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The World Bank

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Report No: 122876-CM

PROJECT APPRAISAL DOCUMENT

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT (IBRD)

ON A PROPOSED IBRD PAYMENT GUARANTEE
IN THE AMOUNT OF UP TO EUR 86 MILLION (US$100 MILLION EQUIVALENT)
AND A PROPOSED IBRD LOAN GUARANTEE
IN THE AMOUNT OF UP TO EUR 171 MILLION (US$200 MILLION EQUIVALENT)

IN SUPPORT OF THE REPUBLIC OF CAMEROON

AND

INTERNATIONAL FINANCE CORPORATION (IFC)

ON A PROPOSED INVESTMENT CONSISTING OF
AN EQUITY INVESTMENT IN THE AMOUNT OF UP TO EUR 60 MILLION
(US$70 MILLION EQUIVALENT)
AND AN A LOAN IN THE AMOUNT OF UP TO EUR 130 MILLION
(US$152 MILLION EQUIVALENT)
AND CLIENT RISK MANAGEMENT SWAPS HAVING IN AGGREGATE AN EXPECTED
LOAN EQUIVALENT EXPOSURE OF UP TO US$10 MILLION

TO NACHTIGAL HYDRO POWER COMPANY

AND

THE MULTILATERAL INVESTMENT GUARANTEE AGENCY (MIGA)

ON PROPOSED MIGA GUARANTEES
IN THE TOTAL AMOUNT OF UP TO EUR 224.8 MILLION
(US$262.5 MILLION EQUIVALENT)

TO EDF INTERNATIONAL SAS OF FRANCE, SOCIETE GENERALE S.A. OF FRANCE
AND INVESTOR A[1]

FOR THE
NACHTIGAL HYDROPOWER PROJECT

June 22, 2018

[1] Due to confidentiality, the name of the potential equity investor cannot yet be disclosed and is therefore referred to in this document as 'Investor A'.

Energy and Extractives Global Practice
Africa Region, World Bank

Infrastructure and Natural Resources
International Finance Corporation

Energy and Extractive Industries Sector Team
Multilateral Investment Guarantee Agency

CURRENCY EQUIVALENTS

(Exchange Rate Effective May 31, 2018)

Currency Unit = EUR

EUR 1 = US$1.1679
SDR 1 = US$1.41665

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

ACOD	Actual Commercial Operation Date
ADB	African Development Bank
AER	*Agence pour l'Electrification Rurale* (Rural Electrification Agency)
AES	American Electricity Supply Corporation
AFD	*Agence Française de Développement* (French Development Agency)
AIMM	Anticipated Impact Measurement and Monitoring
ARSEL	*Agence de Régulation du Secteur de l'Electricité* (Electricity Sector Regulator)
BEAC	*Banque des Etats de l'Afrique Centrale* (Bank of Central African States)
CAMU	Central African Monetary Union
CAO	Compliance Advisor Ombudsman
CAPEX	Capital Expenditures
CEMAC	Central Africa Economic and Monetary Community
CFADS	Cash Flow Available for Debt Service
CIA	Cumulative Impact Assessment
COD	Commercial Operation Date
CPF	Country Partnership Framework
DFI	Development Finance Institution
DPDC	Dibamba Power Development Company
DPF	Development Policy Financing
DSCR	Debt Service Coverage Ratio
DSRA	Debt Service Reserve Account
E&S	Environmental and Social
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
EDC	Electricity Development Corporation
EDF	*Electricité de France S.A.* (Electricity of France)
EDF CIH	*Electricité de France Centre d'Ingénierie Hydraulique* (Hydraulic Engineering Department)
EDFI	EDF International SAS
EHS	Environmental, Health and Safety
EIRR	Economic Internal Rate of Return
ENEO	Energy of Cameroon
EPC	Engineering, Procurement, and Construction
ESAP	Environmental and Social Action Plan
ESIA	Environmental and Social Impact Assessment

ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
ESRS	Environmental and Social Review Summary
FCFA/XAF	Central African franc of the African Financial Community
FIRR	Financial Internal Rate of Return
FY	Fiscal Year
GBV	Gender-based Violence
GDP	Gross Domestic Product
GESP	Growth and Employment Strategy Paper
GHG	Greenhouse Gas
GoC	Government of Cameroon
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
GWh	Gigawatt Hour
HFO	Heavy Fuel Oil
H&S	Health and Safety
HV	High Voltage
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IDC	Interest During Construction
IFC	International Finance Corporation
IFI	International Finance Institutions
IMF	International Monetary Fund
IPP	Independent Power Producer
IRR	Internal Rate of Return
IUCN	International Union for Conservation of Nature
KPDC	Kribi Power Development Company
kWh	Kilowatt Hour
L/C	Letter of Credit
LEQ	Loan Equivalent Exposure
LPHP	Lom Pangar Hydropower Plant
LV	Low Voltage
MFD	Maximizing Finance for Development
MIGA	Multilateral Investment Guarantee Agency
MINEPDED	Ministry of Environment, Nature Protection and Sustainable Development
MV	Medium Voltage
MVA	Mega Volt Ampere
MW	Mega Watt
N2CS	Nyom 2 Connection Substation
NGO	Non-governmental Organization
NHPC	Nachtigal Hydropower Company
NPV	Net Present Value
O&M	Operation and Maintenance
OP/BP	Operational Policy / Bank Policy
OPEX	Operating Expenditures
PAP	Project Affected Person
PDO	Project Development Objective
PDSE	*Plan de Développement du Secteur de l'Electricité* (Least Cost Power Sector Expansion Development Plan)
PoEs	Panel of Experts

PPA	Power Purchase Agreement
PPP	Public-private Partnership
PS	Performance Standard
RAP	Resettlement Action Plan
SBLC	Stand By Letter of Credit
SCADA	Supervisory Control and Data Acquisition
SCD	Systematic Country Diagnostic
SDR	Special Drawing Rights
SEP	Stakeholder Engagement Plan
SG	*Société Générale S.A.*
SIG	Southern Interconnected Grid
SII	Summary of Investment Information
SONATREL	*Société Nationale de Transport d'Electricité* (National Electricity Transport Company)
SONEL	*Société Nationale d'Electricité* (Public Power Utility)
SPV	Special Purpose Vehicle
TCOD	Target Commercial Operation Date
TPA	Third Party Access
VAT	Value Added Tax
WB	World Bank
WBG	World Bank Group (World Bank, IFC, MIGA)
WWF	World Wildlife Fund

International Bank for Reconstruction and Development (IBRD)

Regional Vice President:	Makhtar Diop
Country Director:	Elisabeth Huybens
Senior Global Practice Director:	Riccardo Puliti
Practice Manager, Energy:	Charles Cormier
Practice Manager, Guarantees:	Richard Bernard MacGeorge
Co-Task Team Leaders:	Stephan Garnier (ADM), Nicolas Sans
Co-Task Team Leader, Guarantees:	Patrice Caporossi

International Finance Corporation (IFC)

Regional Vice President:	Sergio Pimenta
Global Industry Director:	Morgan Landy
Regional Director:	Oumar Seydi
Regional Industry Head:	Bertrand Heysch de la Borde
Global Industry Manager:	Sumeet Thakur
Regional Portfolio Manager:	Rudo Linda Munyengeterwa
Investment Leader:	Julien Thureau
Primary Investment Officers:	Dan Vardi, Max Blom
Investment Team:	Celian Gondange, Ali El Reda Youssef

Multilateral Investment Guarantee Agency (MIGA)

Vice President and Chief Operating Officer:	Subramaniam V. Iyer
Director, Operations:	Sarvesh Suri
Associate Director & Chief Underwriter:	Muhamet Bamba Fall
Sector Manager:	Marcus Williams
Regional Head-Africa:	Hoda Moustafa
Team Leader:	Noureddin Ennaboulssi
Underwriting Team:	Annabelle Libeau

CAMEROON
Nachtigal Hydropower Project

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Cameroon

Nachtigal Hydropower Project (P157734)

PROJECT APPRAISAL DOCUMENT

Basic Information			
Project ID: IBRD: P157734	EA Category: A – Full Assessment		Team Leader(s): Stephan Garnier, Nicolas Sans, and Patrice Caporossi
Lending Instrument Investment Project Financing, IFC Equity, IFC Debt, IBRD and MIGA Guarantees	Fragile and/or Capacity Constraints [ ] Financial Intermediaries [ ] Series of Project [ ]		
Project Implementation Start Date 19 July 2018	Project Implementation End Date 31 December 2023		
Expected Effectiveness Date 01 October 2018	Expected Closing Date 30 June 2024		Guarantee Expiry Date Payment Guarantee: 30 June 2039 Loan Guarantee: 30 June 2039
Joint IFC and MIGA Yes			
Practice Manager/Practice Manager (Guarantees)	Senior Global Practice Director	Country Director	Regional Vice President
Charles Cormier/ Richard MacGeorge	Riccardo Puliti	Elisabeth Huybens	Makhtar Diop

Borrower: **Republic of Cameroon**			
Responsible Agency: **Nachtigal Hydro Power Company (NHPC)**			
Contact: Pierre Edimo		Title:	Chairman CTR
Telephone No.:	+23722223816	Email:	pedimo_2007@yahoo.fr
Contact: Olivier Flambard		Title:	Project Manager Nachtigal
Telephone No.:	+237690871520	Email:	olivier.flambard@nachtigal-hpp.com

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Project Financing Data (in EUR Million)					
[X]	IFC Equity	[ ]	IBRD Loan	[X]	IBRD Guarantee
[ ]	IDA Credit	[ ]	IDA Grant	[X]	IFC Debt
[X]	MIGA				
Total Project Cost:		EUR 1,184 million		Total World Bank Guarantee: Payment: Up to EUR 86 million equivalent Loan: Up to EUR 171 million equivalent	
Financing Gap:		0.0		IFC Equity: Up to EUR 60 million IFC Loan: Up to EUR 130 million IFC Client Risk Management Swaps: Up to US$10 million LEQ MIGA Guarantee (Equity, Quasi-Equity / Shareholder Loan): Up to EUR 191.5 million MIGA Guarantee (Swap): Up to EUR 33.3 million	

Financing Source	**Amount**[2]
Equity	EUR 273 million
Euro-denominated Long Term Debt	EUR 694 million
FCFA-denominated Long Term Debt	EUR 171 million
VAT reimbursement	EUR 47 million
Total	EUR 1,184 million

Institutional Data
Practice Area (Lead)
Energy & Extractives
Contributing Practice Areas
Climate Change, Public Private Partnership
☐ I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this Project.
Gender Tag
Does the activity plan to undertake any of the following? Please select Yes or No for each:
Gender analysis and/or consultation on gender related issues: [Yes].
Specific actions to address the distinct needs of women and girls, or men and boys, or positive impacts on gender gaps: [No].
Mechanisms to facilitate monitoring and/or evaluation of gender impacts: [No].

[2] Financing plan is not final and is subject to negotiations

Proposed Development Objective(s)
The Project development objective is to increase the availability of renewable energy power and leverage private finance for the Nachtigal Hydropower Project.

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

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

Conditions and Legal Covenants		
Covenants		
Source of Fund		
IBRD		

Description

Usual and customary covenants for guarantee operations in support of project financings of this nature will be included in the legal agreements.

The Project Company (under Payment Guarantee) will covenant, among others, that it will:

a) comply with applicable laws, including environmental and social laws, and the applicable World Bank environment and social safeguards requirements under the World Bank Performance Standards (PS);

b) provide annual audited financial statements and other reports;

c) provide certain notices and other information to IBRD;

d) provide access to the Project;

e) not engage in (or authorize or permit any affiliate or any other Person acting on its behalf to engage in) any Sanctionable Practices in connection with the Project;

f) comply with World Bank requirements relating to Sanctionable Practices regarding individuals or firms included in the WBG list of firms debarred from WBG-financed contracts; and

g) obtain IBRD's consent prior to agreeing to any change to any material Project related transaction document to which it is a party which would materially affect the rights or obligations of IBRD under the Guarantee Agreement.

The Project Company (under Local Loan Guarantee) will covenant, among other things, that it will (i) use the proceeds of the disbursements under the IBRD-Guaranteed Loan Facility exclusively for the Project and in accordance with the terms and conditions of the IBRD-Guaranteed Loan Agreement, (ii) comply with applicable laws, including environmental and social laws, and the applicable World Bank environmental and social requirements under the World Bank Performance Standards; (iii) provide annual audited financial statements and other reports, (iv) provide access to the Project, (v) not engage (or authorize or permit any affiliate or any other Person acting on its behalf to engage in) in any Sanctionable Practice in connection with the Project, (vi) comply with World Bank requirements relating to Sanctionable Practices regarding individuals or firms included in the World Bank Group list of firms debarred from World Bank Group-financed contracts, (vii) provide certain notices and other information to IBRD, and (viii) obtain IBRD's consent prior to agreeing to any change to any material Project related transaction document to which it is a party which would materially affect the rights or obligations of IBRD under the Guarantee Agreement.

In addition, the Project Agreement may contain covenants by the Project Company to use its reasonable efforts prior to the end of each Local Loan term to induce each Guaranteed Lender to elect to extend its participation in the Local Loan and not exercise its rights under the Local Loan Purchase Agreement to have Cameroon buy out its participation in such loan. In the event the Guaranteed Lenders, whether some lenders or all lenders, exercise their rights to have such participations purchased by Cameroon, the Project Agreement may contain undertakings for the Project Company to use its reasonable efforts to find eligible commercial lenders to purchase such participations.

Conditions of Effectiveness

Source of Fund		
IBRD		

Description of Condition

Usual and customary conditions of effectiveness for guarantee operations in support of project financing of this nature, including but not limited to:

(a) firm commitment for the financing necessary to complete construction of the Project, including satisfactory contribution of equity;

(b) execution, delivery and effectiveness of all Project and Financing Agreements, in form and substance satisfactory to IBRD, including, among others, the Indemnity Agreement, the Project Agreement, the Cooperation Agreement(s), [the Guarantee Support Agreement] and the Commitment Agreement;

(c) delivery of all relevant host country environmental approvals required for the operation of the Project, and compliance with all applicable World Bank requirements relating to Sanctionable Practices[3] and environmental and social safeguards, including the World Bank Performance Standards;
(d) effectiveness of all required insurance (to include IBRD as an additional insured on third-party liability insurance);
(e) satisfaction of all conditions precedent for first disbursement under the Financing Documents, save for any condition that requires the effectiveness of the Guarantee Agreement to have occurred;
(f) payment in full of outstanding fees and expenses of IBRD's external counsel;
(g) provision of satisfactory legal opinions;
(h) receipt of English-language versions acceptable to IBRD of the Concession Agreement, [Guarantee Support Agreement] and Commitment Agreement; and
(i) Payment in full of the Initiation Fee and Processing Fee (if invoiced), Front-end Fee and the first installment of the Standby Fee and/or Guarantee Fee (if invoiced).

