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IDA/R2017-0118/1

April 24, 2017

Closing Date: Thursday, May 11, 2017 at 6 p.m.

FROM: Vice President and Corporate Secretary

Cameroon - Hydropower Development on the Sanaga River Technical Assistance Project

Project Appraisal Document

Attached is the Project Appraisal Document regarding a proposed credit to Cameroon for a Hydropower Development on the Sanaga River Technical Assistance Project (IDA/R2017-0118), which is being processed on an absence-of-objection basis.

Distribution:

Executive Directors and Alternates
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Document of

The World Bank

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Report No: PAD2234

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF €24.9 MILLION
(US$26.3 MILLION EQUIVALENT)

TO THE

REPUBLIC OF CAMEROON

FOR A

HYDROPOWER DEVELOPMENT ON THE SANAGA RIVER TECHNICAL ASSISTANCE PROJECT

APRIL 20, 2017

ENERGY AND EXTRACTIVES GLOBAL PRACTICE
AFRICA REGION

CURRENCY EQUIVALENTS

(Exchange Rate Effective February 28, 2017)

Currency Unit	=	CFA Franc
US$1	=	FCFA 615.9
US$1	=	Euros 0.94312930

FISCAL YEAR

January 1 - December 31

ABBREVIATIONS AND ACRONYMS

AES	American Electricity Supply
AFD	*Agence Française de Développement* (French Agency for Development)
APM	Assistant Project Manager
ARSEL	*Agence de Régulation du Secteur de l'Electricité* (Sector Regulatory Agency)
CAA	*Caisse Autonome d'Amortissement* (Autonomous Sinking Fund)
CBS	*Commission de Bassin de la Sanaga* (Sanaga Basin Commission)
COPIL	*Comité de Pilotage* (Steering Committee)
CPEB	*Commission Paritaire des Eaux de Basin de la Sanaga* (Joint Commission for Sanaga Basin Waters)
CPF	Country Partnership Framework
DA	Designated Account
EDC	Electricity Development Corporation
EIRR	Economic Internal Rate of Return
ENEO	Energy of Cameroon (National Utility)
EPC	Engineering-Procurement-Construction
ERP	Emergency Response and Preparedness Plan
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
FCFA/XAF	West African Franc
FM	Financial Management
GBR	Geological Baseline Report
GDP	Growth Domestic Product
GESP	Growth and Employment Strategy Paper
GRS	Grievance Redress Service
GoC	Government of Cameroon
GWh	Gigawatt hour
HEM	Hydro-electro-mechanics
HFO	Heavy Fuel Oil
IBRD	International Bank for Reconstruction and Development
IDA	International Development Agency
IDF	Institutional Development Fund

IFC	International Finance Corporation
IFR	Interim Financial Report
IPP	Independent Power Producer
IPPF	Indigenous Peoples Planning Framework
IVMP	Integrated Vector Management Plan
km	Kilometer
kWh	Kilowatt hour
M&E	Monitoring and Evaluation
MINEE	*Ministère de l'Eau et de l'Energie* (Ministry of Water and Energy)
MINEPAT	*Ministère de l'Economie, de la Planification et de l'Aménagement du Territoire* (Ministry in charge of Economy, Planning and Regional Development)
MINFI	*Ministère des Finances* (Ministry in charge of Finance)
MINMAP	*Ministère des Marchés Publics* (Ministry of Public Procurement)
MW	Megawatt
NHPC	Nachtigal Hydropower Project Company
NPV	Net Present Value
O&M	Operations and Maintenance
PDSE	*Plan de Développement du Secteur de l'Electricité* (Least-Cost Power Sector Expansion Development Plan)
PFM	Public Financial Management
PIM	Project Implementation Manual
PIU	Project Implementation Unit
PDO	Project Development Objective
PPA	Power Purchase Agreement
PPP	Public-Private Partnership
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
SA	Social Assessment
SESA	Strategic Environmental and Social Assessment
SCD	Systematic Country Diagnostic
SIGED	Integrated Financial Management System for Donor Funded projects
SONATREL	*Société Nationale de Transport d'Electricité* (National Electricity Transport Company)
SONEL	*Société Nationale d'Electricité* (Public Power Utility)
STP	*Secrétariat Technique Permanent* (Permanent Technical Secretariat)
ToR	Terms of Reference
UGP	*Unité de Gestion de Projet* (Project Implementation Unit)

Regional Vice President:	Makhtar Diop
Country Director:	Elisabeth Huybens
Senior Global Practice Director:	Riccardo Puliti
Practice Manager:	Charles Joseph Cormier
Task Team Leader(s):	Stephan Claude Frederic Garnier

BASIC INFORMATION

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

[ ] Situations of Urgent Need of Assistance or Capacity Constraints

[ ] Financial Intermediaries

[ ] Series of Projects

Approval Date	Closing Date	Environmental Assessment Category
11-May-2017	31-Jul-2023	A - Full Assessment

Bank/IFC Collaboration
No

Proposed Development Objective(s)

The Project development objective is to improve the Recipient's institutional capacity for a sustainable development of hydroelectric resources on the Sanaga River Basin.

Components

Component Name	Cost (US$, millions)
Identification of hydropower project sites on the Sanaga River Basin	11.00
Supervision of the Nachtigal Hydroelectric Project	1.50
Hydrological Risk Mitigation and Dam Safety	5.50
Advisory services for hydroelectric assets concession schemes	1.75
Establishment of an integrated reservoir management plan for optimal hydropower generation on the Sanaga river	1.75
Project Management Support and Capacity Building	7.20

Organizations

Borrower :	Government of Cameroon
Implementing Agency :	Electricity Development Corporation (EDC) Ministry of Water and Energy (MINEE)

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

Total Project Cost:	Total Financing:	Financing Gap:
28.70	28.70	0.00
	Of Which Bank Financing (IBRD/IDA): 26.30	

Financing (in US$, millions)

Financing Source	Amount
Borrower	2.40
International Development Association (IDA)	26.30
Total	**28.70**

Expected Disbursements (in US$, millions)

Fiscal Year	2017	2018	2019	2020	2021	2022	2023	2024
Annual	0.00	4.00	7.50	5.50	4.50	3.20	1.20	0.40
Cumulative	0.00	4.00	11.50	17.00	21.50	24.70	25.90	26.30

INSTITUTIONAL DATA

Practice Area (Lead)

Energy & Extractives

Contributing Practice Areas

Climate Change
Environment & Natural Resources
Water

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

Gender Tag

Does the project plan to undertake any of the following?

a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF

No

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

Yes

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

Yes

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

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

7. Environment and Social	Substantial
8. Stakeholders	Moderate
9. Other	
10. Overall	Substantial

COMPLIANCE

Policy

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

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	✓	
Natural Habitats OP/BP 4.04	✓	
Forests OP/BP 4.36	✓	
Pest Management OP 4.09	✓	
Physical Cultural Resources OP/BP 4.11	✓	
Indigenous Peoples OP/BP 4.10	✓	
Involuntary Resettlement OP/BP 4.12	✓	
Safety of Dams OP/BP 4.37	✓	
Projects on International Waterways OP/BP 7.50		✓
Projects in Disputed Areas OP/BP 7.60		✓

Legal Covenants

Sections and Description

The Recipient shall maintain at all times until the completion of the Project, a Project steering committee with composition, mandate and resources satisfactory to the Association. (Schedule 2, Section I.A.1.a. of the Financing Agreement)

Sections and Description
No later than twenty-four (24) months after the Effective Date, the Recipient shall establish and thereafter maintain at all times until the completion of the Project, a special river basin commission for the management of the optimization of hydroelectricity on the Sanaga River Basin with a composition, mandate and resources satisfactory to the Association. (Schedule 2, Section V.B. of the Financing Agreement)

Sections and Description
Without limitations upon the provisions of Section I.F of this Schedule 2, in the event of the development of hydropower projects on the Sanaga River Basin in a manner which materially differs from the results of the optimization study and recommendations of the SESA referred to in Part A.1 of the Project, the Association reserves the right to cancel the allocated Financing for Parts A.2, A.3 and A.4 of the Project. (Schedule 2, Section V.C. of the Financing Agreement)

Sections and Description
In order to ensure the timely carrying out of the audits referred to in Section II. B.3, the Recipient shall recruit, in accordance with the provisions of Section III of this Schedule 2, not later than six (6) months after the Effective Date, an external auditor with qualifications, experience and term of reference acceptable to the Association. (Schedule 2, Section II.B.4 of the Financing Agreement)

Sections and Description
The Recipient shall afford the Association a reasonable opportunity to review the SESA and said action plan; thereafter, but not later than three (3) months after the completion of the SESA, disclose in an accessible public manner and adopt such action plan as shall have been agreed with the Association. (Schedule 2, Section I.F.1a of the Financing Agreement)

Conditions

Type	Description
Effectiveness	The Recipient has established the MINEE-PIU and recruited to the MINEE-PIU, a project coordinator, a procurement specialist, a financial management specialist, an accountant, a social development and environmental specialist, all in accordance with the provisions of Section I.A.2 of Schedule 2 to the Financing Agreement. (Article V, 5.01(a) of the Financing Agreement.)
Effectiveness	The Subsidiary Agreement has been executed on behalf of the Recipient and the Project Implementing Entity in accordance with the provisions of Section I. B.1 of Schedule 2 to the Financing Agreement. (Article V, 5.01(b) of the Financing Agreement.)

Type	Description
Effectiveness	The Project Implementing Entity has expanded the mandate of the Lom Pangar-PIU in accordance with Section I.B.1(b) of Schedule 2 to the Financing Agreement. (Article V, 5.01(c) of the Financing Agreement.)
Effectiveness	The Recipient has expanded the mandate of the Lom Pangar Special Tender Board in accordance with Section I.B.5 of Schedule 2 to this Agreement. (Article V, 5.01(d) of the Financing Agreement.)
Effectiveness	The Recipient and the Project Implementing Entity have adopted the Project Implementation Manual in accordance with the provisions of Section I.D of Schedule 2 to this Agreement. (Article V, 5.01(e) of the Financing Agreement.)
Disbursement	No withdrawal shall be made for payments made prior to the date of this Agreement, except that withdrawals up to an aggregate amount not to exceed four hundred thousand Euros (€400,000) may be made for payments made prior to this date but on or after May 1, 2017 for Eligible Expenditures. (Schedule 2, Section IV.B.1a of the Financing Agreement)
Disbursement	No withdrawal shall be made under Category 1, unless the Recipient has established the MINEE-Special Tender Board in accordance with the provisions of Section I.A.3 of Schedule 2 to the Financing Agreement. ((Schedule 2, Section IV.B.1b of the Financing Agreement)

PROJECT TEAM

Bank Staff

Name	Role	Specialization	Unit
Stephan Claude Frederic Garnier	Team Leader(ADM Responsible)	Lead Energy Specialist	GEE07
Kouami Hounsinou Messan	Procurement Specialist(ADM Responsible)	Procurement	GGO07
Kolie Ousmane Maurice Megnan	Financial Management Specialist	Financial Management	GGO23
Alassane Agalassou	Team Member	Senior Energy Specialist	GEE07
Allison Berg	Team Member	Sr. Operations Officer	GEE08

Cyrille Valence Ngouana Kengne	Safeguards Specialist	Environment	GEN07
Faly Diallo	Team Member	Finance Officer	WFALA
Hocine Chalal	Safeguards Advisor	Environment	GEN07
Kristyna Bishop	Safeguards Specialist	Social	GSU01
Laurence Hougue Bouguen	Team Member	Administrative	AFCC1
Laurent Durix	Team Member	Consultant	GEE03
Luciano Canale	Team Member	Senior Hydropower Specialist	GEE07
Mariano Salto	Team Member	Energy Economist	GEE01
Marie Louise Felicite Soue	Team Member	Operations	GEE07
Marjorie Pavia	Team Member	Legal	CESDR
Nneoma Veronica Nwogu	Counsel	Legal	LEGAM
Thanh Lu Ha	Team Member	Operations	GEEFS

Extended Team

Name	Title	Organization	Location

CAMEROON
HYDROPOWER DEVELOPMENT ON THE SANAGA RIVER TECHNICAL ASSISTANCE PROJECT

TABLE OF CONTENTS

I. STRATEGIC CONTEXT

A. Country Context

1. Cameroon is a medium-sized (475,650 km^2) country in Central Africa with a population of about 23.3 million (2015), growing at around 2.5 percent per year. Cameroon has vast natural resources, including oil, gas, minerals, agricultural land, and forests with remarkable biodiversity, which provide a potential basis for development. Cameroon's gross national income (GNI) per capita stood at US$1,320 in 2015, making it a lower-middle income country. Economic growth averaged 3.3 percent per year in the 2000s, but the 2009 global financial crisis led to a slump due to weaker demand for Cameroon's non-oil exports. At 5.8 percent, economic growth picked up in 2015 and, despite a gloomy economic outlook in the Central African Economic and Monetary Community, lower oil prices, and insecurity in the Far North of Cameroon, growth is estimated to have reached 5.2 percent in 2016.

2. Cameroon remains characterized by high levels of poverty and weak social indicators. Poverty declined only marginally since 2001, from 40.2 percent to 37.5 percent in 2014, and is increasingly concentrated in Cameroon's northern regions, where it worsened in the same period. The country ranked 153 out of 187 on the 2015 Human Development Index, with some indicators, including life expectancy, declining over the last 10 years, and infant and maternal mortality rates still exceedingly high. Cameroon's main challenge over the coming years will be to significantly accelerate economic growth and scale up investments while implementing policies that will ensure that the benefits of growth are shared. This will require major improvements in the business climate, important investments in infrastructure, better governance, and more efficient public spending, as well as fiscal policies that specifically target the needs of the poor.

3. Cameroon's debt situation has deteriorated recently due to the funding of major infrastructure projects concomitant with lower oil revenues. The public debt-to-gross domestic product (GDP) ratio that had declined to 10 percent in 2008 owing to the 2006 Highly Indebted Poor Countries and Multilateral Debt Relief Initiative, reached 32.4 percent of GDP in 2016, compared with 15.6 percent of GDP in 2013. The risk of debt distress was raised from medium to high in the joint International Monetary Fund/World Bank 2015 debt sustainability analysis, reflecting the collapse in the value of exports and the rapid growth in non-concessional borrowing. Economic policies will require a more stringent focus on resolving a number of sectoral bottlenecks in the energy, agriculture, telecommunications, mining, and transport sectors to allow broader and more efficient exploitation of the country's resource potential.

4. The country has adopted ambitious development goals as laid out in the Growth and Employment Strategy Paper (GESP), which establishes the framework for the first implementation phase (2010–2020) of the Vision 2035. Vision 2035 sees Cameroon becoming a middle-income, industrialized country with poverty levels below 10 percent by 2035. The strategy emphasizes the need for agricultural diversification, increased productivity, and large-scale public investment projects. The priority areas identified in the strategy are: (a) infrastructure development in energy, telecoms, and transport; (b) development of the rural and mining sectors; (c) improvement in human resources through health, education, and training; (d) greater regional integration and export diversification; and (e) financial sector deepening and strengthening.

B. Sectoral and Institutional Context

5. **Since the late 1990s, the Government of Cameroon (GoC) has embarked on an ambitious reform agenda for the power sector**. In 1998, far-reaching policy and structural reforms were implemented by the GoC to address pressing governance issues that were stifling investment in generation capacity and distribution. The *Agence de Régulation du Secteur de l'Electricité* (Sector Regulatory Agency, ARSEL), and the *Agence pour l'Electrification Rurale* (Rural Electrification Agency, AER) were established. The vertically-integrated *Société Nationale d'Electricité* (Public Power Utility, SONEL) was privatized in 2001, with a 20-year concession awarded to the American Electricity Supply (AES) Corporation. As a result, SONEL gradually evolved from a loss-making government utility to an income-generating enterprise while mobilizing significant investments in new generation capacity and connections. AES Corporation sold its equity stake in SONEL in 2014 to the private equity company ACTIS Capital LLP, which renamed it Energy of Cameroon (ENEO) S.A.

6. The GoC initiated a second phase of reforms starting with the 2011 Electricity Law. The second phase was required to address the lack of sector investments, which were particularly acute in 2010 when performance began to stall. In particular, a lack of investment in the transmission backbone became a critical bottleneck to the expansion of power generation capacity and Cameroon's hydroelectric resources on the Sanaga River Basin. Key changes under the 2011 legislation included (a) the transfer of transmission network management from ENEO to a state-owned entity, the National Electricity Transport Company (SONATREL), whose mandate includes the development, operation, maintenance, and expansion of the national transmission grid, including its interconnection with neighboring countries; (b) changes to water storage activities, including the transfer of the water storage concession of the Sanaga Basin reservoirs to the Electricity Development Corporation (EDC), created in 2006, which holds public electricity sector assets and whose mandate includes the development, management, and operation of hydropower assets; and (c) the introduction of new penalty charges in the event that ENEO fails to meet the agreed performance targets.

7. **Power sector overview and growth forecast**. In 2015, total installed electricity generation capacity was estimated at 1,289 MW with hydro representing 59 percent of the total, concentrated in three large hydropower plants, Song Loulou (384 MW), Edéa (267 MW), and Lagdo (72 MW), with the first two located on the Sanaga River. Of the remaining capacity, about 350 MW consists of heavy fuel oil (HFO) and diesel generation[1] and about 216 MW relates to the Kribi Gas to Power Project[2] commissioned in 2013. Total power production in 2014 reached 6,080 GWh fed into three grid systems for an estimated peak demand of over 1,800 MW and power needs ranging between 5,700 GWh and 6,300 GWh.

8. In terms of electricity distribution and access, as of 2015 about 48 percent of the Cameroonian population had access to electricity, and 74 percent of the population lived in localities connected to electricity (of which 47 percent are in the northern regions). However, only a small share of the 14,000 localities nationwide were connected to the grid, and major differences remained between urban and rural areas, and the southern and northern regions. While ENEO, the distribution company, made progress in 2015 and 2016 with the implementation of its investment program, notably by crossing the threshold of one million connections and reducing the number of incidents and outages on the network, its operational performance remained disappointing. Technical and commercial losses remained high at about 30 percent, and the company's financial performance was subject to major payment delays of electricity bills, including by ALUCAM (Aluminum Company)

[1] Including expensive diesel generation deployed under an emergency program aimed at decreasing power deficit while waiting for the Lom Pangar reservoir dam commissioning and new hydropower plants to come online.
[2] Supported by guarantees from IDA and with funding from International Finance Corporation. In 2013, demand included about 285 MW and 1,500 GWh of self-generation.

and the GoC, pushing ENEO to use costly bridge loans. Since ENEO collects the revenues for the entire power sector, the financial health of the whole sector is subject to ENEO being able to collect enough revenue from all market players.

9. **Demand forecast and opportunities provided by the Sanaga River Basin**. According to the forecasts in the 2014 *Plan de Développement du Secteur de l'Electricité* (Least Cost Power Sector Expansion Development Plan, PDSE), by 2035 peak demand is expected to range from 3,900 MW to 5,500 MW depending on the growth scenario (median or high) and electricity consumption may range from 24,400 GWh (median) to 33,400 GWh (high). The PDSE also forecasts that by 2022/2023, hydropower will represent about 75 percent of the energy mix (along with about 15 percent gas-to-power and remaining 10 percent from other sources, including renewable energies). In the longer term, Cameroonian hydropower resources are eventually intended for export to neighboring countries. The African Development Bank is financing the development of a Regional Master Plan, which will include interconnectors. Regarding access forecast, Cameroon's recently approved Rural Electrification Master Plan intends to increase the population living in electrified localities (of which 75 percent are in the northern regions) to 88 percent by 2022, through grid extension (80 percent) and off-grid solutions (20 percent). Hydropower is expected to play a key role in the country's ability to expand access, including both large hydro and mini-hydro for off-grid schemes.

10. Cameroon has the third largest hydropower development potential in sub-Saharan Africa, estimated at over 12,000 MW across the country. Half of this potential is concentrated in the Sanaga River Basin, and integrated development of its estimated 6,000 MW could cover the expected power demand growth in an economically and environmentally sustainable fashion. It is estimated that 4,200 MW of capacity could be added through large hydropower sites, with the remaining 1,800 MW being added through development of smaller (mainly upstream) sites.

11. Focusing on hydropower development in the Sanaga River Basin rather than spreading it across multiple river basins in Cameroon enables economically efficient use of the water storage and transmission investments, as well as the possibility of leaving other rivers free-flowing, thus limiting ecosystem impacts in other basins. Until 2015, the Sanaga River was regulated by three dams (Mapé, Bamendjin, and Mbakaou) of limited capacity that maintained the firm (all-season) capacity of the hydropower sites (current or future) at a considerably lower level than the installed capacity. The Lom Pangar regulating dam, fully impounded for the first time in 2016, will increase the guaranteed, all-season hydropower capacity on the Sanaga River by approximately 40 percent. This will immediately translate into the addition of 120 MW at existing downstream hydropower plants as they will also generate electricity in the dry season. In the medium-term, the Lom Pangar dam will allow for further downstream development of large-scale hydropower plants by ensuring all-season water flows. These features make potential hydropower sites downstream of Lom Pangar among the most attractive power assets in Cameroon. Lower electricity generation costs that can be supported by development of such assets—and resulting lower electricity tariffs—can spur economic growth by stimulating development of value-added activities in Cameroon's broader economy and facilitating affordable household energy access.

12. The attractiveness of the Sanaga River Basin, combined with Cameroon's steady and overall positive track record of reform and private sector involvement in the electricity sector, makes it likely to be one of the few countries in sub-Saharan Africa able to effectively attract private investors and commercial financing in hydropower generation. Mobilizing private sector funding for large hydropower investments, a sector requiring high upfront capital expenditure, would help mitigate the deterioration of the public debt-to-GDP ratio noted earlier while allowing the country to benefit from the development of hydropower resources. Furthermore, the timely addition of hydropower capacity is needed to be able to decommission thermal capacity installed under

the emergency program (*Programme Thermique d'Urgence*), for which every kWh proved costly to the public budget.

