category of assets.

(c) A Management Assertion that IBRD funds have been expended in accordance with the intended purposes as specified in the relevant legal agreement.

Funds Flow and Disbursement Arrangements

17. ***Banking arrangements:*** The project's eligible expenditures will be co-financed by the World Bank, AFD, and the GoA at 45 percent, 34 percent, and 21 percent, respectively. To facilitate the implementation of the project activities, the FCMU-WB/AFD will establish and maintain: (a) a segregated Designated Account (DA), for deposit of funds from the World Bank, in U.S. dollars at a commercial bank under terms and conditions acceptable to the World Bank; (b) a Dedicated Account, for deposit of AFD funds, in EUR at a commercial bank under terms and conditions outlined in the Co-Financer Financing Agreement; and (c) a Project Account (PA), for deposit of government counterpart funds, in local currency at a commercial bank. The diagram below depicts the funds flow mechanism for the project activities.

Figure 3.2. Funds Flow Mechanism



18. ***Disbursement arrangements:*** Disbursement of IBRD funds will be done on a transaction basis. An initial advance up to the ceiling of the DA (to be indicated in the Disbursement Letter [DL]) will be made into the DA; subsequent disbursements will be made on a monthly basis against submission of the Statement of Expenditure or other documents as specified in the DL.

19. In addition to the advance method, the option of disbursing the funds through direct payments to a third party, for contracts above a pre-determined threshold for eligible expenditures, will also be available. Withdrawal applications for such payments will be accompanied by relevant supporting documents, such as copies of the contracts, invoices, and other appropriate supporting documents. Options for the use of reimbursements will also be available. The DL will specify additional instructions for withdrawal of the proceeds of the Loan.

20. Disbursements of AFD funds will be made in accordance with the World Bank's applicable disbursement guidelines and policies and specific instructions to be included in the DL. The disbursement of AFD funds will be made through advances, direct payments, and reimbursements; these methods will be stated in the DL. AFD will not finance project expenditures related to a contract with a contractor, supplier of goods and services, or consultant who is on any of the EU, UN or French financial sanctions lists. It authorizes the World Bank to issue a DL (in consultation with this agency) that will provide specific instructions to the borrower for disbursement in accordance with the respective Financing Agreement. The borrower will be required to submit a withdrawal application (WA) and copies of the supporting documents to the Bank in accordance with terms and conditions to be outlined in the DL, as well

as a signed hard copy of the WA and supporting documents to AFD. The World Bank will review each WA in accordance with applicable guidelines and procedures to verify that the amount requested by the borrower is in accordance with the respective Financing Agreements, and advise AFD through the Drawdown Order to make payments, subject to approval by the AFD. If AFD does not approve the payment requested in the WA, it will promptly inform the World Bank and the borrower in writing of its decision and basis for such decision.

Auditing

21. The project single set of financial statements (covering all project funds and expenditures) will be audited annually in accordance with International Standards on Auditing (ISA) as promulgated by the International Federation of Accountants (IFAC), and the audit report, together with the management letter, will be submitted to the World Bank within six months after the financial year-end; that is, June 30 of each following fiscal year. The costs incurred for the audit will be financed under the project. The auditors will be required to express a single opinion on the project single set of financial statements. In addition, a detailed management letter containing the auditor's assessment of the internal controls, accounting system and compliance with financial covenants in the Loan Agreement, suggestions for improvement, and management's response to the auditor's management letter will be prepared and submitted to management for follow-up actions. The arrangements for the appointment of the external auditors of the project financial statements will be communicated to the World Bank and AFD through agreed terms of reference, and the selection process should be completed within four months after the Project effectiveness date. The project will comply with the World Bank disclosure policy on audit reports (for example, make publicly available, promptly after receipt of all final financial audit reports [including qualified audit reports]) and place the information provided on the official website within one month of the report being accepted as final by the World Bank.

Conditionality

22. ***Effectiveness condition:*** Appointment of a qualified and experienced dedicated project Financial Manager under terms and conditions acceptable to the Bank, adoption of a revised and updated Financial Procedures Manual (as part of the PIM),and purchase, installation and customization of a project computerized accounting system are FM conditions for effectiveness.

23. ***Dated Covenants:*** Appointment of one dedicated Project Accountant, and appointment of external auditors should be finalized within four months after the project effectiveness date.

Financial Management Action Plan

24. In order to establish an acceptable control environment and to mitigate financial management risks the following measures should be taken by the due dates as indicated in the financial management action plan below.

Table 3.1. Financial Management Action Plan

#	Action	Responsibility	Completion date
1	Appointment of a dedicated qualified and experienced project Financial Manager (or continuation of the contract)	FCMU-WB/AFD/DNA	Effectiveness
2	Purchase, installation and customization of computerized project accounting system	FCMU-WB/AFD/DNA	Effectiveness
3	Appointment of one dedicated project Accountant (or continuation of the contract)	FCMU-WB/AFD/DNA	No later than 4 months after effectiveness
4	Adopt revised and updated project FM procedures manual acceptable in form and substance to the Bank	FCMU-WB/AFD/DNA	Effectiveness
5	Appointment of the project external auditors	FCMU-WB/AFD/DNA	Not later than 4 months after effectiveness

Supervision Plan

25. The project will be supervised on a risk-based approach. The FM supervision will be carried out by the World Bank Financial Management Specialist (FMS). The supervision will focus on the status of the financial management system to verify whether the FCMU-WB/AFD continues to maintain acceptable project financial management arrangements and provide support where needed. It will include a review of quarterly progress reports and audit reports, and will follow up on material accountability issues by engaging with the World Bank task team leader, Client, and/or Auditors. Based on the current "Substantial" risk assessment, field visit supervision will take place twice each fiscal year and will be adjusted if the need arises.

FM Risk Assessment and Mitigation

26. The World Bank's principal concern is to ensure that project funds are used economically and efficiently for the intended purpose. Assessment of the risks that the project funds will not be appropriately used is an important part of the financial management assessment work. The risk features comprise two elements: (a) the risk associated to the project as a whole (inherent risk), and (b) the risk linked to a weak control environment with regard to project implementation (control risk). The content of these risks is described below.

Table 3.2. Risks and Mitigating Measures

Risk factors/Description of Risk	Risk Rating	Risk Mitigating Measures Incorporated into the Project Design	Conditions of Negotiations, Board or Effectiveness (Yes or No)	Residual Risk Rating
Inherent Risk:				
Country level: Progress has been made in reform of the country's PFM over the years; however, these reform efforts have not yet addressed weaknesses in budget execution, internal controls, capacity development and general oversight.	H	The GoA is committed to continue with the implementation of PFM reform to improve the control environment of country national systems. The PEMFAR is underway and draft reports acknowledge the commitment by the Government to reform the country's PFM over the years, and the progress made.	No	H
Entity level: The implementing agency may not be able to meet the FM requirement due to inability to retain project finance staff.	S	Appointment of a qualified and experienced dedicated project Financial Manager is a condition of effectiveness. The project Financial Manager will be supported by one dedicated project Accountant.	Yes. Condition of effectiveness.	S
Project level: The resources of the project may not be used for the purpose intended.	S	The project has one spending unit, as payments of contractors, suppliers and consultants will be centralized at the FCMU-WB/AFD. The project will adopt a revised and updated Financial Procedures Manual	No	S
Control Risk:				
Budgeting: Weak budgetary execution and control leading to budgetary overrun or inappropriate use of project funds.	M	The FM procedures manual will spell out the budgeting and budgetary control arrangements to ensure appropriate budgetary oversight. The IFRs will include comparison of planned and actual project expenditures.	No	M
Accounting: The FCMU-WB/AFD may not be able to retain project finance staff capable of adequately performing their responsibilities. The accounting function might not be able to execute its duties and to generate	S	The appointment of a qualified and experienced dedicated project Financial Manager is a condition of effectiveness. The FCMU-WB/AFD will ensure that a project Financial Manager is on board throughout project implementation, and it will make use of the computerized accounting system to account for	Yes. Appointment of qualified and experienced dedicated project Financial Manager and purchase and	S

Risk factors/Description of Risk	Risk Rating	Risk Mitigating Measures Incorporated into the Project Design	Conditions of Negotiations, Board or Effectiveness (Yes or No)	Residual Risk Rating
financial information in a timely manner.		project funds, expenditures and resources.	installation of computerized accounting system are conditions of effectiveness.	
Internal control: Specific aspects of the project activities may not be appropriately addressed in the FM Manual and there is a risk of non-compliance with key internal control procedures due to weak FM capacity.	S	Financial and administrative procedures to be employed by the FCMU-WB/AFD in ongoing project implementation are documented in the existing FM Procedures Manual. This manual will be revised and updated to ensure that specific aspects of the project activities are appropriately addressed. The World Bank's regular FM implementation support through desk reviews and field visits will make appropriate recommendations to improve project FM environment.	No	S
Funds flow: Delay in implementation of project activities due to lack of knowledge of Bank's disbursement procedures and risk of misused and inefficient use of funds.	M	Disbursements will be handled by the FCMU-WB/AFD, whose staff have experience in handling disbursement of Bank-financed operations. The rigorous review of all transactions prior to final payment will be performed by the Project Executive Coordinator and the Project Accountant.	No	M
Financial reporting: The implementing agency may not be able to produce financial reports in a timely manner as required to monitor and effectively manage the project	M	The FCMU is producing financial reports required to monitor and effectively manage the progress of ongoing Bank-financed operations, and a similar financial reporting system will be in place for the proposed operation. The FCMU-WB/AFD will use the automated accounting package that will enable the efficient and timely generation of financial information.	No	M

Risk factors/Description of Risk	Risk Rating	Risk Mitigating Measures Incorporated into the Project Design	Conditions of Negotiations, Board or Effectiveness (Yes or No)	Residual Risk Rating
Auditing: Delays in submission of audit reports or delays in implementing the recommendations of the Management Letter.	M	An independent external audit firm will be hired by the project to ensure compliance with the audit submission timelines set out in the financing agreement. The World Bank will monitor audit submission compliance and ensure implementation of Management Letter recommendations.	No	M
Governance and Accountability: Possibility of corrupt practices including bribes, abuse of administrative and political positions, mis-procurement, misuse of funds, etc. are a critical issue.	S	Robust FM arrangements (including a comprehensive annual audit of project accounts and Bank FM supervision, including review of transactions and asset verification) designed to mitigate the fiduciary risks in addition to the FCMU's overall internal control systems.	No	S
OVERALL FM RISK	S			S

Note: H= Higher, S = Substantial; M = Moderate; and L = Low.