Safeguard Policies Triggered by the Project	**Yes**	**No**
OP/BP 4.03: Performance Standards For Private Sector Activities	X	
PS 1: Assessment and Management of Environmental and Social Risks and Impacts	X	
PS 2: Labor and Working Conditions	X	
PS 3: Resource Efficiency and Pollution Prevention	X	
PS 4: Community Health, Safety, and Security	X	
PS 5: Land Acquisition and Involuntary Resettlement	X	
PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	X	
PS 7: Indigenous Peoples		X
PS 8: Cultural Heritage	X	
OP/BP 4.37 Safety of Dams	X	

Team Composition

World Bank Staff

Name	**Role**	**Title**	**Specialization**	**Unit**
Stephan Garnier	Team Leader (ADM Responsible)	Lead Energy Specialist	Energy Specialist	GEEDR
Patrice Caporossi	Team Leader	Senior Infrastructure Finance Specialist	Guarantee & Project Finance	GTPFS
Nicolas Sans	Team Leader	Senior Hydropower Specialist	Hydropower	GEEDR

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

Luciano Canale	Team Member	Senior Hydropower Specialist	Hydropower	GEEDR
Zhengjia Meng	Team Member	Infrastructure Finance Specialist	Guarantee & Project Finance	GTPFS
Ali Ouattara	Team Member	Senior Financial Specialist	Financial and Economic Analysis	GEEDR
Mark Sigrist	Team Member	Senior Counsel	Legal (Guarantees)	LEGSG
Neil Ashar	Team Member	Senior Counsel	Legal (Guarantees)	LEGSG
Christine Makori	Team Member	Senior Counsel	Legal	LEGAM
Sofia Ferreira	Team Member	Senior Counsel	Legal	LEGAM
Kristyna Bishop	Team Member	Senior Social Development Specialist	Social Safeguards	GSU01
Cyrille Ngouana	Team Member	Senior Environmental Specialist	Environmental Safeguards	GEN07
Alain Owono	Team Member	Senior Social Development Specialist	Social Safeguards	GSU01
IFC Staff				
Name	**Title**		**Specialization**	**Unit**
Julien Thureau	Chief Investment Officer		Investment	CN3S6
IFC Equity Team				
Max Blom	Principal Investment Officer		Investment	CN3S6
Nicolas Busquet	Senior Counsel		Legal	CLEAF
Ali Youssef	Investment Analyst		Investment	CN3S6
IFC Debt Team				
Dan Vardi	Principal Investment Officer		Investment	CN3S6
Celian Gondange	Investment Officer		Investment	CN3S6
Ali Youssef	Investment Analyst		Investment	CN3S6
Francois Felli	Senior Counsel		Legal	CLENG
Yan Jin	Principal Syndications Officer		Syndications	CSLAC
Paul Adams	Syndications Officer		Syndications	CSLAC
Kokou Akolly	Associate Financial Officer		Treasury	CTCEM
Ndeye Fatou Diop	Associate Financial Officer		Treasury	CTCEM

Other IFC team members			
Name	**Title**	**Specialization**	**Unit**
Mehita Sylla	Country Manager	Region	CAFW4
Josiane Kwenda	Senior Investment Officer	Investment	CN3S6
Julio Lemaitre	Chief Engineer	Power	CNGPW
Roy Kroese	Principal Industry Specialist	Power	CN3S6
Larissa Luy	Principal Environmental Specialist	E&S	CESIG
Irene Angeletti	Environmental and Social Specialist	E&S	CESI2
Emelly Mutambatsere	Senior Sector Economist	Economics	CSEIN
Eusoph Deriza Kanyenda	Senior Insurance Officer	Insurance	CIRIN
Yannick Stephant	Senior Risk Officer	Integrity	CBRIA
Roman Zyla	Senior Corporate Governance Officer	Governance	CESCG
Setprumea So	Program Assistant	Operations	CN3S6
MIGA Staff			
Name	**Title**	**Specialization**	**Unit**
Noureddin Ennaboulssi	Senior Underwriter	Operations	MIGOP
Annabelle Libeau	Underwriter	Operations	MIGOP
Christina Elisabeth Deischl	Senior Underwriter	Finance & Risk	MIGFR
Paul Barbour	Senior Risk Management Officer	Economics & Sustainability	MIGEC
Chinwe Binitie	Senior Counsel	Legal Affairs & Claims	MIGLC
Janice Moskowitz	Legal Analyst	Legal Affairs & Claims	MIGLC
Atia Byll-Cataria	Environmental and Social Development Specialist	Economics & Sustainability	MIGES
Amarilis Beltran Netwall	Climate Change Specialist	Economics & Sustainability	MIGES
Milton Shapiro	Senior Integrity Compliance Officer	Economics & Sustainability	MIGES
Samia Abdelmoumene	Program Assistant	Operations	MIGOP

I. STRATEGIC CONTEXT

A. Country Context

1. **Cameroon has vast natural resources, including oil, gas, minerals, agricultural land, and forests with remarkable biodiversity, which provide a strong basis for development.** It is a medium-sized (475,650 km^2) country in Central Africa with a population of about 24 million in 2016, growing at around 2.5 percent per annum. Strategically located at the heart of the Gulf of Guinea, Cameroon is at once the gateway to the economy of a part of Central Africa and a trade route between the economies of West and Central Africa. Its gross national income per capita stood at US$1,357 in 2016, making it a lower-middle income country.

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 188 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. Moreover, outbreaks of violence in Cameroon's North and Far North Regions and a secessionist movement in the country's English-speaking areas are inhibiting economic activity, and increased security spending is straining the public finances.

3. **Economic growth has been inconsistent and has slowed down recently.** While growth averaged almost 6 percent in 2014-2015, the economy slowed down in 2016 and 2017. Gross domestic product (GDP) growth was estimated at 3.2 percent in 2017 due to a continued decline in oil production, lower international commodity prices and the contraction in rubber and coffee production. Improved energy supply, continued implementation of the three-year emergency plan (PLANUT), and increased public works related to the preparation of the 2019 African football cup are factors supporting the GDP growth.

4. **Cameroon's sovereign debt situation has deteriorated recently due to the funding of major infrastructure projects concomitant with lower oil revenues.** High levels of public investment have substantially increased the share of non-concessional debt, and debt-service payments are intensifying fiscal pressures. Public debt levels rose sharply from 21.5 percent in 2014 to 33.7 percent at end-2017, and a recent World Bank-International Monetary Fund (IMF) assessment concluded that Cameroon is at high risk of debt distress.

5. **The current challenging economic outlook requires an upfront fiscal consolidation and progress on structural reforms to support competitiveness, reduce inequality in economic and social outcomes, and support the economy to perform at its potential capacity.** The rapid deterioration in fiscal and external balances, and the need to restore macro stability in the region and confidence in the common currency, requires Cameroon to implement adjustment measures alongside its Central Africa Economic and Monetary Community (CEMAC) partners. President Biya of Cameroon convened the 2016 Head of States summit at which CEMAC members agreed to implement strong measures to accelerate fiscal consolidation and support diversification and to seek financing from the IMF. Cameroon signed a three-year Extended Credit Facility (ECF) program with the IMF covering 2017-2020, and a First Fiscal Consolidation and Inclusive Growth Development Policy Financing (DPF) operation (P163657) with the World Bank, as part of a three-year DPF series. This is part of a broader multilateral and bilateral effort to support Cameroon, providing US$2 billion in financial support for Cameroon over a three-year period. The DPF is focusing on a number of key sectors requiring reforms, including the energy sector.

6. **Economic policies will require a more stringent focus on resolving several sectoral bottlenecks, including in energy, to allow broader and more efficient exploitation of the country's resource potential.** 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 the benefits of growth are shared. This will require significant 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. The 2016 Enterprise Survey stated that access to reliable and affordable electricity was a major constraint to doing business. To date, only 50 percent of Cameroonians have access to electricity.

7. **The Government of Cameroon (GoC) 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."** The GoC 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: (i) infrastructure development in energy, telecoms, and transport; (ii) development of the rural and mining sectors; (iii) improvement in human resources through health, education, and training; (iv) greater regional integration and export diversification; and (v) financial sector deepening and strengthening.

B. Sectoral and Institutional Context

Harnessing Hydropower Potentials

8. **In line with the GESP, the 2014 Least Cost Power Sector Expansion Development Plan (*Plan de Développement du Secteur de l'Electricité, PDSE*), forecasts peak demand to quadruple by 2035,** with a range from 3,900 MW to 5,500 MW depending on the growth scenario[4] (median or high). Electricity consumption is expected to range from 24,400 GWh (median) to 33,400 GWh (high).

9. **In order to deliver on the GESP goals, Cameroon will need to significantly increase access to electricity for its population.** The current access rate to electricity is 50 percent – though this rate is much lower in rural areas. Cameroon's recently approved Rural Electrification Master Plan intends to increase to 88 percent the population living in electrified localities by 2022 (from 74 percent in 2016). This would be achieved through a mix of grid extension (80 percent) and off-grid solutions (20 percent). Both large grid-connected hydro and mini-hydro for off-grid schemes would be required to address these needs.

10. **The costs of electricity service in Cameroon are relatively high**, as a result of a reliance on expensive liquid-fueled thermal generation and poor operational performance - especially distribution losses which are around 30 percent. Electricity tariffs charged by the vertically-integrated power utility (Energy of Cameroon – ENEO) are rather high - an average of about US$0.14/kWh, while the regional average is about US$0.13/kWh and the regional average for countries with hydro-based power systems is about US$0.10/kWh. Despite the high tariff, the sector can not achieve full cost recovery without GoC subsidies to make up for the revenue shortfall. Over the period 2012-2018, the GoC has paid ENEO a tariff compensation, defined as the gap between ENEO's cost of service and the tariff charged to end-users, of a yearly average amount of EUR 17 million.

11. **The deployment of hydropower resources holds the key to lowering the cost of electricity and ensuring that Cameroon's economy is competitive.** Cameroon is endowed with environmentally friendly

[4] The high scenario is based on GDP growth rates of 6.5 percent annually and aggressive industrial expansion. The median scenario is based on GDP growth rates of 6.0 percent annually and a more conservative path for industrial expansion.

renewable energy and reliable hydropower resources, which provide the least cost solutions to increase base load capacity and thus lower the cost of power generation**.** Cameroon has the third largest hydropower development potential in Sub-Saharan Africa, estimated at over 12,000 MW. The PDSE forecasts that by 2023, hydropower will represent about 75 percent of the energy mix[5] (along with about 15 percent gas-to-power and the remaining 10 percent from other sources, including other renewable energies)[6].

12. **The GoC intends to focus first on hydropower development on the Sanaga River, where half of the potential is concentrated, rather than developing multiple river basins.** This would enable an 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. It is estimated that 4,200 MW of capacity could be added on the Sanaga River through large hydropower sites, and 1,800 MW through smaller (mainly upstream) sites.

13. **The PDSE identifies the proposed Nachtigal Amont Project (420 MW) as the next least-cost hydropower site to be developed on the Sanaga River.** Until 2015, the Sanaga River was regulated by three dams (Mapé, Bamendjin, and Mbakaou) that maintained the firm (all-season) capacity of the hydropower sites at considerably lower level than the installed capacity. The Lom Pangar Hydropower Plant (LPHP) Project (P114077), which was financed by the World Bank, fully impounded for the first time in December 2016 and commissioned in June 2017, increased the guaranteed, all-season hydropower capacity on the Sanaga River by approximately 40 percent in potential future hydropower sites as shown in Figure 1. In 2017, this immediately translated into an additional 120 MW capacity during dry seasons at existing downstream hydropower plants. In the medium-term, the Lom Pangar dam will allow for further development of downstream large-scale hydropower plants by ensuring all-season water flows and increasing firm energy production of the projects located downstream. These features make potential hydropower sites downstream of Lom Pangar including Nachtigal, among the most attractive power assets in Cameroon.

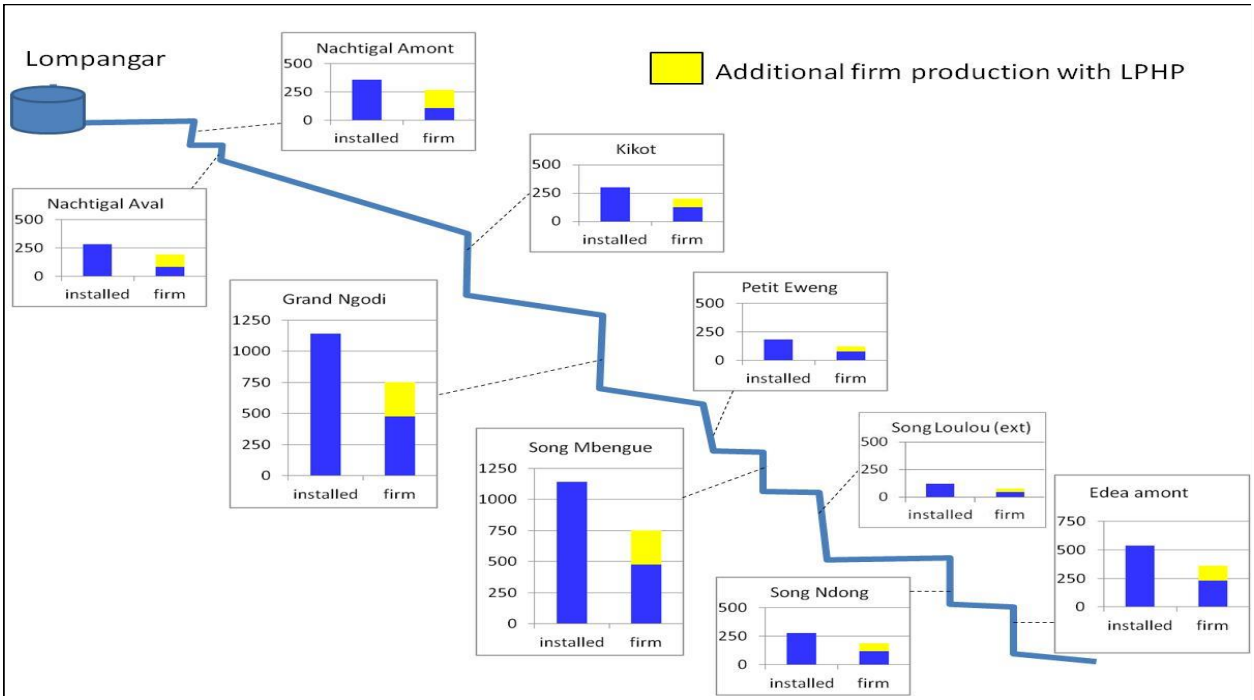
14. **The Nachtigal Hydropower Project (the Project) – which has among the lowest tariffs (**levelized tariff estimated at 40 FCFA/kWh or 6.1 EURct/kWh**) of any generation project in Sub-Saharan Africa, will be a key part of the effort to reduce the costs of electricity in Cameroon and to promote sector sustainability.** The commissioning of new hydropower projects such as Nachtigal and Memve'elé[7] - which together will represent roughly 40 percent of Cameroon's generation capacity – will, in addition to adding significant clean energy generating capacity, allow a continued downward trajectory in production costs. This strategy has already seen some success. Following the commissioning of Lom Pangar, the estimated average annual tariff compensation is being reduced from US$25 million for the sole year 2017 to US$16 million for the whole period 2018-2020. Once operational, Nachtigal will further save the country US$100 million on an annual basis in generation costs, compared to the most likely alternative of an open cycle gas plant, over the first seven years of operations (2023-2030).

[5] In the longer term, Cameroonian hydropower resources are eventually intended for export to neighboring countries. The African Development Bank and Islamic Development Bank are planning to finance the Cameroon-Chad interconnector.

[6] In 2017, renewable energies represent 59 percent of the total installed electricity generation capacity.

[7] Memve'elé is a 211 MW hydropower plant, publicly financed, commissioned in 2018.

Figure 1: Potential Future Hydropower Sites along the Middle Sanaga (MW)[8]



Sector Reforms

15. **The energy sector development program is strongly rooted in the series of reforms seeking to promote the financial viability of the sector to attract private sector participation and to increase access.** Under the 1998 energy sector law, generation was partially unbundled by opening generation of electricity to competition, creating the concept of eligible customers and allowing third-party access (TPA) to the transmission grid while setting up independent dispatching to ensure fair and equitable access to the grid. In 2009, the Government awarded the Dibamba Power Development Company (DPDC) and Kribi Power Development Company (KPDC), special purpose vehicles, 20-year rights to build and operate the 88 MW Dibamba heavy fuel oil (HFO) fired and the 216 MW Kribi natural gas-fired power plants and associated transmission lines. They were commissioned in 2009 and 2013, respectively.

16. **The 1998 law also allowed the creation of key institutions and the privatization of the vertically-integrated public power utility, Société Nationale d'Electricité (SONEL).** In 1998, the Agence de Régulation du Secteur de l'Electricité (ARSEL) was established as the independent sector regulator. In 2001, SONEL was privatized under a 20-year concession: the American Electricity Supply Corporation (AES) was awarded a 56 percent stake in the utility, that was renamed AES-SONEL. In 2014, AES Corporation sold its equity stake in AES-SONEL to the private equity fund ACTIS Capital LLP (Actis), which became the strategic partner for the remaining period of the concession (2014-2021). The concessionaire was renamed ENEO CAMEROON S.A. (ENEO) and Actis agreed to undertake a series of actions to improve services, financial viability, and governance.

17. **A new phase of reform in the power sector started in 2011, with the promulgation of the new Electricity Law which paved the way for unbundling generation, transmission, and distribution.** The power sector suffered from a lack of investment in transmission and large technical and commercial losses.

[8] Firm capacity is the capacity equivalent to the amount of energy available for production which can be guaranteed to be available at a given time. Installed capacity is the intended maximum full load capacity of the hydropower plant.

This became a critical bottleneck to the expansion of power generation capacity and development of the hydropower potential of the Sanaga River Basin. In response, the 2011 Electricity Law introduced three key changes. First, it provided for 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. The law thus operationalized the TPA model that was enacted in the 1998 law. Second, it introduced changes to water storage responsibilities, including the transfer of the water storage concession of the Sanaga Basin reservoirs to the Electricity Development Corporation (EDC)[9]. The management of water storage facilities is now carried out under concession agreements, which define the operation and management conditions. The law also defines the two main management principles: optimizing water resources and granting users non-discriminatory access to the water resource. Third, the law provided for new penalty charges in the event ENEO fails to meet agreed performance targets.