13. The 420 MW Nachtigal Hydropower Project will be the first hydropower project that will benefit from the Lom Pangar dam on the Sanaga River. It is being developed under a public-private partnership (PPP) structure, and its successful implementation is expected to have a powerful demonstration effect on the feasibility and value of leveraging private sector investment and commercial financing. To capitalize on this flagship project, and attract investors across the entire Sanaga River Basin, the GoC needs to decrease project preparation risks for private investors and build its capacity to negotiate swiftly and transparently with such investors. This sets Cameroon on the path of a long-term vision where the public and private sectors each know and play their respective roles related to hydropower development in the country. That is, the public sector being in charge of planning, system optimization, power transmission and interconnection, site identification and selection, and retention of ownership and operation of hydropower cascade-wide storage, while the private sector invests in developing and operating individual hydropower projects within a river cascade context under a mix of options, such as independent power producer (IPP), concession, or with a power purchase agreement (PPA). In addition to the Nachtigal Hydropower Project, the GoC envisages the acceleration of the development of the 270 MW Song Dong Project with the objective of commissioning it just after Nachtigal. The GoC has also signed a number of Memoranda of Understanding (MOUs) for the development of other sites on the Sanaga River, but these are at an early development stage. It is expected that all future hydropower developments in the Sanaga River Basin will be informed by and benefit from the Strategic Environmental and Social Assessment (SESA) and the optimization study to be completed under the proposed project.

14. **The World Bank Group has been a strategic partner of Cameroon in the energy sector, with a strong portfolio of projects and support to energy policy dialogue**. The World Bank Group has built a close working relationship with all sector stakeholders and is a trusted partner in regard to policy, institutional development, and sector investment. World Bank-supported projects include the Energy Sector Development Project (P104456), which provides assistance to update the sector framework and supports rural electrification; the Lom Pangar Hydropower Project (P114077), which supports a regulating dam to reduce seasonal water variability in the basin; and the recently approved Electricity Transmission and Reform Project (P152755), which will help improve the capacity, efficiency, and reliability of the national transmission network. The World Bank is also supporting hydropower development on the Sanaga River through the planned Nachtigal Hydropower Guarantee Project (P157734), which is under preparation to facilitate the first hydropower plant on the Sanaga River through a PPP-backed by partial risk guarantee, which will result in approximately 420 MW of additional generation capacity. The International Finance Corporation (IFC) has also been active in the power sector in Cameroon for over a decade, as advisor to the GoC in the privatization of AES-SONEL; as lead developer of a syndicated loan for its five-year investment program; and as lender to two power development companies (Dibamba and Kribi). The World Bank and IFC continue to play a pivotal role in facilitating a constructive dialogue and transparent decision making by the national authorities in the sector and in supporting sector and sub-sector policy reform.

15. The proposed project aims to support institutional capacity building and knowledge transfer to the GoC in refining its tools and strategy to develop its hydropower resources in an integrated and sustainable manner. This technical assistance project is part of the wider suite of World Bank Group instruments described above, the combination of which provides an example of how the World Bank Group can support large hydropower development in sub-Saharan Africa. This includes providing support for *inter alia* technical-economic optimization, integrated planning, and environmental and social risk mitigation to enable the attraction of private sector and commercial capital in hydropower development.

C. Higher Level Objectives to which the Project Contributes

16. **The proposed project will support the strategic objectives of the GoC's Vision 2035** to achieve shared growth, reduce poverty, and create jobs through increased industrialization, improved productivity, and better governance. Similarly, the project will contribute to the GoC's GESP 2010-2020, which aims to increase non-oil growth by investing in key infrastructure, improving productivity and the business climate, and strengthening human development and regional integration. By supporting the GoC to hold its course and stay on its sector reform path, the project will help establish a predictable environment for future growth and competitiveness of Cameroon's economy, which in turn will be essential for creating jobs and lifting marginalized and vulnerable populations out of poverty, which is aligned with the World Bank Group's twin goals of reducing poverty and boosting shared prosperity.

17. **The World Bank Group's 2016 Systematic Country Diagnostic (SCD)**[3] for Cameroon identified improving reliability, availability, and access to clean energy as the highest ranked—and most feasible—intervention for addressing poverty reduction through improvements in the business environment. According to the 2015 Global Competitiveness Index, Cameroon ranks 124 out of 140 countries worldwide on electricity infrastructure. In the World Bank's 2007 Investment Climate Assessment, two thirds of manufacturing firms cited power deficiencies as a constraint to doing business, leading to losses as high as 4.3 percent of annual sales. About half of the small and medium enterprises and 90 percent of the large enterprises own generators, and the electricity gap is met by high-cost, high-polluting, diesel back-up.

18. **The World Bank Group's FY2017-2021 Country Partnership Framework (CPF),**[4] discussed on March 28, 2017, translates the core constraints identified by the SCD into three areas of focus: (i) increasing rural productivity, particularly in the north; (ii) improving the business environment for the formal and informal private sector; and (iii) supporting improvements of governance in the private and public sector. This project will actively contribute to pillars (ii) and (iii) of the CPF and to the governance and private sector support objectives of the GoC's Vision 2035.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

The Project development objective is to improve the Recipient's institutional capacity for a sustainable development of hydroelectric resources on the Sanaga River Basin.

B. Project Beneficiaries

19. ***Direct beneficiaries.*** The primary project beneficiaries are the institutions that will benefit from the technical assistance, namely the *Ministère de l'Eau et de l'Energie* (Ministry of Water and Energy, MINEE) and EDC, which will gain enhanced capacity to attract private sector financing and commercial capital for hydropower development in Cameroon. In addition, key stakeholders in the sector will benefit from timely and transparent development of the Sanaga River Basin. The private sector will access new investment opportunities with reduced risks from clear rules and availability of public information on resources management and/or ranking of the most-

[3] Report No. 103098-CM.
[4] Report No. 107896-CM.

ready and desirable sites for hydro development. With the development of hydro sites on the Sanaga River, ENEO and its current and future electricity consumers will benefit from cheaper hydroelectricity compared to fossil fuel alternatives, decreased likelihood of shortages, and improved likelihood that electrification programs proceed as the country moves from crisis-management to planned generation growth. Ultimately, the country's population as a whole will benefit as improvements in the capacity to meet demand for power removes the impediments that the sector was placing on job creation, poverty reduction, and improved prospects for shared prosperity.

C. PDO-Level Results Indicators

20. The project has been designed around the principle of learning by doing and capacity transfer by consultants who will bring international best practices in large hydropower development to Cameroon. The proposed PDO indicators are the following:

- Priority hydroelectric site on the Sanaga River identified and awarded to a private concessionaire on a competitive basis for development (Yes/No).
- Hydrology risk mitigation mechanisms identified and implementation roadmap prepared (Yes/No).
- Dam Safety Framework adopted by MINEE and ready for implementation (Yes/No).

21. See Section VII for the project results framework.

III. PROJECT DESCRIPTION

22. Hydropower will play an increasing role in meeting the growing demand for electricity in Cameroon with the Sanaga River Basin being the primary water source in the country. Through a combination of technical assistance, advisory services, expert support, studies, and analyses, the project will provide support to ensure that (i) the GoC has the capacity to develop its hydropower resources in an integrated and sustainable manner; (ii) a hydroelectric site on the Sanaga River is identified for development; and (iii) the private sector is engaged for its development. The project will further ensure that Sanaga River Basin hydroelectric resources are developed in line with international best practices. The generation and sharing of technical and regulatory knowledge with support of the project (for example, on hydrology risks, dam safety, reservoir management, cascade investment optimization, and competitively bid concessions) will bring the GoC and the private sector on equal footing to identify and distribute risks in the development of the basin's potential. All technical assistance provided under the project will be undertaken with capacity building and knowledge transfer as key elements. Technical assistance under the project will be provided through six components, which are described in the following paragraphs with further details in Annex 1.

A. Project Components

Component 1: Identification of Hydroelectric project sites on the Sanaga River Basin. (IDA US$11 million equivalent).

23. The Sanaga River has a technical hydropower potential of nearly 6,000 MW and about 500 meters of available head between Nachtigal falls and the delta. . It is envisaged that this potential be exploited by means of nine hydropower plants in a cascade arrangement. Hydropower plants could operate as run-of-the-river in cascade arrangement, taking advantage of the seasonal regulation of the natural runoffs provided by the four reservoirs (including the recently commissioned Lom Pangar). This component would finance technical assistance to the GoC to identify, rank, and select the next large-scale hydroelectric site on the Sanaga River and provide institutional capacity support for its development through a competitively sourced PPP. The component has four sub-components.

Subcomponent 1(a): Sanaga River Basin Hydropower Potential Optimization Study (IDA US$1.5 million equivalent).

24. The subcomponent will review several alternatives of cascade arrangement, which include different dam and powerhouse sites, dam heights, installed capacities, and project layouts and represent the reference study for future hydropower investments in the Sanaga Basin. This study will provide a comprehensive and seamlessly exploitable database on sites' hydro potential, including mapping, topography, geology, hydrology, pre-feasibility studies, and design of the potential equipment, both individually and taking into account several options for multi-site optimization and investment sequencing. The subcomponent will also provide a SESA for the development of hydroelectricity in the Sanaga River Basin and a strategic evaluation of major social and environmental dimensions to be identified, described, and evaluated for any future development in the basin, and will include an assessment of the cumulative impacts of the cascade arrangement. The work will identify the best arrangement and rank options based on a comprehensive optimization study having considered the latest dataset and by adopting the most modern surveying techniques. The most promising schemes will be presented to and discussed with the GoC, which will select, in collaboration with the Word Bank, the hydropower site to be developed with support under this project.

Subcomponent 1(b): Development of a New Hydroelectric Site on the Sanaga River (IDA US$7.25 million equivalent).

25. This subcomponent will deepen the pre-feasibility work for the site selected under subcomponent 1(a) and will undertake the engineering, environmental, and social studies for the site and fund the transaction advisory services to submit the site for development under a competitive scheme. The engineering, environmental, and social aspects will assess, update, and develop a bankable feasibility study to be used for tender design and documentation for the development of the proposed hydropower plant site and associated transmission lines to evacuate the power. It will include the following:

- **Engineering and Feasibility Studies.** Engineering studies for the selected site will consist of assessments of geology, geotechnical, topographic, bathymetry, modeling at project level, hydrology, and sedimentation handling. This will be supported through the provision of consulting services, an independent dam safety Panel of Experts (in compliance with World Bank operational policies, more below), and operating expenses associated with workshops and technical assistance during the first transaction. The scope and budget for this subcomponent include a "light" geological campaign aimed at preparing and making available to potential developers the Geological Baseline Report (GBR), which defines the geological settings of the selected site and assesses the main geological risks. Scope of works for the geological investigations will be

defined in the terms of reference (ToR) for the consultant and will include drilling boreholes in the key locations and laboratory testing. The GBR will be developed to a level of detail suitable for directly preparing tender documents for engineering-procurement-construction (EPC) type contracts. The engineering studies will inform and help finalize the feasibility studies, including an initial review of existing documentation, and confirm the site and layout of the scheme, while updating any information required to advance development of the scheme in accordance with international good practices. The subcomponent will support tender designs and completion of documentation to assist the GoC in finalizing a bankable reference project. To achieve the best outcome of the technical studies, save time, and avoid unnecessary transaction costs, it is advisable that the feasibility study consultant and the consultant for subcomponent 1(a) be procured under the same contract.

- **Environmental and Social Safeguard Studies.** This will include, for the selected hydropower plant site, the Environmental and a Social Impact Assessment (ESIA) including Environmental and Social Management Plans (ESMPs), Resettlement Policy Frameworks (RPFs) and Resettlement Action Plans (RAPs), Indigenous Peoples Planning Framework (IPPF) and/or Indigenous Peoples Plans, and a Labor Influx Management Plan as needed, for each infrastructure investment associated with the selected project. In particular, these studies will address participation and consultation and include analysis of benefit sharing with host communities, including citizen engagement mechanisms; labor influx issues and social conflict; gender equality; and access to electricity in the project area. The studies will inform the GoC, the national power utilities, interested and affected parties, and other stakeholders about potential environmental and social impacts associated with development of the proposed hydropower plant site.
- **Panel of Experts.** A Panel of Experts including dam safety and environmental and social expertise will provide high-level support and guidance on the implementation of the project following international standards and best practices, including on social and environmental safeguards. This Panel of Experts will be financed under Component 6.
- **Transaction Advisory Services.** Legal, financial, and technical advisory services to assist the GoC in the assessment of different potential financial and institutional transaction structures, including options for public or private funding, and PPPs, with a view to recommending the optimal bankable structure that takes into consideration of prevailing market conditions, priorities of stakeholders involved, and technical parameters and development schedule. On this basis, the transaction advisor will be responsible for supporting the GoC to (a) start negotiating and drafting the main contractual documents such as the PPA, the concession agreement, the connection and dispatch agreement and a draft government support agreement; and (b) prepare bidding documents for the selection of the private developer and conduct market sounding for possible private developers/concessionaires and financing institutions.

Subcomponent 1(c): Support to the Competitive Selection of a Private Concessionaire (IDA US$0.75 million equivalent).

26. This subcomponent will include support and technical assistance of the transaction advisory services during the tender process for the concessionaire, and research of the PPP. The competitive selection will be on the basis of clear and transparent criteria, such as the least-cost electricity price (lowest US$/kWh). It is advisable to include this support to the GoC in the same contract of the transaction advisor recruited under subcomponent 1(b).

Subcomponent 1(d): Support to GoC until Financial Close (IDA US$1.5 million equivalent).

27. The awarded concessionaire will be responsible for the final technical design, taking it to a further level of detail and for preparing the entire set of bidding documents (and contracts) related to the construction of the dam and power plant as these documents will depend on the final financing structure and the developer's technical choices.

The concessionaire will be responsible for finalizing and negotiating the project's contractual documents and for bringing the project to financial closure. This subcomponent will ensure that the GoC has the requisite support to negotiate with the concessionaire by providing the GoC with technical assistance and legal and financial advisory services during contractual negotiations and until financial closure is reached.

Component 2: Supervision of the Nachtigal Hydroelectric Project (IDA US$1.5 million equivalent).

28. The Nachtigal Hydroelectric Project is a 420 MW hydropower project to be constructed on the central course of the Sanaga River, 65 km northeast of Yaoundé. This strategic project for Cameroon is being developed by the recently created Cameroonian project company, Nachtigal Hydro Power Company (NHPC), whose shareholders are the Republic of Cameroon, *Electricité de France* (EDF), and IFC. Total investment is estimated at nearly US$1 billion. The World Bank is considering supporting the project with an International Bank for Reconstruction and Development (IBRD) partial risk guarantee in the amount of about US$300 million.

29. The Nachtigal Project will be implemented under two main EPC contracts—one for the civil works and the other for hydro-electro-mechanic (HEM) works. The concessionaire (NHPC) will contract an Owner's Engineer to supervise the implementation and quality of the construction contracts, including smooth coordination between the different contractors. In addition, a number of advisors will assist the lenders to monitor the implementation of the Project, including an independent engineer focusing on construction and an independent environmental and social auditor focusing on the monitoring of the ESMP. This component would provide technical assistance to support the GoC in its supervision duties during construction and commissioning of the dam and the powerhouse. This would help ensure timely completion of the project and establishment of good practices for the development of this large-scale, international hydroelectric project.

30. This component would support hiring of a firm with a track record of managing complex infrastructure projects to support the GoC in its supervision duties, including to (a) assist the GoC and GoC-related entities to monitor the construction of the project and the ESMP; (b) support the GoC and GoC-related entities so that they can identify reasons for delay or scope changes (if any) and assist the GoC in negotiations with the concessionaire to help mitigate these changes and delays; and (c) assist SONATREL in the supervision of the commissioning of the turbines and evacuation transmission line. This scope would then mirror, for the GoC, the scope of the independent engineer and environmental and social auditor, who will monitor the construction and the implementation of the ESMP for the lenders.

31. The Panel of Experts, with dam safety and environmental and social expertise, financed under Component 6, will provide high-level support and guidance on the implementation of the Nachtigal Project following international standards and best practices. It will review the design of the dam and provide recommendations to ensure that there is full compliance with the World Bank performance standards on dam safety and advise (if deemed needed) on environmental and social risks and ensure compliance with World Bank safeguard policies.

Component 3: Hydrological Risk Mitigation and Dam Safety (IDA US$5.5 million equivalent).

32. This component supports a range of technical assistance activities to ensure the prudent management of Sanaga River Basin hydroelectric resources.

Subcomponent 3(a): Definition and Establishment of Hydrological Risk Mitigation Mechanisms (IDA US$2.5 million equivalent).

33. Building on the recent experience in hydro-dominated systems, this subcomponent supports analysis to underpin the implementation of a long-term, hydrological risk mitigation strategy to accompany the sustainable development of Cameroon's hydropower potential and protect the GoC from volatility related to hydroelectricity

generation, especially in dry years and during periods of high commodity prices, taking into account climate variability. The subcomponent will support a hydrologic and climate change study at the national scale, with a focus on the Sanaga River Basin cascade, which remains vulnerable to climate anomalies and multi-year droughts, despite the resilience provided by the four upstream regulating dams. Such climate variability assessments and potential impact of long-term climate change will be essential for the understanding of the hydrological risk, the impact on generation, and the design of long-term mitigation instruments. The subcomponent will support analysis of the local relevance of various mitigation mechanisms, including diversification of the energy mix as well as a financial risk mitigation strategy, such as risk retention and risk transfer instruments as part of the electricity sector weather-related shock management strategy. The subcomponent will also support the development of a detailed action plan/road-map to put into effect selected risk protection mechanisms. This road map will detail the required assistance to create the legal, financial, and commercial frameworks necessary to implement the selected strategy.

Subcomponent 3(b): Dam Safety Definition and Implementation (IDA US$1.5 million equivalent).

34. This subcomponent will support the design of a generic Dam Safety Framework applicable to all water basins in Cameroon. The framework will be designed using international best practices and will be further detailed for the Sanaga River Basin to allow its immediate adoption. Consulting work will assist the GoC in identifying best practices relevant for Cameroon, including the main activities required for Dam Safety Assessment (see below), and adapting and shaping them to fit national regulations, including with regulatory frameworks related to environmental and social safeguards.

Subcomponent 3(c): Dam Safety Assessment (IDA US$1.5million equivalent).

35. The subcomponent will fund the evaluation of the safety of a number of dams, including the three regulating dams of Mapé, Bamendjin, and Mbakaou that together with Lom Pangar have a key role in the development of the Sanaga hydropower cascade, securing water for generation during the dry season and sensibly improving the energy output and the economic attractiveness of the entire cascade of hydropower plants. The activity will provide support to EDC, which owns and operates the regulating dams. The technical tasks will include (a) dam stability analyses; (b) the evaluation of the safety and the serviceability of the gates and other hydro-mechanical equipment (HEM); and (c) implementation of a continued monitoring plan, including the preparation of technical specifications. The independent Panel of Experts mentioned above will also provide high-level support and guidance to this task.

Component 4: Advisory Services for Hydroelectric Asset Concession Schemes (IDA US$1.75 million equivalent).

36. In order to bridge a rapidly growing gap between demand and supply in past years, the GoC used public financing to fast-track the development of a certain number of hydroelectric projects (Memve'ele, Lom Pangar, Bini-Warak, Mekin, etc.) which, once commissioned, pose questions related to asset handling and operations and maintenance (O&M). The same will be true of additional assets on the Sanaga River. As such, this component will support advice and guidance on options for how to manage such assets.

Subcomponent 4(a): Analysis of Options for the Awarding and Contracting of Concessions of Publicly-owned Hydroelectric Assets (IDA US$0.25 million equivalent).

37. This subcomponent will fund advisory services for carrying out an analysis of the costs, benefits, merits, and limitations of each possible option and define the legal and implementation requirements. Options to be studied may include, but are not limited to, award to an existing local operator, competitive tender for the selection of an international operator(s) for a part or all of the assets, or establishment of a special purpose operator locally with the technical assistance/training of an international O&M consultant. A careful market analysis will also be

conducted to confirm the feasibility of each option.

Subcomponent 4(b): Support to the Implementation of the Selected Concession Mechanism (IDA US$1.5 million equivalent).

38. This subcomponent will support implementation of the selected option(s) with technical and legal advisory services for the GoC. The support will include preparation of tender documents (if necessary), including contracts for an O&M contractor, with risk sharing mechanisms and responsibilities, as well as clear performance indicators and remuneration mechanisms for the operator/contractor.

Component 5: Establishment of an Integrated Reservoir Management Plan for the Optimal Hydropower Generation on the Sanaga River (IDA US$1.75 million equivalent).

39. Building on the work completed under the IDA-supported Lom Pangar Hydropower Project to operationalize procedures and conditions for water flows and downstream releases in a manner that is optimal for electricity generation, subject to meeting minimum needs of other users, this component will support the operationalization of the Sanaga Basin Commission. A detailed roadmap has been prepared and agreed with the GoC to create and operationalize the *Commission de Bassin de la Sanaga* (Sanaga Basin Commission, CBS). The CBS will be composed of a *Commission Paritaire des Eaux de Bassin de la Sanaga* (Joint Commission for Sanaga Basin Waters, CPEB) and of a *Secrétariat Technique Permanent* (Permanent Technical Secretariat, STP) within EDC. The *Agence Française de Développement* (French Development Agency, AFD) will provide parallel financing for the implementation of the agreed road map.

Subcomponent 5(a): Assistant Project Manager (APM) to EDC for the Operationalization of the STP (IDA US$1 million equivalent).

40. The APM will closely support and advise EDC in the implementation of the detailed action plan/road map. This will include advising on the drafting of texts defining and creating the CPEB and the STP, staffing, establishment of the water management procedures, and analysis of the operational support needs combined with the definition of possible partnerships with competent organizations with similar responsibilities.

Subcomponent 5(b): Capacity Building Program to the STP (IDA US$0.25 million equivalent).

41. This subcomponent will finance capacity building for the STP as included in the road map.

Subcomponent 5(c): Ensuring Reliability of the Water Information System (IDA US$0.5 million equivalent).

42. This subcomponent will finance a specialized firm to ensure the reliability of the physical data on the Water Information System and to develop an operational tool (model) for planning but also managing in real time water allocation as well as programming of hydropower production at different time steps (annually, monthly, daily, and hourly).

Component 6: Project Management Support and Capacity Building (US$7.2 million, of which IDA US$4.8 million equivalent and GoC US$2.4 million equivalent).

43. This component will provide financing for the coordination, management, supervision, training, monitoring, procurement, audits, and monitoring and evaluation (M&E) of the project; as well as support for cross component activities, such as the Panel of Experts, and activities related to the development of sustainable human resources in the hydropower sector.

Subcomponent 6(a): Project Management for MINEE (IDA US$1 million equivalent and GoC US$1.2 million equivalent).

44. This subcomponent will fund the coordination, management, supervision, monitoring, training, procurement, audits and M&E for the part of the project implemented by MINEE.

Subcomponent 6(b): Project Management for EDC (IDA US$1 million equivalent and GoC US$1.2 million equivalent).