Procurement

27. Procurement activities for the proposed Project will be carried out in accordance with the World Bank's "Guidelines: Procurement of Goods, Works and Non-consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" dated January 2011, revised July 2014, "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" dated January 2011, revised July 2014, and the provisions stipulated in the Financing Agreement for the Project.

28. Further, the "Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants" dated October 15, 2006 and revised in January 2011 will apply.

29. The following activities form part of the Project and are subject to World Bank procurement procedures:

Works: Works contracts procurement under the project may include the rehabilitation and expansion of water supply systems, water transmission mains and reservoirs, and replacement and installation of meters and valves and residential water connections, among others.

Goods: Goods procurement under the project may include water pumps; meters, pipes and associated accessories; and IT equipment, among others.

Consulting Services: Consulting services may include design checks and works supervision on networks, transmission mains and reservoirs; support to IRSEA, DNA, and INRH; and hydrological and fluvial studies; among others.

Non-consulting Services: Management support contracts for selected water utilities.

Particular Methods of Procurement of Goods, Works and Non-consulting Services

30. **International Competitive Bidding**. Except as otherwise provided below, goods, works and non-consulting services shall be procured under contracts awarded on the basis of International Competitive Bidding.

31. **Other Methods of Procurement of Goods, Works and Non-consulting Services**. The following methods, other than International Competitive Bidding, may be used for procurement of goods, works and non-consulting services for those contracts specified in the Procurement Plan:

Table 3.3. Procurement Method (1)

(a) National Competitive Bidding
(b) Shopping
(c) Direct Contracting

Particular Methods of Procurement of Consultants' Services

(a) **Quality- and Cost-based Selection.** Except as otherwise provided in paragraph (b) below, consultants' services shall be procured under contracts awarded on the basis of Quality and Cost-based Selection.

(b) **Other Methods of Procurement of Consultants' Services**. The following methods, other than Quality and Cost-based Selection, may be used for procurement of consultants' services for those contracts which are specified in the Procurement Plan:

Table 3.4. Procurement Method (2)

(a) Selection under a Fixed Budget
(b) Least Cost Selection
(c) Selection Based on Consultants' Qualifications
(d) Single-source Selection of Consulting Firms
(e) Selection of Individual Consultants
(f) Single-source procedures for the Selection of Individual Consultants

Review by the World Bank of Procurement Decisions

32. The review thresholds are shown in the table below. The procurement plan shall set forth those contracts which shall be subject to prior review by the World Bank. All other contracts shall be subject to post review by the World Bank. The World Bank may, at its own discretion, require that a sample of contracts below the threshold be subject to prior review, at any time or when the Procurement Plan is updated.

Table 3.5. Provisional Thresholds for Procurement and Review Methods[6]

Expenditure Category	Contract Value Threshold (US$)	Procurement/ Selection Method	Contracts Subject to Prior Review
Works	≥10,000,000	ICB	All
	< 10,000,000	NCB	None
	< 100,000	Shopping	None
	-	Direct Contracting	All
Goods and Non-Consulting Services	≥2,000,000	ICB	All
	< 2,000,000	NCB	None
	<100,000	Shopping	None
	-	Direct Contracting	All
Consulting Services - Firms[7]	≥ 1,000,000	QCBS	All
	≥300,000 - < 1,000,000	QCBS	None
	< 300,000	CQS/ Other (QCBS/ FBS/LCS)	None
	-	SSS	All
Consulting Services – Individuals (IC) [8]	≥ 200,000	ICS	All
	< 200,000	ICS	None
	-	SSS	All

[6] The thresholds may be revised from time to time, upward or downward, based on the continued assessment of the performance of the FCMU-WB/AFD. Furthermore, the World Bank may, at its discretion, mandate a Prior Review for activities below the above amounts or the adoption of a more suitable procurement method.

[7] All Terms of Reference should be submitted for World Bank prior review.

[8] All Terms of Reference should be submitted for World Bank prior review.

Procurement Plan

33. The procurement plan for the project was disclosed on August 19, 2016. The procurement plan includes contracts of about US$192 million that will be procured in the first 18 months of Project implementation. The plan is available in the Project's database, as well as in the World Bank's external website. The procurement plan will be updated annually or as required to reflect the actual Project implementation needs and improvements in institutional capacity.

34. The frequency of procurement supervision missions will be once every six months. Special procurement supervision for post-procurement reviews will be carried out at least once every twelve months.

Environmental and Social (including safeguards)

35. ***Environmental Safeguards:*** OP/BP 4.01 Environmental Assessment is triggered for this project; as a repeater project from WSIDP I, and as the majority of project investments are expected to only have minor impacts on the environment, this project is classified as Category B in the World Bank's Environmental Assessment classification. Simple environmental management measures are expected to be able to adequately manage likely impacts resulting from the project (primarily pollution from wastes/residues on soil, eventual oil spills from generator filling, and health and safety risks).

36. Although the nature, scale and scope of the infrastructure investments proposed for the project are similar to those financed under the original project, the precise location of project activities and their footprints was not known prior to appraisal. The ESMF was therefore updated to reflect minor changes in the project nature and scope. The environmental safeguard tools available at different subproject stages, such as the ESSC and the EMP, have been reviewed, as well as the environmental clauses and penalties for non-conformity to the EMP. If needed for certain sub-projects due to foreseen negative environmental impacts, an Environmental and Social Impact Assessment will be prepared to identify, assess and adequately manage those impacts (also in accordance with Angolan Environmental Impact Assessment law - Decree 51/04, 23 July 2004). The ESMF updating process was subject to broad public consultation in the nine beneficiary cities and has been disclosed in Angola and at the World Bank's external website on October 6, 2016.

37. The Borrower's capacity to implement environmental safeguard policies during WSIDP I has proven to be acceptable. The existing FCMU includes two experienced safeguards specialists, one financed by WSIDP I and the other by the AfDB, and safeguard procedures are well established. The FCMU-WB/AFD will include the existing team and procedures, and the capacity to manage environmental impacts of WSIDP II is considered to be satisfactory.

38. ***Social Safeguards:*** This project is a repeater of WSIDP I, which was classified under OP/BP 4.01 as Environmental Category B. The nature, scale and scope of the infrastructure investments proposed for the project are similar to those financed under the original project.

However, the precise location of project activities, along with their footprints, was not known prior to appraisal. The RPF updating process was subject to broad public consultation in the nine beneficiary cities and has been disclosed in Angola and at the World Bank's external website on October 5, 2016.

39. Project component 3 (Rehabilitation and Expansion of Water Supply Production and Distribution) has the potential of triggering the World Bank's policy on Involuntary Resettlement (OP 4.12). As a result, a resettlement policy framework has been prepared establishing the standards and procedures to follow in preparing a Resettlement Action Plan (RAP) if it is determined that civil works activities will trigger OP4.12. A RAP will need to be prepared, reviewed and cleared by the World Bank, and implemented prior to the project causing impacts on household assets or land, or before causing a negative impact on income.

40. Individual civil works would have localized impacts with mostly minor impacts. Efforts will be made to reduce and avoid land acquisition. Where possible, works will be conducted within existing facilities or along existing rights-of-way that have not been encroached upon. For new well fields, intake facilities, and storage tanks, government land which is not in use will be the first option. Household connections will be provided to those households requesting service and therefore will not trigger involuntary land acquisition. If it is necessary for a household connection to pass through land that is not a part of the household's property, and is not unused government land, then land acquisition may trigger the need for a RAP. The Environment and Social Screening Form indicates when a RAP is needed.

41. The borrower has experience and expertise in managing World Bank-funded operations. The borrower has significant experience in preparing, consulting with Bank staff, and disclosing safeguards documents in country and in the World Bank's external website, including a number of Environmental and Social Management Plans (ESMPs) for different construction sites across the country.

42. The proposed infrastructure investments include:

(a) Civil, electrical and mechanical works to improve water supply production, which include expansion and refurbishment of well fields, a water intake, and water treatment plants;

(b) Priority infrastructure to increase service coverage and operational efficiency of the water distribution system, which include goods and rehabilitation or construction of water distribution centers;

(c) Rehabilitation or expansion of water transmission infrastructure, including new pipelines and pump stations, as well as rehabilitation and expansion of water supply networks.

(d) Rehabilitation or replacement of hydrometric stations nationwide; and

(e) Supply of chlorine, aluminum sulfate, caustic soda, and fuel.