Ongoing Challenges

18. **Continued sector financial sustainability is critical to ensuring the bankability of future large generation projects and attracting the private sector**. There are two main challenges to achieving financial sustainability in the sector: (a) improving the operational performance of ENEO on distribution, as technical and commercial losses are high at 30 percent, with cash collection performance about 5 percent below target for Low Voltage (LV) customers; and (b) reducing delays in the payment of electricity bills from the Government, parastatal institutions and municipalities[10], and in the payment of the tariff compensation by the Government.

19. **ENEO's financial health has been under stress because of poor operational performance and delayed payments by Government and parastatal institutions.** As a result, ENEO has resorted to costly bridge loans, delayed tax payments to the GoC, and accumulated arrears to its suppliers and vendors. As of December 31, 2017, ENEO had overdue receivables from the GoC and parastatal institutions of EUR 96 million[11]. For its part, ENEO had accumulated EUR 96 million in arrears to its suppliers as well as to the tax authority. In turn, the power suppliers accumulated arrears to their fuel suppliers and financiers, creating liquidity problems along the value chain. This has led to a vicious circle where ENEO is not generating enough cash to invest and improve its distribution performance, and is thus penalized under the tariff formula, which leads to a further deterioration of its financial health. Further details on the sector financial analysis are presented in Annex 5.

20. **The GoC and ENEO, have agreed to a mechanism to clear ENEO fiscal debt.** Additionally, as part of prior actions of the recently approved First Fiscal Consolidation and Inclusive Growth DPF operation (P163657), the GoC agreed to a binding schedule of clearance of arrears within a three-year timeframe, which included payment by GoC of government arrears to ENEO, as well as the repayment of overdue taxes by ENEO to the tax authority.

21. **Simultaneously, a series of actions have been taken to avoid the buildup of future arrears.** As part of the ongoing DPF program, the GoC has established a process to ensure the timely inclusion of each year's tariff compensation amount in the finance law, and to schedule regular disbursement. These measures are under implementation starting in 2018. Going forward, all GoC electricity bills should be paid on time through monthly payments and a factoring mechanism. In addition, as part of the DPF program, the GoC will develop and fully implement: (i) an economically viable and robust process for the payment of public

[9] The EDC was created in 2006. It holds public electricity sector assets and its mandate includes the development, management, and operation of hydropower assets.

[10] Together, GoC, municipalities and ALUCAM (the Aluminum Company, by far the single largest customer) represent 25 percent of ENEO's revenues.

[11] As of December 31, 2017, arrears amounted: EUR 58 million from the GoC and EUR 38 million from SOEs.

electricity bills (e.g. state-owned enterprises and parastatal institutions); and (ii) a public lighting levy mechanism, payable by every commercial and household customer through the electricity tariff, which will reduce future budget transfers.

22. **While the sector is being unbundled, ongoing implementation challenges remain.** One key challenge is the future of the private concession for the power utility ENEO, whose twenty-year concession expires in 2021. The ongoing separation of the transmission function (including transfer of assets and personnel) from the ENEO concession should allow the newly-created public transmission utility SONATREL to focus on transmission, as it will be set-up and operationalized with assistance under IBRD's Electricity Transmission Reform Project (P152755). This will leave ENEO to focus on the distribution network expansion and operational performance improvements. However, without clear visibility on the extension of the concession beyond 2021, ENEO has been unable to raise the financing required to improve the distribution system which is under stress given the growth in demand.

23. **On June 13, 2018, the GoC issued a letter to ENEO notifying it of its intention to extend the generation and distribution concession for ten years until 2031 and confirming its off-taker role under the Nachtigal Project[12]**. Negotiations with the private concessionaire are expected to begin shortly on the terms of this extension with the expectation that an amendment between the GoC and ENEO will be signed in the coming months. The GoC is keen to ensure that incentives are in place to improve the operational performance of the utility, namely with regards to reducing distribution losses and enforcing minimum quality of service criteria.

24. **The successful renewal of ENEO's concession agreement should unlock the financing for ENEO to carry out its business plan.** Significant investment is expected to improve the distribution segment including programs to expand the customer base, reduce losses and improve billing collection. These measures will in turn enhance ENEO's ability to generate cash and maintain a sustainable financial position.

WBG Sector Engagement

25. **The proposed Nachtigal Hydropower Project builds on a sustained, 20-year engagement in the energy sector by the WBG in Cameroon.** The WBG has been a long-term, strategic partner of Cameroon's energy sector, with a strong portfolio of projects and consistent support to the Government's reform agenda. It has built a close working relationship with all sector stakeholders and has become a trusted partner regarding policy, institutional development, and sector investment. Over the past few years, the WBG has financed the following activities: (i) the Energy Sector Development Project (P104456) which provided assistance to update the sector framework and supported rural electrification; (ii) the Lom Pangar Hydropower Project (P114077), which supports a regulating dam to reduce seasonal water variability in the Sanaga basin; (iii) the Electricity Transmission and Reform Project (P152755), which helps improve the capacity, efficiency, and reliability of the national transmission network by financing investments in transmission, and supporting the operationalization of SONATREL, expected by end of 2018; and (iv) the Hydropower Development on the Sanaga River Basin Technical Assistance Project (P157733), which aims at sharing technical and regulatory knowledge (e.g., on hydrology risks, dam safety, cascade investment optimization, and competitively-bid concessions). The latter project will also provide assistance to the GoC in its supervision of activities related to the Nachtigal Project, and support the establishment of an Integrated Reservoir Management Plan for optimal hydropower generation on the Sanaga River which will help maximize output from future hydropower developments. In addition, the above-mentioned DPF program supports the Government's efforts to ensure the financial sustainability of all actors along the value chain of the sector and to maintain and therefore enhance private sector confidence.

[12] Both ENEO and Actis confirmed in separate response letters to the Government, dated June 14, 2018, their willingness and intention to seek an agreement to the new amendment/extension of the Concession in the coming months.

26. **The WBG has also been active in supporting private sector-led generation and distribution activities in Cameroon.** Specifically, IBRD, MIGA and IFC have provided guarantees, political risk insurance and syndicated loans respectively for the Kribi Gas Power Project (P110077), a 216 MW gas-fired plant in Kribi under a Build-Own-Operate-Transfer contract. IFC supported the privatization of the distribution company AES-SONEL by providing advisory services and arranging a EUR 250 million syndicated loan. MIGA also provided guarantees to Actis against key risks covering Project agreements relating to their investment in AES-SONEL. In addition, IFC and MIGA provided financing and guarantees to the Dibamba Project, an 88 MW HFO plant, which was commissioned in 2009.

27. **The WBG has been instrumental in securing private finance for the Nachtigal Hydropower Project, which is one of the very few public-private partnerships (PPP) in hydropower in Sub-Saharan Africa, and a good demonstration of the principles of maximizing finance for development (MFD).** IBRD, IFC and MIGA worked in a coordinated manner to bring sustainable private sector solutions to the infrastructure sector. IBRD focuses on the regulatory framework, government capacity building as well as the provision of critical risk mitigation instruments, which is important for Project bankability and effectively enables a local debt tenor of an unprecedented 21 years. IFC, as the co-developer, senior lender and swap provider for the Project, provides the project company with significant equity, debt, hedge instruments and mobilizes other lenders. MIGA provides its political risk insurance to equity and potential swap providers to de-risk the Project. All combined, the WBG brings a unique set of experience, skills and instruments to work with private sector including the project developer – Electricity of France (*Electricité de France S.A.* – EDF), local and international commercial banks, as well as other Development Finance Institutions (DFIs) to deliver this Project in a sustainable way.

C. Higher Level Objectives to which the Project Contributes

28. **The Project will support 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 2010-2019, 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 increase low cost and environmentally friendly power generation, the Project will help establish a predictable environment for future growth and competitiveness of Cameroon's economy. This in turn will be essential for creating jobs and lifting marginalized and vulnerable populations out of poverty, in line with the World Bank's twin goals of reducing poverty and boosting shared prosperity.

29. **The World Bank's 2015 Systematic Country Diagnostic (SCD)[13] for Cameroon identified improving reliability, availability, and access to clean energy as the highest ranked – and most feasible – intervention for addressing poverty reduction**. 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 annual revenue losses as high as 4.3 percent. 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.

30. **The Project will actively contribute to the WBG FY17-21 Cameroon Country Partnership Framework (CPF)[14]** approved on March 28, 2017, which translates the core constraints identified by the SCD into three areas of focus: (i) increasing rural productivity, particularly in the north; (ii) improving the

[13] Report No. 103098-CM.

[14] Report No. 107896-CM.

business environment for the formal and informal private sector; and (iii) supporting improvements of governance in the private and public sector. **The Project is also strongly aligned with MIGA's FY18-20 Strategy**, which prioritizes supporting projects in IDA-eligible member countries and supporting Climate Change finance.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

31. The project development objective (PDO) is to increase the availability of renewable energy power and leverage private finance for the Nachtigal Hydropower Project.

B. Project Beneficiaries

32. **The Project will increase Cameroon's total installed electricity generation capacity by more than 30 percent, which will benefit current and future electricity consumers** including the poor, who are disproportionately excluded from economic activities due to lack of grid connections and inadequate power supply. The Project generates cheaper and cleaner power compared to fossil fuel alternatives, providing significant climate co-benefits, and creating conditions for further electrifications. Ultimately, the country's population will be a beneficiary as improved electricity service supports job creation, poverty reduction, and improved prospects for shared prosperity.

33. **The Project will benefit from WBG guarantees, equity investments and loans**. The guarantees mobilize cost-competitive loans from local banks, and backstop part of the payment security package for the Project. The 21-year long-term debt from local banks will set a precedent of using long-term local debt to finance critical infrastructure assets for replication in future infrastructure transactions.

C. PDO Level Results Indicators

34. Progress towards achieving the PDO will be measured by the following indicators:

- Generation capacity of energy constructed (MW) (Corporate Results Indicator);
- Additional operating net capacity available (MW);
- Private cumulative Capital Mobilized for the Nachtigal Hydropower Project (EUR million), of which from cumulative local sources (EUR million equivalent); and
- Avoided global greenhouse (GHG) emissions (teq CO_2).

III. PROJECT DESCRIPTION

A. Summary

Technical Description

35. **The Project is a greenfield, 420 MW, run-of-river hydropower plant on the Sanaga River located at Nachtigal falls**. The Project is located approximately 65 km north-east of Yaoundé. Interest in the Nachtigal Amont site emerged as early as 1965 during the first inventory of the Sanaga River hydropower potential. Since then, several studies were conducted by various developers to understand the site potential. In 2013, a joint development agreement was signed between IFC, EDF, Rio Tinto Alcan Inc., and GoC to develop this strategic project. During the past four years, the developers and GoC have significantly advanced the Project with an objective to reach financial close in 2018. The total estimated investment excluding contingencies is about EUR 1.07[15] billion.

36. **The Project will be connected to the country's Southern Interconnected Grid (SIG)**, which transmits about 94 percent of the national electricity consumed and comprises major cities like Yaoundé and Douala. Thanks to its unique site and hydrology, the Project is expected to generate on average 2,900 GWh per annum. The Nachtigal Project layout includes a 1,455-meter-long, 13.6-meter-high main dam in roller compacted concrete, creating a structure of 27.8 hm^3. The site also includes a 421-ha upstream reservoir, a concrete lined headrace channel about 3.3 km long and 14-meter-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 (see Figures 2, 3 and 4 below). The powerhouse is equipped with seven Francis generating units of 60 MW each. The Nachtigal Project also 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.

Project Company and Sponsor Group

37. **This Project is developed by Nachtigal Hydro Power Company ("NHPC" or "Project Company")**. The shareholders are the Republic of Cameroon (30 percent), EDF International SAS - EDFI (40 percent) and the IFC (30 percent), pursuant to the Shareholders Agreement signed on July 7, 2016. Changes in the current shareholding structure might occur in the future to include Investor A[16] and Africa50 Project Finance. The GoC has informed all parties of its intention to sell down half of its stake in NHPC (15 percent) at or around financial close to Africa50 Project Finance. Africa50 Project Finance is an investment platform owned by 25 African government, two central banks and the African Development Bank.

38. **EDFI is a holding company comprising EDF's investments outside of France.** EDF is a French utility involved in all segments of the energy value chain: generation, transmission, distribution, energy supply, and trading with a portfolio of more than 130 GW of generation capacity spread throughout Europe, South America, North America, and Asia. EDF is Europe's largest renewable energy producer and has an extensive footprint in the hydropower sector. EDF had total revenues of EUR 69.6 billion in 2017 and is currently rated A-, A3, and A- by S&P, Moody's, and Fitch, respectively.

[15] The total Project cost is EUR 1.18 billion including contingency worth 20 percent of the Engineering, Procurement, and Construction (EPC) contract value.

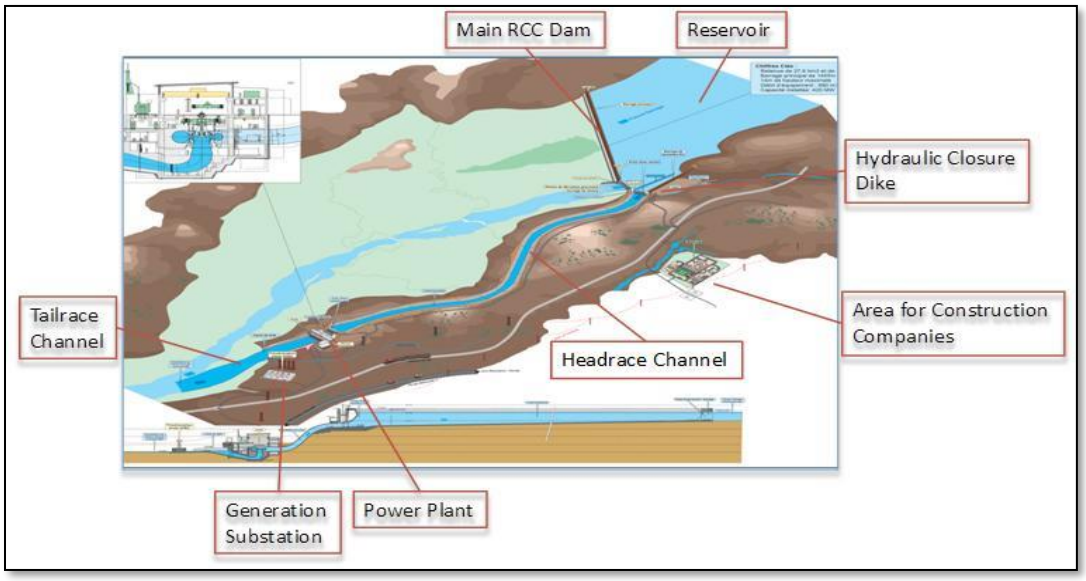
[16] Due to confidentiality, the name of the potential equity investor cannot yet be disclosed and is therefore referred to in this document as 'Investor A'.

Contractual Arrangements

39. **NHPC was granted the 35-year exclusive right to design, build, operate and transfer the Project under a concession agreement signed with GoC in 2017.** NHPC and ENEO, the Project's sole off taker, are now expected to sign a power purchase agreement (PPA) for 35 years. The PPA is availability-based with a levelized tariff estimated at 40 FCFA/kWh or 6.1 EURct/kWh, a very competitive level compared to most generation projects in Sub-Saharan Africa.

40. **A suite of agreements[17] will allocate roles and responsibilities among the Project stakeholders.** Amongst other agreements, NHPC, GoC, ENEO, and SONATREL will sign a Commitment Agreement laying out their mutual commitments, including GoC's commitment regarding the construction and reinforcement of transmission infrastructure, its financial support to the Project and its insulation from the current sector reforms.

Figure 2: Overview of the Nachtigal Hydropower Project



Source: NHPC.

Figure 3: Three Dimensional Views of Simulated Nachtigal Facilities

Source: NHPC.

[17] Please see more details in the Institutional and Implementation Arrangements Section below and in Annex 3.

Figure 4: Layout of the 420 MW Nachtigal Hydropower Project

Source: NHPC.