45. This subcomponent will fund the coordination, management, supervision, monitoring, training, procurement, audits, and M&E for the part of the project implemented by EDC. It will also fund the development, during the first six months of project implementation, of a methodology to evaluate the specific capacity enhancement of the human resources achieved by implementing the project.

Subcomponent 6(c): Panel of Experts (IDA US$1.5 million equivalent).

46. This subcomponent will fund the Panel of Experts with responsibilities described in Components 1 and 2, and in particular to provide independent expertise, support, and guidance related to dam safety and environmental and social aspects. The Panel will also be solicited to provide advice and guidance on Component 3.

Subcomponent 6(d): Support for Sustainable Human Resources (IDA US$0.65 million equivalent).

47. This subcomponent will fund cross-component activities related to the development of human resources in the hydropower sector. In particular, within the context of this project, it will fund a capacity needs assessment to identify future skills needs for Cameroon when developing the entire value chain on hydroelectricity over the next 20 years. This would provide a stocktaking of capacities currently available among the key stakeholders involved in the hydropower value chain, as well as an evaluation of new capacities or skills needed, and an identification of where these may be developed and housed. Long-term capacity/skills building programs will be developed in coordination with Cameroonian universities as relevant.

Subcomponent 6(e): Internships (IDA US$0.65 million equivalent).

48. This subcomponent will fund internships for students or young graduates to learn on-the-job about hydropower related professions. It is expected that six to 12 scholarships for one to two years could be awarded in two sessions under the project, related to professions/skills being developed under Components 1 to 5. The trainees will work alongside each implementing entity. Scholarship allocations will seek parity on gender (that is, at least half will be awarded to women) and among execution agencies (MINEE and EDC).

B. Project Cost and Financing

49. The lending instrument for the proposed project is Investment Project Financing in the form of an IDA Credit of €24.9[5] million (US$26.3 million equivalent of which €13.7 million of the financing on blend terms and €11.2 million on hard terms). The Republic of Cameroon has requested that the credit be in Euros under the IDA Single Currency Lending Pilot Program.

Project Components	Project cost	IDA Financing	Counterpart Funding
1. Identification of Hydroelectric project sites on the Sanaga River Basin	11.00	11.00	
2. Supervision of the Nachtigal Hydroelectric Project	1.50	1.50	
3. Hydrological Risk Mitigation and Dam Safety	5.50	5.50	
4. Advisory Services for Hydroelectric Asset concession schemes	1.75	1.75	
5. Establishment of an Integrated Reservoir Management Plan for the Optimal Hydropower Generation on the Sanaga River	1.75	1.75	
6. Project Management Support and Capacity Building	7.20	4.80	2.40
Total Costs			
Total Project Costs	28.70	26.30	2.40
Front End Fees			
Total Financing Required	**28.70**	**26.30**	**2.40**

C. Lessons Learned and Reflected in the Project Design

50. Hydropower is a domestic natural resource that can be a potent driver of development, but that can also disappoint if not well managed and if its inherent risks are not mitigated. Insufficient, but also asymmetric capacity and level of information between the parties, first among which are the government and the private investors, can lead to attempts to capture the resource rent which in turn generates suboptimal investments and returns to the nation. Conversely, the availability of a proper long-term vision, readiness of technically sound information, and existence of valid policies and frameworks, can support the application of principles of fair competition, transparent contracts, and involvement of civil society organizations and benefits sharing among stakeholders. To this end, the design and development of this project has benefited from lessons learned from hydropower operations and analytical work in Africa, as well as from other completed and ongoing World Bank projects in Cameroon. The following is a summary of the key lessons and the design features of the project that have taken them into account.

[5] In accordance with current Republic of Cameroon per capita income and IDA 17 lending criteria, the credits will be financed under the Single Currency IDA regular credit terms, with 25-years maturity including a 5-years grace period. The single currency amount (EUR 24.9 million) will be converted to the final SDR amount for commitment authority and country allocation management purposes on the day of project approval. For information, the estimated value of the credit in Special Drawing Rights (SDR) SDR 19.9 million

51. **The project forms an integral part of a sector investment and reforms process.** Lessons learned from around the globe show that the World Bank's involvement in technical assistance or knowledge sharing alone has limited impact. Rather, in Cameroon the World Bank has a strong, established policy dialogue and is a trusted, strategic partner of the GoC in the power sector. This project simultaneously underpins and benefits from significant investment lending in the distribution, transmission, and generation sectors. It benefits from prior investment and dialogue in that it is not implemented in a vacuum and the trust and skills foundations are already in place, thus speeding the implementation and increasing the likelihood of success. It underpins the same process in that by setting the stage for private sector involvement in the hydropower generation, it increases the chances that the generation needs will be met and the entire sector strengthened and developed.

52. **Sufficient resources and time must be allocated for the preparation of a quality basin-level investment framework, provided as a public good.** Prior projects show that pre-feasibility studies and associated safeguard instruments are a must, but are not sufficient when multiple investment options are to be weighted simultaneously for bidding. Costs related to weighting associated risks to each option are dissuasive and some risks may be perceived as cumulative, scaring away the private sector or leading it to go for single-sourced options. The project will not only establish a framework for the river basin investment sequencing but will also address hydrological risks, dam safety, and water resources management and take an interdisciplinary approach in assessing the environmental and social impacts of the proposed options. Experience teaches that taking short cuts to reach short-term deadlines leads to delays in the medium term.

53. **Public entities must be accompanied in the real world implementation of principles established in policies**. Due to asymmetric information and also the need to demonstrate the willingness and capacity of the governments to deliver on policies, the experience on private sector participation in the energy sector in Africa points toward the importance of establishing clear, transparent, and balanced contractual arrangements between the government, private sector, off-takers, and other partners. Only with a strong contractual framework can the PPP arrangements lead to more efficient design, construction, and operation arrangements under better timelines than if developed by the public sector. The project provides not only assistance to the GoC for the establishment of such a contractual framework, but also support for its real-world test (including its adaptation as necessary) throughout the process of developing concessions to the private sector of a new development and for the operation of one existing asset in the Sanaga River Basin.

54. **Management support and capacity building must happen simultaneously.** Lessons from past reforms and projects show that for ambitious framework-wide projects to be successful, management assistance and the simultaneous building of staff capacity are required. The project addresses the strong need for systematic development of human capacity and institutional strengthening of both implementing agencies, and commits long-term support from international experts not only at the policy and framework level but also all along the implementation phase thereby transferring skills and providing a gradual handover to local staff and management.

55. **Hydrological risk mitigation strategy can incorporate lessons from Uruguay.** This project is informed by lessons from past operations carried out in other countries, particularly Uruguay, where the energy mix is hydro-dominated. Indeed, climate variability and drought conditions may lead to a reduced inflow into the hydropower plants and the need to use more expensive energy sources (for example, thermal and imported energy) to meet demand, which imposes a financial risk particularly when oil and gas prices are high. Uncertainty about the future hydrologic conditions under changing climate increases such vulnerability. The Uruguayan state-owned electricity company (UTE) has received technical support from the World Bank to develop an innovative scheme through a layered risk mitigation strategy that has included (a) new investments in less expensive renewable sources; (b) the use of an energy stabilization fund, including use of contingent credit lines; and (c) weather and

oil price insurance that protects UTE in the case of low probability but extreme, high cost droughts. Uruguay and Cameroon share similarities in that the energy mix in both countries is hydro-dominated and generation costs are volatile, peaking dramatically in dry years or when commodity prices are high. Likewise the two major Uruguayan catchment systems and the Sanaga Basin are hit by climate anomalies potentially associated with the El Niño-Southern Oscillation cycle. Building on the Uruguayan experience, the risk mitigation strategy that needs to be developed to accompany the hydropower development of the Sanaga River Basin and for Cameroon in general will be based on the updated least cost expansion plan, multilayered, and designed with progressive hydrologic triggers.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

56. **Implementing Agencies**. The project will have two implementing agencies: MINEE and EDC. MINEE will implement components with strategic and policy dimensions, while EDC will implement components that are more operationally focused in nature. Thus, MINEE will implement Components/subcomponents 1(c), 1(d), 2, 3(a), 3(b), 4, 6(a), 6(c), 6(d), and 6(e); EDC will implement Components/subcomponents 1(a), 1(b), 3(c), 5, and 6(b). Each agency will have a Project Implementation Unit (*Unité de Gestion de Projet,* UGP).

57. **Steering Committee.** The strategic supervision of project implementation and overall cohesion of the work across each implementing agency will be coordinated by a *Comité de Pilotage* (Steering Committee, COPIL), chaired by MINEE. The COPIL will be established by decree. The COPIL, presided by the Minister of MINEE, will be composed of representatives from MINEE (Electricity Division, Hydro-resources Division), the Ministry of Economy, Planning and Regional Development (MINEPAT), the Ministry of Finance (MINFI), EDC, ARSEL, and ENEO. The COPIL will be regularly informed of progress on project implementation, including through quarterly progress and financial reports by the respective UGPs. The COPIL will review and validate the key options proposed by the consultants hired to provide advisory services under the project.

58. **Project Implementing Units**. Both MINEE and EDC will have a UGP. MINEE's UGP, namely UGP-1, will be created before project effectiveness. Headed by a Project Coordinator who will be responsible for the day-to-day management of project activities, UGP-1 will include a financial management specialist, an accountant, a procurement specialist, and a social development and environmental specialist. UGP-1 can be reinforced on a need basis by staff from the MINEE. EDC's UGP, namely UGP-2, will be set-up by extending the competencies of the existing Lom Pangar Project Implementation Unit (PIU) already in place within EDC to include the implementation of the EDC-implemented components of this project. A deputy to the current coordinator of the Lom Pangar PIU may be appointed to keep work pressure manageable. UGP-2 will at least include a coordinator, a financial management specialist, an accountant, a senior procurement specialist, a social development specialist, and an environmental specialist.

59. Each UGP will be responsible for the day-to-day management of its components of the project and for coordination of project-related activities including (a) ensuring the timely implementation of the project in accordance with the Project Implementation Manual (PIM); (b) preparing annual work plans and budgets and annual procurement plans for submission to the World Bank for approval and to the COPIL for information; and (c) assuming overall responsibility for, inter alia, such tasks as procurement, financial management (FM), M&E, communication, citizen engagement, and compliance with environmental and social safeguards.

60. **Project Implementation Manual**. A PIM will be prepared and approved before effectiveness to provide guidance on roles and responsibilities as well as on the technical, administrative, financial and accounting procedures, procurement arrangements, and safeguard procedures.

B. Results Monitoring and Evaluation

61. The project-level M&E framework will track progress during implementation, measure intermediate outcomes, and evaluate project impacts. The results framework, detailed in Section VII, outlines key performance indicators, data collection methods, a timetable for collection, and responsible agencies. This framework will be used to supervise and monitor project implementation. In addition, during the first six months of project implementation, a separate and dedicated framework will be designed to evaluate the specific capacity enhancement of the recipients' human resources achieved by implementing the project.

62. Each UGP will be responsible for ensuring monitoring and evaluation of outcomes, and will closely coordinate with government agencies, donors, and other stakeholders. Each UGP will prepare project reports that are in form, content, and substance satisfactory to the World Bank. Reports will be prepared for each semester during project implementation, and will be submitted to the World Bank no later than 45 days after the end of the period covered by the reports. Monitoring of results and outcomes will be reported in the UGPs' project implementation reports. Furthermore, the World Bank will supervise the project over its lifetime and its results and outcomes on a regular basis to evaluate the project's achievement of the PDO. If necessary, corrective actions will be discussed and agreed upon with the GoC, including, for example, during the project's mid-term review.

63. The World Bank will be responsible for putting together the overall data for the results framework based on information provided by both UGPs.

C. Sustainability

64. The project is integral to the sustainability of the power sector in Cameroon by building capacity within Cameroonian institutions to manage its hydropower resources in an integrated and sustainable manner, and the project also enables the private sector to complement and buttress existing public sector investments in the power sector by taking on the development and operations of investment-heavy hydro infrastructure and thereby freeing public funding to support other power sub-sectors' needs, such as meeting the electrification/access challenge.

65. A well-defined river basin investment framework, buttressed by tested procedures and contractual arrangements, will contribute to the sustainability and transparency of the timely development of all Sanaga cascade sites through private sector investment. The project also provides technical assistance for an integrated water management plan of the Sanaga River and mitigation of the consequences of its climate induced inflow variability. This continuation of the work initiated for Lom Pangar will support cross-sector sustainability in the river basin. The optimization of reservoir management will benefit all downstream users (for example, hydropower producers, agriculture, urban water supply) while maintaining environmental flows and provides institutional frameworks to anticipate, avoid, or resolve conflicts between upstream and downstream users and contribute to the sustainability of their livelihoods.

66. Last, capacity building and knowledge transfer will be a key part of the project to ensure long-term sustainability of investments and to build capacity for any future investments in the sector.

D. Role of Partners

67. Project implementation activities will be carried out in coordination with donors involved in the power sector in Cameroon. As the lead agency for donor coordination in the power sector in Cameroon, the World Bank organizes regular meetings of the donors to ensure coordination of interventions in the sector. More particularly, Component 5 of the project will be implemented in close collaboration with AFD, which is co-financing with the World Bank the environmental and social measures of the Lom Pangar Project, including those linked to management of the reservoir of the Sanaga Basin and cumulative downstream mitigation measures, such as water quality, monitoring of greenhouse gases, and monitoring of Lom Pangar induced downstream impacts.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

68. The overall project risk rating is substantial. Major risks are attributable to the breadth of the assistance being provided, the necessity of significant and continued government involvement for its success, and the country's challenging capacity and governance environment. However, major risks are mitigated by the fact that this project is primarily providing technical assistance/advisory services to the GoC related to actions that are known and agreed to be necessary to address the long-standing situation of power scarcity in the country. Each of the project components addresses specific technical and policy actions that are required to ensure that the private sector accepts to invest in developing the Sanaga River Basin cascades, thereby enabling the GoC to achieve its development goals without having to use unsustainable levels of public financing. The project provides assistance to the GoC to be able to negotiate on equal footing with highly savvy private developers.

69. **Political and governance and sector strategy and policy risks are inter-related, and are considered substantial.** Sustained political commitment is critical to the success of the technical assistance provided by the project, which is also dependent on continued policy advances in the power sector. Any political roll-back of reforms could result in fewer private parties or developers willing to participate in asset development or operations. While reforms could be reversed by future administrations, the reform process has been ongoing for over a decade, and there is broad public support and political consensus around the need for the sector to continue reforms to avoid falling back into acute shortages. Policy and strategic measures devised under other World Bank-supported projects (Lom Pangar, Energy Sector Development, Electricity Transmission and Reform) are being implemented, which increases the confidence that relevant legislation and decrees will continue to be developed. Several components under the proposed project provide direct support to the strengthening of the reform process and the related sector stability. In addition, the GoC's willingness to involve private sector participation has been recently re-confirmed during the World Bank Group-GoC Energy Sector High-level workshop in December 2016, including its intention to develop generation assets exclusively through the private sector after 2022.

70. There is a sector financial viability risk related to timely implementation by the GoC of tariff adjustments and/or compensation, as well as on-time payment of GoC's electricity consumption bills. Lack of political will to strengthen ENEO's revenue base could result in deterioration of ENEO's finances, thus affecting its ability to make payments to different market players, including IPPs. Furthermore, a sustained deterioration of ENEO's finances could affect its ability to borrow the capital needed for urgent infrastructure rehabilitation and for bolstering its operational performance. The World Bank team is strongly engaged in sector dialogue on this issue with the GoC. The sector's and ENEO's financial viability has been the key topic of the World Bank Group-GoC high-level sector

workshops held in September and December 2016. As a result, a detailed action plan was agreed to address delays in tariff setting and payment of compensation to ENEO. It was agreed to work on further macro-modeling of the impact of tariff increases, including on households in particular and on the economy in general.

71. **Institutional capacity for implementation and sustainability risks are also inter-related and considered substantial.** The project directly addresses the GoC's lack of capacity to negotiate on a level playing field with private investors that are interested to develop hydroelectric resources on the Sanaga River. Thus, the project seeks to support the GoC in balancing the attraction of private sector investment and commercial financing with limitation of the risk of rent capture by investors. It will support the GoC to implement principles of competition and transparency while providing sufficient and relevant information to mitigate investment-risks perceived by potential investors. The project will support the design of balanced contracts between public and private stakeholders and seeks to ensure the transparent selection of a private developer. The provision of world-class advisors to the GoC will help overcome the capacity and information asymmetry often seen between parties in large infrastructure transactions in sub-Saharan Africa.

72. Another risk is that the GoC will be unable to attract interested parties for the various transactions required to optimally develop the Sanaga Basin, or investors will not succeed at reaching financial closure. The market for private investors as well as concessionaires or operators is still at a very nascent stage in sub-Saharan Africa, which limits the number of qualified competitors as well as willingness by financiers to provide the necessary lending. Similarly, perceived power offtake risk or lack of secured or guaranteed PPA backing a PPP or concession bid may limit private players' participation or the capacity to close after a successful bid. The technical assistance provided under the project seeks to reduce uncertainties through the provision of publicly available knowledge, at international-standards level, of technical, environmental, and social impact studies, as well as geological and hydrological studies. These will provide the common reference-frame on which negotiations between bidders and government can be based. The technical assistance will also provide a careful market analysis to identify specific concession models adequate for the existing assets or investment sequencing and bidding mechanisms for new hydropower. With regard to offtake risks, the recently approved World Bank-supported Electricity Transmission and Reform Project will be the main tool for mitigation. In terms of implementation capacity, given that the project will support several technical assistance activities/advisory services on a number of issues related to Sanaga River Basin resource development and management, close oversight by the implementing agencies and strong supervision by the World Bank will be critical.

73. **Fiduciary risks are considered substantial**. The fiduciary risk is broader than the project itself, and applies rather to the whole hydro-electric development of the Sanaga River Basin. This project seeks to decrease fiduciary risk to public and private sector actors involved in the optimal development of hydroelectric resources. As far as the project fiduciary risks are concerned, residual FM and procurement risks are assessed as substantial. Mitigation measures to address these risks are described below and in Annex 2.

74. ***Environmental and Social Risks are considered Substantial.*** As a technical assistance project, environmental and social risks relate mostly to the future downstream implementation of the project's recommendations and outputs than to the current project itself. Concretely, there is a potential risk that the GoC may choose to ignore the recommendations and outputs of the Project, potentially leading to more risky alternative choices not in line with the advice provided under the Project with increased environmental or social risks and potential impacts over the long term. However, recruitment of a Panel of Experts with environmental and social expertise as well as use of well-regarded consulting firms, under terms of reference satisfactory to the World Bank, that provide practical and solid advice consistent with the World Bank's Safeguard Policies will reduce this risk and will help the GoC make informed and sustainable decisions in the development of the sector. It is expected that the recommendations and outputs financed by the World Bank, and particularly the SESA, will

support the Government in its decision-making, allowing a better understanding that ignoring environmental and social issues would be contrary to the broader target of attracting competitive and reputable private players to invest in the sector. In addition, a legal clause has been introduced which specifies that, in the event of the development of hydropower projects on the Sanaga River Basin in a manner which materially differs from the results of the optimization study and recommendations of the SESA, IDA reserves the right to cancel the activities related to the development of a new site and to cancel the financing allocated to Components 1.b, 1.c, and 1.d.

75. **Climate and disaster risks.** The project has been screened for risks related to climate change and natural disasters. As a technical assistance project, such risks are negligible. However, the objective of the project is to assist the GoC with the integrated and sustainable management of hydroelectric resources on the Sanaga River. All climate and disaster risks will be examined in detail all along the implementation of the project, including the completion of a hydrologic and climate change study on a national scale.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

76. **Rationale for public sector financing**. As the project is providing technical assistance and not financing any investments directly, a traditional cost/benefit economic analysis has not been undertaken. However, there is a strong rationale for public sector financing to support activities proposed under the project. The technical assistance provided under this project will contribute to building a solid knowledge base on the various hydro sites' conditions and technical aspects, reducing the risk of cost overruns during construction and supporting an informed selection of development sequencing and of potential investors and operators. Transaction and procurement advisory services are expected to promote effective competition for concessions and help the GoC negotiate the right balance between development outcomes and return to investors. In addition, institutional support, institutional capacity building, and sector strengthening will enable sustainable business models and, in turn, improve the investment climate for the whole sector. The proposed project, while not financing any investments directly, has an intrinsic rationale for public provision given its nature and scope. Strengthening the GoC's technical, institutional, regulatory, and project implementation capacities is essential to ensure that hydropower resources are efficiently and sustainably developed and used, with benefits equitably shared by the society at large.

77. **Value added of World Bank support**. The World Bank is well positioned to bring significant added value to the proposed project in light of its experience in supporting large hydropower development in general and power sector reforms in Cameroon in particular. The type of support provided by the World Bank under this project will help level the playing field between the public and private sectors, increase project bankability, and increase the chances of reaching financial closure in a timely and efficient manner. More broadly, the World Bank's presence in this process provides comfort to private sector investors in the increased likelihood of a free and fair selection process.

78. **Hydropower development on the Sanaga River is economically viable.** Also, focusing hydropower development on the Sanaga River rather than spreading it into different basins is economically sound because of the shared storage benefits and potentially cheaper transmission arrangements.

79. The hydropower development plan is largely based on the PDSE. The PDSE optimized the expansion of the hydro-thermal generation park in the three existing transmission network sub-systems in Cameroon while developing a national transmission system. According to this plan, between 2015 and 2035 the country should

develop 3,295 MW of new installed capacity (including the decommissioning of 60 MW of diesel thermal in 2017) out of which 3,216 MW (97.6 percent) corresponds to new hydropower. This includes the cascade development of the Sanaga River because of the shared storage benefits and potentially cheaper transmission arrangements. The PDSE includes an economic analysis to determine the impact of the plan on the Cameroonian society. The analysis developed in the PDSE follows a standard cost-benefit approach in which the study compares the situation with and without expansion plan to estimate the net economic benefits for the society. The analysis only takes into account direct economic benefits that can be attributed to the plan (for instance, additional generation and losses reductions) but does not consider any indirect benefits (for instance, reduction in carbon emissions), and thus the estimation can be considered. Economic benefits were valued using an estimation of the willingness to pay for the electricity service. While the study did not conduct a survey to properly estimate them, the values were estimated based on the existing end user tariffs, which is usually a conservative approach.