43. Typical negative environmental and social impacts expected from the project-supported investments:

- Infrastructure investments under (a), (b), and (d) above will be constructed on Government-owned land, in which similar infrastructure already exists but is in need of expansion or rehabilitation. When carrying out field visits, the project team observed that Government properties are partially fenced, free of encroachment and, in general, well kept. The negative environmental and social impacts expected from the project investments in these areas will be limited to the construction phase; these impacts will be mitigated through implementation of the ESMF and the subproject-specific ESIAs/ESMPs. It is expected that there will be little or no land acquisition in the project, but in the event construction requires land acquisition and/or affects community or individual livelihoods, the borrower will follow the provisions of the RPF addressing compensation requirements. The RAPs of WDSIP I have been updated to be used in WDSIP II.

- Infrastructure investments under (c) will be constructed on the existing rights-of-way of roads. During field visits, the project team observed that the road rights-of-way envisaged for the investments are free of encroachment, but detailed information about any required land acquisition and/or impact on livelihoods (such as of street vendors who may eventually use the area) will be available only during the preparation of the detailed engineering designs. Given the technical flexibility allowed for the installation of water pipelines, it will be possible to avoid land acquisition and impacts on livelihoods. In case these impacts cannot be avoided, the Government will follow the provisions in the RPF addressing compensation requirements.

44. The overall budget for the implementation of the ESMF is estimated at US$380,100, of which US$107,000 will be spent on capacity building and training and US$273,100 on supervision and implementation activities.

Monitoring & Evaluation

45. The FCMU-WB/AFD will be responsible for monitoring and evaluation of project implementation and results. In terms of results monitoring, a comprehensive results monitoring framework has been agreed with the borrower and will be updated quarterly, in coordination with beneficiary agencies. In terms of the operating and financial performance of the PWSUs, IRSEA will be responsible for regularly monitoring a series of performance parameters, including service coverage, cost recovery, and billing and collections. Definitions and reporting methodologies will be standardized across the PWSUs in order to facilitate analysis across the system and over time. In addition, IRSEA will undertake a baseline beneficiary survey, against which post-project results can be compared (post-project surveys will also be undertaken). IRSEA will report PWSU operational and financial indicators to the FCMU-WB/AFD, which

will include them in performance reporting to the World Bank. To support data collection and liaise with all beneficiary agencies, the FCMU-WB/AFD will hire a Monitoring and Evaluation specialist with international experience who will report to the project executive coordinator.

Role of Partners

46. The project will work in close coordination with the AfDB in the provinces where both development agencies are providing support (that is, Moçamedes and Dundo). Harmonization of activities will be the responsibility of the FCMU-WB/AFD.

47. The Project was prepared in close coordination with AFD, which is co-financing the project. A Co-financing agreement will be signed with AFD for this Project in accordance with the stipulations of the Framework Co-Financing Agreement of May 29, 2014 between the World Bank and AFD. Under these co-financing arrangements, AFD will pay the World Bank a fee for the supervision and administration of their share of the Project, using the World Bank's procurement, financial management and safeguard rules.

Conditions and Covenants

Effectiveness

a. The Borrower has created the FCMU-WB/AFD in a manner acceptable to the Bank and has hired a senior financial management specialist, a Project executive coordinator, and two procurement specialists, with qualifications and experience, and pursuant to terms of reference, satisfactory to the Bank.

b. The Project Implementation Manual, including financial management and accounting procedures annexes, has been issued and adopted by the Recipient and is approved by the Bank.

c. The GoA has: (a) opened the Project Account in a commercial bank on terms and conditions satisfactory to IBRD, including appropriate protections against set-off, seizure or attachment; (b) promptly thereafter has made a deposit of Kwanzas 250 million (equivalent to US$1.5 million) to finance the GoA's initial contribution to the costs of the Project; and (c) purchased and installed new automated accounting software.

d. The Co-financing Agreement with AFD has been executed and delivered and all conditions precedent to its effectiveness or to the right of the Borrower to make withdrawals under it have been fulfilled.

Disbursements

a. Payments made prior to the date of the Loan Agreement, except that withdrawals up to an aggregate amount not to exceed $20,000,000 may be made for payments made

prior to this date but on or after December 2, 2016, but not earlier than 12 months the date of the Loan Agreement, for Eligible Expenditures under sub-components 1.b, 1.c, and components 2 and 4.

b. No withdrawal shall be made for sub-components 1.a, 3.a, and 3 for each Participating Province unless the Borrower has submitted evidence, satisfactory to the Bank, that with respect to said particular Participating Province, the Participating Agreement between the Borrower, through MINEA, and the respective Participating Province have been signed Obligations for such agreements will be specified in the Project Implementation Manual.

c. No withdrawal shall be made for Performance Payments for each PWSU unless the Borrower has submitted to the Bank the annual audit report for the respective PWSU, indicating that the targets were achieved or exceeded, in a manner satisfactory to the Bank. The performance targets will be measured after the first full year of audited financial statements; and will be specified in the PIM

Dated Covenants

a. Within four months of effectiveness of the loan, the FCMU-WB/AFD shall contract (or continue the contracts of): (a) a project accountant, (b) project external auditors; and (c) project internal auditors.

b. The GoA shall cause an external auditor to perform a project procurement audit, under terms of reference satisfactory to IBRD, of the procurement for all goods, works, consultants' services, and operating costs. Each such audit of the project procurement shall cover a period of two calendar years, commencing with the calendar year in which the first withdrawal under the Project was made.

c. No later than September 30, 2020, or such later date as may be agreed upon by the GoA and IBRD, the GoA and IBRD shall carry out a mid-term review of the Project, covering the progress achieved in the implementation of the Project.

d. The GoA shall, not later than July 1 of each year during Project implementation, or such later date as IBRD may determine, starting in calendar year 2017, furnish to IBRD for approval, an annual action plan (the Annual Action Plan).

e. Each year no later than six months after the end of the fiscal year (starting in 2018 for existing PWSUs and after the first year of operations for those PWSUs created during the Project implementation), the FCMU-WB/AFD shall submit the annual audit reports of the PWSUs, prepared by independent auditors, to IBRD. This report will be prepared using agreed-upon terms of reference and indicate among other things (i) any deviations to the existing tariff policy along with an explanation as to why the deviation was justified and (ii) evidence that each PWSU's collected revenue covers at a minimum an increasing share of their operating costs.

f. With respect to any activities under sub-component 2(d) and component 3 of the Project, the Borrower shall refrain from starting any works until and unless: (a) the proposed activities have been screened in accordance with the ESMF and RPF; (b) the respective EMP and/or, RAP required for such activities pursuant to the ESMF or, RPF, respectively, has/have been prepared and implemented, in agreement with the Bank; and (c) the foregoing Safeguard Documents have been publicly disclosed.

Covenants for Agreements between MINEA and Participating Provinces (Disbursement Condition a. - to be included in the PIM.)

a. The PWSUs shall not incur any debt unless a reasonable forecast of their revenues and expenditures shows that their projected earnings before interest, taxes, and depreciation (EBITD) for each fiscal year during the term of the debt to be incurred is at least 1.5 times the projected debt service.

b. That after the first audited financial statements, each PWSU's collected revenue should cover at a minimum an increasing share of their operating costs, as follows: (a) 35 percent in the first audited year; (b) 50 percent in the second audited year; (c) 70 percent in the third audited year, (d) 80 percent in the fourth audited year; and (e) more than 100 percent after the fifth audited year.

c. With the objective of ensuring the sustainability of the PWSUs, each year no later than September 30, the provincial governments, jointly with their respective PWSUs, shall prepare and submit to IRSEA a financing plan indicating how the operating costs of the PWSU will be financed. This plan should indicate planned adjustments to the tariff levels, levels of collections, and reductions in the subsidies required to achieve the agreed upon levels of cost recovery for the following two calendar years.

Annex 4: Implementation Support Plan

Republic of Angola: Second Water Sector Institutional Development Project

Strategy and Approach for Implementation Support

1. The Implementation Support Plan (ISP) provides the framework for the World Bank's operational approach to supporting MINEA's implementation of WSIDP II and monitoring implementation progress. The ISP has been developed taking into consideration: (a) the substantial risks identified for the Project; (b) the significant experience of FCMU-WB/AFD staff with respect to Bank- and internationally financed projects; (c) the importance of large civil works contracts in overall implementation and in the achievement of the PDOs; (d) the importance of environmental and social safeguards; and (e) the role of IRSEA and the PWSUs' financial sustainability in the long-term sustainability of project investments and the reliability of water supply. The ISP team reflects these key considerations.

2. Three core activities form the foundation of the ISP: (a) close and ongoing communications with implementing agencies, in particular with respect to procurement and contract implementation issues; (b) receipt and review of quarterly project management reports prepared by the project implementing agencies; and (c) semi-annual implementation support missions to Angola, involving both headquarters and country office staff and technical consultants. This three-pronged approach will provide comprehensive support and oversight for project implementation and enable quick and responsive interactions between project officials and Bank staff.