Expected Risks and Benefits

41. **The hydro conditions of the Sanaga River Basin, combined with Cameroon's track record of private sector involvement make the country attractive to private investors and commercial financing.** Mobilizing private sector funding for large hydropower investments helps to alleviate the public investment burden, thus reducing the pressure on public debt-to-GDP ratio. Furthermore, the timely addition of hydropower capacity is needed to decommission expensive thermal capacity installed under the emergency program implemented in 2013, for which every kWh has proven costly to the public budget.

42. **The successful development of this flagship Project will be the first PPP in hydropower in Cameroon.** On top of reducing the need for public investment at a time of budgetary constraints in Cameroon, the Project will set a standard for other similar investments across the Sanaga River Basin. Finally, the Project's effort to reach financial close will test the rigor of the various sector reforms put in place in Cameroon.

43. **While the Project is expected to cause environmental and social impacts that may be significant and irreversible both during construction and operation (see below), the Project design will ensure that this impact will be monitored and mitigated as much as possible**. The Project Company has set up a dedicated team to implement the recommendations of and monitor the environment and social management plan (ESMP) throughout the lifecycle of the Project. During construction, the Owner's Engineer will be mandated to have a continuous presence on site, to closely monitor the implementation of the ESMP and environment and social (E&S) contractual obligations by Contractors, and address any shortcomings. The Owner's Engineer will have the authority to stop the work on site, instruct the Contractors to implement mitigation measures through work orders and impose financial penalties on the Contractors in case of non-compliance. Its activities will be regularly reviewed by an independent E&S advisor, as well as directly by the GoC, through the IDA-financed Sanaga River Hydropower Technical Assistance Project (P157733), which will fund a Panel of Experts (PoE). As per Cameroonian law, the Project Company will be required to create a Social Dialogue Committee, which includes representation of the Company, EPC contractors, relevant authorities, and workers, to address issues raised by workers on the construction site.

44. **Overall, the Project is expected to generate strong economic and environmental benefits.** It will contribute to the clean energy transition in Cameroon, as it displaces thermal power generation and will enable Cameroon to increase the share or renewable energy in installed capacity from 59 percent in 2017 to more than 75 percent in 2022. As the Project is among the lowest cost of any power generation project of its size (per energy output) in Sub-Saharan Africa, all technologies considered, it will also contribute to lower the overall cost of service for electricity. Finally, the Project will enable Cameroon to meet increasing energy demand, and its ambitious access targets.

B. Project Cost and Financing

45. **The total Project cost is expected to be approximately EUR 1,184 million (approximately US$ 1,383 million) including EUR 114 million of funded contingencies.** The unused contingencies will be shared on a 50:50 basis between the developer and the Government. The savings will be reflected in a lower tariff. The Project is to be financed on a limited recourse basis with a 76:24 debt-to-equity ratio. The funding sources are expected to include EUR 47 million of value added tax (VAT) receipts. The whole debt package falls under IFC's Global Coordinator mandate. It will consist of an 18-year euro-denominated tranche (81 percent of the debt) and a 21-year local currency tranche (19 percent of the debt). Table 1 below reflects indicative project costs, financing structure, and IBRD Guarantees for the Nachtigal Project.

Table 1: Indicative Project Costs, Financing Structure, and IBRD Guarantees (US$ Million)

Power Plant Size	420 MW
Estimated Project Cost	1,383
- of which Funded Contingencies	133
Estimated Equity @ 24%	319
Estimated VAT receipts	54
Estimated Debt @ 76%	1,010
- of which Euro-denominated Long Term Debt	810
- of which Local Currency Long Term Debt	200
Estimated Payment Guarantee	100
Estimated Local Loan Guarantee	200
Estimated Total Guarantee Provided	300

Source: Nachtigal Hydropower Project Financial Model Base Case (updated April 19, 2018)

C. World Bank Group Instruments

46. **The Project will be supported by several WBG instruments.** This includes two IBRD Guarantees, IFC debt and equity investments, one or more IFC euro interest rate swaps and MIGA Guarantees to cover equity shareholders and potential interest rate swap providers.

47. **IFC has been co-developer of the Project through IFC InfraVentures since 2013.** IFC's presence at the early development phase of the Project has been crucial to: (a) provide comfort to the other developers, in the context of a joint WBG sector intervention, in a challenging investment environment; (b) ensure the Project's bankability by leveraging its structuring capabilities in developing and financing IPPs in Sub-Saharan Africa; (c) mitigate political and regulatory risk by ensuring a sound and sustainable contractual framework for the country's first hydro independent power producer (IPP); and (d) ensure the Project is developed following international environmental and social standards. Furthermore, IFC will be

providing equity to the Project and long-term senior debt on a limited recourse basis. IFC's role as Global Coordinator also allowed it to mobilize a large syndicate of DFIs and local commercial banks, leveraging IFC's long-standing experience in Cameroon.

48. **IBRD will provide two Project-based guarantees** - a payment guarantee and a loan guarantee - per the World Bank Policy and Directive on Investment Project Financing. The IBRD Guarantees will backstop certain GoC payment obligations under certain Project-related agreements and provide comfort to the commercial banks involved. Specifically, the IBRD payment guarantee will support the security package for ENEO's payments under the PPA. The IBRD loan guarantee will backstop certain payment obligations of GoC towards lenders of the local financing tranche. The IBRD team has ensured the complementarity of both guarantees and has followed the principle of minimum coverage necessary to make the Project bankable. Each of the two guarantees is structured considering the other guarantee's risk coverage, triggering events, and beneficiaries.

49. **In addition, MIGA will provide guarantees** to EDFI and Investor A for their equity and quasi-equity/shareholder loans, and to Société Générale S.A (SG) for its interest rate swap.

IBRD Payment Guarantee Structure

50. **A payment support package backstopped by an IBRD Guarantee will be in place to support bankability of the PPA.** ENEO may agree to provide NHPC with a Letter of Credit (the ENEO L/C) equivalent to 2.4 months of PPA payments. GoC committed to providing an L/C that shall not exceed EUR 86 million (US$100 million equivalent) (the IBRD-guaranteed L/C) to secure its obligation to guarantee PPA payments after the ENEO L/C has been exhausted. This GoC guarantee obligation is referred to as the State Guarantee. If GoC fails to pay in a timely manner under the State Guarantee, then the Project Company may draw under the IBRD-guaranteed L/C. GoC's obligation to reimburse draws under the IBRD-guaranteed L/C will be backstopped by IBRD.

51. Once the IBRD-covered L/C is drawn, GoC has an obligation to replenish the L/C account under the Commitment Agreement, and to reimburse the L/C bank for the amount drawn under the L/C in accordance with the Re-imbursement and Credit Agreement. If GoC fails to fully repay the L/C bank within 12 months, the IBRD payment guarantee can be called, requiring IBRD to directly repay the L/C bank. In such a case, IBRD can claim re-imbursement from GoC under the terms of the Indemnity Agreement. Any amounts paid out by IBRD under the guarantee, even if subsequently recovered from GoC or otherwise, cannot be reinstated.

52. **SG was competitively recruited by GoC with the support of IBRD to provide this 21 year-tenor L/C[18]**. Market interest was strong and competitive offers were received reflecting appropriately the quality of the Sponsors and the Project, the commitment of GoC, and the level of support provided by IBRD.

IBRD Loan Guarantee Structure

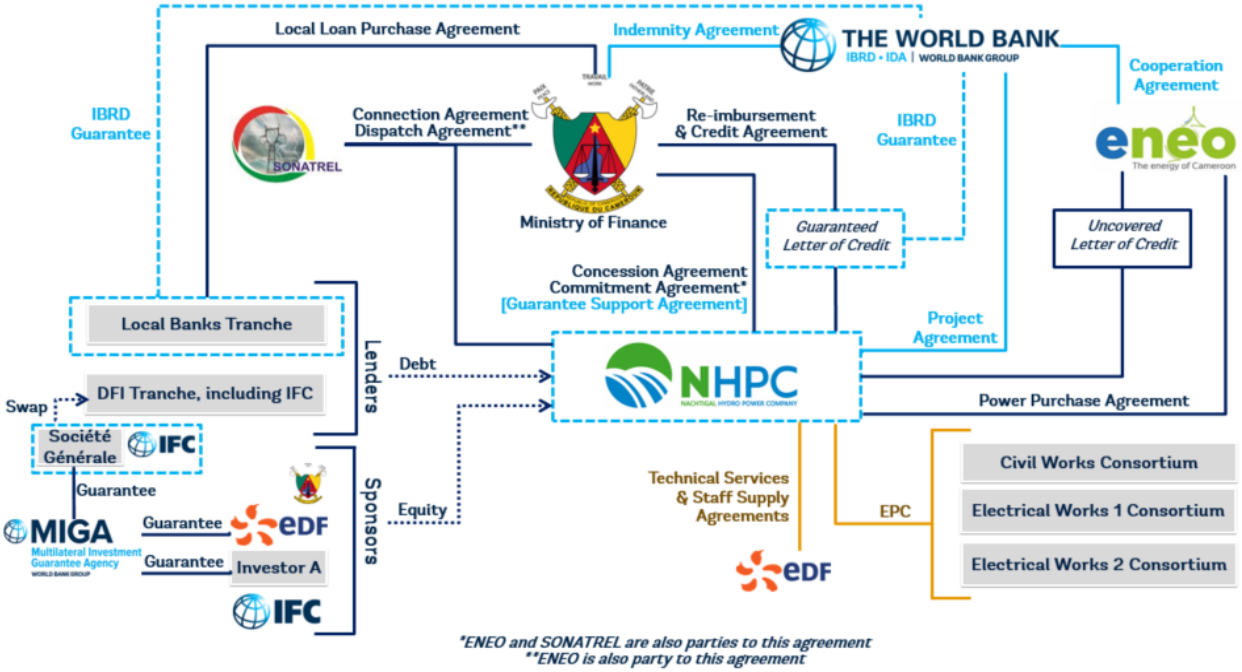
53. **Local banks will provide an unprecedented 21-year local currency tranche of debt mobilized by the IBRD loan guarantee.** The local banks were selected on a competitive basis. Each 21-year loan benefits from a put option exercisable at the local bank's discretion at year 7 and 14 of the loan life, with the loan repayment following a mortgage-style profile over the entire 21-year tenor. While local banks have every incentive to remain as Project lenders with a performing loan on their balance-sheets, this put option

[18] Offers were sought for various maturities on a fully underwritten basis as well as on a syndicated basis. This allowed GoC to optimize its selection in the trade-offs between longer maturity and increased cost, as well as between increased complexity/legal cost versus potential reduced cost of syndication.

mechanism allows them to extend maturities beyond the regulatory restrictions imposed by the Bank of Central African States *(Banque des Etats de l'Afrique Centrale* – BEAC). At dates close to the end of year 7 and 14, if any or all of the local banks decide to exercise their put option, and cannot be replaced by a suitable and eligible lender by the end of years 7 or 14, then GoC is obligated to purchase the loan(s) of the exiting local bank(s). After a local lender exercises its put option, NHPC will have an obligation to use reasonable efforts to find another eligible lender to purchase the exiting lender's loan. In addition to this commitment, GoC is obligated to pay termination compensation if the Commitment Agreement/PPA is terminated following certain termination events, which ensures, among other things, the repayment of the local tranche (principal and interest). Under the IBRD loan guarantee, IBRD will: (i) guarantee GoC's obligation to purchase the loans at year 7 and 14 if the put option is exercised by lenders; and (ii) make scheduled principal and interest payments that the Project Company fails to pay as a result of GoC's failure to pay termination compensation following the exercise of NHPC's termination right due to certain termination events attributable to GoC, thereby enhancing the comfort of the participating local commercial banks.

54. If the IBRD makes a payment under the loan guarantee or the payment guarantee, IBRD would have the right to require GoC to reimburse it immediately on demand or as IBRD may otherwise direct pursuant to the Indemnity Agreement. A diagram of the contractual structure of the proposed IBRD Guarantees is provided in Figure 7.

Figure 7: IBRD and MIGA Guarantees Structure for Nachtigal Hydropower Project



IFC Investments

55. **The proposed IFC investment to the Project Company consists of** (a) an equity investment of up to EUR 60 million through the provision of up to EUR 51 million in quasi-equity instruments and the conversion into common shares of up to EUR 9 million of incurred development costs being funded until Financial Close via InfraVentures[19]; (b) an A Loan of up to EUR 130 million; and (c) Client Risk

[19] On August 4 2017, IFC received Board approval (Board Paper IFC/R2017-0223) to increase its commitment to fund Project development costs from US$8 million to US$15.3 million – InfraVentures Project number 34471.

Management Swaps comprising one or more euro interest rate swap(s) to partially hedge the interest rate risk of the Project's euro-denominated floating-rate senior debt as provided by IFC and other senior lenders. The swap(s) would represent a Loan Equivalent Exposure[20] (LEQ) to the Project Company of up to US$10 million.

IFC Economic Capital

56. **The economic capital exposure** for the proposed IFC investment is up to US$81.4 million. IFC economic capital exposure in Cameroon as of April 30, 2018 was US$17 million.

Proposed MIGA Guarantees

57. **EDFI has requested a MIGA Guarantee covering its** (i) EUR 18 million equity investment in NHPC; (ii) EUR 97 million shareholder loan as a quasi-equity investment to NHPC; and (iii) EUR 60 million in future earnings, for a period of up to 15 years, against the following risk: Breach of Contract.

58. **Investor A has requested a MIGA Guarantee covering its** (i) EUR 4.2 million equity investment in NHPC; (ii) EUR 24.3 million shareholder loan as a quasi-equity investment to NHPC; and (iii) EUR 9.3 million future earnings (lost profits under the termination payment formula of the Commitment Agreement), for a period of up to 15 years, against the following risk: Breach of Contract.

59. **Given the structure of the shareholder loans, the investors may request MIGA to cover them as quasi-equity investments pursuant to Paragraph 1.04(vi) of MIGA's Operational Policies** which permits MIGA to cover shareholder loans as quasi-equity subject to Board approval. Therefore, MIGA is seeking Board approval to cover the shareholder loans as quasi-equity. The equity, quasi-equity, and shareholder loan investments are eligible under Article 12(a) of MIGA's Convention and Paragraphs 1.04(i), 1.04(vi), and 1.05 of the Operational Policies.

60. **SG has requested a MIGA Guarantee covering its interest rate swap**, with a maximum early termination amount of EUR 35 million, for a period of up to 18 years, against the following risks: Breach of Contract, Expropriation, War and Civil Disturbance, and Transfer Restriction. The swap is eligible pursuant to Article 12(c) of MIGA's Convention and Paragraph 1.10(b) of its Operational Policies.

61. **MIGA's gross and net exposures under the Project are up to EUR 224.8 million (equivalent to US$262.5 million) and up to EUR 170.0 million (equivalent to US$198.6 million).** The guaranteed percentages are 90 percent for equity / quasi-equity and 95 percent for interest rate swap. MIGA's Host Country Approval has been requested and requires an affirmative approval by the GoC, prior to signing of the MIGA contracts of guarantees.

Table 2. Proposed Underwriting Structure

US$ million equivalent	*Term of Contract(s) in years*	*Currency Inconvertibility & Transfer Restriction*	*Expropriation*	*War & Civil Disturbance*	*Breach of Contract*
Equity/ Quasi-Equity/Shareholder Loan	15	N/A	N/A	N/A	223.7
Interest Rate Swap	18	38.8	38.8	38.8	38.8
Total MIGA (gross)		**38.8**	**38.8**	**38.8**	**262.5**

[20] LEQ is the expected positive average mark-to-market value of the swap(s).

Facultative reinsurance	N/A	N/A	N/A	N/A
Treaty reinsurance	N/A	N/A	N/A	63.9
Total MIGA (net)	**38.8**	**38.8**	**38.8**	**198.6**

62. **According to Paragraph 2.04 (a) of MIGA's Operational Policies, in special circumstances, MIGA may agree to a guarantee period of up to 18 years.** The special circumstances are in this case as follows: (i) the Project promotes investment in an IDA country and supports Climate Change finance; (ii) it is one of the few PPPs in the hydropower sector in Sub-Saharan Africa; (iii) the Project fits within Cameroon's least cost development plan; (iv) the debt profile of the DFI tranche has a maturity term of 18 years. The swap aims to hedge the interest rate risk related to the DFI tranche by entirely swapping the floating rate, euro-denominated, amortizing debt against fixed rate debt until the debt is fully repaid. It is critical for SG to have MIGA cover for the entire tenor of the swap to match the cash flows of the floating rate debt; and (v) this is a key element of SG's Investment Decision Committee to approve the Project.