80. The results of the economic analysis show that the expansion plan has an economic internal rate of return (EIRR) of 11.7 percent in the medium demand scenario and 10.1 percent in the high demand scenario. Consequently, the net present value (NPV) is positive for discount rates lower than the EIRR as shown in the figure below. For the purposes of the economic analysis, the study uses a six percent discount rate and considers a 10 percent discount rate as the threshold value. Therefore, the NPV of the plan is FCFA 237 million and FCFA 12 million (respectively about US$388,000 equivalent and US$19,700 equivalent) under the medium and high demand scenarios, respectively. According to the study, the lower figures observed in the high demand scenario represent the fact that the additional demand in this scenario arises from industrial customers and exports, which present a lower willingness to pay (i.e. aluminum smelters).

Figure 1. Results from the PDSE Economic Analysis

Source: World Bank based on PDSE

81. **Greenhouse gas accounting**. Greenhouse gas accounting also does not apply due to the nature of this project, although it is recognized that should Cameroon not develop its hydropower resources, it would likely revert to thermal generation. In terms of benefits, it is recognized that technical assistance is critical to help achieve and maximize the large hydropower potential of the Sanaga River Basin.

82. **Financial analysis**. Given the technical assistance nature of the project, performing a financial analysis is not relevant at this stage.

B. Technical

83. The proposed project is not overly complex from a technical point of view, as it mainly entails studies and advisory support that have been engaged successfully in the power sector, including in sub-Saharan Africa.

84. The feasibility studies and environmental and social assessments for the hydropower site (Component 1) do not pose any major technical challenges. Specific aspects (geological and geotechnical investigations, sedimentation studies) will be addressed during project implementation, thereby reducing the construction risks and general costs of the hydropower project. The project will also finance the feasibility and design studies for the main infrastructures (water intake, canal, and dam), but also the power house and the transmission lines will include a reference project design that will be based on the feasibility study. These will be informed by the results of the various environmental and social studies so that the impacts of each of the various designs is taken into consideration during the design phase rather than during implementation.

85. Design of the other components of the project has benefited from lessons learned from hydropower operations and analytical work not only in Africa but also in other regions.

C. Financial Management

86. The fiduciary aspects of the proposed project will be managed by the two UGPs. One will be created within MINEE, while the second will be the Lom Pangar PIU. Given that MINEE's UGP will be a newly created entity with fiduciary capacity to be built, the Lom Pangar PIU will be responsible for financial data consolidation and reporting. For MINEE's UGP, FM staff will consist of an FM officer and an accountant to be recruited by effectiveness. For EDC's UGP, staff will consist of the existing FM experts within the Lom Pangar PIU, currently in charge of the implementation of the Lom Pangar Hydropower Project, which is scheduled to close on December 31, 2018.

87. In line with FM aspects of the World Bank's OP/BP 10.00 Investment Project Financing, an FM assessment was conducted to ensure that the proposed arrangement with EDC's UGP implementing the project at the beginning of project implementation is adequate. The assessment of EDC's UGP concluded that the FM system in place for the Lom Pangar project is deemed adequate; and qualified staff members are in place and conversant with World Bank procedures (one FM officer, two accountants). That team could be reinforced to manage the proposed project as needed during project implementation. MINEE's UGP will be established by effectiveness and will be comprised, for FM activities, of a coordinator, an FM officer, and an accountant. For sustainability purposes (capacity building), it might be considered to add to the project FM teams staff (accountants) from MINEE and/or EDC on a part-time or full-time basis. These staff will benefit from a competence transfer on all FM and disbursement related issues during the project life.

88. In line with the use of the country national system, the project will rely on the existing country FM arrangements put in place to manage donor-funded projects. These arrangements are centered on two main institutions. First, the *Caisse Autonome d'Amortissement* (Autonomous Sinking Fund, CAA), which is equipped with dedicated tools developed by the World Bank Institutional Development Fund (IDF). These tools include (a) a standardized FM manual; and (b) and an integrated FM system for donor funded projects (namely, *Système Intégré de Gestion des Décaissements* [Integrated Financial Management System for Donor-Funded Projects, SIGED), which includes modules on (a) project cycle; (b) budgeting and accounting; (c) automated payments; and (d) electronic archive. Second, the *Ministère des Marchés Publics* (Ministry of Public Procurement, MINMAP) is in charge of ex ante control of all suppliers' invoices associated with a contract before any payment by CAA.

89. In light of the above, (a) the standardized Financial Management Manual of Procedures developed by CAA with World Bank IDF support will be customized to reflect the project specificities; (b) the budget and accounting modules of the SIGED will be deployed at the PIU to handle accounting and reporting needs under the project; and (c) CAA and MINMAP's internal control mechanisms will be applied. An external auditor will be recruited using the country arrangements (by which MINMAP leads the process with involvement of the line ministry) to conduct annual financial audit of the financial statements of the project along with the review of the internal control system. The option to involve the Chamber of Accounts (Supreme Audit Institution) in the auditor recruitment process will be considered. The overall FM residual risk is assessed as substantial. FM assessment and detailed FM arrangements are described in Annex 2.

D. Procurement

90. The overall procurement risk for the project is rated high, mainly due to (a) the country environment risk of corruption in procurement, especially in public contracts; (b) the relatively limited experience of MINMAP in World Bank-financed projects; (c) the potential conflict of interest for MINMAP in relation to the management of complaints linked to contracts directly handled by MINMAP and shortcomings in procurement operations and practices; and (d) the newly created UGP within MINEE. However, the use of the Lom Pangar PIU's procurement expert to implement the project at the beginning will help mitigate MINEE's procurement risk. A Simplified Procurement Plan for the first 18 months of project implementation (dated March 21, 2017) has been prepared and discussed between the World Bank, MINEE, and EDC and agreed upon at negotiations. The Simplified Procurement Plan will be updated at least annually or as required, in agreement with the project team, to reflect the actual project implementation needs and improvement in institutional capacity.

91. As with FM, for sustainability purposes (capacity building), it might be considered to add to the project procurement teams, staff (procurement specialists) from MINEE and/or EDC on a part-time or full-time basis. These staff will benefit from a competence transfer on all procurement-related issues during the project's life. Procurement capacity assessments of the implementing entities were carried out. Mitigation action plans have been developed for EDC's and MINEE's PIU and MINMAP. The overall procurement residual risk is assessed as substantial. Additional details are described in Annex 2.

E. Environmental and Social (including Safeguards)

92. None of the activities financed by the proposed project is expected to induce adverse, irreversible environmental and social impacts. The project is rated environmental category 'A' because of the potential impacts that could be generated by the subsequent implementation of a new hydropower project site. In addition, the project intends to support the supervision of the implementation of the Nachtigal Hydropower Project, which is a high risk project from an environmental perspective. The following safeguard policies are triggered: Environmental Assessment (OP/BP 4.01); Natural Habitats (OP 4.04); Pest Management (OP 4.09); Indigenous Peoples (OP/BP 4.10); Physical Cultural Resources (OP/BP 4.11); Involuntary Resettlement (OP/BP 4.12); Forests (OP/BP 4.36); and Safety of Dams OP/BP 4.37.

93. **Safeguard instruments.** The following safeguards instruments will be prepared and financed under the project:

(a) **Environmental Assessment (OP/BP 4.01):** Once the dam site has been selected by the GoC, the project will finance the preparation of the ESIA for the selected site and the ESIA for the transmission line to be constructed from the site to the existing interconnected grid. The ESIA will also include a cumulative impact assessment on downstream environments. Further, the project will support the preparation of a SESA for

the development of hydroelectricity in the Sanaga River Basin. Finally, an environmental and a social expert will be added to the Panel of Experts that will be set up to advise Cameroon on dam safety and on the environmental and social aspects of the selected project. In addition to the ESMP resulting from the ESIA, robust Environmental and Social Contractor Guidelines will also be prepared for the purposes of the bidding documents, including specific recommendations/measures to mitigate labor influx risk. Draft ToRs for the ESIA, SESA, and Panel of Experts have been prepared and disclosed in country on EDC's website on March 14, 2017, and by the World Bank on March 2, 2017.

(b) **Involuntary Resettlement (OP/BP 4.12):** A social assessment (SA), which will include citizen engagement, and an RPF will be prepared as part of the project. The RPF will be used, in conjunction with ESIAs, to guide the site selection and future implementation of the investments. Draft ToRs for the SA and the RPF have been prepared and disclosed in country on EDC's website on March 14, 2017, and by the World Bank on March 2, 2017; they will be updated under the SESA.

(c) **Forests (OP/BP 4.36):** The project does not support commercial forest exploitation. However, the ESIAs that will be financed through the project will assess and provide relevant guidance to consider during the site selection to be followed to avoid or reduce potential negative impact on health and quality of forest.

(d) **Pest Management (OP 4.09):** Relevant measures will be provided in the ESIAs, and an Integrated Vector Management Plan (IVMP) will be prepared to prevent and address waterborne health risks associated with dam reservoirs in the project area.

(e) **Physical Cultural Resources (OP/BP 4.11):** During the ESIA process, as was the case in the Lom Pangar Hydropower Project, particular attention will be placed on physical cultural resources and relevant mitigation measures proposed if needed. A comprehensive chance find procedure will be prepared as part of the ESIA reports, embedded in the overall ESMPs, to that end.

(f) **Safety of Dams (OP/BP 4.37):** The project will support the development of a hydropower project which will probably include a large dam. The project will finance engineering activities including geological and geotechnical investigations, topographical surveys, bathymetry, physical scale modeling, hydrology, and sediment management. These data will allow the preparation of a geological baseline report and will be integrated into a "reference project" that will serve as the expression of needs of GoC and will be included in the bidding documentation for the concession. An Emergency Response and Preparedness Plan (ERP) for the Sanaga River hydropower development will be prepared with the support of the project. In addition, a dam safety Panel of Experts will be recruited. It will comprise five to seven specialists (geotechnical, concrete, sediment, dam, HEM, environmental and social). Draft ToRs for the ERP and the recruitment of the Panel have been prepared and disclosed in country on EDC's website on March 14, 2017, and by the World Bank on March 2, 2017.

(g) **Natural Habitats (OP/BP 4.04):** The ESIAs that will be prepared will carry out an in-depth assessment of the main threats of natural habitats along the Sanaga River. Specific guidance will be provided to avoid significant conversion or degradation of any critical natural habitats. Should any unavoidable risk of conversion arise, proper additional plan/measures will be prepared to compensate for it.

(h) **Indigenous Peoples (OP/BP 4.10):** Generally, indigenous peoples live in the East (Baka), Center (Bagaladi), South (Bagyeli), and inhabit forested areas. Once a site has been selected, the SA that will be carried out will confirm whether indigenous peoples are present in the project area. The results of the SA will be used to prepare, consult and disclose the relevant instrument. An IPPF was prepared for the World Bank-funded Electricity Transmission and Reform Project and it could be used to guide the preparation of an Indigenous

Peoples Plan for this project as it was focused specifically on the screening for indigenous peoples along proposed transmission lines.

94. **Institutional arrangement for safeguards management.** The two implementing agencies for this project, MINEE and EDC, are familiar with the World Bank safeguard policies as they have implemented projects financed by the World Bank. The implementation of these projects has created environmental and social management capacity within these institutions. Nevertheless, an in-depth environmental and social capacity assessment will be carried out during the preparation of the project to identify specific areas for improvement or strengthening. Regarding the Nachtigal Hydropower Project, the project company (NHPC) has strong capacity and has demonstrated commitment to these issues during the preparation of the project.

95. More broadly, the country has stable environmental and social institutions, namely the Ministry of Environment, Nature Protection and Sustainable Development, the Ministry of Domain, Cadastral and Land Registration Affairs, and Ministry of Socials Affairs. The country also has a comprehensive environmental and social legal framework, including the 1996 Environmental Law and its implementation decrees. A new ESIA decree was signed in 2013. This decree brings out the SESA topic. However, SESA capacity and the environmental and social law enforcement can be strengthened and specific measures will be defined during project implementation.

96. **Citizen engagement/beneficiary feedback.** Building on the existing grievance redress mechanism under the Lom Pangar Hydropower Project, which is functioning well, the grievance redress mechanism for this project will serve as the project beneficiary feedback mechanism. Grievances will be recorded and addressed to the extent possible. During project implementation, the environmental and social studies will also address participation and consultation, and include analysis of benefits sharing with host communities, including citizen engagement mechanisms.

F. Other Safeguard Policies (if applicable)

97. No Other Safeguard Policies are triggered for the project.

G. World Bank Grievance Redress

98. 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/en/projects-operations/products-and-services/grievance-redress-service*. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

VII. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY : Cameroon

Hydropower Development on the Sanaga River Technical Assistance Project

Project Development Objectives

The Project development objective is to improve the Recipient's institutional capacity for a sustainable development of hydroelectric resources on the Sanaga River Basin.

Project Development Objective Indicators

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Priority Hydroelectric site on the Sanaga River identified and awarded to a private concessionaire on a competitive basis for its development		Yes/No	N	Y	Annual	Semester Project Reports	EDC/MINEE
Hydroelectric site selected by GoC		Yes/No	N	Y	Annual	Semester Project Reports	EDC/MINEE
Bidding documents for the selection of a private concessionnaire available		Yes/No	N	Y	Annual	Semester Project Reports	EDC/MINEE

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Bankable feasibility study (including engineering and safeguards studies) completed		Yes/No	N	Y	Annual	Semester Project Reports	EDC/MINEE
Description: - Selection of hydropower site by GoC (expected Year 2) - Readiness of feasibility studies (including E&S studies) (expected Year 4) - Readiness of bidding documents (expected Year 4) - Bidding process completed site awarded to a Private Concessionaire (expected Year 5)							
Name: Hydrology risk mitigation mechanisms identified and implementation roadmap prepared		Yes/No	N	Y	Annual	Semester Project Reports	MINEE
Climate change study and impact on hydrology on the Sanaga River prepared		Yes/No	N	Y	Annual	Semester Project Reports	MINEE
Hydrology risk mitigation mechanisms identified		Yes/No	N	Y	Annual	Semester Project Reports	MINEE
Implementation roadmap prepared		Yes/No	N	Y	Annual	Semester Project Reports	MINEE

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Description: - Climate change study and impact on hydrology on the Sanaga River completed and approved (Year 2) - Hydrology Risk Mitigation Mechanism identified - Implementation roadmap prepared							
Name: Dam safety framework adopted by MINEE and ready for implementation		Yes/No	N	Y	Annual	Semester Project Reports	MINEE
Description:							

Intermediate Results Indicators

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Sanaga River Basin Hydropower Potential Optimization Study available and approved by the Steering Committee		Yes/No	N	Y	Annual	Semester Project Reports	EDC
Description:							
Name: Bidding documents		Yes/No	N	Y	Annual	Semester Project Reports	EDC

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
for the selection of a developer for the selected hydropower project prepared							
Description:							
Name: Feasibility study for the selected hydropower project completed and ESIA published		Yes/No	N	Y	Annual	Semester Project Reports	EDC
Description:							
Name: Qualified technical assistance for oversight of Nachtigal Hydropower Project's construction recruited before the works start		Yes/No	N	Y	Annual	Semester Project Reports	EDC
Description:							
Name: Hydrology and Climate Change Study on the Sanaga River completed and approved		Yes/No	N	Y	Annual	Semester Project Reports	MINEE

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
by the Steering Committee							
Description:							
Name: Dam safety assessment of Mapé, Bamendjin and Mbakaou completed		Yes/No	N	Y	Annual	Semester Project Reports	EDC
Description:							
Name: All publicly funded Hydroelectric Assets are under an O&M contract		Yes/No	N	Y	Annual	Semester Project Reports	MINEE
Description:							
Name: An operational model for managing reservoirs according to the forecasted and real time energy needs has been developed		Yes/No	N	Y	Annual	Semester Project Reports	EDC
Description:							

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Assistant Project Manager to EDC for the operationalization of the Permanent Technical Secretariat of the Sanaga Basin Commission is recruited		Yes/No	N	Y	Annual	Semester Projects Reports	EDC
Description:							
Name: Generation capacity (MW) benefiting from the sustainaibility mechanisms developed under the project (i.e. Hydrology risk mitigation mechanisms and Dam safety framework adopted		Megawatt	0.00	1150.00	Annual	Semester Project Reports	EDC
Description:							
Name: Panel of Experts, including dam safety and environmental and social expertise, recruited		Yes/No	N	Y	Annual	Semester Project Reports	MINEE
Description:							

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Capacity needs assessment completed to identify future skills needs for Cameroon when developing the hydroelectricity value chain over the next 20 years		Yes/No	N	Y	Annual	Semester Project Reports	MINEE
Description:							
Name: Methodology developed to evaluate the specific capacity enhancement of the Recipients' human resources achieved by implementing the project		Yes/No	N	Y	Annual	Semester Project Reports	MINEE
Description:							
Name: Number of internships completed under the Project		Number	0.00	8.00	Annual	Semester Project Reports	EDC/MINEE
of which those completed by women		Number	0.00	4.00	Annual	Semester Project Reports	EDC/MINEE

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Description:							
Name: Project-related grievances registered under the project grievance redress mechanism and addressed		Percentage	0.00	95.00	Annual	Semester Project Reports	MINEE/EDC
Description:							

Target Values

Project Development Objective Indicators

Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	YR6	End Target
Priority Hydroelectric site on the Sanaga River identified and awarded to a private concessionaire on a competitive basis for its development	N	N	N	N	N	Y	Y	Y
Hydroelectric site selected by GoC	N	N	Y	Y	Y	Y	Y	Y
Bidding documents for the selection of a private concessionnaire available	N	N	N	N	Y	Y	Y	Y
Bankable feasibility study (including engineering and safeguards studies) completed	N	N	N	N	Y	Y	Y	Y
Hydrology risk mitigation mechanisms identified and implementation roadmap prepared	N	N	N	N	Y	Y	Y	Y
Climate change study and impact on hydrology on the Sanaga River prepared	N	N	Y	Y	Y	Y	Y	Y
Hydrology risk mitigation mechanisms identified	N	N	Y	Y	Y	Y	Y	Y
Implementation roadmap prepared	N	N	Y	Y	Y	Y	Y	Y

Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	YR6	End Target
Dam safety framework adopted by MINEE and ready for implementation	N	N	N	Y	Y	Y	Y	Y

Intermediate Results Indicators

Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	YR6	End Target
Sanaga River Basin Hydropower Potential Optimization Study available and approved by the Steering Committee	N	N	Y	Y	Y	Y	Y	Y
Bidding documents for the selection of a developer for the selected hydropower project prepared	N	N	N	N	Y	Y	Y	Y
Feasibility study for the selected hydropower project completed and ESIA published	N	N	N	N	Y	Y	Y	Y
Qualified technical assistance for oversight of Nachtigal Hydropower Project's construction recruited before the works start	N	N	Y	Y	Y	Y	Y	Y
Hydrology and Climate Change Study on the Sanaga River completed and approved by the Steering Committee	N	N	Y	Y	Y	Y	Y	Y
Dam safety assessment of Mapé,	N	N	N	N	Y	Y	Y	Y

Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	YR6	End Target
Bamendjin and Mbakaou completed								
All publicly funded Hydroelectric Assets are under an O&M contract	N	N	N	N	Y	Y	Y	Y
An operational model for managing reservoirs according to the forecasted and real time energy needs has been developed	N	N	N	Y	Y	Y	Y	Y
Assistant Project Manager to EDC for the operationalization of the Permanent Technical Secretariat of the Sanaga Basin Commission is recruited	N	N	Y	Y	Y	Y	Y	Y
Generation capacity (MW) benefiting from the sustainaibility mechanisms developed under the project (i.e. Hydrology risk mitigation mechanisms and Dam safety framework adopted	0.00	0.00	0.00	730.00	730.00	730.00	1150.00	1150.00
Panel of Experts, including dam safety and environmental and social expertise, recruited	N	Y	Y	Y	Y	Y	Y	Y
Capacity needs assessment completed to identify future skills needs for Cameroon when developing the hydroelectricity value chain over the next 20 years	N	N	Y	Y	Y	Y	Y	Y

Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	YR6	End Target
Methodology developed to evaluate the specific capacity enhancement of the Recipients' human resources achieved by implementing the project	N	N	Y	Y	Y	Y	Y	Y
Number of internships completed under the Project	0.00	0.00	4.00	4.00	8.00	8.00	8.00	8.00
of which those completed by women	0.00	0.00	2.00	2.00	4.00	4.00	4.00	4.00
Project-related grievances registered under the project grievance redress mechanism and addressed	0.00	0.00	95.00	95.00	95.00	95.00	95.00	95.00

ANNEX 1: DETAILED PROJECT DESCRIPTION

COUNTRY : Cameroon
Hydropower Development on the Sanaga River Technical Assistance Project

1. The Project development objective is to improve the Recipient's institutional capacity for a sustainable development of hydroelectric resources on the Sanaga River Basin. The proposed project will consist of six components as described below.

Component 1: Identification of Hydroelectric project sites on the Sanaga River Basin (IDA US$11 million equivalent).

2. This component finances technical assistance to the GoC to identify, rank, and select a large-scale hydroelectric site on the Sanaga River and provide institutional capacity support for its development through a competitively sourced PPP. The Electricity Law 2011/022, governing the electricity sector in Cameroon and promulgated on December 14, 2011, states that the common regime for concession requires the use of call for tenders' procedure for the selection of owners or operators (Article 14) and that, therefore, developers for any new hydroelectric project ought to be selected on a competitive basis. Article 48 clarifies that direct contracting of a generation concession can only be considered in the case of industrial projects of strategic importance to the national economy. The component will be implemented through four sub-components.

Subcomponent 1(a): Sanaga River Basin Hydropower Potential Optimization Study (IDA US$1. 5 million equivalent)

3. The objective of the study is to optimize the hydropower schemes on the Sanaga River, rank them in order of merit, and select the most promising site to be developed on a competitive basis. The Sanaga River has a technical hydropower potential of nearly 6,000 MW and about 500 meters of available head between the Nachtigal falls and the delta. It is envisaged that this potential be exploited by means of nine hydropower plants in a cascade arrangement. The nine plants will operate as run-of-the-river, taking advantage of the seasonal regulation of the natural runoffs provided by four existing reservoirs (that is, Mapé, Mbakaou, Bamendjin, and the recently completed Lom Pangar). At present, only two hydropower plants, Edéa 267 MW and Song Loulou 384 MW, are on line, being operated by ENEO. The Lom Pangar reservoir, with a life storage of about six billion m^3 together with the other three reservoirs, all operated by EDC, are able to guarantee a minimum flow at Edéa of 1,040 m^3/s, by storing water during wet periods and releasing it during dry periods. It is estimated that the four upstream regulating dams are responsible for about 25 percent increase in the total annual generation of the Sanaga cascade, when fully implemented. According to the PDSE, the most promising hydropower sites to be developed on the Sanaga River after Lom Pangar and Nachtigal (420 MW) are Kikot Aval (540-1000 MW), Song Mbengué (880-1140 MW), and Song Ndong (250-280 MW). The full cascade is shown in figures 1.1 and 1.2.