Implementation Support Plan

3. Tables 4.1 and 4.2 outline the ISP and resources required for WSIDP II.

Table 4.1. Implementation Support

Time	Focus	Skills needed	Resource Estimate	Partner Role
First twelve months (Year 1)	● Contract launch and management ● Confirm reporting and monitoring and evaluation formats ● Confirm financial reporting ● Confirm safeguard monitoring and reporting ● Technical assistance procurement	Team leader Engineer Procurement FM specialist Financial analyst Environmental specialist Social specialist Water resources specialist Utility institutional specialist Water and Sanitation Regulatory Specialist Team assistant	US$845.000	
12 – 48	● Contract management	Team Leader	US$845.000	

Time	Focus	Skills needed	Resource Estimate	Partner Role
months (Years 2 – 4)	● Safeguards ● Ongoing procurement ● Civil works and engineering issues, if any ● Monitoring and evaluation ● financial results ● Project financial management	Engineer Procurement FM specialist Financial analyst Environmental specialist Social specialist Citizen Engagement Specialist Gender Specialist Water resources specialist Utility institutional specialist Water and Sanitation Regulatory Specialist Team assistant	per year	
49 – 72 months (Years 5 – 6)	● Contract closings ● Safeguards ● Civil works and engineering issues, if any ● M&E ● IRSEA and PWSUs' financial results ● Project FM ● ICR preparation	Team leader Engineer Procurement FM specialist Financial analyst Environmental specialist Social specialist Citizen Engagement Specialist Gender Specialist Water resources specialist Utility institutional specialist Team assistant	US$845.000 per year	
Mid-term review	● Contract management ● Progress on civil works ● Safeguards ● Project sustainability ● IRSEA and the PWSUs' financial results	Team leader Lawyer Engineer Procurement FM specialist Financial analyst Environmental specialist Social specialist Citizen Engagement Specialist Gender Specialist Water resources specialist Utility institutional specialist Monitoring and evaluation Team assistant	US$120,000	
Implementation completion reporting	● Project results and evaluation ● Financial and economic analyses	Team leader Engineer ICR author Financial analyst Economist Water resources specialist Utility institutional specialist Team assistant	US$80,000	

Table 4.2. Skills Requirements

Skills requirement	*Staff Weeks per Year*	*Trips per Year*	*Comments*
Team leader	35	2	Washington, DC based
Lawyer	2	As required	Washington, DC based
Engineer	35	2	Washington, DC based
Environmental specialist	15	2	Maputo Country office based
Social specialist	15	2	Washington, DC based
Procurement specialist	8	2	Maputo Country office based
FM Specialist	4	2	Pretoria Country office based
Water resources specialist	6	1	Washington, DC based
Utility institutional specialist	6	1	Washington, DC based
Water and Sanitation Regulatory Specialist	6	1	To be identified
Economist	3	1	To be Identified
Citizen Engagement Specialist	3	1	To be identified
Gender Specialist	3	1	To be identified
ICR Author	3	1	To be identified
Financial analyst	6	1	Washington, DC based
Team assistant	4	As required	Washington, DC based
Team assistant	4	-	Luanda Country office based

Annex 5: Economic Analysis

Republic of Angola: Second Water Sector Institutional Development Project

I. Economic Analysis

Project

1. The objective of WSIDP II is to strengthen the institutional capacity of selected water sector agencies and increase water coverage in target cities. The objective of its components focus on (a) capacity development, (b) institutional support and (c) investments into targeted public water sector utilities (PWSUs) that serve provincial capitals through development of priority infrastructure to expand the water supply system capacity, increase service coverage and service quality, and improve the operating efficiency of the production and distribution systems. The first two components will bring transparency to the sector through improved performance monitoring, technically sound investments, and performance improvement programs. Through Component 3, selected PWSUs will expand their customer base through the construction of new connections, the rehabilitation of existing connections, and the installation of water meters. The latter will equip the PWSUs to measure customers' water consumption and bill them accordingly. It is important to note that the proposed investments' focus on the expansion of water systems, including an expansion into low-income peri-urban communities. These investments will help reduce the coping costs of the currently unserved population and generate a flow of economic benefits that then can be invested into improving living conditions and other actions.

2. Angola has one of the highest rates of morbidity and mortality rates from diarrheal diseases in Africa. The incidence of acute diarrhea resulting in death was 489 per 100,000 children under five[9] in 2011. Improved water supply and sanitation, associated with handwashing may result in an 88 percent reduction of mortality of children under five years of age[10]. The interventions will also generate significant health benefits to all other population groups, reducing the hazard of epidemics, morbidity and mortality from diarrheal and other water-borne diseases, which will subsequently result in increased labor productivity.

3. Angola had limited progress towards achieving its MDGs. Water coverage from public utilities is relatively low. While water companies are expanding piped-water services in par with urbanization which is about three percent a year, this service expansion is not enough to improve coverage: average water coverage with piped connections in secondary cities is around only 34 percent[11]. In addition, there are wide disparities in access to improved water sources among urban areas, in particular provincial capital cities: in the cities included as part of the proposed project, access to an improved drinking water source ranges from five to 60 percent. The remaining, that is, the non-served population, relies on local sources or purchases water from

[9] https://www.path.org/publications/files/VAD_rotavirus_angola_fs.pdf
[10] http://www.cdc.gov/healthywater/global/diarrhea-burden.html
[11] http://www.unwater.org/fileadmin/user_upload/unwater_new/docs/jmp.2014_eng.pdf

private vendors. The latter usually sell potable water in 20-liter jerry cans charging about 100 Angolan kwanza (or US$0.60) per jerry can. An average family of five[12] has to buy two-three such jerry cans a day and will spend up to 7,500 kwanza (US$45) a month to meet basic drinking needs[13] and minimum sanitary activities, consuming just 10 liters of potable water per capita per day (lpcd).

4. Component 3 of the Project will provide 121,500 connections during the first phase of implementation, and an additional 45,000 connections during the second phase. Additionally, the Project funds will finance rehabilitation of another 19,000 connections. The total number of beneficiaries is about 1.2 million people in nine regional cities of the country receiving in-house or in-yard connections to public water services. In addition, three water treatment plants will be constructed with an additional capacity of 48,000 cubic meters per day. It is expected that connected residents will start consuming at least 50 lpcd of affordable water to meet basic personal and hygiene needs. Additional benefits include an increased value of housing with piped water on premises. These benefits, while very important, are not accounted for in the analysis.

5. The Project will provide significant economic benefits, combined with its two technical assistance components: Component 1: Water Supply Institutional Strengthening and Capacity Development and Component and Component 2: Water Resources Management, both focused on development of institutional capacity within the sector. Both of these institutional strengthening components will bring transparency to the water sector and sector performance. Institutional support in water resource management will help in the rational use of available water resources and long-term planning. The benefits from both of these components are expected to be country-wide.

6. The selected utilities and their customers will benefit from these TA components; however, it is not possible to quantify the stream of benefits. The Project team conducted a stress test to assess the effect of these two components on the project's economic rate of return.

Rationale for Public Sector Investment

7. In Angola, municipalities traditionally provided municipal water services. Although the benefits of improved water supply will accrue to the society as a whole, the benefits of such investments are not sufficient to induce private sector investments. This is especially true for Angola, where the municipal sector has suffered from decades of civil war that has resulted in underinvestment and poor maintenance, and where investment needs are very large.

Rationale for Bank Involvement

8. The World Bank has been involved in the municipal service sector since 2008, supporting investments in the water sector with WSIDP I, which provided a first set of necessary

[12] The average family size is 5.1 people per household. Angola census results, 2015
[13] http://www.nap.edu/read/10925/chapter/6#158

investments into the sector. These investments provided emergency infrastructure and compensated for decades of underinvestment and deterioration. WSIDP II will continue support and enhance the benefits of WSIDP I. With this follow-up project, the World Bank, with its global experience, will be able to combine a focus on funding cost-effective investments that will assist the utilities in improving their efficiency in service delivery and cost recovery.

9. WSIDP II investments will largely take place in provincial capital cities. Most of the existing water supply systems in these cities date from colonial times and are therefore, despite emergency rehabilitation under the EMRP and WSIDP I, in need of significant expansion and rehabilitation.

10. The specific World Bank value added is in:

(i) ensuring appropriate technical design and the use of transparent procurement procedures; and

(ii) focusing on improving billing and collections and the long-term commercial viability of the utilities while also promoting fair, consumption-based tariffs.

Methodology of the economic analysis

11. Cost-Benefit Analysis. The economic model uses a cost-benefit methodology and compares the results of with- and without-project scenarios. Similar assumptions were used as those used for WSIDP I. As the project costs are given, the challenge was to estimate the expected benefits will occur or are likely to occur as a result of project implementation.

12. The *with-project* situation includes the proposed investment program under Component 3 and its associated connections. The *without-project* situation assumed no investments or increase in the number of connections.

Benefits

13. The proposed investment provide assistance to nine provincial water companies, helping them to achieve coverage rates of 70 percent and above. It is expected that utilities will take over operation of the infrastructure, and continue expanding water and wastewater system according to the urbanization rate, maintaining the coverage rate that was achieved through the project.

14. The benefit flow comes from the reduction of water service costs to the currently unserved population of about 1.2 million. After the installation of the new connections, the water consumption will also grow to at least 50 liters per capita per day. Payment for this water will be according to the current tariff set by each individual company, ranging from AKZ765 to AKZ1,100 a month per household. Current consumption for unserved population is estimated at approximately 10 lpcd, or 51 liters per family. The cost of this water is estimated to be AKZ7,650 per family per month. The reduction in coping costs is in a range of AOA 6,000-

7,000 per family per month depending on location. The benefits will become available to new customers from 2019 onward.

15. Additional benefits are expected from Components 1 and 2, which will support improved PWSU operational and financial management and improved sector regulation, as well as a strengthened framework for water resource management. While the costs of Components 1 and 2 are not included in the base economic analysis, they are included in a project economic stress test, which assesses whether the estimated project benefits justify the full project costs.

Costs

16. The total investment cost for Component 3 is US$294,525,000 (excluding rehabilitation) in the nine project cities. Calculations for the economic analysis include the cost of construction of new connections, resulting operation and maintenance (O&M) costs of these connections, and benefits to the newly connected population. The fees charged to new customers will offset part of the O&M costs. The collection rate is set at 100 percent as a result of project improvements in billings and collections.

17. The additional stress test was conducted to assess the economic effect on the project of including the cost of Components 1 and 2 into the economic analysis.

18. Two models are assessed. Model 1: O&M costs of the water and sanitation services remain constant per connection. Model 2: newly constructed and rehabilitated connections will be more efficient than the old ones; the analysis estimates that new connections will cost approximately 30 percent less than existing connections due to savings in energy and maintenance and due to reduced water losses.