Project Additionality

63. **The WBG's additionality in this Project is both financial and non-financial**, stemming from: arranging and implementation of a bankable structure, provision of long-term financing, resource mobilization, and provision of commercial and noncommercial risk guarantees (financial); as well as noncommercial risk mitigation via trusted client partnerships, power sector expertise and standard setting (non-financial). As the first hydropower PPP in Cameroon, Nachtigal benefited from IFC InfraVentures' upstream involvement in project development and structuring – which has helped pave the way for the Project's bankability and its compliance with E&S international best practices – and from WBG's experience in supporting Project design. Furthermore, the IBRD loan guarantee will be instrumental in enabling long-term participation by commercial lenders at more favorable terms while MIGA's risk insurance mitigates sovereign risks faced by the Project Sponsors. Drawing on its in-house technical expertise, the WBG is also helping GoC build capacity to implement its hydro-based least cost power sector development plan and to manage sector risks. The expected forms of additionality in the Project, their timing, and indicators are summarized in Table 3.

Financial additionality:

64. **Financing structure**. IFC is providing long-term debt financing with a grace period including a buffer after the end of the construction period (close to six years) and an overall door-to-door tenor of 18 years. This will improve the viability of the Project by matching the long-term nature of revenue streams to debt service obligations, while maintaining a reasonable impact on tariff levels. International project finance in the local power sector has been limited to two IPPs and the distribution company, with tenors not exceeding 15 years. Indeed, Cameroon has low credit availability with no track record of a corporate bond issuance, a limited number of local currency syndicated loans with tenors of up to seven years, and no record of international syndicated loans over the past 12 months[21]. Although private sector debt has increased over the last decade, it remains much lower than the country's regional and income level comparators (13.3 percent of GDP in 2016 against a lower-MIC average of 19.3 percent), and falls below the IDA average (14 percent). IFC thus expects the Project's debt terms to create a precedent in the market and 'set the bar' for future transactions.

65. **Innovative financing structures and/or instruments**. The WBG is best placed to help key Project participants fast-track the implementation of a bankable structure and address the GoC's timing expectations. In addition to providing risk capital for project development (through IFC InfraVentures), IFC's upstream engagement as a co-developer of the Project helped provide comfort to the other developers

[21] Data provided by the IFC Global Macro and Market Research team.

operating amid ambitious sector reforms. IFC is also allowing the Project to hedge itself against interest rate risk by providing swap instruments for its loan as well as for other DFI lenders.

66. **Resource mobilization**. As global coordinator of a large syndicate of 11 DFIs and five local commercial banks, IFC is playing an anchor role in mobilizing long-term financing. The WBG is also leveraging its long-standing experience in Cameroon and its unique ability to mobilize several long-term guarantees: (i) an IBRD payment guarantee backstopping GoC's obligation to reimburse draws on the IBRD-guaranteed L/C, which forms part of the PPA payment security; (ii) MIGA political risk guarantees to EDFI and Investor A for their equity and to SG for its interest rate swap; and (iii) an IBRD loan guarantee to provide comfort to local commercial lenders, thereby allowing them to extend the tenor of their loans beyond the seven-year regulatory limit. As such, commercial banks are providing the equivalent of US$200 million in local currency at a door-to-door tenor of 21 years, accounting for 19 percent of the total Project debt. This will improve currency matching and will be provided under terms that are not available in the local market. In fact, tenors for local-currency loans do not usually exceed seven years and the only extension comparable (in nature and structure) to Nachtigal's (i.e., for the Kribi Gas Power Project) had enabled a 14-year tenor.

67. **IFC own account equity.** IFC is providing equity that is not available in the market at this scale, in a way that strengthens the project company's financial soundness and creditworthiness, as well as its governance – namely via minority rights under the Shareholders' Agreement (which include standard IFC provisions) and IFC's nomination of two Directors to the NHPC Board, both of whom bring extensive power sector experience and a deep understanding of IFC policies and procedures. While there are funds and institutional investors supporting power infrastructure in certain developing markets, Nachtigal will be the largest private hydro power project in Sub-Saharan Africa and to date, there has been very limited private funding of such sizeable greenfield hydro PPPs with lengthy construction periods in the region.

Non-financial additionality

68. **Non-commercial risk mitigation, including trusted partnership**. The WBG expects to leverage its trusted partnership with GoC to facilitate implementation of contractual obligations and reforms associated with Nachtigal and those important for the long-term sustainability of the power sector more broadly. This includes facilitating negotiations on extension of the ENEO concession agreement and clearance of GoC's arrears to ENEO.

69. **Knowledge, innovation and capacity building**. The WBG brings extensive knowledge and expertise of power IPPs following its long-term involvement in the sector in Sub-Saharan Africa and in Cameroon specifically, to ensure comprehensive coverage of sector risks and optimal risk sharing among stakeholders. The design of this operation was informed by WBG lessons learnt with respect to competition on construction contracts, allocation of geotechnical risks, contractor management, environmental and social safeguards, labor influx, and protection of labor rights, among others. In addition, the WBG's ongoing dialogue with, and assistance to, GoC aims to build capacity of sector stakeholders to improve the execution of their Project contractual obligations, in addition to enhancing planning capacity, transparency and sector governance.

70. **Standard setting**. The WBG supports the Project Company in its adoption of- and compliance with World Bank/IFC/MIGA PS detailed in Section VI E.

Table 3. WBG Expected Additionality

Type of Additionality	Expected Additionality	Description	Indicator	Timing and Delivery
Financial	Financing structure	Debt with longer tenor: IFC is providing an 18-year loan with a 6-year grace period. These terms are not available in the local market.	18-year IFC A loan to client.	Disbursement
	Own account equity	IFC is providing equity that is not available at this scale in the market	Up to EUR 60 million IFC equity	Disbursement
	Innovative Financing Structures and/or Instruments	Preparation and structuring support: WBG development and structuring of a bankable Project; Risk management swaps: IFC interest rate hedging otherwise unavailable in the market at a reasonable cost.	Project reaches financial close; Interest rate swaps provided.	Financial close, Disbursements and Repayments
	Resource mobilization	IFC Loan Syndication: IFC is the Global Coordinator of a large syndicate of 11 DFIs and five local commercial banks.	EUR 694 million mobilized from DFIs; Up to EUR 171 million equivalent in local currency.	Disbursement
		IBRD Long-term Guarantees: IBRD's loan guarantee allows extending the local tranche tenor to 21 years; IBRD's payment guarantee to the L/C bank against GoC non-reimbursement of L/C draws supports the bankability of the transaction.	Up to EUR 171 million IBRD Local Loan Guarantee provided over a 21-year period; Up to EUR 86 million IBRD payment guarantee provided over a 21-year period.	At financial close; 7 years post-financial close; 14 years post-financial close; and 21 years post-financial close
		MIGA Long-term Guarantees: MIGA Guarantees in favor of EDFI, Investor A, and SG for termination payment obligations of GoC under the Commitment Agreement and the Concession.	MIGA Guarantees provided to EDFI, Investor A, and SG.	From financial close until termination of the guarantees
Non-financial	Non-commercial risk mitigation, including Trusted Partnerships	WBG trusted partnership with GoC and ENEO, and ongoing assistance will ensure progress on sector reform and mitigate Project risks.	Implementation of contractual obligations and reforms associated with Nachtigal and the power sector	Over the life of the Project
	Knowledge, innovation and capacity building	Transfer of industry or market expertise: WBG's extensive knowledge and expertise in power IPPs applied to ensure optimal contractual structure and build public sector capacity to facilitate Project implementation.	Project complies with international practice on risk allocation and reaches financial close. IBRD support of reforms and capacity building in the sector.	Over the life of the Project

Type of Additionality	Expected Additionality	Description	Indicator	Timing and Delivery
	Standard setting	Improved management of E&S issues: Project Company adoption and compliance with WB/IFC/MIGA PS.	Compliance with WB/IFC/MIGA standards and PSs listed in Section VI E.	Over the life of the Project

D. Rationale for Use of IBRD Guarantees

71. **Over the last 16 years, since the privatization of the national utility, the sector experienced improved sector performance.** However, from 2010 onwards, ENEO was not able to sustain the pace of investments, and performance suffered. The financial performance of the power sector has also been deteriorating. As a result, the power sector has been increasingly reliant on the government budget for compensation of tariff revenues in lieu of increasing tariffs.

72. **IBRD Guarantees are targeting risk mitigation related to the credit risk of ENEO as an off-taker, as well as to broader sector and country risks.** Additionally, GoC's agenda and performance in implementing ongoing sector reforms might create regulatory and institutional uncertainties that could adversely affect NHPC, despite the broad-encompassing activities of the WBG to support the sector. In view of the overall risk exposure, the private sector would not be able to commit to this long term billion-dollar investment in the absence of IBRD Guarantees. This set of guarantees will be complemented by other World Bank operations in the power sector. They include all segments of the value chain as described in Paragraph 25 above.

73. **While considered, other risk mitigation instruments to mobilize debt were deemed not feasible.** Given the degraded financials of the sector, there was limited appetite from institutions (e.g., COFACE and other export credit agencies) to provide a comprehensive risk mitigation cover to commercial banks. Without that cover, the financing terms and the additional complexities introduced by another commercial bank tranche cannot be justified. MIGA will provide Breach of Contract cover to EDFI and Investor A for their equity and quasi-equity investments. MIGA will also provide Breach of Contract, Expropriation, War and Civil Disturbance, and Transfer Restriction cover to SG for the interest rate swap.

74. **Sponsors made the decision to put in place a mix of a DFI foreign currency tranche and a local bank tranche in FCFA on the basis of strong appetite and expertise from both types of institutions.** The IBRD loan guarantee for the FCFA tranche enables the local banks to provide a tenor of 21 years, which extends the tenor to three times the tenor allowed by BEAC in the absence of such a loan guarantee. The local bank tranche (about FCFA 112 billion, US$200 million equivalent) has been sized based on the market appetite, while keeping a competitive tension among the local banks involved.

75. **The IBRD loan guarantee will enable the largest size of local financing in the power sector in Cameroon, with an unprecedented tenor of up to 21 years.** The power sector will benefit from this mechanism both in the short and long term. In the short to medium term, local financing provides a natural currency hedge, reduces the foreign exchange risks and enables long-term financing. In the long term, as the market gets more familiar with long term infrastructure financing on a limited recourse basis, a similar finance structure can be replicated by local banks in financing other infrastructure Projects.

E. Lessons Learned and Reflected in the Project Design

76. **Lessons learned and incorporated in the design of this operation reflect the WBG's worldwide experience with IPP projects**, notably hydropower, as well as lessons learned from the WBG's extensive engagement in the energy sector in Cameroon. It also builds on the Lom Pangar experience related to labor

rights and contractor management, including the worker grievance system, and strengthens mitigation measures through implementation of best practices in the sector.

Power sector capacity building and financial sustainability are critical to successful IPP development

77. From the experiences of recent Cameroon, Kenya and Nigeria IPP development, individual project's success requires a financially sustainable power sector. Continued reforms and capacity building must be carried out consistently. The ongoing IDA and IBRD support provides continued capacity building to sector stakeholders to improve the execution of their statutory mandates, increase planning capacity and transparency, and improve sector governance. Furthermore, the World Bank is in ongoing dialogue with the GoC in support of its sector-wide reform aimed at improving sector performance, which includes the establishment of an IPP selection framework based on open bidding processes. In addition, a set of measures are already being considered in the current DPF series to support: (i) the successful implementation of the ongoing reforms, including the full unbundling and operationalization of SONATREL; and (ii) the improvement of the financial viability/sustainability of the sector, the clearance of arrears and progressively phasing out sector subsidies from the Government.

A high-quality and experienced sponsor is an important determinant of long term IPP success

78. The Sponsor needs to have the technical and financial capability to manage and implement the Project. EDF, a global leader in the power sector, has strong experience in developing IPPs in emerging economies albeit with a limited track record in Sub-Saharan Africa. In addition, EDF has deep knowledge and experiences in designing, constructing, financing and operating large hydropower plants.

79. The Project will also benefit from EDFI's and the World Bank's experience with the 1,070 MW Nam Theun 2 Project (P049290), which remains the largest hydropower Project in Southeast Asia,[22] in particular in working together on risk mitigation aspects. EDF, together with IFC and IBRD, are therefore well equipped from technical, contractual, and financial standpoints to undertake the Project.

Consistent Government commitment is key to successful implementation of a complex IPP

80. Large and complex hydro projects often require the support of the Government to address challenges that the public sector is in a better position to tackle, such as a project's licensing process, consultation with affected people, and some aspects of the compensation plan (for example, land titling). In fact, the participation of the Government in a large infrastructure project is vital to creating an enabling environment for private sector to participate and thrive.

Complex IPP projects require a customized design

81. The WBG has financed several hydropower projects in Sub-Saharan Africa. These include the Bujagali Hydropower Project (P078024), which is being supported by the World Bank, IFC and MIGA. The Bujagali Hydropower Project, as evidenced by a post review by the World Bank, experienced limited competition in contracting the construction work, partially due to market conditions at the time of bidding. And when certain geotechnical risks materialized, construction contracts had to be revised, which caused cost overruns and project delays. The Nachtigal Project developers have taken these complexities into account and chose a different risk allocation, including transferring ground risks to contractors, while ensuring sufficient level of competition in selecting contractors. The Nachtigal Project is considered to offer an adequate mix of incentives for the private sector to perform, as well as a well-balanced risk reward combination.

[22] EDFI holds a 40 percent stake in the Nam Theun 2 Power Company, which owns and operates the 1,070 MW Nam Theun 2 hydropower plant in Laos.

Risk mitigations instrument are key to securing private sector finance

82. Risk mitigation instruments (e.g., guarantees) have a proven record of mobilizing private investments (e.g., in Côte d'Ivoire, Kenya, Nigeria) through efficient mitigation of the payment risks arising from any failure to meet ongoing payment obligations and securing the Government's long-term commitments to projects more generally. The Project will benefit from the experience of the Kribi Gas Power Project, which incorporates loan guarantees dedicated to attracting the local commercial banks (albeit on a smaller scale than for Nachtigal).

Environmental and social mitigations measures need careful preparation and implementation

83. **Environmental and social issues including worker grievances, labor influx and Gender-Based Violence (GBV) have been carefully assessed and mitigation measures build on lessons learned** from a number of projects, including the Nam Theun 2, Lom Pangar, and Bujagali Projects, as well as from other recent infrastructure Projects in the Africa region.

84. **In particular, lessons learned from the recently commissioned Lom Pangar Project in Cameroon have been incorporated in the Project design, in close coordination with the Sponsors.** Cameroonian law mandates the creation of a Social Dialogue Committee to provide a space for workers to raise complaints and engage with the Contractor and labor authorities. In the case of the Lom Pangar Project, the Social Dialogue Committee included representatives from the regional office of the Ministry of Labor, the Contractor, the Implementing Agency EDC and its Supervision Engineer, workers' unions, and the workers' representatives. All decisions of this Committee were made public and communicated to the Project construction workers. The objective of the Committee was to discuss issues and grievances brought to the Committee by Project workers and to establish direct engagement between authorities and Project workers. A similar Committee will be set up during construction and NHPC will be observer in the meetings. This Social Dialogue Committee played a crucial role in addressing workers grievances during construction, particularlry as the Project Grievance Redress Mechanism (GRM) was only aimed at addressing complaints raised by Project Affected Persons (PAP) (from resettlement etc.). In the Nachtigal Project, the GRM scope has specifically been extended to collect and address workers complaints. A specific focus has also been given in contract documents to Environmental, Health and Safety (EHS) provisions to address the main sources of grievances observed in the Lom Pangar Project (decent accommodation, EHS supervision etc.).

85. **The Lom Pangar Project has seen an unexpectedly large number of migrants settle around the reservoir area to benefit from the economic opportunities provided by the large fish resource created by the lake.** This phenomenon, even if expected to be at a much smaller scale in the case of Nachtigal due to the much smaller size of the reservoir, will be controlled by the Ministry of Fisheries. Only fishermen from Affected Communities will be allowed access to the reservoir. Accordingly, the Migratory Influx Management Plan includes investments in public infrastructure (water, education, health) based on a population influx scenario of 1,500 people.

86. **Recent lessons learned related to labor influx and associated GBV issues in large infrastructure projects have been duly incorporated in the Project design** such as (i) a contractual requirement to implement a code of conduct and action plan – including training – for prevention of GBV by EPC Contractors management and workers; (ii) the inclusion in the code of conduct and disciplinary procedures of an explicit prohibition to engage in sex with minors and sexual harassment; and (iii) the specification, as part of its Grievance Mechanism, for NHPC to acquire the expertise to handle GBV related complaints. These are specific lessons learned from recent infrastructure projects where the Sponsor hired a qualified non-governmental organization (NGO) to provide a means for victims to speak in confidence. NHPC will be required to recruit an NGO for that purpose.