Figure 1.1. Sanaga River Basin (left) and the proposed Sanaga Hydropower Cascade (right)

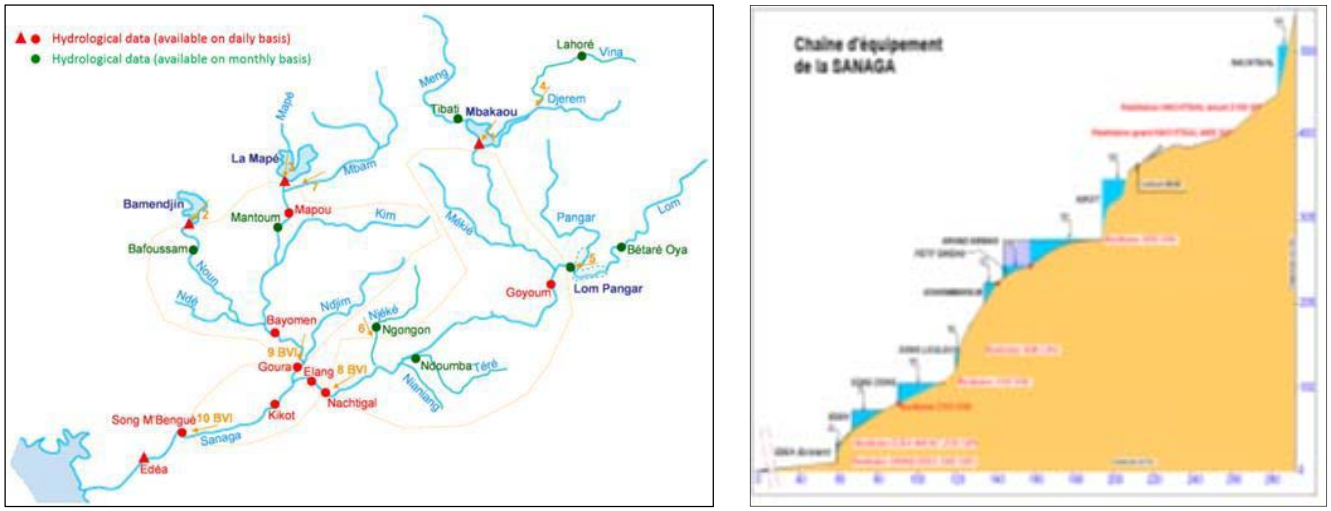
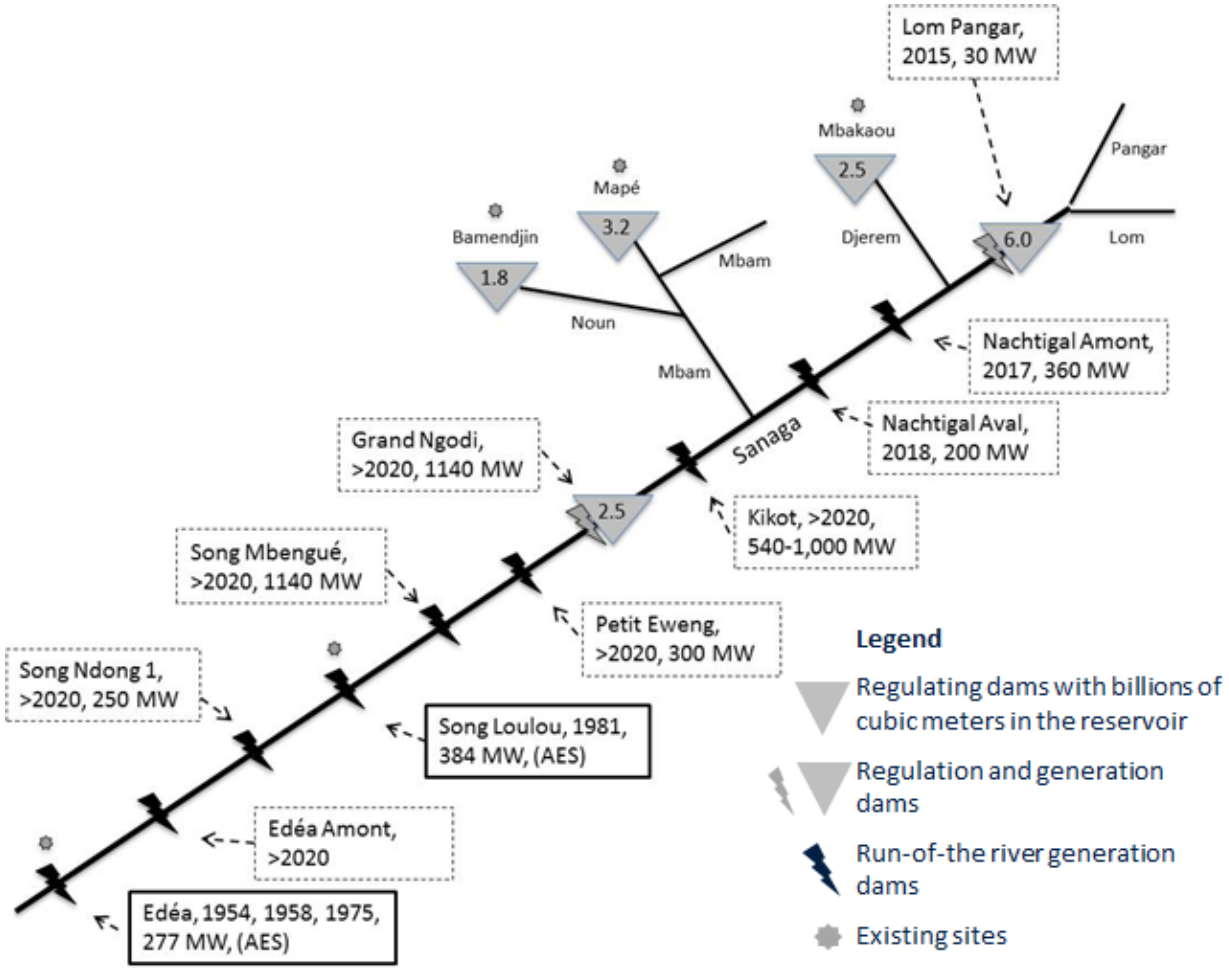


Figure 1.2. Scheme of Hydropower Development on the Sanaga Basin



4. The Sanaga Basin Master Plan and the hydropower potential of the basin have been studied since 1983. The cascade arrangement has several alternatives, which include different dam sites and powerhouse sites, dam heights, installed capacities, and project layouts.

5. The project will provide support to the implementation unit to establish a comprehensive optimization plan for the Sanaga River Basin. It will finance a study that will become the reference source for the GoC to (a) avail itself of up-to-date information on the status of hydroelectric potential in the Basin; (b) ensure that each site be optimized to its full power potential subject to meeting other uses of water (agriculture, drinking water); (c) ensure that this development be undertaken in a sustainable fashion that respects environmental and social requirements; (d) guarantees an equitable sharing of water resources among current and future users; (e) ensure an access to a quality and cost-competitive energy to populations and enterprises in Cameroon; and (f) value access and use of this indigenous natural resource. Access to this information will enable the GoC take a well-informed decision on the site to develop it as a priority.

6. This study will provide a comprehensive and seamlessly exploitable database on the sites' hydro-potential, including mapping, topography, geology, hydrology, prefeasibility studies, and design of the potential equipment both individually and taking into account several options for multi-sites optimization and investment sequencing.

7. The subcomponent will also provide a SESA for the development of hydroelectricity in the Sanaga River Basin and a strategic evaluation of major social and environmental dimensions to be identified, described, and evaluated for any future development in the basin. A social analysis of the specific characteristics of the populations established in the Sanaga River Basin and likely to be affected by its valorization will be analyzed so as to anticipate the needs for consultations and participatory engagements.

8. The selection of the best arrangement shall be performed based on a comprehensive optimization study having considered the latest dataset and by adopting the most modern surveying techniques. The technical consultant shall collect the most recent geological and seismic data and the latest hydrologic series, and select the most realistic socio-economic parameters having tested the sensitivities on the most uncertain parameters to ensure the robustness of the analysis. The proposed cascade alternative shall make use of the largest possible amount of head available for generation, and shall also consider conjunctive operations of the series of hydropower plants, the transmission lines to evacuate the power, and all associated infrastructures. Potential for irrigation and other competitive uses of the water resource will be captured in the analysis. The Nachtigal hydropower plant, implemented by NHPC, is a source of input data and fixed requirement for the study.

9. The proposed hydroelectric schemes composing the Sanaga hydropower cascade shall be ranked after a detailed comparative analysis and based on a number of criteria which include the techno-economic viability, key environmental and social impacts, readiness for implementation, the risk profile, and so on. The most promising scheme shall be presented to and discussed with the GoC, which will make the final decision on the first hydropower project to be developed. This pre-feasibility document will represent the reference study for the Sanaga hydropower development and future hydropower investments in the area.

Subcomponent 1(b): Development of a New Hydroelectric Site on the Sanaga River (IDA US$7.25 million equivalent)

10. This subcomponent includes the feasibility study of the selected site, the ESIA, and the transaction advisory services.

11. **The objective of the engineering studies** is to assess, update, and develop a fully bankable feasibility study, which is complete up to tender design and documentation, for the development of proposed hydropower

plant and associated transmission lines to evacuate the power. The existence of a fully bankable feasibility study is intended to facilitate mobilization of the required resources for the development of the scheme within the shortest possible time and address the prevailing power supply shortages. This will be supported through the provision of consulting services, an independent dam safety Panel of Experts (in compliance with World Bank safeguard policies), and operating expenses associated with workshops and technical assistance during the first transaction. The project would move forward the feasibility studies, including an initial review of existing documentation and confirm the site and layout of the scheme, updating any information required to advance development of the scheme in accordance with international good practices. The subcomponent will support tender designs and documentation to assist the GoC in finalizing a bankable reference project. The feasibility study will be supported by the results of site geological investigations. The scope and budget for this sub-component include a light geological campaign aimed to prepare and make available to the potential concessionaires, the GBR, which defines the geological settings of the selected site and assesses the main geological risks. Scope of works for the geological investigations will be defined in the ToR for the consultant and will include drilling boreholes in key locations and laboratory testing. The GBR will be developed to a level of detail suitable for directly preparing tender documents for EPC type of contracts. To achieve the best outcome of the technical studies, save time, and avoid unnecessary transaction costs, it is advisable that the feasibility study consultant and the consultant for sub-component 1(a) be procured under the same contract.

12. **The objective of the environmental and social safeguard studies** for the selected hydropower plant site is to evaluate the design for the selected hydropower plant, and develop the required ESIAs, Environmental and Social Management Plans, RPFs, RAPs, and a Labor Influx Management Plan, as needed, for each infrastructure investment associated with the project. These studies will, in particular, address participation and consultation, and include analysis of benefit sharing with host communities, including citizen engagement mechanisms; labor influx issues; social conflict; gender equality; and access to electricity in the project area. These studies will inform the GoC, national power utilities, interested and affected parties, and other stakeholders about potential environmental and social impacts associated with development of the selected hydropower plant. They are further intended to facilitate mobilization of the required resources for the development of the scheme within the shortest possible time and to be used during implementation and development of the project. This will be supported through the provision of consulting services, an independent environmental and social Panel of Experts (in compliance with World Bank safeguard policies), and expenses associated with workshops and assistance during the transaction. The ESIA would conduct a review and update of the previous screening and the available preparatory studies for the hydropower development of the Sanaga River. The assessment will include any transmission lines required to evacuate power and connect to the national grid, and impacts related to other associated infrastructure, such as access roads, work camps, site installations, and so on.

13. **A Panel of Experts,** with dam safety and environmental and social expertise, will provide high-level support and guidance on the implementation of the project following international standards and best practices, including on social and environmental safeguards. This Panel of Experts will be financed under Component 6.

14. **The objective of the transaction advisory services** is to provide legal and financial transaction advice to the GoC on the development of the proposed new hydropower project. This will include an assessment of different potential transaction structures, including options for public or private funding, and PPPs, with a view to recommend the most optimum, bankable structure that takes into consideration prevailing market conditions, priorities of stakeholders involved, and technical parameters and development schedule resulting from the updated feasibility study. The advisory services will include support to the GoC to (a) start drafting and negotiating the main contractual documents such as the PPA, the concession agreement, the connection and dispatch agreement and a draft government support agreement; and (b) prepare bidding documents for the

selection of the private developer and conduct market analysis for possible private developers/concessionaires and financing institutions.

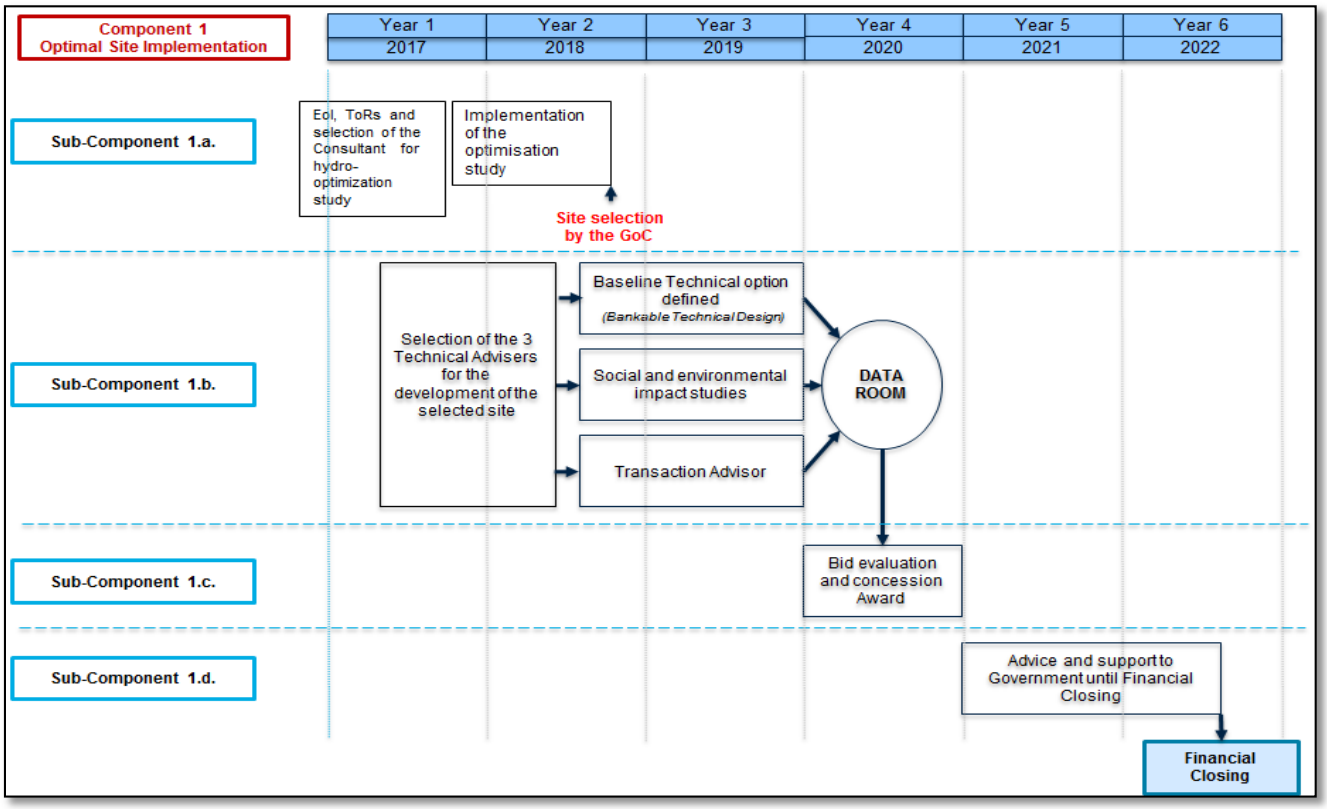
Subcomponent 1(c): Support to the Competitive Selection of a Private Concessionaire (IDA US$0.75 million equivalent)

15. This subcomponent will include support and technical assistance of the transaction advisor during the tender process for the concessionaire and the research of the IPP. The competitive selection will be on the basis of clear and transparent criteria, such as the least-cost electricity price (lowest US$/kWh). It is advisable to include this support to the GoC in the same contract of the transaction advisor recruited under subcomponent 1(b).

Subcomponent 1(d): Support to GoC until Financial Close (IDA US$1.5 million equivalent)

16. The awarded concessionaire will be responsible for the final technical design, taking it to a further level of detail, and for preparing the entire set of bidding documents (and contracts) for construction of the dam and power plant as these documents will depend on the final financing structure and the developer's technical choices. The concessionaire will also be responsible for finalizing and negotiating the project's contractual documents and for bringing the project to financial closure. This subcomponent will provide the GoC with technical assistance and legal and financial advisory services during contractual negotiations and until the financial closure is reached.

Figure 1.3. Component 1 Shedule



Component 2: Supervision of the Nachtigal Hydroelectric Project (IDA US$1.5 million equivalent).

17. The Nachtigal Hydropower Project, namely Nachtigal Amont, is a 420 MW hydropower plant on the Sanaga River located in correspondence to the Nachtigal falls, nearly 65 km north-east of Yaoundé. The project layout includes a 1,455 meter long, 14 meter high main dam in roller-compacted concrete, creating a 27.8 hm^3 - 421 ha upstream reservoir, a concrete lined headrace channel about 3.3 km long and 14 meters deep on average to conduct water to the hydroelectric power plant with a maximum flow rate of 980 m^3/s corresponding to the project design flow. The powerhouse is equipped with seven Francis generating units of 60 MW each. The Nachtigal Project comprises a 225 kV substation and a double circuit 50.3 km transmission line to evacuate the power produced to the Nyom 2 connection substation. Construction of the facility shall start by mid-2017 and commissioning of the first turbine is expected in 2021. This strategic project for Cameroon is developed by the Cameroonian Project Company, NHPC, whose shareholders are the Republic of Cameroon, Electricité de France (EDF), and IFC. Total investment is estimated at nearly US$1 billion. The World Bank is considering supporting the project with an IBRD partial risk guarantee in the amount of about US$300 million.

Figure 1.4. Layout of the 420 MW Nachtigal Project

Figure 1.5. 3D Views of Nachtigal Facilities

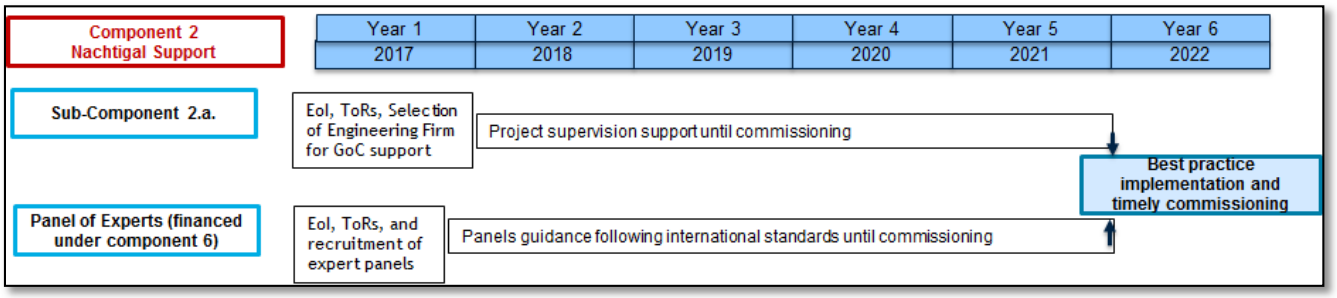
Source: NHPC

18. This component would provide technical assistance to support the GoC in its supervision duties during construction and commissioning of the dam and the powerhouse. This would help ensure timely completion of the project and establishment of good practices for the development of this large-scale, international hydroelectric project.

19. It would support hiring of a firm with a track record of managing complex infrastructure projects to support the GoC in its supervision duties, including to (a) assist the GoC and GoC-related entities to monitor the construction of the project and the ESMP; (b) support the GoC and GoC-related entities so that they can identify reasons for delay or scope changes (if any) and assist the GoC in negotiations with the concessionaire to help mitigate these changes and delays; and (c) assist SONATREL in the supervision of the commissioning of the turbines and evacuation transmission line. This scope would then mirror, for the GoC, the scope of the independent engineer and of the environmental and social auditor, who will monitor the construction and the implementation of the ESMP for the lenders.

20. The Panel of Experts, with dam safety and environmental and social expertise, financed under Component 6, will provide high-level support and guidance on the implementation of the Nachtigal Project following international standards and best practice. It will review the design of the dam and provide recommendations to ensure that there is full compliance with the World Bank performance standards on dam safety and advice (if deemed needed) on environmental and social risks and ensure compliance with World Bank safeguard policies.

Figure 1.6. Component 2 Shedule



Component 3: Hydrological Risk Mitigation and Dam Safety (IDA US$5.5 million equivalent)

Subcomponent 3(a): Definition and Establishment of Hydrological Risk Mitigation Mechanisms (IDA US$2.5 million equivalent)

21. Building on the recent experience in hydro-dominated systems, this sub-component is designed to prepare and implement a long-term, hydrological risk mitigation strategy to accompany the sustainable development of the country's hydropower potential and protect the GoC from the volatility of electricity generation costs, especially in dry years and during periods of high commodity prices.

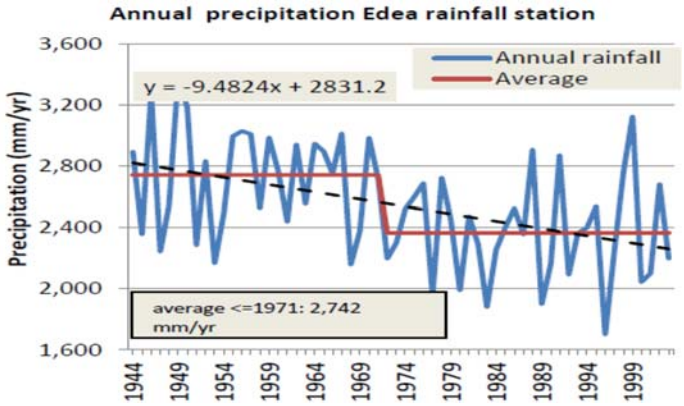
22. Today, the installed capacity of the country is nearly 1,289 MW, while the total hydro capacity, which represents 59 percent of the energy mix, consisting of Edéa 267 MW and Song Loulou 384 MW on the Sanaga River and Lagdo 72 MW on the Bénoué River. The remaining generation is thermal with Kribi 216 MW gas power plant, six HFO thermal plants concentrated in the area of Douala and Yaoundé, and a large number of off-grid diesel generators spread all over the country. The energy demand is projected to increase 6.5 percent annually for the next 10 years.