Assumptions

19. The expected investment will take six years, with investments spread equally through the implementation period:

Table 5.1. Investment Distribution

2017	2018	2019	2020	2021	2022
16.66%	16.66%	16.66%	16.66%	16.66%	16.66%

20. Population projection. The current population is approximated from reports of *Instituto Nacional de Estatística, República de Angola (2015).* The current rate of urbanization is reported in a range of three percent a year on average[14] for the duration of the project. The current coverage rate was taken as is, except Dundo, Luena and Moçamedes, for which coverage information was not available at the time of preparation of this analysis. For those cities, the

[14] The World Fact Book, 2015, Angola

analysis assumed a coverage rate of 34 percent, which is the average for municipalities in Angola.

21. Cost and benefit projections are calculated for a 20-year period. Benefits begin to accrue in year three of the project. The net present value (NPV) is calculated at a discount rate of six percent, as per World Bank guidelines.

22. All calculations are in AKZ at an exchange rate of AKZ165/US$.

23. Health benefits were assessed using the World Health Organization assumptions for years of life lost (YLL) related to mortality of children under five due to acute diarrhea.

Results

24. Model 1. The ERR for the Project is 21.7 percent, and the NPV is US$386 million.

25. Model 2. If the O&M cost is reduced by 30 percent for new connections, then ERR is calculated to be 24.2 percent and the NPV US$463 million.

26. Model 3. If the project O&M are increased by 30 percent, then ERR is calculated to be 19.1 percent, and the NPV US$304 million.

27. Model 4 (Stress test). If the costs of the Components 1 and 2 are included, the ERR is calculated to be 16 percent and the NPV US$297 million.

28. The project is estimated to save the lives of approximately 15,000 children, or 680,000 productive years. The analysis, however, does not include a monetary estimate of these benefits.

Risk and sensitivity analysis

29. The Project is resilient to external shocks: if the investment costs increase 30 percent, the resulting ERR is 16.6 percent, while the NPV is US$314 million.

30. If the project implementation is delayed by three years, and its benefits will start coming three years later, the resulting ERR is 33 percent, and the NPV is calculated to be US$429 million.

31. If both factors are included (delay and cost increase), the ERR is calculated to be 15 percent, while the NPV is US$362 million.

32. The project is resilient to cost increase, including O&M costs and delays.

Economic effects due to exchange rate fluctuations

33. For the purposes of sensitivity analysis, the effects of two levels of depreciation of the Angolan currency on the economic analysis are calculated: AKZ265/US$ and AKZ400/US$. This calculation was undertaken due to the currency mismatch between the currency of project investments and that of project benefits. While project benefits, as well as O&M costs, are in AKZ, project financing is in US$. Analysis of the project benefits at the two different exchange rates indicates that the project is viable even if there are significant changes in the exchange rate.

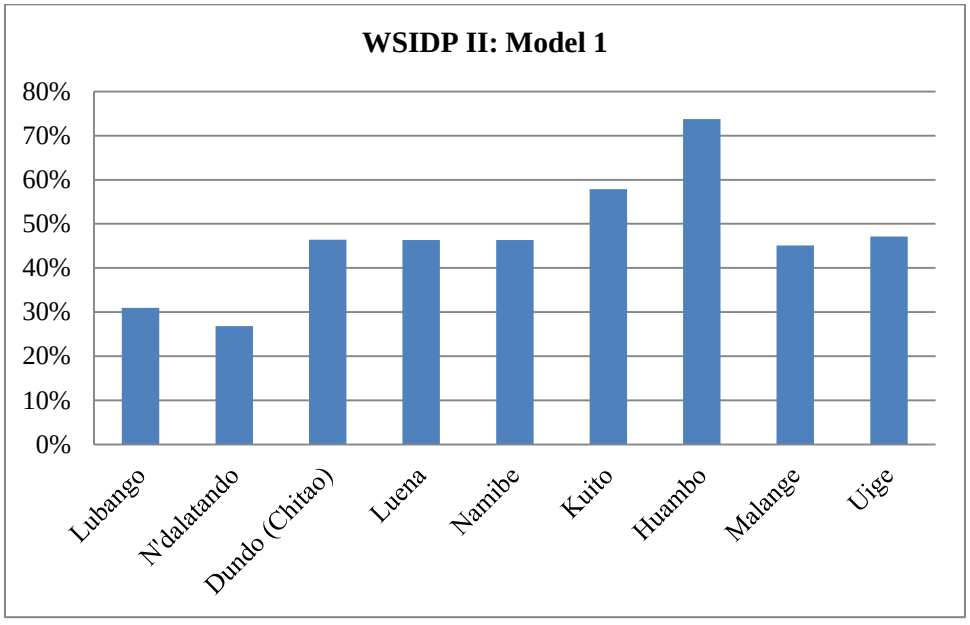
Table 5.2. Exchange Rates Considered in the Analysis

Exchange rate (AKZ/US$)	NPV (US$)	ERR (%)
165	387 million	21.7
265	314 million	16.6
400	23 million	7.2

Fiscal impact

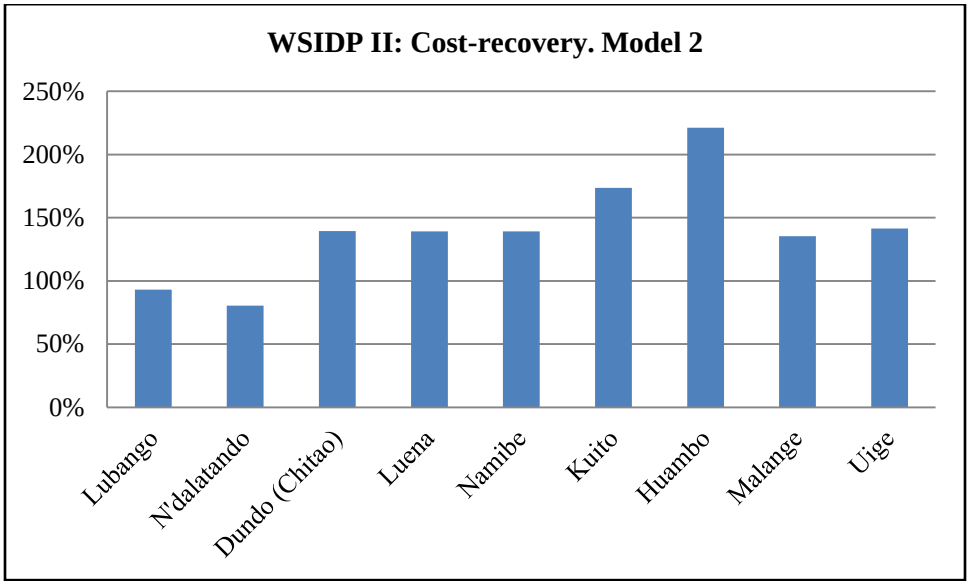
34. The expanded network and operations will result in a fiscal impact for all companies, as none of them currently cover their O&M costs. The investment programs are accompanied by support to improve the PWSUs' operational and financial performance. While tariffs, which are decided by provincial governors, have been adjusted in some cities, they are still too low to cover operational costs. Ongoing operational subsidies are likely to be required from provincial governments. According to the assumptions used in Model 1 of the economic analysis, the project would result in the following cost-recovery for each of the utilities.

Figure 5.1. Results Model 1- Utility Cost Recovery



35. Model 2. However, while improvement of services may bring a loss to utilities as the current operational and maintenance costs do not cover costs of operation, the technical improvements and correction of tariffs will make the utilities sustainable. The municipal governments will need to cover the fiscal deficit to keep services operational and sustainable. Even with 30 percent cost reduction, the cost recovery of O&M costs are expected to be achieved only in Huambo. The 50 lpcd consumption can be considered to be at low end. With the growth of the economy and improvement of the living standard, the water consumption will grow. At the same time, the Government may start tariff adjustment to make it in par with economic growth. Thus, the desired cost recovery can be achieved on average for the whole project, including for seven of the nine project utilities, if average consumption increases to 70 lpcd and the tariffs are increased by 50 percent.

Figure 5.2. Results Model 2 - Utility Cost Recovery



*Consumption 70 lpcd, O&M cost reduction 30% and tariff adjusted by 50% to current level

Conclusions

1. WSIDP II is a sustainable and resilient project with significant benefits. It will withstand both delays in implementation and a 30 percent cost increase.

2. The project may require tariff adjustments of approximately 50 percent to become financially sustainable.

3. The project is resilient to external shocks related to the exchange rate.

4. A stress test indicates that the project is sustainable even if costs of Components 1 and 2 are included in the economic analysis.

Financial Analysis

36. The World Bank reviewed basic financial information provided by six PWSUs as part of project appraisal—PWSU Bié (which serves the capital city of Kuito and the neighboring city of Kunje); PWSU Huambo; PWSU Huila, which serves the capital city Lubango; PWSU Malanje; PWSU Cuanza Norte, which serves the capital city N'Dalatando, and PWSU Uige. The PWSUs have in general only recently been established, and technical assistance had in some cases begun only several month previously. The quality of the information provided therefore varied significantly; in some cases, the information could not be considered a reliable presentation of costs or revenues. Only one PWSU had financial or operational information prior to 2015, and in two cases, there was no information even for 2015, and projected estimates for 2016 had to be based on a few months of information. In addition, as nearly none of the individual water connections serviced by the PWSUs have meters, billed revenues are based on estimated consumption levels that cannot be confirmed. Finally, even when payments for operating costs have been reliably tracked, subsidies to the PWSUs have often taken the form of in-kind provision of goods or materials, or staff paid by the provinces; reported costs therefore do not necessarily reflect true costs. For the above reasons, there is unfortunately no reliable basis on which to estimate future performance of the utilities at this time.