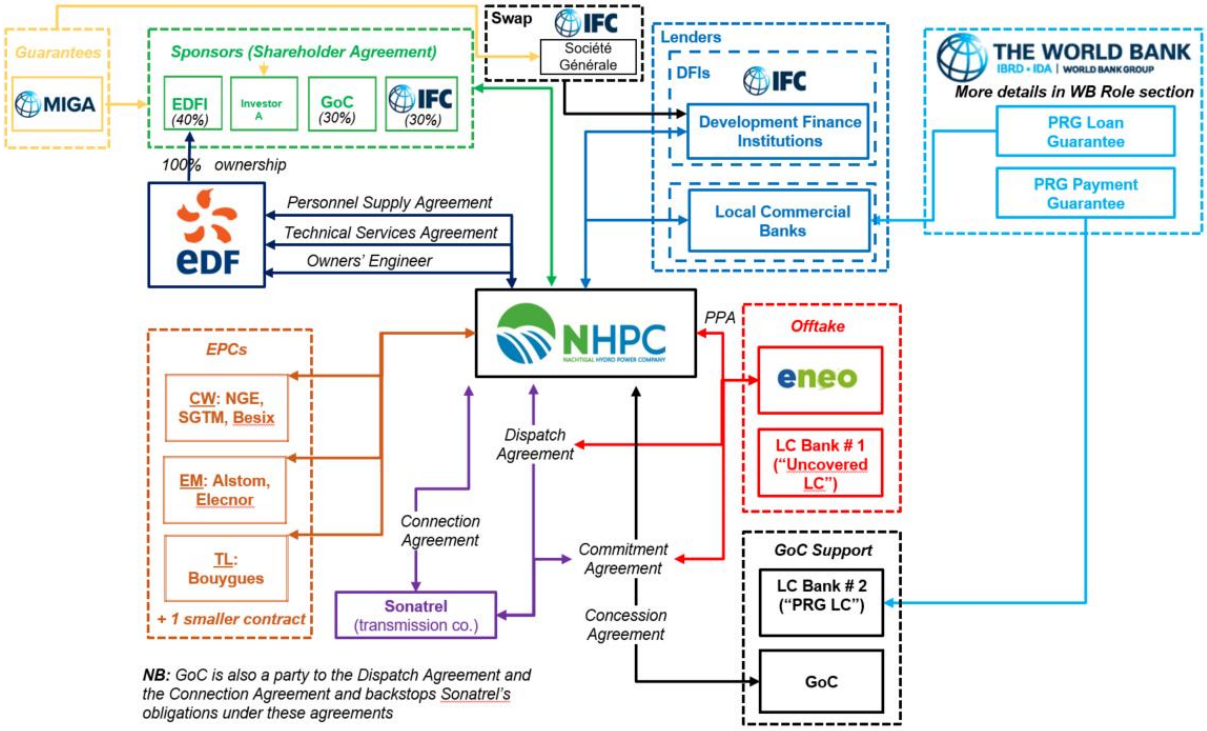
IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

87. **The Project will be implemented by Nachtigal Hydro Power Company, a special-purpose vehicle incorporated under the laws of Cameroon.** The Project Company is co-owned[23] by EDFI, GoC, and IFC and will be in charge of the design, financing, construction, operation and maintenance of the Project.

88. **The contractual framework of the Project includes a suite of contracts between NHPC, GoC, off-taker ENEO, public transmission utility SONATREL, EDF and the EPC Contractors (the "Key Project Agreements").** The institutional and implementation arrangements as well as the contractual framework of the Project are presented in the figure below. They have been designed to ensure that the construction and operation of the Project can move ahead despite a number of uncertainties given the current sector reforms undertaken by GoC. More details on the contracts and the parties are provided in Annex 3.

Figure 8: Contractual Framework of the Project



89. **Key Project contracts are in near-final form and are expected to be signed soon.** These key contracts are the following:

- The Concession Agreement (signed in April 2017 with amendment in near final form) between NHPC and GoC gives NHPC the exclusive right to design, build, operate, and transfer the Project for 35 years and documents key GoC undertakings;
- The PPA will be entered into by NHPC and ENEO for a duration of 35 years matching that of the concession. The PPA is availability-based, similar to most power projects in Sub-Saharan Africa

[23] Investor A and Africa50 Project Finance are expected to acquire shares in NHPC at or prior to financial close.

and to IFC-financed Kribi Gas Power Project. NHPC will not bear hydrology risk but will be required to meet certain availability targets, failing which penalties will apply to PPA payments. The PPA documents the option for ENEO to purchase power from NHPC before the targeted commissioning date, as the first of the seven turbines is scheduled to be commissioned 13 months before this date. The PPA also includes a mechanism to share equally between GoC and NHPC the benefits of unused contingencies through a tariff reduction.

- The Government Commitment Agreement to be signed by NHPC, GoC, ENEO, and SONATREL will lay out the parties' mutual commitments, including GoC's commitment regarding the construction and reinforcement of transmission infrastructure, its financial support to the Project through a US$100 million equivalent guarantee backstopping ENEO's payment obligations under the PPA and its insulation from the current sector reforms.

90. **A Connection Agreement and a Dispatch Agreement among GoC, NHPC, ENEO and SONATREL will define the technical standards of construction, operation, and maintenance of various Project systems to ensure smooth power evacuation and wheeling through the system.** NHPC will sub-contract the construction of the infrastructure to engineering, procurement, and construction (EPC) contractors. The construction works will be carried out through four EPC contracts in total: (a) two larger lump sum turnkey EPC contracts in charge of civil works ("GC") and electro-mechanical works ("EM1"); and (b) two smaller lump sum turnkey EPC Contracts in charge of the transmission line ("EM2") and company's housing estate ("CE"). In order to ensure adequate coordination among the EPC contractors, mitigate interface risk and possible resulting delays and cost overruns, EDF will act as Owner's Engineer as documented in a specific contract to be entered into by NHPC and EDF.

91. **Operation and Maintenance (O&M): NHPC will be in charge of the O&M of the Project throughout the duration of the concession with the help of EDF**. EDF will provide technical services and dedicated staff through the Technical Services Agreement and the Personnel Supply Agreement. It is worth noting that, given the nature of the project, such O&M contracts are expected to cover both construction and operation periods in order for the O&M staff to be operational before the commercial operation period.

92. **The risk allocation among the public and private parties is summarized in the table below.** In the context of Cameroon and given the ongoing sector reforms, the risk allocation is deemed appropriate for the sector. A more detailed risk allocation table can be found in Annex 8.

Table 4: Project Risk Allocation

Phase	Risk	NHPC	GoC	SONATREL	ENEO	IBRD	MIGA
Pre-construction	Project design	X					
	Debt and Equity Funding	X	X				
Construction	Cost Overrun	X					
	Delays in Construction	X					
	Access to public infrastructure		X	X			
	Environment and Social	X					
Operation	Hydrology		X		X		
	Operation & Maintenance	X					
	Performance (excl. hydro conditions)	X					
	Power evacuation and transmission		X	X			
	Tariff payment		X		X	X	
	Environment and Social	X					
Phase	**Risk**	**NHPC**	**GoC**	**SONATREL**	**ENEO**	**IBRD**	**MIGA**
During PPA/	Currency devaluation		X		X		

Concession	Currency Convertibility and Transfer		X			X	X
	Political Force Majeure (Local)		X			X	X
	Change in Law		X			X	X
	Expropriation		X			X	X
	Natural Force Majeure (incl. flood and exceptional drought)	X	X				

B. Results Monitoring and Evaluation

93. **The Project-level monitoring and evaluation framework will track progress during implementation, measure intermediate outcomes, and evaluate Project impacts.** The results framework, detailed in Annex 1, outlines key performance indicators, data collection methods, a timetable for collection, and responsible entities. This framework will be used to supervise and monitor Project implementation. NHPC will be responsible for ensuring monitoring and evaluation of outcomes.

C. Sustainability

94. **In line with the GoC strategy, the Project will contribute to**: (i) securing the supply of electricity in Cameroon by relying on domestic potential; (ii) increasing the share of low cost renewables in the energy mix, thereby lowering the cost of service and contributing to the GoC objective to achieve cost reflective tariffs; and (iii) reducing the need for expensive fossil fuel based power generation and exposure to the volatility of oil prices, thereby contributing to the sustainability of the sector.

95. **Over the life of the PPA, all parties have incentives to honor the contract for its entire duration.** The Sponsors have an attractive return on their investment and in case payment issues arise, they benefit from the support of IBRD through the payment guarantee. ENEO and GoC will benefit over the long term from receiving a significant amount of low-cost clean energy from an indigenous resource. The presence of GoC in the Project as shareholder and local banks as senior debt providers respectively will further reinforce the interest of the GoC to facilitate the operation of the Project over the long term.

96. **The Project Company has set up a dedicated team to implement the recommendations of and monitor the ESMP, and to ensure that issues are mitigated adequately.** Obligations for implementing the Project's environmental, social, and health and safety requirements will be established through a set of contractual arrangements with a clear chain of responsibilities to ensure the proper supervision of the Project throughout implementation. The Owner's Engineer is required to maintain a constant presence on site, and is responsible for closely monitoring the implementation of the ESMP and E&S contractual obligations by Contractors, and address any shortcomings. Project activities will be regularly reviewed by an independent E&S advisor, as well as directly by the IFC and MIGA E&S teams, and the GoC, through the IDA-financed Sanaga River Hydropower Technical Assistance Project, which will be funding a PoE.

97. **During the operational phase, the Project will follow a well-defined O&M strategy** whereby technical support and staffing from EDF will be provided to NHPC. The O&M plan will cover the pre-operation period to ensure that the team is gradually mobilized and trained to be fully operational before the plant is commissioned.

V. KEY RISKS

98. **The overall Project risk is considered substantial.** Key risks and mitigation measures are discussed below.

99. **Political and Governance and Sector Strategy and Policy Risks are inter-related, and are considered substantial.** Sustained government commitment is critical to the success of the Project, which is also dependent on continued progress in policy and institutional reform. Any political roll-back of reforms could pose obstacles to achieving financial close and Project implementation. 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 for continued reforms to avoid falling back into acute power shortages. In June 2018, GoC informed ENEO of its decision to extend ENEO's generation and distribution concession for ten years, which paves the way to ENEO raising the financing for its required investments, improve its operational performance and turn around its financials. The GoC's willingness to continue to involve private sector participation was consistently re-confirmed, as well as its intention to introduce better incentives to improve operational performance (including reduce losses) in the ENEO concession agreement. Policy and strategic measures devised under other World Bank-supported Projects (see Paragraph 25) are being implemented, which increases the confidence that implementation of relevant legislation and decrees will continue. Also, the Hydropower Development on the Sanaga River Basin Technical Assistance Project includes several components that provide direct support to the strengthening of the reform process and the related sector stability, while sector policy reform measures are supported by the DPF series. With constraints on the public debt, a higher public debt to GDP ratio, and an IMF program under implementation, GoC has incentives to make use of private investments in power production. Foreign investment appetite is strong, as shown by Nachtigal, with other IPPs potentially on the horizon.

100. **Macro-economic risk related to GoC solvency, given the impact on ENEO's financial viability, is considered substantial.** Cameroon is the largest CEMAC economy, currently experiencing an economic crisis precipitated by the steep fall in the price of oil, which comprised 76 percent of the region's exports in 2014. The World Bank's DPF series is designed to support GoC in implementing fiscal adjustments to this crisis, as it will accelerate much needed reforms to boost competitiveness and mitigate economic vulnerability by improving access to social services. The operation is part of a broader multilateral and bilateral effort to support Cameroon over 2017-2019. Development partners such as the IMF, the African Development Bank, the European Union, and the French Development Agency (*Agence Française de Développement* – AFD) have come together to help stem the economic crisis in the CEMAC. Together, the programs will provide about US$2 billion in financial support for Cameroon over a three-year period, and help the country emerge from the difficult economic situation provided it stays the course on the necessary reforms.

101. **Sector financial viability, which depends on timely tariff adjustments and/or compensation by GoC, and regular payment of public electricity consumption, is considered a substantial risk.** The lack of political will to strengthen ENEO's revenue base could result in a deterioration of ENEO's financials, thus affecting its ability to make payments to different market players, including IPPs. Furthermore, a sustained deterioration of ENEO's financials could affect its ability to raise the financing needed for urgent infrastructure rehabilitation and for bolstering its operational performance. While NHPC is partially insulated by design from the off-take risk by the GoC support backed by the IBRD payment guarantee, the issue remains for the overall sector. The sector's and ENEO's financial viability were the key topic of the WBG-GoC high-level sector workshops held in September and December 2016, and are a key objective in the DPF series. As a result, a detailed action plan to address delays in tariff setting and payment of compensation to ENEO was agreed, and included as triggers in the DPF series. In the first operation approved in December 2017, the prior actions aimed at improving the financial sustainability of the energy sector and enhancing private sector confidence included: (i) the obligation for the Government to clear FCFA 54[24] billion of arrears (electricity bills and compensation subsidies) accumulated as of August 31, 2017; and (ii) the introduction of a systematic budget allocation in year n+1 of the potential tariff

[24] Total outstanding arrears from GoC to ENEO as of December 31, 2017 totaled around FCFA 38 billion or EUR 58 million. They have since been partially cleared and stood at FCFA 30 billion or EUR 46 million as of April 10, 2018.

compensation estimated by ARSEL during year 'n' in order to avoid building up new arrears. Over the course of the next three years, it is expected that the GoC will clear its arrears to ENEO, while mitigating the potential for a renewed buildup of these arrears. The upcoming DPF operations will also focus on a systematic payment mechanism of public sector bills for parastatals and a revised energy policy for industries that would reduce subsidies and their related fiscal burden.

102. **Institutional Capacity for Implementation risk is substantial.** There is a risk of delays due to insufficient coordination capacity between implementing entities. Nachtigal is a complex undertaking, involving government agencies, private investors, and contracted technical partners, and coordination is a continual challenge in Cameroon. This is mitigated and informed by the positive experience gained on the Lom Pangar Hydropower Project and by sound technical expertise and experience in hydroelectricity brought by the sponsors, including IFC and EDF. While most of the Project implementation will be under the responsibility of NHPC (construction, operation), activities outside the responsibility of NHPC will however need to be addressed. IBRD support (transmission, sector reforms) will help provide the capacity needed. Also, the Hydropower Development of the Sanaga River Basin Technical Assistance Project will provide support to the GoC for its supervision duties during implementation.

103. **Environmental and social risks are considered high during construction and substantial during implementation.** The Project may cause adverse environmental and social impacts that may be significant and irreversible. More than 2,000 ha have been expropriated for the Project but only five households will be physically displaced. Due diligence has been performed by EDF and IFC during Project preparation from 2014 to 2016 and this resulted in the development of an Environmental and Social Impact Assessment (ESIA). The preparation of the resettlement and livelihood restoration action plans was done with extensive public consultation. In all, as of October 2017, more than 130 information and consultation meetings were held, where more than 5,000 people attended. NHPC has demonstrated substantive capacity on environmental and social assessment and management during the preparation of the Project. This will be strengthened during construction by NHPC's recruitment of additional E&S staff. NHPC will also benefit from the support and strong experience of EDF on environmental and social management (including its experience in the Nam Theun 2 Project, which has a strong track record during implementation). In addition, Mott MacDonald/ERM has been recruited as an independent advisor to the Lenders to perform environmental and social due diligence and monitoring services.

104. **Even though experience and capacity for designing and implementing environmental and social safeguards measures have been acquired from the Lom-Pangar Project, GoC has capacity limitations and might not satisfactorily ensure a thorough safeguards compliance monitoring**. To ensure that GoC and WBG's environmental and social safeguard standards are met, the Hydropower Development on the Sanaga River Basin Technical Assistance Project will support the GoC during the implementation of the Nachtigal Hydropower Project. Other safeguards risks are associated with the effective development and implementation of environmental flow strategies between hydropower facilities, whereby watershed protection measures required to manage rivers and future reservoir water quality conditions (e.g., regarding agriculture and agri-processing industry controls) are elaborated and implemented, with detailed institutional roles and responsibilities assigned and resourced. To mitigate this risk, which is outside of Project control, EDC was assigned by the GoC to develop and implement an Integrated Water Resources Management Plan (IWRMP) for the Sanaga River to sustainably plan and manage the various developments in the basin. NHPC will be an active stakeholder in development and implementation of the IWRMP. As part of the above-mentioned Technical Assistance Project, a Strategic Environmental and Social Assessment (SESA) of the Sanaga Cascade will be carried out. The findings of the SESA will be incorporated in the IWRMP framework and in other Project instruments such as the adaptive environmental flow release (EFR) strategy for Nachtigal, the Fishing Action Plan, and the monitoring of incidence of water-related vector-borne diseases.