23. The PDSE, on the supply side, is based on the exploitation of the large hydropower and gas potential of the country. The master plan is primarily focused on the implementation of the large-scale, hydro-projects on the Sanaga River and the other catchments. The next new project on the Sanaga River, Nachtigal, is expected to start commercial operation in 2021. In the next few years, the hydro capacity will further increase owing to the commissioning of Memve'ele 201 MW on the Ntem River (2017) and Warak 75 MW on the Bini River (2018). The country has a large reserve of natural gas (estimated at 157 billion m^3), and, according to the energy master plan, gas generation will count for 30 percent of the mix in the long-term. Nevertheless, the energy mix of the country is hydro-dominated and will remain as such, exposing the energy system to high hydrological risk which needs to be assessed and properly mitigated.

24. This subcomponent supports the GoC in the implementation of a mitigation strategy aimed to minimize the impact of the hydrological variability and the climate change risk and reduce the volatility of the generation costs in electricity tariffs. This requires a number of analytical works including the definition of the expected hydrologic conditions (climate change study) and the different risk management instruments. Once the strategy is drafted the last analytical task will concern preparation of the implementation plan to make the strategy operational. The sub-component is thus articulated around three tasks:

- **Hydrology and Climate Change Study (IDA US$0.75 million equivalent).** A hydrologic and climate change study at national scale with focus on the Sanaga Basin will be undertaken. Although the presence of the four upstream regulating dams provide resilience to the hydrologic variability, the Sanaga hydropower cascade remains vulnerable to climate anomalies and multi-annual droughts. There is evidence that an abrupt drop of the average annual precipitation in the Sanaga catchment occurred after the 1970s (that is, 15 percent reduction). This reduction has been observed in other regions of West Africa, notably in the Sahel. The climate change assessment will be essential for the understanding of the hydrologic risk, for the impact on the generation, and for the design of the long-term mitigation instruments.

Figure 1.7. Annual Precipitation at the Sanaga Delta



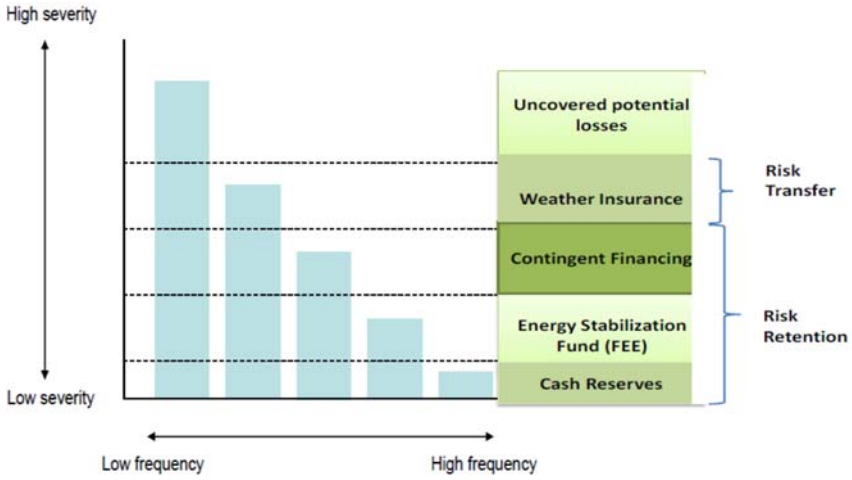
- **Identification and Definition of Sustainable Mechanisms to Mitigate the Hydrology Risks (IDA US$1.5 million equivalent).** Presently, the generation costs in Cameroon are quite high and subject to the volatility of fossil fuel prices. The average end-user electricity tariff is US$0.16/kWh, above the average price in the region and definitely excessive for a country with the hydroelectric capacity of Cameroon.

  The GoC has made great efforts in keeping the electricity tariffs fixed (last adjustment was in 2012) and subsidizes the energy sector by compensating ENEO to partially cover the high generation costs. Such compensations are onerous for the public budget, especially in severe hydrologic conditions when the Brent crude oil price is high. The financial risk mitigation strategy may use risk retention and risk transfer

instruments as part of its electricity sector risk management strategy covering weather-related shocks that affects electricity generation costs.

As part of its risk retention, a number of protection mechanisms are presently available, such as (a) investments in the optimization of the energy mix or in the integration of cheaper renewables; (b) absorption of short-term hydrologic variations in the tariff structure; (c) access to a contingent line of credit; (d) creation of a stabilization fund; and (v) use of bank guarantees. For the more infrequent events, a weather insurance that protects the GoC's financial position in the case of low probability but extreme and high cost droughts could be used to transfer the risk to a third party. Nowadays, the weather derivative products have a larger diffusion in the hydropower sector and insurance premiums are more affordable. The risk mitigation strategy could be layered so that the retained risk is managed by progressively triggering the protection measures and instruments, up to a certain threshold, above which the risk is transferred.

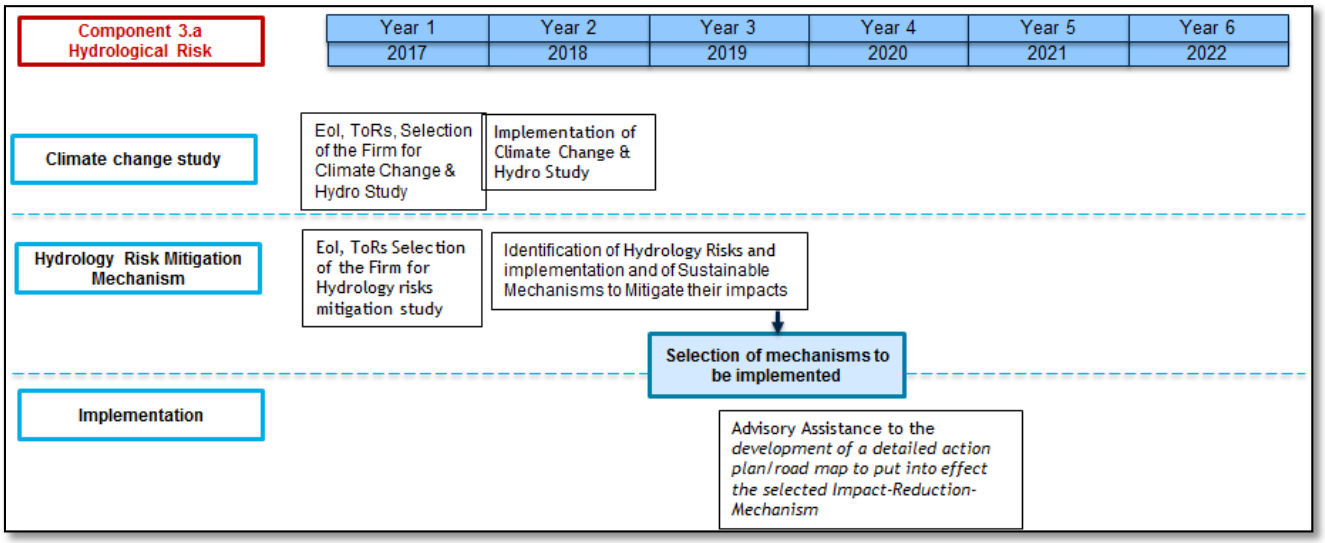
Figure 1.8. Risk Management Strategy



Each instrument has its own financial conditions and relevance to the context of the Sanaga Basin and the country in general. The design and optimization of the different financial instruments and the way they are combined is key to the successful implementation of the risk mitigation plan. This innovative approach will be supported through the provision of consulting services and technical assistance during the strategy preparation. The task for the consultant will be focused on the development of the electricity system simulation platform, or any other integrated model that will be able to (a) program the release of energy resources into the system in the short and medium term; (b) plan the investment programs in new electricity generation infrastructure, including interconnection capabilities with neighbor countries; and (c) analyze the optimal mix of commercialization of energy from specific energy sources. The platform shall be coupled with another model that takes as an input the simulated electricity generation cost function linked to the different historical hydrology scenarios and applies the use of different combinations of financial instruments. The analysis shall also incorporate a stochastic analysis of commodity price volatility (mainly for oil and its derivatives) and the probability distribution of a drought event into the optimization process. In particular, from the historic series of meteorological data, the consultant shall identify and model the climate setups considered as most relevant in terms of relative impact to the probability distribution of dry hydrology years. This may include the identification and modeling of correlations between dry years and global phenomena, such as the El Niño-Southern Oscillation cycle.

- **Support to the Development of a Detailed Action Plan/Road Map to Put into Effect the Selected Impact-reduction Mechanism (IDA US$0.25 million equivalent).** The sub-component will also support the development of a detailed action plan/road map to put into effect the selected risk protection mechanisms. This roadmap will detail the required assistance to create the legal, financial, and commercial frameworks necessary to implement the selected strategy.

Figure 1.9. Subcomponent 3(a) Shedule



Subcomponent 3(b): Dam Safety Definition and Implementation (IDA US$1 million equivalent)

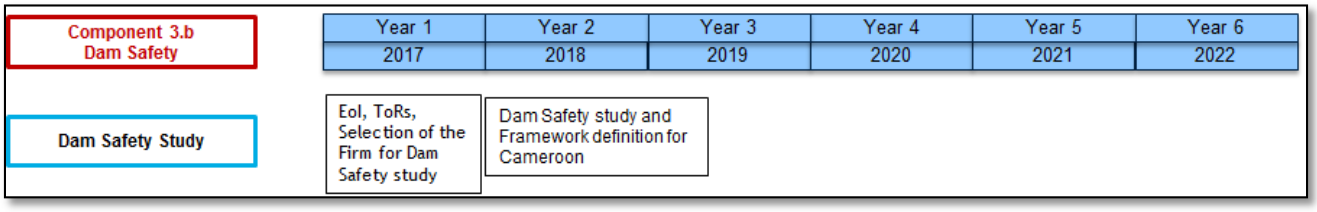
25. As anticipated in the PDSE, the importance of hydroelectricity in the electricity generation mix is expected to grow rapidly as the bulk of the future demand growth will be mainly covered through addition of new hydropower capacity. With an expected share of 70 percent to 75 percent of the power mix and numerous dams and power stations to be built in the coming years, it is fundamental to have appropriate regulation in place.

26. This is why MINEE requested the inclusion of a component to design a Dam Safety Framework for the project. A generic framework applicable to all basins will be designed using international best practices and will be further detailed for the Sanaga River Basin to allow its immediate adoption.

27. The World Bank is implementing a comparative study of legal and institutional frameworks related to dam safety across 51 countries, including Cameroon (Dam Safety Working Group). The study, implemented in close collaboration with Australia's South Wales University, uses detailed questionnaires to identify the variations across legal and institutional aspects and develop a comparative analysis. A technical level meeting is expected in May 2017 to compile and discuss the study results and to issue best practices recommendations by mid-2017.

28. Given these elements, the subcomponent will finance the definition of a ***Dam Safety Framework for Cameroon.*** Using the best practices and the recommendations issued by the Dam Safety Working Group, as part of this task, a consultant will assist the GoC in identifying best practices relevant for Cameroon, including the main activities required for Dam Safety Assessment (see below), and adapting and shaping them to fit national regulations, including with regulatory frameworks related to environment and social safeguards.

Figure 1.10. Subcomponent 3(b) Schedule



Subcomponent 3(c): Dam Safety Assessment in the Sanaga Basin (IDA US$1.5 million equivalent)

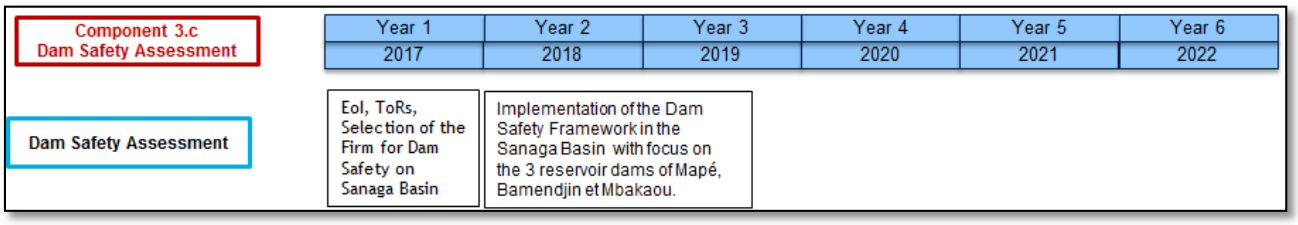
29. As part of this task, an evaluation by an engineering firm of the safety of several dams including the three regulating dams of Mapé, Bamendjin, and Mbakaou will be undertaken. The three reservoirs together with Lom Pangar have a cumulative storage of about 13 billion m^3 and play a key role in the development of the Sanaga hydropower cascade securing water for generation during the dry season and sensibly improving the energy output and economic attractiveness of the entire cascade of hydropower plants. The regulating dams are owned and operated by EDC, which is also responsible for their maintenance, monitoring, and safety in general. While Lom Pangar has been completed in 2016, the other three dams were built during the 1970s and 1980s, and a Dam Safety Assessment is long overdue. The technical tasks of the international consultant will include (a) the dam stability analyses; (b) the evaluation of the safety and the serviceability of the gates and the other hydro-mechanical equipment (HEM); and (c) the implementation of a continued monitoring plan, including the preparation of technical specifications and requirements for new instruments to be installed at the dam. The independent Panel of Experts, recruited under subcomponent 6 will also provide high-level support and guidance to support this task.

Table 1.1. Cameroon Dams in Operation, under Implementation and Planned

Dam	River	Reservoir Volume (m^3)	Dam height (m)	End of Construction Year	Downstream Hydropower Plant Sites on the Sanaga River
Mapé	Mapé	3.1	35	1987	Kikot (P), Eweng (P), Song Mbengue (P), Song Loulou (O), Song Dong (P), Edea (O)
Bamendjin	Noum	1.6	22	1974	Kikot (P), Eweng (P), Song Mbengue (P), Song Loulou (O), Song Dong (P), Edea (O)
Mbakaou	Djérem	2.5	30	1971	Nachtigal Falls (I), Kikot (P), Eweng (P), Song Mbengue (P), Song Loulou (O), Song Dong (P), Edea (O)

** I=under implementation; O=in operation; P=planned*

Figure 1.11. Subcomponent 3(c) Schedule



Component 4: Advisory Services for hydroelectric asset Concessions Schemes (IDA US$1.75 million equivalent)

30. To bridge a rapidly growing gap between demand and supply in the past years, the GoC used public financing to fast-track the development of a certain number of publicly-owned hydroelectric projects (Memve'ele, Lom Pangar powerhouse, Bini-Warak, Mekin, and so on) which, once commissioned, pose questions related to asset handling and O&M. Recent experiences of the World Bank in sub-Saharan Africa have shown the need to address the O&M phase during the early stage of project preparation with the main focus on good institutional arrangements and suitable O&M business models to be fully secured and committed as part of the financing arrangement. The World Bank is working on a number of initiatives to better define O&M strategies and implement best practices policies in future and on-going projects. Within this framework, the World Bank has recently launched a series of Hydropower O&M Workshops with the main objectives of bringing together the key players, sharing knowledge and technical expertise, discussing challenges and possible solutions, reviewing the standard procurement approach to O&M, discussing new business models that might make O&M challenges easier to manage and finally creating a platform for an international operator market. In a recent review of the hydropower sector in sub-Saharan Africa, the World Bank has identified a number of business model for the O&M enforced in the region. MINEE requested the support of the World Bank to identify the most relevant options for the operation contract of these new power plants. This component will fund advisory services for carrying out an analysis of the costs, benefits, merits and limitations of each possible option and define the legal and implementation requirements, including funding of a regional market analysis to sound the appetite of international operators in managing those new assets in West Africa. Upon assisting the GoC in selecting the appropriate option(s), the advisor may also provide support for its implementation, if needed. The component is split into the following two subcomponents:

Sub-component 4(a): Analysis of Options for the Awarding and Contracting of Concessions of Publicly-owned Hydroelectric Assets (IDA US$0.25 million equivalent)

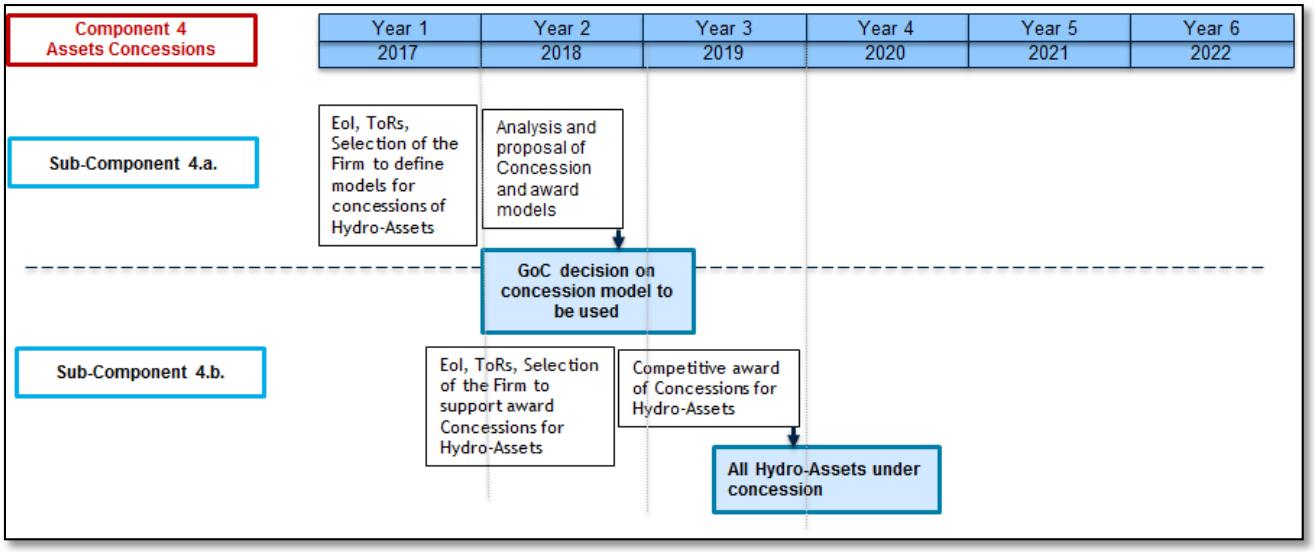
31. Options to be studied may include but not be limited to (a) award to existing local operator; (b) competitive tender for the selection of an international operator(s) for a part or all of the assets; or (c) establishment of a special purpose operator locally with the technical assistance/training of an international O&M consultant. A careful market analysis will also be conducted to confirm the feasibility of each possible option.

Sub-component 4(b): Support to the Implementation of the Selected Concession Mechanism (IDA US$1.5 million equivalent)

32. Based on the selected option(s), this sub-component will support the implementation, with technical and legal advisory services for the GoC to see the process through. The support will include preparation of the tender documents (if necessary), including contracts for the O&M contractor with risk sharing mechanisms and

responsibilities as well as clear performance indicators and remuneration mechanisms for the operator/contractor.

Figure 1.12. Component 4 Shedule



Component 5: Establishment of an Integrated Reservoir Management Plan for the Optimal Hydropower Generation on the Sanaga River (IDA US$1.75 million equivalent)

33. This component will build on the work completed under the Lom Pangar Hydropower Project to operationalize the procedures and conditions for water flows and downstream releases in a manner that is optimal for electricity generation subject to meeting minimum needs of other users. A detailed road map has been prepared and agreed with the GoC to create and operationalize CBS. The CBS will be composed of a CPEB and an STP within EDC. This component will finance, together with AFD, the implementation of the agreed road map. In particular, the component will finance three subcomponents:

Subcomponent 5(a): Assistant Project Manager (APM) to EDC for the Operationalization of the STP (IDA US$1 million equivalent)

34. The APM will closely support and advise EDC in the implementation of the detailed action plan/roadmap. This will include (a) the drafting of texts defining and creating the CPEB and the STP; (b) staffing; (c) establishment of the water management procedures; and (d) the analysis of the operational support needs combined with the definition of possible partnerships with competent organizations with similar responsibilities.

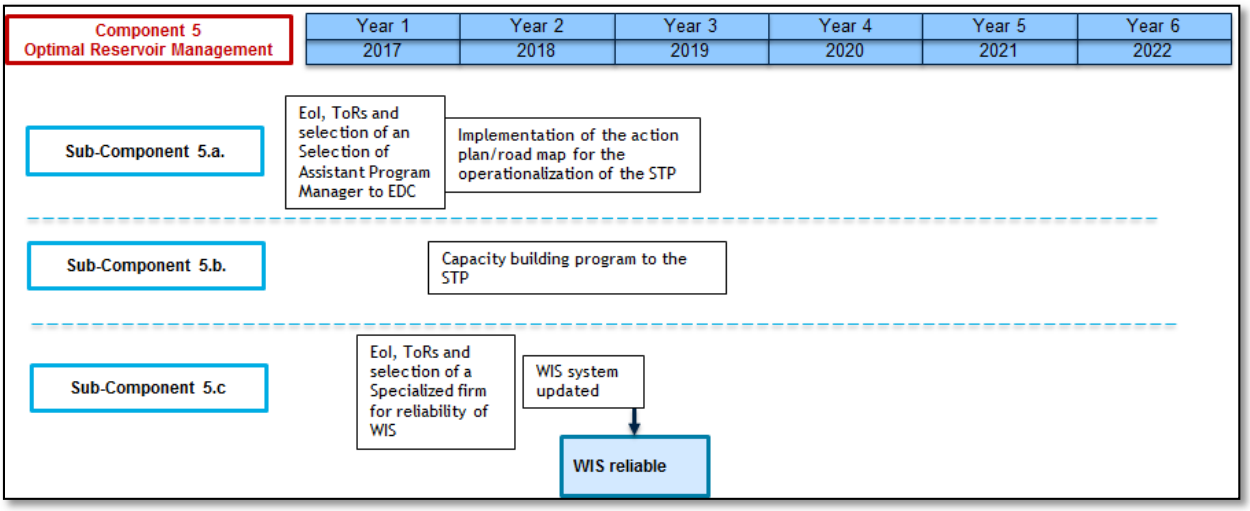
Subcomponent 5(b): Capacity Building program to the STP (IDA US$0.25 million equivalent)

35. The action plan/road map includes a detailed capacity building program for the STP. This subcomponent will finance it.