37. At this stage of reform of and investment in urban water supply in Angola, the key financial objective is working towards the PWSUs' coverage, through customer tariffs, of operational costs. It is not expected that most of the PWSUs will be able to generate revenues above and beyond that level or to contribute toward the cost of capital investments and major rehabilitation. The project, through investments in comprehensive system and customer metering and in systems and technical assistance to improve billings and collections, is expected to significantly improve the utilities' ability to fully cover operating costs. Operating and financial performance will be reported and analyzed on an ongoing basis; targets have been set, and performance will be reviewed over time and against other utilities.

38. The following table provides a summary of core operational and financial information of the six reviewed utilities, although the caveats noted above apply. Information provided is for 2015 except for Huambo, Cuanza Norte and Uige, who were not able to provide figures for 2015 and whose figures are therefore 2016 estimates. Additional information for each of the six utilities, including particular challenges in some cases, is provided following the table.

Table 5.3. Core Operational and Financial Information of Reviewed Utilities

	Bié	Huambo	Huila	Malanje	Cuanza Norte	Uige
Total connections	7,079	15,634	7,083	7,984	5,000	Unknown
Estimated water sales (m3/ day)	2,849	10,058	6,052	5,785	2,396	1,123
Unaccounted-for Water (estimated)	66%	18%	50%	50%	50%	90%
Water billings (AKZ million)	151	138	230	201	66	14
Water revenues (collections)	64	88	209	142	53	9.5
Collection ratio	42%	64%	91%	71%	80%	70%
Operating expenses (total, AKZ million)	74	156	267	192	171	385
Of which, staff expenses	32	85	200	142	95	371
Cost Recovery Ratio (based on collections)	86%	56%	78%	98%	31%	2%
Number of staff	77	196	315	76	25	40
Staff/1,000 connections	10.8	12.5	44.5	11.4	5.0	n/a

39. **PWSU Bié** (cities of Kuito and Kunje): PWSU Bié was formally established in late 2015. Under WSIDP I, the consulting firm Indaqua is providing management and technical assistance to the utility under a three-year contract. Bié has begun the process of documenting its infrastructure assets, operations, customers, and finances. It has a total of 7,079 formal connections, most of them residential yard-taps, and 77 staff (with a staffing ratio of 10.9 staff per 1,000 connections). It has two water treatment plants—Kunje, which serves the Kunje area of the city, with treatment capacity of 1,800 cubic meters per day, and Cussola, which serves Kuito, with treatment capacity of 6,700 cubic meters per day.

40. There are currently no meters on production equipment or reservoirs; management estimates production based on design capacity. Customers are also not metered; the utility assumes for planning purposes that residential customers consume 12 cubic meters per month, commercial customers consume 20 cubic meters per month, institutional (for example, national and provincial buildings, schools, etc.) consume 40-50 cubic meters per month; and that consumption at public standposts is approximately 53 cubic meters each month (per standpost).

41. **Revenues:** Residential tariffs are currently set at AKZ145 per cubic meter (US$1.23 at the current official exchange rate of AKZ118 per US$), with no monthly fixed charges. In the absence of meters, residential consumption is assumed to be 12 cubic meters per month; residential water bills are therefore AKZ1,740 per month (US$14.70/month). Commercial/Industrial and Institutional tariffs are set at AKZ160 per cubic meter. Although non-residential usage is also not metered, the utility estimates usage for non-residential customers and charges on a per-meter basis. The utility estimates that it billed AKZ151,156,440 for water in 2015, 94 percent of which was for residential consumption. It estimates that it collected approximately AKZ64 million, for an estimated collection ratio of only 42 percent.

42. **Operational Expenses:** Prior to the formal establishment of the utility company, not all operating expenses were paid by the utility or recognized as a cost of doing business. These include, generally: (i) some staff considered employees of the province, but working on water delivery; and (ii) water treatment chemicals purchased by the provincial government and provided to the utility. In addition, electricity costs have been heavily subsidized in Angola (and not all water utilities have paid their electricity bills on a regular basis). Going forward, the water utilities are expected to recognize and pay for all staff, to no longer receive chemicals in-kind from the provincial governments, and to pay their electricity bills. However, the costs of the management/technical assistance contracts are paid by WSIDP I, and are not considered a direct cost to the utility.

43. PWSU Bié calculated their total operational expenses for 2015 to be approximately AKZ74.1 million. This figure does not include approximately AKZ12 million in in-kind subsidies and AKZ14 million in staff salaries paid by the province. There was therefore a cash shortfall from revenues of approximately AKZ10 million. This was paid out of initial capital paid into the utility upon its establishment. For 2016, Bié has estimated that its operating costs will be significantly higher than costs recorded in the past. The recorded costs for 2015 and the projected costs for 2016 are provided here.

Table 5.4. PWSU Bié - Costs for 2015 and the Projected Costs for 2016

Expense	2015 AKZ million	2016 AKZ million	Comment
Staff costs	31.70	75.24	Inclusion of staff previously paid for by local government; inclusion of social security and insurance costs; six additional staff; (cost of new administrative board [management])
Electricity	1.20	12.32	Higher costs due to reduction in electricity subsidies
Fuel Costs	17.00	29.55	Diesel costs; higher due to reduction in government subsidies
Chemicals	14.00	19.76	Incorporation of full cost of water treatment chemicals
Repairs and Maintenance	3.80	14.05	
Gas and Vehicle Costs	2.90	2.90	
Communications	0.20	0.30	

Other administrative costs	3.30	8.55	
Total	**74.10**	**162.67**	120 percent increase in total costs

44. **Operational Cost Recovery:** Bié has conservatively estimated its collections for 2016, based on its 2015 collections, its loss of operations in Kunje for 2016, and the economic downturn, which they report has resulted in lower observed collections. In 2015, 100 percent collection of billings combined with subsidized costs would have resulted in a 204 percent operational cost coverage ratio; however, given their 42 percent collection ratio, their operational cost coverage on a cash basis was only 86 percent. For 2016, based on a full accounting of operational costs, Kuito's billings just cover its operational cost (with an operational cost coverage ratio of 1.0); however, on a cash basis, they are expected to only be able to meet 37 percent of their estimated costs. While some costs may be avoided, it is not clear how this expected operational shortfall will be met.

Table 5.5. PWSU Bié Operational Costs

	2015 Estimated (AKZ)	**2016 Projected (AKZ)**
Billings	151,156,440	163,231,320
Cash Collections	64,000,000	60,000,000
Collection Ratio	86 percent	37 percent
Operating Expenses	74,100,000	162,669,000
Operational Cost Coverage Ratio	2.04	1.0
Cash-Based Operational Cost Coverage Ratio	0.86	0.37

45. **PWSU Huambo:** PWSU Huambo, similar to the other utilities, has just begun the process of documenting its infrastructure assets, operations, customers, and finances. A team from Águas de Portugal (AdP) has been selected to provide management and technical assistance to the utility under a three-year contract. It has a total of 15,634 formal connections, most of them (15,540) residential yard-taps, and 196 staff (with a staffing ratio of 12.5 staff per 1,000 connections). The utility reports that its water treatment capacity is 24,480 m3 per day, but that it likely treats less than half that amount. They report that one of their treatment plants was damaged during the 2015 rainy-season floods and is not operational. Despite reportedly large and unused treatment capacity, Huambo believes it needs additional capacity. An issue may be that while it is able to abstract sufficient water for treatment during the rainy season, it is unable to meet demand during the dry season.

46. Similar to the other utilities, there are currently no meters on production equipment or reservoirs; management estimates production based on design capacity. Customers are also not metered. The utility therefore does not have information on actual production or consumption, or unaccounted-for water.

47. **Tariffs and Utility Revenues:** Residential tariffs are currently set at AKZ80 per cubic meter (US$0.68 at the current official exchange rate of AKZ118/US$), with no monthly fixed charges. In the absence of meters, residential consumption is assumed to be 18.75 cubic meters per month. The utility bills AKZ1,500 per month per connection. Commercial/Industrial and

Institutional tariffs are set at AKZ100 and AKZ110 per cubic meter depending on whether the user is considered a moderate or heavy user. (As there are no meters, presumably the rate and usage are also based on estimates.) The utility estimates that it bills approximately AKZ11.5 million per month for water charges. Over the first quarter of 2016, its average collection for water charges has been about AKZ7.3 million per month, for an estimated collection ratio of 63.5 percent. Note that the utility has revenues from other fees and charges—new connection fees, taxes—that provided an average AKZ3.2 million per month to the utility, or approximately 40 percent of its collections from water charges.

48. **Operational Expenses:** PWSU Huambo has not been able to prepare financial statements or other information for 2015. Financial information was reportedly not available at the utility's offices when ADP began the management contract in late 2015, however, at the World Bank's request, monthly operating expenses for the first several months of 2016 were provided. These have been averaged, and a total amount for 2016 projected.

Table 5.6. PWSU Huambo - Operational Costs

Expense	Monthly Average (January – March, 2016) AKZ	2016 AKZ (estimate based on average)
Staff costs	7,120,000	85,440,000
Electricity	710,000	8,520,000
Fuel Costs	409,300	4,911,600
Chemicals	2,350,440	28,205,280
Repairs and Maintenance	1,258,000	15,096,000
Gas and Vehicle Costs	300,000	3,600,000
Communications	110,000	1,320,000
Other administrative costs	718,000	8,616,000
Total	**12,975,740**	**155,708,880**

49. **Operational Cost Recovery:** Based on the averages for the first three months of 2016, and assuming no changes in billings, revenues, or costs for the rest of the year, PWSU Huambo's annual billings for water service for 2016 are estimated to total AKZ138 million. If its operating cost estimates for 2016 are reasonable, its operational cost coverage ratio is calculated to be 88.6 percent. On a cash basis, assuming a collection ratio of 63.5 percent, they are expected to cover 56 percent of their estimated costs. That said, the utility does have miscellaneous other revenues (see above re. other income) that may somewhat improve its cash flows.