105. **Gender-Based Violence (GBV).** The prevalence of GBV in Cameroon is high as it is a deeply rooted social phenomenon. For example, a national study carried out in 2011[1], identified that from the age of 15, more than 55 percent of women have been victims of physical violence, mostly perpetuated by the current or more recent husband/partner but also by family members (mother, father, step mother or step father, brother or sister). In addition, 34 percent of women aged between 15 and 49 have experienced physical violence, 8 percent sexual violence only and 21 percent physical and sexual violence. In this context, it will be a challenge to fully prevent the occurrence of GBV. However, the risk for GBV in the context of the Project, can and must be mitigated. During Project preparation, GBV risk was clearly outlined in the Environmental and Social Review Summary (ESRS, June 2017), under PS 4 on management of GBV issues. Some fundamental specifications have been incorporated in the contract documents where, for example, it is indicated that NHPC will ensure that EPC contractors' code of conduct and disciplinary procedures include the prohibition to engage in any type of sexual behavior with minors and any type of abuse or violence against women and girls. NHPC will also include gender specific mitigation measures within the NHPC Migratory Influx Management Plan to ensure any negative impacts on women due to the Project are addressed. Finally, NHPC will acquire or contract the necessary expertise to effectively address GBV and ensure that the NHPC grievance redress mechanism is able to handle complaints related to (i) misconduct of construction workers in host communities and (ii) potential abuses of private/public security forces, in particular complaints related to GBV. This will be accompanied by a communication campaign led by NHPC to explain the expected behavior of workers and private/public security forces in host communities, and how a member of the community can file a related complaint. The system will communicate outcomes to complainants and other relevant parties, keeping in mind confidentiality provisions and the need to protect victims. Close monitoring of these issues will be carried out by the Project team to ensure that GBV if encountered, is adequately addressed by the Project Company. Recent cases related to GBV in projects highlighted that most of the time, a standard GRM is not an adequate vehicle for victims to report GBV allegations due to high risk that information is not kept confidential. To mitigate this issue, the Sponsor will be required to hire a qualified NGO to provide a means for victims to speak in full confidence.

106. **Labor and Migration Influx.** At peak, 1,500 workers will be mobilized on site for the construction effort. In addition, the spontaneous development of people around the construction sites usually causes major impacts in terms of health, safety and social balance of resident communities. In order to limit the influx of job seekers around the site while promoting local employment, a social influx plan was prepared in 2015 and is an integral part of the ESMP. The following measures will be taken in agreement with local authorities (i) agree on a plan to limit the settling of migrants who come to buy land in the vicinity hoping to settle there; (ii) constitute a security brigade to prevent people settlement near the site without the permission of communities; and (iii) develop a land management plan of areas bordering the facilities in order to promote sustainable development. In addition, the various construction contracts impose to hire at least 50 percent of construction workers locally and to implement a schedule allowing non-local workers to regularly return home thus dissuading families to immigrate to the area as the site is only a one-hour drive from Yaoundé. As evidenced on large infrastructure projects recently completed, including the LPHP Project, workers grievances and social tensions from the large workforce is an important risk for smooth project implementation. Non-payment of wages by subcontractors, non-payment of social security contributions by contractors, irregularities in overtime payments and inadequate accommodations at project start can lead to strikes and create conflictual working conditions on site. In order to mitigate this risk, the selection of contractors included a criterion on EHS performance to ensure that the EPC contractor practices are in line with best industry practices. Strict contractual provisions require (i) compliance with Labor Law (payment of social security dues) and PS 2 extended to subcontractors, including internal grievance

[1] *Enquete démographique et de santé et à indicateurs multiples (EDS-MICS) from the National Institute for Statistics, MINEPAT, MINSANTE, 2011.* Demographic and Health Surveys -Multiple Indicators- (EDS-MICS) from the National Institute for Statistics, MINEPAT, MINSANTE, 2011

mechanism; (ii) documented internal work regulations including conditions for overtime pay; (iii) compliance with IFC/IBRD/MIGA guidance on workers accommodations; and (iv) penalties to address late payment of wages. This contractual set up complemented by strict monitoring mechanisms to ensure compliance from all parties involved such as: (i) EPC monthly reporting (workers grievances, wages and social security contributions, drinking water tests); (ii) NHPC monthly inspections (decent accommodations, food quality); (iii) the inclusion of worker grievances in the Project GRM as well as the creation of a Social Dialogue Committee (with NHPC participating as observer); and (iv) labor audits every six months.

107. **Stakeholder risks are considered substantial.** Being a large dam hydropower project, negative environmental and social impacts might be perceived by some national and international NGOs, civil society, as well as other stakeholders such as local communities. To mitigate this risk, considerable coordination and information dissemination have taken place during Project preparation to increase awareness of the Project. Consultations during the preparation of the environmental and social documentation of the Project indicate strong support from the local population in Project areas. The current Stakeholder Engagement Plan (SEP) was last updated in April 2016 and the NHPC community relations team is in constant engagement with local communities, implementing several programs which will contribute to improved livelihoods. The SEP is being updated for the construction phase to include a greater emphasis on communication with neighboring communities regarding construction schedules, employment opportunities, and community health and safety; and coordination with nearby land based construction Projects (Yaoundé water supply, Sanaga bridge), which could potentially contribute to social conflict but also increase benefit opportunities.

108. **Climate and Disaster Risks.** The recently completed climate risk assessment for hydropower generation in Cameroon[25] shows that, based on the presently available climate projections for the 21st century, by 2050 the total long-term average hydro-energy generation on the Sanaga River Basin should be limited and could vary between -15 percent and +5 percent of the base case value (present hydrology); results for 2080 are similar. It is highly unlikely that hydro-energy generation would decrease more than 20 percent due to climate change.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

Project Economic Analysis

109. ***Rationale for Public Sector Financing.*** The proposed operation will support the GoC's efforts to increase power generation by crowding in private sector participation in the power sector. The provision of risk mitigation instruments is a fundamental component in the overall transaction as it provides the necessary comfort to lenders and shareholders and ensures the bankability of the Project. The use of IBRD Guarantees helps optimize the use of scarce public resources through the provision of the minimal amounts of security to lenders and investors required to make the Project financially viable. The WBG's support is critical to provide confidence to investors in the sector, as proven by the fact that a limited amount of IBRD support will enable about EUR 1.18 billion of financing (equivalent to US$1.34 billion), including EUR 0.37 billion (equivalent to US$0.43 billion)[26] of private capital mobilized in the form of equity, debt, and L/C. Furthermore, given the tight fiscal situation and capacity constraints of the public sector, the proposed PPP structure appears to be the most appropriate structure for this much needed Project. The contingent

[25] *Understanding the impact of climate change on hydropower: the case of Cameroon – climate risk assessment for hydropower generation in Cameroon* – April 27, 2014 (Africa Energy Practice).
[26] This can be broken down to EUR 171 million local loans, EUR 109 million EDF equity, and EUR 86 million liquidity L/C.

liability arising from the Project consists of the guarantee provided by the GoC to backstop ENEO's payment obligation (a guarantee which will be secured by an IBRD-guaranteed revolving L/C in the amount of EUR 86 million, for which GoC is the reimbursement obligor) and GoC's obligation to pay termination compensation to NHPC in the case of early termination of core Project agreements[27], a customary market-standard protection that is indispensable to the Project's bankability.[28]

110. ***Project Net Benefits.*** The Nachtigal Hydropower Project is expected to generate an economic internal rate of return (EIRR), excluding environmental benefits, of 20.9 percent, with a net present value (NPV) of US$1,193 million at a discount rate of six percent. Including the benefits of greenhouse gas (GHG) emissions reduction, the EIRR increases to 27.9 percent with an NPV of US$2,227 million (at six percent discount rate and with low shadow carbon price scenario). The economic benefits of the electricity produced by the Nachtigal Hydropower Project are conservatively estimated considering the opportunity cost of natural gas-based generation during the concession period in Cameroon[29]. A detailed economic analysis of the Project was prepared by the World Bank, IFC and MIGA teams and details are further discussed in Annex 5.

Table 5: Economics Results

Discount Rate	%	6.0
Economic Internal Rate of Return (EIRR)		
EIRR excluding CO2	%	20.9
EIRR including CO2		
With Low Shadow Carbon Price Scenario	%	27.9
With High Shadow Carbon Price Scenario	%	33.3
Net Present Value (NPV)		
NPV excluding CO2	US$ million	1,193
NPV including CO2		
With Low Shadow Carbon Price Scenario	US$ million	2,227
With High Shadow Carbon Price Scenario	US$ million	3,260

111. ***IFC Anticipated Impact Measurement and Monitoring.*** The Project has an anticipated impact measurement and monitoring (AIMM) rating of Excellent based on an AIMM score of 120. IFC expects the Project to add low-cost clean power generation capacity required to support access expansion plans in Cameroon, and deliver significant economy-wide effects including employment and value added. The anticipated market creation effects include improved competitiveness, deriving from the establishment of an enabling framework to mobilize private investors and commercial financing in the development of large hydropower projects in Cameroon. The replacement of imported fuels with a domestic resource for power generation is also expected to enhance resilience of the power system.

Project Financial Analysis

112. **The Project's operating cash-flows are expected to cover debt service**, allow for regular dividend payments, and provide the Shareholders with a reasonable return for this kind of project. The

[27] The amount of the termination compensation depends on, among other things, the outstanding amount of the debt at the time of termination and which party is responsible for the termination event.

[28] While GoC also has a contingent liability in relation to the local lenders' put option at year 7 and 14, by paying the put price (and acquiring the relevant loan) GoC would be reducing the debt portion of any potential early termination payment under the Commitment Agreement by the same amount. Accordingly, while the timing of the contingent liability relating to the put option may be different from the timing of any early termination payment, there would be no net effect on the aggregate amount of GoC's contingent liability in relation to the Project.

[29] This is considering that a new 420 MW gas-to-power IPP is commissioned by 2023 in Nachtigal's stead. Without this replacement gas-to-power plant, Nachtigal would be displacing other existing and planned oil- and gas-fired capacity and the economic and environmental benefits would be significantly larger.

Lenders' base case is expected to result in a minimum Debt Service Coverage Ratio (DSCR) of 1.45x, with an average annual DSCR of 1.53x, which is consistent with precedents for a Project of this nature. In the case that Project contingencies are not utilized, the savings will be allocated equally to reduce tariff as well as Project costs, benefiting the country and Project company respectively.

113. **While the Project provides the GoC with one of the lowest IPP tariffs in Sub-Saharan Africa, the Project and financing structure are also bankable and attractive to private sector investors.** The strong combination of sizeable funded contingencies, significant time buffers, the progressive commissioning of turbines in the base case, and a robust liquidated damages regime protect the Lenders and Shareholders from downside risks during construction and operations, while the off-taker credit enhancement via the IBRD Guarantee and a robust set of Project documents (namely the PPA and Commitment Agreement) mitigate the risk of ENEO's nonpayment. Sensitivities show that the Project is robust and demonstrates strong resilience to all key stress test scenarios. As can be expected, permanent shortfalls in turbine capacity and construction cost overruns are the most sensitive factors. More details on the financial analysis are presented in Annex 5.

Sector Financial Analysis

114. **In recent years, despite a marginally positive annual profit, ENEO has faced a worsening liquidity situation**. The liquidity crunch has resulted in (i) ENEO drawing on its Debt Service Reserve Account (DSRA) in September 2017 to repay its DFI loan installment; and (ii) ENEO accumulating arrears towards its suppliers, including the two IPPs, KPDC and DPDC – arrears to KPDC and DPDC represent around 5.7 and 5.8 months of payments, respectively, as of mid-June 2018. This situation is due mainly to poor operational performance against regulatory targets, and delayed payments by GoC and SoEs, that jointly account for more than 25 percent of ENEO's revenues.

115. **Under the concession, ENEO is able to charge a regulated tariff to its LV and Medium Voltage customers**. The High Voltage (HV) customers (including Alucam) benefit from contractual tariffs lower than the regulated tariff, as they represent 34 percent of electricity sales but only 8 percent of revenues. The regulated tariff is calculated to cover fixed costs, energy costs, depreciation, taxes and a return on the regulated asset base (RAB), and incentivizes ENEO to invest and improve operational performance: profitability is driven by (i) ENEO's relative operational performance vis-à-vis regulatory targets on losses, bad debt, fixed costs and quality of service; and (ii) capital expenditures (CAPEX) which will increase the RAB. ENEO does not take hydrology risk (low hydrology increases fuel consumption) nor demand risk as these are adjusted for actual levels at the end of each year and lead to a tariff adjustment.

116. **Although the end-user tariff has not changed since 2012 (equivalent to EUR 12.2 cents/kWh), by setting yearly and quinquennal operational performance targets for ENEO, the compensation regulation does incentivize the concessionnaire to boost its distribution efficiency** in view of bringing the cost of service / kWh down to the level of end-user tariffs, and possibly even lower. Exogenous factors such as hydrology and fuel costs that are beyond ENEO's control are included in the tariff compensation amount.

117. **However, a lack of focus and commitment during the 2011-2014 period, just before AES sold its stake to Actis, led to worsening distribution and cash collection efficiencies.** Since taking over the concession in 2014, and despite increasing CAPEX, Actis has been unable to significantly improve ENEO's operational performance against regulatory targets. As a result, ENEO's profitability and cash flow situation has been lagging. Over the four-year period of 2012 – 2015, ENEO's poor performance has reduced its potential free cash flow (approximated by Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA)) by an estimated EUR 48 million per year on average (as shown in Table 6 below). 2016 was

the first year of a new five-year tariff period, which has led to the reset of the regulatory target; this, coupled with an enhanced performance, has reduced the impact of distribution efficiency on EBITDA.

Table 6: Impact on EBITDA of ENEO Operational Performance vs Regulatory Target (estimates)

EBITDA Breakdown (EURm)	2012	2013	2014	2015	2016	Total
Regulatory EBITDA (I)	**125**	**123**	**121**	**119**	**124**	**613**
Impact of Distribution Efficiency	(22)	(31)	(46)	(50)	(12)	(160)
Impact of Bad debts	(8)	(11)	(9)	(9)	(0)	(37)
Impact of fixed costs	(1)	2	(5)	(7)	(1)	(12)
Impact of penalties	(8)	(7)	(8)	(3)	3	(24)
UE provision reversal/adjustment	–	–	9	7	(5)	10
Others	(3)	(5)	31	(7)	(31)	(16)
Actual EBITDA (II)	**83**	**72**	**93**	**49**	**78**	**375**
Shortfall (II-I)	**(42)**	**(52)**	**(29)**	**(70)**	**(46)**	**(238)**

118. **GoC bills (including public lighting) are on average EUR 53 million per year**; in addition, GoC has to pay a tariff compensation as it has been reluctant to increase end-user tariffs since 2012. The amount of tariff compensation is shown in Table 7 for the 2012 – 2018 period (2018 is an estimate). As of December 31, 2017, GoC arrears to ENEO total EUR 58[30] million, and late payments of SoEs represent another EUR 38 million.

Table 7: Tariff Compensation Owed by GoC to ENEO (EUR million)

2012	2013	2014	2015	2016	2017	2018
14	-	27	9	31	21	2

119. **This liquidity situation is costly to manage**, as ENEO has had to resort to expensive short-term measures to generate enough breathing room to meet its principal repayments on long-term DFI debt and to make much needed investments. But these investments remain below what would be needed to improve the operational performance significantly. As a result, the company is trapped in a vicious circle of tight liquidity, that restricts ENEO's ability to invest, and as a consequence operational performance is stagnant at best, which impacts EBITDA and reduces liquidity further. More details on the sector financial analysis are presented in Annex 5.

120. **The liquidity issue has been a major focus of the ongoing DPF series.** In the first operation approved in November 2017, the prior actions aimed at improving the sector's financial sustainability included: (i) the obligation for the Government to clear FCFA 54[31] billion of arrears (electricity bills and compensation subsidies) accumulated as of August 31, 2017; and (ii) the introduction of a systematic budget allocation in year n+1 of the potential tariff compensation estimated by ARSEL during year n in order to avoid building up new arrears. Over the course of the next three years, it is expected that the GoC will clear its arrears to ENEO, while mitigating the potential for a renewed buildup of these arrears. The next DPF of the series, under preparation, will also focus on a systematic payment mechanism of public sector bills for parastatals and a revised energy policy for industrials that would reduce subsidies and their related fiscal burden.