Subcomponent 5(c): Ensuring Reliability of the Water Information System (IDA US$0.5 million equivalent)

36. This sub-component will finance a specialized firm to ensure the reliability of the physical data of the Water Information System and to develop an operational tool (model) for planning and also managing in real time water allocation as well as programming of hydropower production at different time steps (annually, monthly, daily, and hourly).

Figure 1.13. Component 5 Shedule



Component 6: Project Management Support and Capacity Building (US$7.2 million, of which IDA US$4.8 million equivalent and GoC US$2.4 million equivalent)

37. This component will provide financing for the coordination, management, supervision, training, monitoring, procurement, audits, and M&E of the project as well as support for cross component activities, such as the Panel of Experts, and activities related to the development of sustainable human resources in the hydropower sector.

Subcomponent 6(a): Project Management for MINEE (IDA US$1 million equivalent and GoC US$1.2 million equivalent)

38. This sub-component will fund the coordination, management, supervision, monitoring, training, procurement, audits, and M&E for the part of the project implemented by MINEE.

Subcomponent 6(b): Project Management for EDC (IDA US$1 million equivalent and GoC US$1.2 million equivalent)

39. This sub-component will fund the coordination, management, supervision, monitoring, training, procurement, audits, and M&E for the part of the project implemented by EDC. It will also fund the development, during the first six months of project implementation, of a methodology to evaluate the specific capacity enhancement of the human resources achieved by implementing the project.

Subcomponent 6(c): Panel of Experts (IDA US$1.5 million equivalent)

40. This subcomponent will fund the Panel of Experts with responsibilities described in Components 1 and 2, and, in particular, to provide independent expertise, support and guidance related to dam safety and

environmental and social expertise. The Panel will also be solicited to provide advice and guidance on Component 3.

Subcomponent 6(d): Support for Sustainable Human Resources (IDA US$0.65 million equivalent)

41. This subcomponent will fund cross-components activities related to the development of human resources in the hydropower sector. In particular, within the context of this project, it will fund a capacity needs assessment to identify future skill needs for Cameroon when developing the entire value chain on hydroelectricity in the next 20 years. This would provide a stock taking of capacities currently available among the key stakeholders involved in the hydropower value chain, as well as an evaluation of new capacities or skills needed, and an identification of where these may be developed and housed. The long-term capacity building will be developed in coordination with Cameroonian universities as relevant.

Sub-component 6(e): Internships (IDA US$0.65 million equivalent)

42. This sub-component will fund internships for students or young graduates to learn on-the-job about hydro-power related professions. It is expected that 6 to 12 scholarships for one or two years could be awarded in two sessions under the project, related to professions/ skills being developed under Components 1 to 5. The trainees will work alongside with each implementing entity. Scholarship allocations will seek parity on gender (that is, at least half will be awarded to women) and among execution agencies (MINEE and EDC).

ANNEX 2: IMPLEMENTATION ARRANGEMENTS

COUNTRY : Cameroon
Hydropower Development on the Sanaga River Technical Assistance Project

Project Institutional and Implementation Arrangements

1. **Implementing Agencies.** The project will have two implementing agencies: MINEE and EDC. MINEE will implement components with strategic and policy dimensions, while EDC will implement components that are more operationally focused in nature. Thus, MINEE will implement Components/subcomponents 1(c), 1(d), 2, 3(a), 3(b), 4, 6(a), 6(c), 6(d), and 6(e); and EDC will implement Components/subcomponents 1(a), 1(b), 3(c), 5, and 6(b). Each agency will have an UGP.

2. **Steering Committee.** The strategic supervision of project implementation and overall cohesion of the work across each implementing agency will be coordinated by a COPIL, chaired by MINEE. The COPIL will be established by decree. The COPIL, presided by the Minister of MINEE, will be composed of representatives from MINEE (Electricity Division, Hydro-resources Division), MINEPAT, MINFI, EDC, ARSEL, and ENEO. The COPIL will be regularly informed of the progress on project implementation, including through quarterly progress and financial reports by the respective UGPs. The COPIL will review and validate the key options proposed by the consultants hired to provide advisory services under the project.

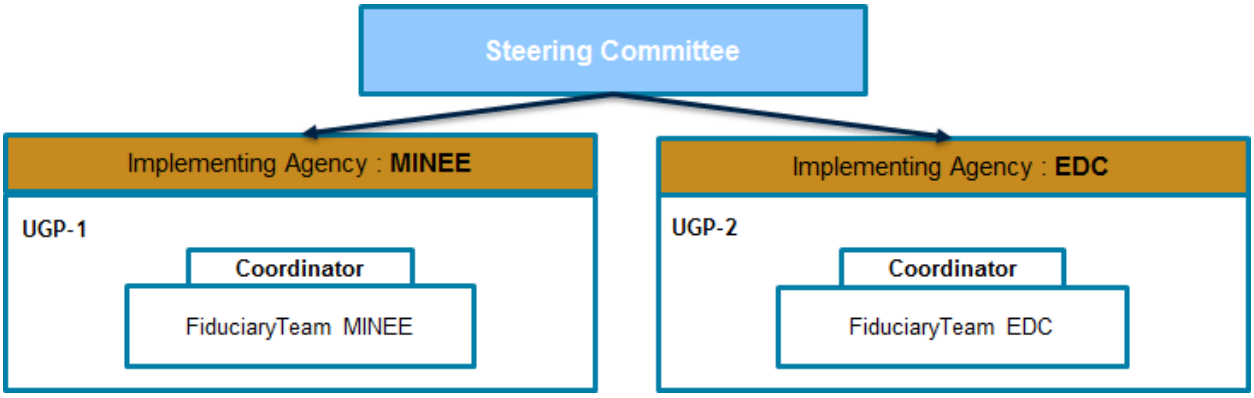
3. **Project Implementation Units.** Both MINEE and EDC will have a UGP. MINEE's UGP, namely UGP-1, will be created before project effectiveness. Headed by a project coordinator who will be responsible for the day-to-day management of project activities, UGP-1 will include a financial management specialist, an accountant, a procurement specialist, and a social development and environmental specialist. UGP-1 can be reinforced on a need basis by staff from MINEE. EDC's UGP, namely UGP-2, will be set-up by extending the competencies of the existing Lom Pangar PIU already in place within EDC to include the implementation of the EDC-implemented components of this project. A deputy to the current coordinator of the Lom Pangar PIU may be appointed to keep work pressure manageable. UGP-2 will at least include a coordinator, a financial management specialist, an accountant, a senior procurement specialist, a social development specialist, and an environmental specialist.

4. Each UGP will be responsible for the day-to-day management of its components of the project and for coordination of project-related activities including (a) ensuring the timely implementation of the project in accordance with the PIM; (b) preparing annual work plans and budgets and annual procurement plans for submission to the World Bank for approval and to the COPIL for information; and (c) assuming overall responsibility for, *inter alia*, such tasks as procurement, FM, M&E, communication, citizen engagement, and compliance with environmental and social safeguards.

5. ***Project Implementation Manual***. A PIM will be prepared to provide guidance on the roles and responsibilities as well as on the technical, administrative, financial and accounting procedures, procurement arrangements, and safeguard procedures.

6. Figure 2.1 illustrates the project's implementation arrangements.

Figure 2.1 Project Organization Chart



Financial Management

7. **Country Issue.** After the adoption of the new Public Financial Management (PFM) Act (*Nouveau Régime Financier de l'Etat*) in 2007 the GoC introduced in 2013 the program budgeting approach in all line ministries. While the budget has been approved on a programmatic basis since 2013, the intended benefits of the reforms have yet to materialize. Budget preparation and adoption processes have transitioned to program budgeting. However, the core problems identified in 2007 remain unsolved. The execution of line ministries' capital budget remains low and the performance of public services has not improved. Traditional annual line item budgeting persists in budget execution, meaning that the benefit and flexibility of multi-year program-budgeting are not yet leveraged. Program performance indicators are still essentially activity and output-based indicators, with no real foray into outcomes. Program managers in line ministries are not sufficiently prepared to handle their new responsibilities and they lack several tools to carry out their duties. Finally, financial information systems have not undergone the necessary changes to ensure consistency and comprehensiveness of financial information among the key players along the expenditure chain. This is essential in order to match financial and performance information and allow for an effective and efficient management of public resources.

8. To support the ongoing PFM reform process, the World Bank is preparing a PFM project aiming at (a) enhancing transparency and efficiency in public financial management; and (b) improving public procurement performance as to achieve efficiency, transparency, competition, and better value for money. The implementation of this project will sustain the results already achieved and contribute to the improvement of the overall public financial management environment in Cameroon.

9. Finally, the World Bank's IDF supported the GoC to elaborate a standard FM manual and an integrated information system for investment projects aiming at ensuring a better integration of the investment project FM system to the country system. The information system aims at contributing to improved synergy between the project's accounting system and the government information system by allowing automatized transmission and integration of project's financial information to the government system, thus enhancing transparency over donor funded projects' funds management.

FM Assessment

Table 2.1, FM Assessment Table and Mitigation Measures of FM Risks

Risk	Risk Rating	Risk Mitigating Measures Incorporated into Project Design	Risk after Mitigation Measures
Country level Governance is widely acknowledged to be weak and may impact negatively the achievement of the development objectives of programs and projects implemented.	**H**	Donor actions are oriented toward PFM reform agenda in support to the GoC's commitment to tackle the cross-cutting issue of governance in public resources management. In addition to investment support operations, some donors foresee using the budget support instrument that could help accelerate the pace of the PFM and governance agenda.	**H**
Entity level New implementing unit within MINEE with capacity to be built might jeopardize the project readiness for implementation and the existing PIU staffing at EDC may not be adequate to handle the additional workload.	**H**	Before the project becomes effective, the PIU will be created within MINEE (implementing entity) and staffed with seasoned fiduciary team. Internal control will follow the national internal control in place that is working quite well. Reinforcing the staff at EDC UGP taking into account the additional workload will be considered.	**S**
Project level The project activities might be improperly coordinated as it will be implemented by two different entities with no direct hierarchic scheme.	**S**	The internal control that will be built around an implementation manual that will ensure that the project is implemented in accordance with accepted procedures and segregation of duties. Roles and responsibilities of each stakeholder will be clearly defined. As such a COPIL presided by MINEE will be set up to ensure overall coordination, cohesion and control over the project activities implemented by each UGP.	**S**
INHERENT RISK	**H**		**S**
Budgeting Elaboration of a credible consolidated budget in line with the procurement plan and the implementation plan of both implementing units might be an issue as the project might experience delay in the consolidation process. As such, delay may occur in the budget preparation and deviations may be experienced in budget execution of some components not captured by the reports.	**S**	The standardized FM manual will be customized to provide clear timeline and responsibilities for budget preparation, consolidation and monitoring.	**S**

Risk	Risk Rating	Risk Mitigating Measures Incorporated into Project Design	Risk after Mitigation Measures
Accounting MINEE UGP is not yet set up and operational hence the project may experience delays in the treatment of financial information and in the recording of financial information. In addition EDC FM staff might be overwhelmed with the additional tasks the new project will bring.	**S**	The budgeting and accounting module of SIGED installed at EDC under a multi projects version will be customized and deployed at the UGPs level. The FM staffing will be under ToR acceptable to IDA so as to ensure the team is familiar with World Bank FM procedures. As the Lom Pangar Project will be closing in December 2018, reviewing the staffing arrangement at EDC will be considered in case the project becomes effective before that date.	**S**
Internal Controls and Internal Audit The internal control is to be set up and might lack appropriate segregation of duties and clear description of roles. As experienced with the Lom Pangar Project, the internal audit unit of EDC might not be involved in the internal audit activities of the project contributing to weaken the internal control environment of the project.	**S**	The project manual of procedures will include a clear description on the internal control environment including roles and responsibilities of each actor in the project activity control process. EDC internal audit unit will be involved at an earlier stage and an agreement (including scope, and frequency and resources of the review) will be reached to ensure that the internal audit function of the project will be fulfilled by EDC's internal audit unit.	**S**
Funds Flow As there is not yet a dedicated account for the project there is a risk that the project funds are diverted and used for non-project eligible purposes or in case of EDC comingled with Lom Pangar funds.	**S**	Two Designated Accounts will be opened in stable commercial banks acceptable to the World Bank, one for each implementing unit. The accounts will be managed by the CAA.	**M**
Financial Reporting Delays in the submission of agreed consolidated interim financial reports and annual project financial statements as the reporting scheme between both implementing units is not yet set up and operational.	**S**	The budgeting and accounting module of SIGED installed at EDC under a multi projects version will be customized and deployed to ensure timely recording of financial information as well as timely production of quarterly and annual financial statements. The consolidated reporting needs will be clearly defined in the manual and the current accounting software at EDC should also be installed at MINEE UGP.	**S**

Risk	Risk Rating	Risk Mitigating Measures Incorporated into Project Design	Risk after Mitigation Measures
Auditing The project financial statements and internal control arrangements might not be audited.	**S**	An external auditor will be recruited according to ToRs acceptable to the World Bank. Involving the chamber of account (Supreme Audit Institution) in the recruitment process will be considered.	**S**
CONTROL RISK	**S**		**S**
Overall FM risk	**H**		**S**

Note: H = high; L = low; M = moderate; S = substantial.

Table 2.2. Financial Management Action Plan

Action to be undertaken	Time-frame	Responsible Body
Recruit the financial management officer and the accountant at MINEE UGP based on ToR acceptable to the World Bank	Before effectiveness	MINEE
Customize the standardized project FM procedures to reflect the project specifics as part of the PIM	Not later than two months after effectiveness	UGP EDC
Customize and deploy at both UGPs the budgeting and accounting module of SIGED of EDC to handle accounting and reporting needs under the project	Not later than three months after effectiveness	UGP EDC
Recruit an external auditor to conduct annual financial audit of the financial statements of the project along with the review of the internal control system	Within six months of effectiveness	UGP EDC

Financial Management Arrangements

10. In line with the use of the country national system, the project FM arrangement will rely on the existing country FM arrangements put in place to manage donor-funded projects. These arrangements are centered on two main institutions, the CAA equipped with dedicated tools developed by the World Bank IDF and MINMAP in charge of ex ante control of all suppliers invoices associated with a contract before any payment by CAA.

11. **Staffing**. The current EDC UGP FM staff in charge of implementing the Lom Pangar Project will be responsible for the FM activities of the new project. The EDC UGP consists of one financial management officer and two accountants. The MINEE UGP to be set up will be staffed with a financial management officer and an accountant to be recruited based on ToR acceptable to the World Bank. This will be done by effectiveness.

12. **Budgeting.** The overall responsibility for preparing an annual work plan and related budget will lie with both UGPs although consolidation would be done by EDC UGP. The different steps of budget elaboration and management (preparation, revision, adoption, and execution) will be detailed in the FM section of the PIM. The consolidated annual work plan and budget will be prepared yearly, approved by the COPIL and submitted to the World Bank early enough to provide no objection before the end of January (or one month after the effective date for the first year of the project). A budget execution report will be included in a report scheme to enable the monitoring of the project implementation.

13. **Accounting Policies and Procedures.** The UGPs through their accounting teams will have the overall responsibility for maintaining the accounts of the project activities and ensuring that the annual financial statements are produced in a timely manner and in accordance with the accounting standards that are in effect in Cameroon.[6] The budget and accounting modules of SIGED installed at the EDC PIU that is capable of covering several projects will be customized to fit the project accounting needs and deployed at the MINEE UGP. Therefore, it will be used to record the project's transactions and to produce the required periodic reports not later than three months after the effectiveness date. Furthermore, when the current CAA reporting systems, developed with the software provider Tomate, permits, a dedicated window will be opened for the project's users by CAA on the accounting and reporting module of said CAA information system. Owing to the interface that is being developed between SIGED and the existing systems in the Directorate of Public Treasury (PATRIOT) and the Directorate of Investment Projects (PROBMIS), the project transactions would be easily incorporated into the national financial statements.

14. **Internal Control and Internal Auditing**. The administrative, financial, and accounting procedures will be part of the PIM. The PIM will include a clear description of the initiation and approval processes with respect to segregation of duties. In that regard the standardized Financial Management Manual of Procedures developed by CAA with World Bank IDF support will be customized to reflect the project specificities. The UGPs will make use of the computerized accounting system to capture all project-related transactions. The financial management officers will be responsible for maintaining all necessary controls to ensure (a) that the project funds are used only for the intended purposes in an efficient and economical way; (b) the preparation of accurate, reliable, and timely periodic consolidated financial reports; and (c) that the project's assets are adequately safeguarded. These are reinforced by the GoC's internal control arrangements, such as the prior visa payment by MINMAP that will apply to the project's invoices and the control over withdrawal applications and payments requests by CAA.

15. To sustain the capacity building initiatives of the project team**,** the World Bank loan accounting and FM units will provide adequate training in disbursement and FM procedures to the project FM team. All of these measures aim at further enhancing the internal control system.

16. An internal audit unit is included in EDC. Therefore, at an early stage, taking into account lessons learned for Lom Pangar Project, an agreement, which may include the scope, frequency of the reviews and resources needed, will be reached with EDC internal audit unit to ensure it would be able to cover the internal audit needs of the project.

17. ***Financial Reporting and Monitoring***. Consolidated quarterly interim financial reports (IFRs) to be generated from the computerized FM system will be presented by the implementing unit in charge of the reporting consolidation in accordance with the format agreed with the World Bank. In so doing, a timeline will be set in the procedures to ensure the financial data are collected and that the IFRs could be prepared and submitted on time. Such reports will need to be submitted to the World Bank within 45 days of the end of each calendar quarter. The current format of the IFR under the Lom Pangar Project will continue to be used. The IFRs will normally include (a) sources and uses of funds by the classifications of project expenditures (detailed by components and activities); (b) a comparison of budgeted and actual project expenditures (commitment and disbursement) to date and for the quarter; (c) a statement of the use of funds by component or activity; (d) the designated account activity; and (e) a physical progress report on the implementation of the project.

18. At the end of each fiscal year, the project will prepare consolidated annual financial statements.

[6] The Accounting principles set out by *l'Organisation pour l'Harmonisation en Afrique du Droit des Affaires,* known as OHADA.

19. ***External Auditing***. The consolidated annual financial statements and quarterly consolidated IFRs prepared by the UGPs and the internal control system will be subject to an annual audit by a reputable and independent auditing firm based on ToRs satisfactory to IDA.

20. The scope of the audit will be tailored to the project's specific risks in accordance with World Bank requirements and will be agreed upon with the GoC. In particular, the independent auditor will audit the use of all funds flowing from the designated accounts to the ultimate beneficiaries. The project will comply with the World Bank's access to information and disclosure policies by making all disclosable audit reports (opinion report only) publicly available promptly after receiving them. The project's external auditor will be hired within six months of effectiveness. A single audit opinion, in compliance with International Standards on Auditing, will be issued and will cover all project receipts, payments, and accounts. The audited financial statements, along with the auditor's report and Management Letter (incorporating management's comments) covering any identified internal control and accounting system weaknesses, will be submitted to IDA within six months of the end of each financial year. If their availability and capacity permit, involving the Chamber of Accounts (Supreme Audit Institution) in the auditor recruitment process will be considered.

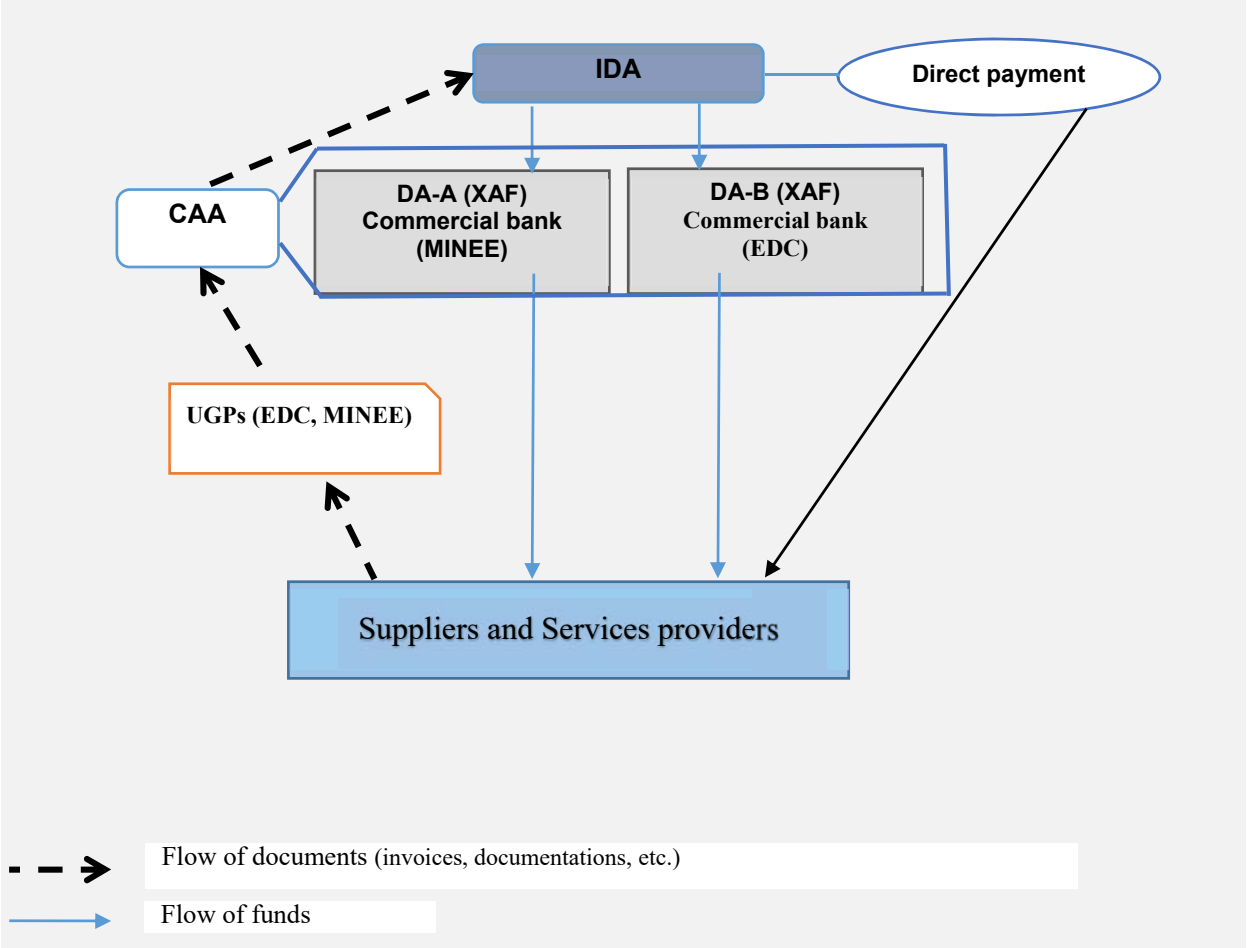
Disbursements

21. **Funds Flow and Disbursement Arrangements**. Funds flow will rely on the GoC's banking arrangements through CAA. In this regard, CAA's managing director will continue to act as public accountant, which includes the signing authorization on all payment means using the automated payments module of CAA information system for donor financing.