Table 5.7. PWSU Huambo - Operational Cost Recovery

	2016 Estimated/Projected (AKZ)
Water Billings	138,000,000
Cash Collections	87,630,000
Collection Ratio	63.5%
Operating Expenses	155,708,880
Operational Cost Coverage Ratio	88.6%
Cash-Based Operational Cost	56.3%

Coverage Ratio	

PWSU Huila (city of Lubango)

50. Water services for the city of Lubango and elsewhere in Huila province are technically still provided under the authority of DNA; however, steps have been taken to establish PWSU Huila, and management and technical assistance is being provided by the consulting firm Mitatta, whose assignment began in mid-May, 2016. The utility reports that it has 9,845 connections in Lubango, although only 7,083 are active connections, of which 6,631 are household connections. There are an additional 280 standposts providing water in peri-urban areas providing, on average, water to 40-50 families per standpost. The utility has 315 staff—far higher than necessary, with a staff ratio of 44 staff per 1,000 connections.

51. **Tariffs and Utility Revenues:** The utility assumes household consumption of 15 cubic meters per month for households with individual connections; it assumes households located relatively close to public standposts consume approximately 100 liters per person per day, but far less for households who must travel a greater distance. The utility charges approximately AKZ127 per cubic meter (approximately AKZ1,900 per month). For standposts, the utility charges a flat fee of AKZ250 per month per household; AKZ350 per month if access to public laundry facilities is included. The utility reports that, while it does not provide sanitation services, it includes a small sanitation fee in its billings in anticipation of providing such services in the future. The utility does not bill customers—it relies on customers voluntarily paying the utility. The utility has only an estimate of its billed revenues, but believes that its collection ratio is between 80 and 90 percent of what it should be billing. For 2015, PWSU Huila estimates that billings were approximately AKZ230 million, while collections (receipts) were approximately AKZ209 million.

52. **Operational Expenses:** The most noteworthy aspect of the operating expenses of PWSU Huila is its exceedingly high staff costs. While its per-staff expenses are not as high as several other PWSUs, Huila seems to have inherited significant staff from the provincial DNA, which results in an existing staffing ratio of 44 staff per 1,000 connections and staff costs that make up 75 percent of total operational expenses.

Table 5.8. PWSU Huila - Operational Costs

Expense	2015 AKZ million	Comment
Staff costs	200.3	The utility's staff costs are exceedingly high.
Electricity	1.8	Electricity costs appear to be low, especially given that reported electricity costs for 2014 were more than twice this amount.
Fuel Costs	8.5	
Chemicals	3.4	
Repairs and Maintenance	6.2	
Gas and Vehicle Costs	26.5	This figure also seems very high.
Communications	2.6	
Other administrative costs	17.8	
Total	**267.2**	

53. **Operational Cost Coverage and Cash-Based Operational Cost Coverage:** For 2015, PWSU Huila's billings for water service were estimated (based on collections) to total AKZ230 million. Based on its reported 2015 operating expenses of AKZ267.2 million, its operational cost coverage ratio is calculated to be 86 percent. On a cash basis, the utility likely covered 76 percent of its estimated costs.

Table 5.9. PWSU Huila -Operational Cost Recovery

	2015 Estimated (AKZ)
Billings	229,916,531
Cash Collections	209,015,028
Collection Ratio	91%
Operating Expenses	267,226,455
Operational Cost Coverage Ratio	86%
Cash-Based Operational Cost Coverage Ratio	76%

PWSU Malanje

54. PWSU Malanje (and its predecessor under the provincial department of water [DPA]) has received for several years technical assistance from Águas de Valencia, financed by the government of Spain, and therefore has a better record of its financial performance than the other utilities. Under WSIDP I, Águas de Valencia is providing management and technical assistance to the utility under a three-year contract that formally began in October, 2015.

55. The utility reports that it has just under 8,000 formal connections, 7,561 of which are residential. It has 77 staff, resulting in a staffing ratio of 9.6 staff per 1,000 connections. The utility also operates 34 public standposts, which the utility estimates serve between four and five thousand people, or an average of 132 persons per standpost (26 households, assuming an average household size of 5). While there are no meters on production equipment or reservoirs, the utility estimates that it treats approximately 11,600 cubic meters per day, although it may have capacity for double that amount.

56. **Revenues:** Of its 8,000 customers, the utility has meters on approximately 1,500 residential customers (provided through an earlier World Bank-financed project), although it does not use them for billing purposes. The utility has reviewed customer usage on those metered accounts and has found that average usage is 21 cubic meters per month. Unlike the other utilities included in the project, customers in Malanje are charged a fixed fee. Customers are assigned a rate class, with each rate class charged a different fixed fee. (Note that, despite nominal volumetric tariffs in other cities, because no customers are metered, their water charges are effectively a flat charge, based on an assumed monthly consumption. Once meters are installed, utilities will be able to charge based on use. In Malanje, the tariff structure will need to be formally changed in order to charge customers based on actual use.) The majority of residential customers are charged AKZ2,000 per month (US$16.9 at the official exchange rate of AKZ118/US$); the utility assumes that customers use an average of 20 cubic meters per month,

for a derived tariff of AKZ100 per cubic meter (US$0.84). Most commercial consumers are charged a flat charge of AKZ2,500 (US$21.20) per month. Consumption is assumed to be 25 cubic meters per month, for a derived rate of AKZ100 per cubic meter – the same as for residential customers. Households who use standposts are charged AKZ50 per day for usage. Eighty percent of that is in theory provided to the utility (the remaining goes to the standpost manager), however, the utility is currently unsure of their legal right to those revenues, and is currently depositing standpost revenues into an escrow account.

57. The utility reports that there is a relatively strong tradition of payment for water services, despite the fact that the utility does not deliver bills. Customers come to the water utility, where the utility informs them of what they owe. The utility reports that their current collection ratio is approximately 70 percent. In 2015, the utility collected AKZ142 million for water services from customers (US$1.2 million). The derived billing amount (based on 70 percent collections) was AKZ200.7 million (US$1.7 million). The utility also collects charges for new connections and fees (including late fees); in 2015, this amount was AKZ46.3 million (US$390,000), or approximately 33 percent of their collected revenue.

58. **Operating Expenses:** Because PWSU Malanje has had managerial and technical assistance for several years, they have been able to track their operating expenses more consistently than the other utilities. They were able to provide expenses for 2014 and 2015 to the World Bank team, as well as estimated expenses for 2016. Their 2015 costs and 2016 estimates are provided below.

Table 5.10. PWSU Malanje - Operational Cost

Expense	2015 AKZ million	2016 AKZ million	Comment
Staff costs	142.5	155.0	77 total staff.
Electricity	4.3	4.2	
Fuel Costs	-	-	
Chemicals		10.6	Presumably chemical costs were paid in the past by the provincial government.
Repairs and Maintenance	16.1	18.6	
Gas and Vehicle Costs			
Communications			
Other administrative costs	28.4	20.3	
Depreciation	6.5	7.8	Most other utilities have not provided depreciation costs, presumably due to lack of information on utility assets. This is a non-cash expense.
Interest costs	1.8	2.0	The utility reports that interest costs were incurred due to borrowing from banks to cover cash shortfalls for salaries.
Taxes	1.8	2.0	While the utility has recognized tax liabilities, it is unclear if it actually paid them.
Total Expenses	**200.4**	**219.1**	
Total Expenses, not	**192.1**	**209.4**	**Removes non-cash expenses (assumes that taxes**

including taxes and depreciation			**are not paid)**

59. **Operational Cost Recovery:** PWSU Malanje's operational cost coverage for 2015 is calculated to be 1.3 (note that this includes non-operational revenues such as fees for new connections as revenue, as well as non-operational costs such as materials and labor for new connections, however, it does not include depreciation or taxes). On a cash basis, its operational cost coverage is calculated to be 0.98 – the utility nearly meets its operational costs with its own revenues. Its projections for 2016 are similar – operational cost coverage of 1.31, or 0.96 calculated on a cash basis. This slight reduction of cost coverage on a cash basis is due to a lower expectation of non-operational revenues. The utility is projecting a 70 percent collection ratio; if it improves its collection ratio, it could achieve a cost-coverage ratio (on a cash basis) greater than 1.0.

Table 5.11. PWSU Malanje - Operational Cost Recovery

	2015 Estimated (AKZ)	**2016 Projected (AKZ)**
Billings (estimated)	247.1	275.2
Cash Collections	188.4	201.0
Collection Ratio	71%	70%
Operating Expenses (not including depreciation or taxes)	192.1	209.4
Operational Cost Coverage Ratio	1.29	1.31
Cash-Based Operational Cost Coverage Ratio	0.98	0.96

PWSU Cuanza Norte (city of N'Dalatando)

60. PWSU Cuanza Norte was formally established in December, 2013. SUERECA/Veolia is providing management and technical assistance to the utility under a three-year contract that formally began in September, 2015. The utility reports that it has approximately 5,000 connections, but that it doesn't have any detailed information about them. It also has 108 public standposts. It currently can deliver 2,922 cubic meters of water per day – most of that is treated with chlorine, although it is not necessary to treat a small amount coming from a separate source, which is added into the main transmission line untreated. The utility reports that it currently does not have staff—only the three members of the administrative board and the management/technical assistance team from SUERECA/Veolia. It is unclear why the utility did not inherit staff from the unit managed by the DPA, as was the case in all the other utilities. The utility reports that it plans to have a total of 25 staff, but that it has not been able to find qualified staff at salaries it can pay.