22. Funds will flow from the IDA Account to two Designated Accounts (DA-A and DA-B) denominated in XAF and opened in reputable commercial banks in Cameroon that is acceptable to the World Bank. The DAs will be managed by the CAA according to the disbursement procedures described in the administrative, accounting, and financial procedures manual as part of section of the PIM and the Disbursement Letter.

23. Upon effectiveness, this operation will follow transaction-based disbursement. The DA will receive an initial deposit equivalent the expenditure forecast for the first six months after project effectiveness, as indicated in the approved Annual Work Plan and Budget and will be replenished regularly through monthly Withdrawal Applications. Direct payment, reimbursement, and special commitment methods will be available to the project and might apply as appropriate. Disbursements may become report-based eventually when both UGPs have the capacity to produce reliable and acceptable IFRs. The minimum value of the direct payments, reimbursements and special commitments will be 20 percent of the DA ceiling.

Figure 2.2. Disbursement Channel



24. **Implementation Support Plan for FM**. FM implementation support intensity and frequency will be in line with the risk-based approach, and will involve a collaborative approach with the entire Task Team. A first implementation support mission will be performed three months after project effectiveness. Afterward, the missions will be scheduled by using the risk based approach model and will include the following diligences (a) monitoring of the financial management arrangements during the supervision process at intervals determined by the risk rating assigned to the overall FM assessment at entry and subsequently during Implementation (Implementation Status and Results Report); (b) integrated fiduciary review on key contracts; (c) review of the IFRs; (d) review of the audit reports and management letters from the external auditors and follow-up on material accountability issues by engaging with the task team leader, client, and/or auditors; and the quality of the audit (internal and external) also is to be monitored closely to ensure that it covers all relevant aspects and provide enough confidence on the appropriate use of funds by recipients; (e) physical supervision on the ground; and (f) assistance to build or maintain appropriate FM capacity and efficient internal control system.

25. **Conclusions of the FM Assessment.** The overall FM residual risk at preparation is considered **substantial**. The proposed financial management arrangements for this project are considered adequate and meet the World Bank's minimum fiduciary requirements under OP/BP10.00.

26. **Disbursements by Category**. The table below sets out the expenditure categories to be financed from the credit proceeds.

Table 2.3. Expenditure Categories to be Financed from the Credit Proceeds

Categories*	Portion A Amount of the Credit Allocated (expressed in EUR)	Portion B Amount of the Credit Allocated (expressed in EUR)	Percentage of Expenditures to be Financed by (inclusive of Taxes)	
			Portion A Amount of the Credit	Portion B Amount of the Credit
(1) Goods, non-consulting services, consultants' services, Training and Operating Costs for Parts A.3, A.4, B, C1, C.2, D, F.1, F.3 and F.4 of the Project	6,600,000	5,400,000	55%	45%
(2) Goods, non-consulting services, consultants' services, Training and Operating Costs for Parts A.1, A.2, C.3, E, F.2 and F.5 the Project	7,100,000	5,800,000	55%	45%
TOTAL AMOUNT	**13,700,000**	**11,200,000**		

**** Category (1) = MINEE implemented activities; Category (2) = EDC implemented activities.***

Procurement

27. Procurement for the project will be carried out in accordance with the World Bank 'Guidelines: Procurement of Goods, Works, and Non-Consulting Services under International Bank for Reconstruction and Development (IBRD) Loans and IDA Credits & Grants by World Bank Borrowers' dated January 2011, revised July 2014; 'Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credit & Grants by World Bank Borrowers', dated January 2011, revised July 2014; 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; and the provisions stipulated in the Loan Agreement.

28. For the components and/or subcomponents for which MINEE and EDC will be the implementation units, depending on the value of the contract involved, the procurement responsibilities will be shared between these implementation units and MINMAP.

29. Procurement capacity assessments of the implementation agencies were carried out, and the overall procurement risk for the project is rated high. These generated the following action measures to be taken by the respective implementation agencies. For the MINEE UGP-1, the measure include (a) elaborate and submit a procurement plan to the World Bank; (b) elaborate a satisfactory version of the PIM comprising a section on procurement for use by the project; (c) recruit a procurement specialist with satisfactory qualification and experience. For the EDC UGP-2, the measure include (a) elaborate and submit a procurement plan to the World Bank; (b) elaborate a satisfactory version of the PIM comprising a section on procurement for use by the project; (c) maintain during the project's life an acceptable procurement arrangement to the World Bank, comprising at least a qualified procurement specialist and eventually other additional procurement staffs, if justified by the workload; and (d) amend the act establishing the existing special tender in charge of co-financed project within EDC, in manner deemed acceptable to the World Bank, such that the mandate of the board is broadened to cover procurement under this project and its procurement thresholds are raised to accelerate procurement activities.

During appraisal, it was agreed to include an effectiveness condition to expand the mandate of the Lom Pangar Special Tender Board for EDC-implemented activities, and thereafter maintain at all times during the implementation of the project, the Lom Pangar Special Tender Board with composition, ToR, and resources satisfactory to the Association.

30. For the MINEE UGP, there will be a need to put in place a new special tender board for the proposed project activities, acceptable to the World Bank, with high procurement thresholds to accelerate procurement activities. It was agreed that a disbursement condition for MINEE-implemented activities will be included, to establish a special tender board ("MINEE Special Tender Board"), and thereafter maintain at all times during the implementation of the project, the MINEE Special Tender Board with composition, ToR, and resources satisfactory to the Association.

31. Satisfactory implementation of the proposed above actions should bring the overall residual procurement risk to substantial.

32. Direct contracting justification is cleared by the World Bank as a part of the procurement plan and justified by the client

Table 2.4. Summarized Prior Review table

Type of procurement	Procurement Prior Review Thresholds (US$ millions)	Comments
Goods, information technology and non-consulting services	1.5	Prior review thresholds of the type of procurement are identical to those of Single Source Selection and Direct Contract. Direct contracting and Single Source justification are cleared by the World Bank as a part of the procurement plan and justified
Consultants: firms	0.5	
Consultants: individuals	0.2	

33. Based on country-specific needs and circumstances, shopping thresholds for the purchase of vehicles and fuel may be increased up to US$500,000, in consultation with major cars dealers and oil providers.

34. The main consulting assignments of the project are show in the table below.

Table 2.5. List of Consulting Assignments with Selection Methods and Time Schedules

Ref. No.	Description of Assignment	Estimated Cost (US$ millions)	Selection Method	Review by World Bank (Prior/Post)	Comments/ Completion date
A. MINEE-implemented activities					
MI.1	Recruitment the Project Fiduciary Management team (Coordinator, Financial management specialist, accountant, procurement specialist)	1,200,000	IC	Prior	Several contracts to be renewed every two years July 2023
MI.2	Recruitment of a Panel of Experts (multiple individual contracts)	1,500,000	IC	Prior	Several contracts to be renewed every two years June 2022
MI.3	Recruitment of a qualified firm to provide support to the GoC in its contractual obligations related to the Nachtigal project	1,000,000	QCBS	Prior	June 2022
MI.4	Recruitment of a firm for the development of the Hydrology and Climate Change Study on the Sanaga River basin	250,000	QCBS	Post	June 2018
MI.5	Recruitment of a firm for the development of the Hydrology risk mitigation strategy and mitigation mechanisms	1,000,000	QCBS	Prior	June 2019
MI.6	Recruitment of a firm for the development of a Dam safety framework	300,000	QCBS	Post	December 2018
MI.7	Recruitment of a firm for the Analysis of Options for sustainable operation and maintenance of Publicly-financed Hydroelectric Assets	150,000	QCBS	Post	March 2018
MI.8	Recruitment of a firm to provide support to the GoC in the Implementation of the Concession type options selected under MI.7	1,000,000	QCBS	Prior	December 2019
MI.9	Recruitment of a firm to identify Human Resources needs in the hydroelectricity sector in the medium and long term and develop a related capacity building strategy	250,000	QCBS	Prior	December 2018
MI.10	Recruitment of a project auditor	50,000	LCS	Prior	Procurement handled outside of the Project (MINEPAT) July 2023

B. EDC-implemented activities					
EDC.1	Reinforcement of the fiduciary capacities of UGP-2 (social development specialist, environment specialist)	420,000	IC	Prior	July 2023
EDC.2	Recruitment of an individual consultant to write the Project Implementation Manual (PIM)	50,000	IC	Post	Financed under Lom Pangar Hydropower Project or SONATREL June 2017
EDC.3	Recruitment of a firm for the Sanaga River Basin Hydropower Potential Optimization Study	1,000,000	QCBS	Prior	December 2018
EDC.4	Recruitment of a firm for engineering studies and the feasibility study of a selected New Hydroelectric scheme (including geological baseline)	3,000,000	QCBS	Prior	December 2020
EDC.5	Recruitment of a consultant in charge of conducting a Social Assessment alongside the Sanaga River	100,000	IC	Post	December 2018
EDC.6	Recruitment of a firm for the Strategic Environmental and Social Assessment (SESA) for the development of hydroelectricity in the Sanaga basin	100,000	IC	Post	June 2019
EDC.7	Recruitment of a firm for the, the Environmental and a Social Impact Assessment (ESIA) of the selected hydropower plant site (including transmission lines)	200,000	QCBS	Post	June 2020
EDC.8	Recruitment of a Transaction Advisor firm to develop and pre-negotiate contractual documents and draft the bidding documents for the selection of the private developer	1,500,000	QCBS	Prior	December 2021
EDC.9	Recruitment of a firm for the Dam Safety Assessment of Mapé, Bamendjin et Mbakaou	2,000,000	QCBS	Prior	December 2019
EDC.10	Recruitment of a fir as Assistant Project Manager (APM) for the Operationalization of the STP	750,000	QCBS	Prior	December 2019
EDC.11	Recruitment of a firm to Ensure the Reliability of the Water Information System of the Sanaga	150,000	QCBS	Post	December 2018
EDC.12	Recruitment of a firm to develop an operational tool for planning and managing water allocation	100,000	QCBS	Post	December 2018
EDC.13	Recruitment of an individual consultant to develop a methodology to evaluate and measure specific capacity enhancement achieved by the Project	80,000	IC	Post	December 2017

EDC.14	Recruitment of interns to learn on-the-job about hydropower related professions	300,000	IC	Post	6 to 12 interns December 2020

Note: IC = Individual Consultant; LCS = Least-Cost Selection; LPHP = ; QCBS = Quality-and Cost-Based Selection.

Environmental and Social (including safeguards)

35. None of the activities financed by the proposed project is expected to induce adverse, irreversible environmental and social impacts. The project is rated environmental category A because of the potential impacts that could be generated by the subsequent implementation of a new hydropower project site. However, at this stage, there is no clarity on the civil works to be undertaken – whether in a cascade, the size of dams, or their specific location. The following safeguard policies are triggered: Environmental Assessment (OP/BP 4.01); Natural Habitats (OP/BP 4.04); Pest Management (OP 4.09); Indigenous Peoples (OP/BP 4.10); Physical Cultural Resources (OP/BP 4.11); Involuntary Resettlement (OP/BP 4.12); Forests (OP/BP 4.36); and Safety of Dams (OP/BP 4.37).

36. The project is providing technical assistance upstream to specific new hydropower project preparation. Key specific draft Terms of Reference have been prepared and disclosed prior to appraisal both in country on EDC's website on March 14, 2017, and by the World Bank on March 2, 2017.

37. In addition, the project intends to support the supervision of the implementation of the Nachtigal Hydropower Project, which is a high risk environmental project. An abbreviated ESIA has been carried out in 2006, updated in 2011, and enriched in 2015. The ESMPs have been completed in 2016 and presented to all stakeholders in July 2016. The ESIA is under review by IFC and the World Bank and is expected to be disclosed in May 2017.

38. **Safeguard instruments**. All safeguard instruments to be prepared under the proposed project will be reviewed before being disclosed by the GoC and the World Bank team to ensure full compliance with GoC and WB policies. The following safeguards instruments will be prepared and financed under the project:

(a) **Environmental Assessment (OP/BP 4.01):** The project will support the preparation of a SESA for the development of the hydroelectricity cascade in the Sanaga River Basin. Once the dam site has been selected by the GoC, the project will finance the preparation of the ESIA for the selected site and the ESIA for the transmission line to be constructed from the site to the existing interconnected grid. The ESIA will also include a cumulative impact assessment on downstream environments. A Panel of Experts will also be set up and will include environmental and social expertise to advise Cameroon on the environmental and social aspects of the selected project. In addition to the ESMP resulting from the ESIA, a robust Environmental and Social Contractor Guidelines will also be prepared for the purposes of the bidding documents, it will include specific recommendations/measures to mitigate labor influx risk. Draft ToRs for the SESA, the ESIA, and the Panel of Experts have been prepared and disclosed both in country on EDC's website on March 14, 2017, and by the World Bank on March 2, 2017.

(b) **Involuntary Resettlement (OP/BP 4.12):** An SA and RPF will be prepared as part of the project. The RPF will be used, in conjunction with ESIAs, to guide future implementation of the investments. Draft ToRs for both SA and RPF have been prepared and disclosed both in country on EDC's website on March 14, 2017, and by the World Bank on March 2, 2017. Both ToRs will be updated under the SESA study.

(c) **Forests (OP/BP 4.36):** The project does not support commercial forest exploitation. However, the ESIAs that will be financed through the project will assess and provide relevant guidance to consider during the site selection to avoid or reduce potential negative impact on the health and quality of the forests.

(d) **Pest Management (OP 4.09):** Relevant measures will be provided in the ESIAs, and an IVMP will be prepared to prevent and address waterborne health risks associated with dam reservoirs in the project area.

(e) **Physical Cultural Resources (OP/BP 4.11):** During the ESIA process, as it was the case in the Lom Pangar Hydropower Project, particular attention will be placed on physical cultural resources and relevant mitigation measures proposed if needed. A comprehensive chance find procedure will be prepared as part of the ESIA reports, embedded in the overall ESMPs, to that end.

(f) **Safety of Dams (OP/BP 4.37):** The project will support the development of a hydropower project which will probably include a large dam. The project will finance engineering activities including geological and geotechnical investigations, topographical surveys, bathymetry, physical scale modeling, hydrology, and sediment management. These data will allow the preparation of a geological baseline report and will be integrated into a "reference project" that will serve as the expression of needs of the GoC and will be included in the bidding documentation for the concession. An ERP for the Sanaga River hydropower development will be prepared under the project. In addition, the Panel of Experts, which will include dam safety expertise and environmental and social expertise, will be recruited. It will comprise five to seven specialists (geotechnical, concrete, sediment, dam, HEM, environmental, and social). Draft ToRs for the ERP and the recruitment of the Panel have been prepared and disclosed both in country on EDC's website on March 14, 2017, and by the World Bank on March 2, 2017.

(g) **Natural Habitats (OP/BP 4.04):** The ESIAs that will be prepared will carry out an in-depth assessment of the main threats of natural habitats along the Sanaga River. Specific guidance will be provided to avoid significant conversion or degradation of any critical natural habitats. Should any unavoidable risk of conversion arise, proper additional plan/measures will be prepared to compensate for it.

(h) **Indigenous Peoples (OP/BP 4.10):** Generally, indigenous peoples live in the east (Baka), center (Bagaladi), south (Bagyeli), and inhabit forested areas. Once a site has been selected, the SA that will be carried out as part of the SESA will confirm whether indigenous peoples are present in the project area. The results of the social assessment will be used to prepare, consult and disclose the relevant instrument. An IPPF was prepared for the World Bank-funded Electricity Transmission and Reform Project and it could be used to guide the preparation of an Indigenous Peoples Plan for this project as it was focused specifically on the screening for indigenous peoples along proposed transmission lines.

39. *Institutional arrangement for safeguards management.* The two implementing agencies for this project, MINEE and EDC, are familiar with the World Bank safeguards policies as they have implemented projects financed by the World Bank. The implementation of these projects has created environmental and social management capacity within these institutions. Nevertheless, an in-depth environmental and social capacity assessment has been carried out during the preparation of the project to identify specific areas for improvement or strengthening. Regarding the Nachtigal Hydropower Project, the project company (NHPC) has strong capacity and has demonstrated commitment to these issues during the preparation of the project.

40. More broadly, the country has stable environmental and social institutions, namely the Ministry of the Environment, Nature Protection and Sustainable Development, the Ministry of Domain, Cadastral and Land Registration Affairs, and the Ministry of Socials Affairs. The country also has a comprehensive environmental and social legal framework including the 1996 Environmental Law and its implementation decrees. A new ESIA decree was signed in 2013. This decree brings out the SESA topic. However, SESA capacity and the environmental and social law enforcement can be strengthened and specific measures will be defined during project implementation.

41. **Grievance Redress Mechanism.** A mechanism for redressing grievance is already in place within EDC and had already demonstrated its relevance and efficiency with the Lom Pangar Hydropower Project.

Monitoring and Evaluation

42. **Monitoring Arrangements and Data Collection.** Data collection will be included in the engineering consultants' ToR under Component 1. The two UGPs will monitor and evaluate all projects indicators.

43. **Views of Direct Beneficiaries.** The views of the future beneficiaries will be sought and reflected during the SESA process. Comprehensive M&E reporting will be needed to monitor the results and performance of the following project. It will involve mainly the direct beneficiaries of project activities but will also be extended to other beneficiaries such as private operators.

44. **Reporting.** The two UGPs will have overall responsibility for reporting to and liaising with the COPIL and producing the project's biannual M&E reports. The report will include the updated results framework and action table, listing the corrective actions to be implemented with deadlines and clearly identifying the people responsible. The report will be sent to the World Bank for informational purposes.

45. **Consultation.** Extensive public consultation will be carried out during the preparation of the safeguard instruments. Civil society, project-affected people and various stakeholders will be consulted during the preparation of the ESMF, IPPF, and RPF. Most of the concerns expressed by the stakeholders will be taken into consideration. Key draft ToRs for the preparation of safeguard instruments have been disclosed in country and by the World Bank. Regarding the Nachtigal Hydropower Project, the ESMPs have been completed in 2016 and presented to all stakeholders in July 2016.

Role of Partners (if applicable)

46. Project implementation activities will be carried out in coordination with donors involved in the power sector in Cameroon. In particular, Component 5 of the project will be implemented with close collaboration with AFD, which is co-financing with the World Bank the environmental and social measures of the Lom Pangar Project, including environmental and social measures linked to management of the reservoir of the Sanaga Basin and cumulative downstream mitigation measures such as water quality, monitoring of greenhouse gases and monitoring of Lom Pangar induced impact downstream. The World Bank is the lead agency for donor coordination in the power sector in Cameroon and thus organizes regular meetings of the donors to ensure coordination of interventions in the sector.

ANNEX 3: IMPLEMENTATION SUPPORT PLAN

COUNTRY : Cameroon
Hydropower Development on the Sanaga River Technical Assistance Project

Strategy and Approach for Implementation Support

1. The Implementation Support Plan described below explains how the World Bank will supervise implementation of the project, including identified risk mitigation measures. The Implementation Support Plan is also linked to the results/outcomes identified in the result framework.

Implementation Support Plan and Resource Requirements

2. The level of technical support needed includes staff with energy sector knowledge and expertise and more specifically, expertise in hydropower projects; specialized expertise, including procurement experts, safeguards specialists, power engineering, and M&E expertise, is also required. The primary responsibility for this support lies with the Task Team Leader with key inputs from specialized World Bank experts. Evaluation of results indicators will be part of regular World Bank supervision missions. The main focus in terms of support during implementation is summarized in the table below.

3. FM supervision will be consistent with a risk-based approach. The supervision intensity is based initially on the assessed FM risk rating and subsequently on the updated FM risk rating during implementation. Given the Substantial residual risk rating, on-site supervision will be carried out at least once per year. On-site review will cover all aspects of FM, including internal control systems, the overall fiduciary control environment, and tracing transactions from the bidding process to disbursements as well as statement of expenses review. Additional supervision activities will include desk review of semester IFRs, quarterly internal audit reports, audited Annual Financial Statements and Management Letters as well as timely follow up of issues that arise, and updating the FM rating in the Implementation Status and Results Report and the Portfolio and Risk Management (PRIMA) system. Additional target reviews may be conducted depending on emerging risks. The World Bank's project team will support in monitoring the timely implementation of the action plan. Detailed FM reviews will also be carried out regularly, either within the regular proposed supervision plan or a more frequent schedule if needed, to ensure that expenditures incurred by the project remain eligible. Regular reporting arrangements and supervision plan will also ensure that the implementation of the project is closely monitored and that appropriate remedial actions are taken expeditiously.

4. In terms of procurement, in addition to the prior review supervision to be carried out by the World Bank, the capacity assessment of the implementing agencies has recommended that the World Bank should carry out supervision missions at least once a year to review procurement actions. These post-procurement reviews should cover at least 20 percent of the contracts subject to post-review.

Time	Focus	Skills Needed	Resource Estimate	Partner Role
First 12 months	Effectiveness, procurement, and supervision Preparation of consultation and communication plan	Task Team Leader Hydropower Engineer Procurement Safeguards Financial Country Team	US$150,000	MINEE/EDC will lead implementation
12-72 months (including Mid-term Review and Completion Report)	Continued procurement, implementation, and contract management, supervision	Task Team Leader Hydropower Engineer Procurement Safeguards Financial Country Team M&E	US$120,000 per fiscal year	MINEE/EDC will lead implementation
Other				

Skills Mix Required

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
Team Leader	Estimated to be 5-7 weeks per year	2-3 per year	
Hydropower Engineer	Estimated to be 5-7 weeks per year	2-3 per year	
Financial Analyst	Estimated to be 5-7 weeks per year	2 per year	
Social	Estimated to be 5-7 weeks per year	2 per year	
Environmental	Estimated to be 5-7 weeks per year	2 per year	
Monitoring	Estimated to be 5-7 weeks per year	Local staff	
Procurement	Estimated to be 5-7 weeks per year	Local staff	
Financial Management	Estimated to be 5-7 weeks per year	Local staff	

Partners

Name	Institution/Country	Role
AFD	France	Parallel Financing