61. **Tariffs and Utility Revenues:** There does not appear to have been any history of charging for water in N'Dalatando. There is no billing system, and the management team reported that there was no approved tariff when they began. They have since established a tariff of AKZ100 per cubic meter (US$0.85) for residential connections, and a tariff for business between AKZ120 and 140 per cubic meter (US$1.02 and 1.19). The utility assumes that

residential customers consume 10 cubic meters per month, resulting in a monthly charge of AKZ1,000. Commercial customers are assumed to consume 25 cubic meters per month.

62. The utility does not appear at the moment to be able to bill for water service. In theory, if customers were billed at the assumed level of consumption, annual revenues could possibly be on the order of AKZ66 million (US$560,000). This is of course unlikely for 2016, although may be possible for 2017. The utility hopes that it might be able to achieve an 80 percent collection ratio, resulting in cash revenues of AKZ52.8 million (US$447,500).

63. **Operational Expenses:** PWSU Cuanza Norte was not able to report any actual past operating costs. It has provided estimates for 2016 based on recent experience, provided below.

Table 5.12. PWSU Cuanza Norte - Operational Cost

Expense	2016 estimated/projected AKZ million	Comment
Staff costs	94.7	25 total staff (projected). Note that the utility has based the cost estimate on what it believes are mandated salaries. The current staff cost estimate would result in per-staff costs that are three times that of several other utilities, and twice as high as the utility with the next-highest per-staff costs.
Electricity	0.89	
Fuel Costs	3.51	
Chemicals	20.0	Unclear why this amount is so high, given limited treatment.
Repairs and Maintenance	13.7	
Gas and Vehicle Costs	0.44	
Communications	3.2	
Other administrative costs	34.8	Unclear why this amount is so high.
Depreciation	14.8	Unclear how this was calculated, given that there is no utility asset registry. This would be a non-cash expense.
Total Expenses	**185.6**	
Total Expenses, not including depreciation	**171.4**	**Removes non-cash expense (depreciation)**

64. **Operational Cost Recovery:** Given the poor operational and financial information available from PWSU Cuanza Norte, the cost-coverage ratios estimated here can be considered speculative, at best. Given that the utility does not appear to have a realistic way of generating much income this year, the operating cost estimates—which could be assumed to be a budget—are highly unrealistic.

Table 5.13. PWSU Cuanza Norte - Operational Cost Recovery

	2016 Projected (AKZ)
Billings (estimated)	66.0
Cash Collections	52.8
Collection Ratio	80%
Operating Expenses (not including depreciation)	171.4
Operational Cost Coverage Ratio	0.39
Cash-Based Operational Cost Coverage Ratio	0.31

PWSU Uige

65. PWSU Uige, serving Uige province and its capital city, began receiving management and technical assistance from Águas de Portugal under a three-year contract that formally began in September, 2015. The utility provided mixed information about its operations. Total connections may total 5,880, but the utility is undertaken a cadastral survey of connections and has confirmed, so far, 2,132 connections. However, only 1,366 of those connections have signed water supply contracts with the utility. The utility reported that residents with connections who have not signed water supply contracts have had their connections closed. (It is assumed that customers who have not yet been surveyed are still able to access water without being billed.) Of the 1,366 connections with agreements with the utility, 1,290 are residential, 41 are commercial, and 35 are governmental or other institutional connections. In addition, the utility maintains two locations where private-sector water trucks purchase water, and 44 public standposts.

66. The utility has installed capacity to treat 13,500 cubic meters per day. It does not have meters on production or transmission assets, but estimates that it produces 12,500 cubic meters per day. The utility does not know how much water is consumed by customers with connections. The utility said it hoped to have 50 employees as of the end of 2016. (It currently has fewer employees, and is therefore intending to hire additional staff.) The system is scheduled to receive an additional 9,400 connections (and 120 kilometers of new network) under WSIDP I.

67. **Tariffs and Utility Revenues:** The utility reports that monthly billing amounts for residential customers is AKZ1,740 (US$14.75), which is based on assumed consumption of 12 cubic meters each month (based on per-person consumption of 80 liters per day and an average household size of 5 persons), and a tariff of AKZ145 per cubic meter (US$1.23). Commercial customers are charged a flat rate of AKZ2,500 per month (US$21.19) (again, based on an assumed level of consumption, although it is not clear what that level of consumption is), while hotels are charged a flat rate of AKZ6,500 (US$55.09). That said, there is as yet no billing system, so payment is based on customer initiative.

68. The utility does not appear at the moment to be able to provide bills to customers. The utility said it had charged an average of AKZ1,158,880 per month during the first four months of 2016, projecting that it would charge a total of AKZ13,906,551 for the year. (Note that it should

be able to charge more customers over the course of 2016 than it was able to during the first four months, assuming that it continues its cadaster/customer database work.) For example, if it billed all 5,850 customers with connections an average of AKZ1,740 each month, its billings for the year would reach AKZ119 million. Conservatively, it could be able to bill half of its customers, for 2016 revenue of AKZ59.5 million. At an assumed 70 percent collection ratio, cash revenues could be AKZ41.8 million (US$354,000).

69. **Operational Expenses:** PWSU Uige was not able to report any actual past operating costs. While it provided figures for operating expenses during the first four months, it was unable to provide background information for the amounts. The 2016 estimates, based on the numbers provided for January through April, are provided here for information.

Table 5.14. PWSU Uige - Operational Cost

Expense	2016 estimated/ projected AKZ million	Comment
Staff costs	371.1	This estimate is based on what the utility reported it had paid staff during the first four months of the year, for 40 staff. This would make the average annual salary for Uige staff AKZ773,000, or approximately four times higher than the average salary of the other utilities. The utility could not provide any justification for the high staff costs.
Electricity	0.03	
Fuel Costs	0.24	
Chemicals	4.81	
Repairs and Maintenance	2.29	
Gas and Vehicle Costs	2.87	
Communications	1.17	
Other administrative costs	3.00	
Total Expenses	**385.5**	96 percent of operating expenses, according to the utility's figures, are for staff costs.

70. **Operational Cost Recovery:** Given the poor operational and financial information available from PWSU Uige and their inability to provide back-up for the costs provided, there is no point in calculating operational cost coverage ratios for the utility. The World Bank expects that the utility will prepare and provide a realistic budget for 2016 and 2017, with clear assumptions regarding revenues and expenses.

Annex 6: Overview of Activities Supported under WSIDP I and II

Republic of Angola: Second Water Sector Institutional Development Project

Table 6.1. Activities Supported under WSIDP I and II

Activity	Support Under WSIDP I	Expected Support Under WSIDP II
Establishment of PWSUs	7 utilities created through the project (Kuito, Malanje, Huambo, Uige, N'Dalatando, Lubango and Luena)	2 utilities to be created (Dundo and Moçamedes)
Support for Management Contracts	6 Management contracts for 3 years for the utilities supported through the project	9 Management contracts for the utilities created and supported by the project for 4 years; (6 Management contracts will follow after the expiration of contracts supported under WSIDP I.)
Payments to Management Contracts' consultants as performance incentives	To be paid to consultants as they achieve annual performance targets	To be paid to consultants as they achieve annual performance targets Payments made under WSIDP II will only be made after the completion of WSIDP I.
Independent financial and performance audits	Audits will be carried out for the last 2-3 years of the project (depending on whether the utility has auditable financial reports) for the utilities created under WSIDP I	Audits will continue to be carried out for utilities created under WSIDP I, and will be started for those utilities created under WSIDP II (once the financial reports are auditable) for the entire WSIDP II implementation period.
Financial support to utility operations, as a performance grant conditioned on the achievement of certain targets	Financial support will be provided to the PWSUs to ensure they have the means to provide the services.	Financial support will be provided to the PWSUs to ensure they have the means to provide services
Regulatory Agency for the Water and Sanitation Sector (IRSEA)	Support to the establishment of the RA for the Water Supply and Sanitation Subsector (IRSEA) on March 16, 2016, through the Presidential Decree no. 59/16	Development of water and sanitation regulatory instruments; support to the regulator with respect to departmental and staffing /skills requirements

Activity	Support Under WSIDP I	Expected Support Under WSIDP II
National Institute for Water Resources (INRH)	Technical Assistance to review the legal framework and to establish the INRH on November 16, 2010, through the Presidential Decree No. 253/10	Support to the INRH Regional Directorates, as well as Capacity-building, Training, Communications, and Operational Support
Water Resource Monitoring network	Construction of 35 Hydrometric Stations	Construction of (additional) 30 Hydrometric Stations
Information System for INRH	Set up of the system; hardware, software and migration of previous data	Managing and operationalizing the system, establishing data-gathering protocols and communications systems with regional offices
River Basin Planning	Development of an Integrated River Basin Management Plan (IRBMP) for the Cuanza River	Implementation of an economic instrument for the management of water resources in the Cuanza River Basin Preparation of two additional IRBMPs in the southern coastal region
Safety of Dams	TA to review the safety of selected dams in critical condition	Carrying out of a national inventory of existing dams; assessment by a panel of experts of the safety status of prioritized dams, and the elaboration of the legal and regulatory framework,
Rehabilitation of Water Supply Systems	110.000 Household Connections; 900 km of network	186,500 additional household connections; 1,675 additional km of network

Annex 7: Map (IBRD 42451)