121. **Additionally, the introduction of additional hydropower generation capacity in the country's energy mix in the short term, will reduce the cost of production and limit the amount of annual tariff**

[30] They have since been partially cleared and now stand at FCFA 30 billion or EUR 46 million as of April 10, 2018.

[31] Total outstanding arrears from GoC to ENEO as of December 31, 2017 totaled around FCFA 38 billion or EUR 58 million. They have since been partially cleared and stood at FCFA 30 billion or EUR 46 million as of April 10, 2018.

compensation. This, coupled with investment aimed at boosting distribution efficiency, should improve the sector's financials in the medium term and move towards reducing the gap between ENEO's cost of service and the end-user tariffs. As described above, the concessionaire still has to raise the capital needed for it to deliver on its loss-reducing investment plan. On June 13, 2018, the GoC announced its intention to extend the ENEO generation and distribution concession by ten years to 2031, which, once implemented, will allow ENEO's financing to move forward.

122. **Irrespective of the sector demand growth scenario, the implementation of Nachtigal Hydropower Project will have a positive impact on the trajectory of the Cameroon power sector's cost of service.** Under the base case, the average yearly saving in compensation payments as a result of implementing Nachtigal over building an open cycle natural gas plant (as a most likely alternative) is conservatively projected to be FCFA 56 billion (US$100 million equivalent) over the first seven years of operations (2023-2030). In the period of 2018-2030, the cumulative savings in compensation payments are projected to amount to FCFA 451 billion (US$803 million equivalent) under the base case demand growth scenario. More details on the impact of Nachtigal are presented in Annex 5.

GHG Emissions and climate co-benefits

123. **Nachtigal provides significant climate co-benefits.** Due to its high priority in the dispatch order, Nachtigal will displace an equivalent of an open cycle natural gas plant in the merit order of dispatch. The hydro generation will reduce the unit CO_2 emission in an aggregated basis by 0.364 kg CO_2 eqv-MWh.

124. **Using the International Finance Institutions (IFIs) methodology to GHG accounting, the Project is expected to save about 364 g CO_2e/kWh – more than 1 million ton annually.** The Project's annual GHG emission are estimated at 6,894 teqCO2 per year. The area to be flooded consists of 112 ha of forest on the right river bank and islands, and 108 ha of shrub savanna. Based on a multi-criteria analysis performed by EDF-CIH, NHPC has decided not to remove the vegetation from the area to be submerged, as its maintenance provides favorable habitat for the reproduction of fish. Estimation of emissions was updated in 2017 using the International Hydropower Association (IHA) G-res tool, an online tool developed by the IHA to estimate the GHG emissions from the introduction of a reservoir in a landscape. The assessment does not include construction phase emissions which is in line with IFI's methodology. Considering an energy generation of 2,900 GWh/year, the Project's net GHG emissions is estimated at 2.4 g CO_2 e/kWh. By comparison, the emissions intensity of the electrical grid in Cameroon, is currently about 364 g CO_2 e/kWh.

125. Under these assumptions, the Project will avoid 41,687,000 tCO2 over the economic life of 40 years. Using the low shadow carbon price to quantify the GHG savings, the estimated value of savings is about US$700 million over the Project life.

B. Technical

126. **Feasibility studies of the Projectt were carried out in 2015 by EDF**. The results of the studies were fine-tuned in 2016, based on recommendations from an independent PoE, who carried out a detailed review. This review provided the necessary degree of assurance that the Project conforms to current best international practices and standards, including applicable design flood and design seismic load. The geotechnical and geological investigations and testing have been undertaken by recognized agencies and took into consideration the recommendations of the PoE. The Project layout has been defined based on a state-of-the-art and accurate LiDAR topographical survey.

127. **The dam type, height, location, and corresponding land submergence by the size of the reservoir have been optimized** taking into consideration the need to balance economic viability with

environmental and social impacts. The recommended Project layout presents straightforward features using standard and well-established hydropower design and construction practices and duly accounting for the geological/geotechnical site conditions. The design of the roller compacted concrete dams draws from the latest developments in the industry, such as the use of grout-enriched roller compacted concrete for the dam facing. The design of the dam also incorporates lessons learned from the recently completed Lom Pangar Project on the Sanaga River.

128. **The power and energy generation capacity and the number and size of units have been optimized** considering optimized peaking capacity and water availability on the Sanaga River, downstream of the Lom Pangar regulating dam, leading to the choice of seven identical Francis turbines of 60 MW each.

129. **Loss of active storage due to sediment deposits in the reservoir has been duly studied and modeled**, and an adequate sediment management plan is recommended, including industrial extraction of sand deposits upstream of the reservoir, and will be prepared by NHPC. Specific design features (protection wall and gates) have been provided to protect sediments from entering the intake structure.

130. **Project cost estimates include contingencies representing 20 percent of total EPC costs**, which has been deemed to be adequate to mitigate potential cost overruns as well as delays during construction.

131. **The selected sub-contractors are competent and experienced to do the work for each EPC contract.** While the works for the Nachtigal Project are large scale, they are not particularly complex technically and there is no significant underground work. Additionally, key construction risks have been transferred to the contractors. Close cooperation and effective interface management and supervision by EDF as Owner's Engineer will be key to the successful execution of the works. EDF will coordinate the three main EPC contracts with the objective of ensuring that works are performed according to specifications and delivered on time.

132. **Construction is expected to start shortly after financial close** for a total duration of 57 months from initial mobilization and site preparation to commissioning of all seven generation units.

C. Financial Management

133. **There is no obligation related to the disbursement of an IBRD-financed procurement or procurement-related disbursements.** IBRD will provide a payment guarantee to NHPC as well as a loan guarantee to support commercial debt to NHPC.

134. **NHPC will be the responsible party for managing the finances of the Project.** It will install and maintain adequate financial management systems, including the system of accounting, reporting, auditing, and internal controls, and relevant qualified staff. The annual financial statements will be prepared using internationally accepted accounting principles and will be audited in accordance with international standards on auditing. The performance of the proposed Project will be monitored through, inter alia, regular progress reports and audited annual financial statements to be submitted by NHPC to IBRD, IFC and MIGA respectively. The entire financial management system of NHPC is being developed during the period leading to financial close. The WBG and the senior lenders group will review these arrangements to ensure that they are acceptable.

D. Procurement

135. **Under the World Bank's Policy on Investment Project Financing, applicable to guarantee Projects, goods and services must be procured with due regard to economy and efficiency.** The Sponsors provided Lenders and IBRD with information on the procurement process used to competitively

select the four EPC contractors, as well as on the building blocks of these EPC prices. IBRD´s review concluded that the overall procurement of the Nachtigal Project meets the general principles of industry-wide standards of economy, efficiency, and transparency for this scale and type of procurement. Further analysis during the due diligence of the Lenders Technical Advisor confirms that the selected suppliers are competent and experienced to do the work for each EPC contract. It was also highlighted that close cooperation, effective interface management, and supervision by the Owner's Engineer will be key to the successful execution of the works.

136. In 2013, the GoC, as allowed by the then power sector regulations, signed a Memorandum of Understanding with EDF and Rio Tinto for the development, construction, and financing of a greenfield hydropower plant in the range of 400 MW of installed capacity located on the Sanaga River near the Nachtigal falls. In July 2015, IFC, EDFI, Rio Tinto Alcan Inc., and GoC started the negotiation of a term-sheet describing the main terms of the PPA, the Concession Agreement, and the overall GoC Project support. This term sheet was signed in July 2016 by IFC, EDFI, and GoC, as in April 2016, Rio Tinto Alcan decided to withdraw from the Project development due to a strategic review of their operations in Cameroon.

137. The construction works are expected to be carried out through two main lump sum turnkey EPC contracts (Civil Engineering - GC lot, and Electro-mechanical 1 - EM1), complemented by two additional smaller lump sum turnkey EPC contracts (Electro-mechanical 2 - EM2, and Staff Housing - CE). Detailed contractual mechanisms between the different stakeholders have been incorporated in the EPC contracts to closely manage the interface risk between the lots.

138. **The Nachtigal EPC contracts bidding processes have followed international competitive bidding process rules as is typical for this kind of large hydropower scheme developed by the private sector.** The bidding process was organized by EDF's Hydraulic Engineering Centre (*Centre d'Ingénierie Hydraulique* - EDF CIH) for the Sponsors group. Each EPC bidding process was properly advertised, with a prequalification organized in July 2016 and proposals issued in January 2017. The Sponsors group and EDF CIH assessed the proposals based on a set of weighted criteria. The GoC has commissioned Nodalis as its technical and financial advisor during the development phase to review the procurement analysis and concluded that the selection process was adequate, and that the pricing of the EPC contracts was in the market range of similar projects in the sub region. The evaluation reports have been reviewed by the Lenders Technical Advisor, who confirmed the technical soundness of the selected companies and consistency of the contract prices.

139. **The Owner's Engineer role will be carried out by EDF under a dedicated contract.** This contract has been reviewed by the Project Shareholders, among which IFC, GoC (advised by Nodalis), as well as the Lenders Technical Advisor. The review concluded that the effort expected to be deployed by EDF will ensure close supervision of the works and mitigate construction risks.

140. **Finally, significant efforts have been deployed by the Sponsors and the GoC to reduce the tariff, and Lenders and IBRD efforts also contributed to support the Project.** The transaction is at a final negotiation stage, especially in relation to the key Project agreements and the tariff discussions. IBRD has been included in discussions on key issues in relation to the Project agreements and considers the versions of these agreements reviewed generally to be fair to the parties, including a fair return to the private investors and a fair allocation of risks among the Sponsors, Lenders, and GoC.

141. **The tariff was negotiated based on an open book approach, with known equity returns, defined construction costs, and a reasonable cost of debt.** This should ensure fairness to all parties. With respect to risk allocation, GoC benefits from its own legal and technical advisors (Eversheds and Nodalis). The sub-contracting process was led competitively by the Sponsors group and deemed satisfactory to the

World Bank and Nodalis, as GoC advisor. In addition, the World Bank has been given access to the due diligence reports of the Lenders' Technical Advisor, the Lenders' E&S advisor and the Lenders' Legal advisor as these have become available and is generally satisfied with the overall due diligence process. Additionally, IFC and GoC as equity holders, have incentives to ensure that the EPC and O&M contracts are fair to the Project to ensure a reasonable return on equity.

E. Environment and Social (including Safeguards)

142. **The Nachtigal Hydropower Project is located in natural and modified habitats where terrestrial and aquatic biodiversity values exist.** The Project will have a footprint of 2,051 ha for the construction of its main components and ancillary facilities. While only five households will be physically displaced, the Project will directly impact 917 farmers through agricultural land expropriation and restrictions on land use, and approximately 117 fishermen, 83 fish traders, and 960 sand miners will be temporarily or permanently economically displaced. Vulnerable groups will be impacted as well. During its peak construction period, the Project will employ a workforce of nearly 1,500, with the attendant stress that such a population influx will have on the cost of goods and services, public security and social cohesion. Although modest in size, the progressive filling of the dam's reservoir might generate population influx as recently experienced with the Lom Pangar Project, where thousands of people have migrated from Chad, Nigeria, and all over Cameroon and settled near the reservoir and have rapidly built a small but growing commercial fishing industry. This massive influx resulted in significant pressure on resources, social organization, and the basic infrastructure that was originally designed for small villages. The Project will form part of a hydropower cascade that will have cumulative impacts.

143. **Given all these factors, the Nachtigal Hydropower Project has been designated as a Category A Project because it may cause adverse environmental and social impacts that may be significant and irreversible.** IFC appraisal missions took place in April 2015 and December 2015 to review baseline studies and mitigation plans with NHPC's environmental and social team, and meet the Ministries of Forestry and the Environment, as well as the International Union for Conservation of Nature (IUCN), a conservation agency and conservation NGO World Wildlife Fund (WWF). Joint World Bank/IFC/MIGA appraisal missions took place in November 2016 and September 2017. The appraisal visits included interviews with NHPC's Chief Executive Officer and its environmental and social team, meetings with local authorities in Batchenga, and meetings with affected communities in the villages of Ndji and Ndokoa. In accordance with MIGA Policy on Environmental and Social Sustainability (2013), MIGA may rely on due diligence carried out by IFC and World Bank provided that MIGA determines it to be of sufficient quality and scope to adequately inform MIGA's approval process. MIGA choose to rely on IFC and World Bank environmental and social appraisal findings.

144. **A comprehensive ESMP has been prepared, addressing environmental impacts, health and safety, labor influx, and organizational capacity.** As part of the ESMP, the following management plans have been prepared and consulted upon: Biodiversity Action Plan, Migratory Influx Management Plan, Resettlement Action Plans (RAP), and a Livelihood Restoration Action Plan (sand mining workers) (see Annex 3 for the full list of safeguard instruments). Based on these instruments, an ESRS and an Environmental and Social Action Plan (ESAP) have been prepared, and disclosed on IFC's web site on June 19, 2017. The ESRS and ESAP have been disclosed in-country on NHPC's web site in June 2017. Following the involvement of European DFIs as Lenders, and the environmental and social due diligence completed in November 2017 by Mott MacDonald/ERM as the Lenders' Independent Advisor, the ESAP has been revised and updated (see Annex 3 for ESRS and ESAP).

145. **Additional instruments, including a Land Acquisition Policy for addressing accidental damage to crops and assets by contractors and any unforeseen new land acquisition identified** (e.g., access roads and borrow pits across from the Project as well as easement increase), **a Vulnerable People**

Assistance Plan, and a Local Economic Development Action Plan have been developed. In January 2018, IFC Infrastructure Advisory Services team conducted a two-day strategy workshop with NHPC and has agreed to support the Project in the following areas: (i) local supplier development program; (ii) gender program; (iii) design of livelihood restoration activities for fishermen and sand miners; and (iv) governance of the Local Economic Development Action Plan.

146. **The following PSs of the World Bank (OP/BP 4.03), IFC and MIGA are triggered:** PS1: Assessment and Management of Environmental and Social Risks and Impacts; PS2: Labor and Working Conditions; PS3: Resource Efficiency and Pollution Prevention; PS4: Community Health, Safety, and Security; PS5: Land Acquisition and Involuntary Resettlement; and PS6: Biodiversity Conservation and Sustainable Natural Resources Management. PS8: Cultural Heritage is also triggered as many studies show that Cameroon is a cultural rich country. Only PS7: Indigenous Peoples has not been triggered as no indigenous peoples have been identified in the Project's area of influence.

147. ***PS1 – Assessment and Management of Environmental and Social Risks and Impacts:*** A detailed ESIA was carried out in 2006 and updated in 2011, which was disclosed on the Project Company's and IFC's website. The ESIA results were presented to the local population, NGOs, and Cameroonian administration in 2006 and 2011. The scope of the updated ESIA includes the main components of the Project and ancillary infrastructure, such as the transmission line, access roads, among others. Public hearings organized by the Ministry of Environment, Nature Protection and Sustainable Development (MINEPDED) were held starting in January 2014 and followed by multiple information and consultation meetings held during 2014, 2015 and 2016. An environmental compliance certificate was issued by the MINEPDED in April 2014, which expired in April 2017 and is now superseded by an "*Attestation de respect des obligations environnementales"* issued in April 2017. The Attestation is issued by MINEPDED on delivery and acceptance of NHPC semiannual reports detailing the implementation of the ESMP.

148. A detailed cumulative impact assessment (CIA) was also conducted for the Lom Pangar Hydropower Project and other downstream hydropower Projects, including Nachtigal (AECOM, 2011), which mainly focused on the potential negative impacts on the estuary of the Sanaga. To address the impacts identified in the CIA, the EDC of Cameroon is commissioning an Integrated Water Resources Management Plan for the Sanaga River.

149. In 2014, owing to the involvement of EDF and IFC as Project developers, a series of complementary studies were commissioned to evaluate Project impacts and define detailed mitigation plans with regards to: (i) land acquisition and involuntary resettlement of PAPs around the dam and along the transmission line; (ii) economic displacement of sand miners; (iii) loss and fragmentation of habitat for aquatic and terrestrial fauna and flora; (iv) migratory influx; (v) public health; (vi) cultural heritage; (vii) pollution prevention during construction; (viii) opening of a laterite quarry; and (ix) installation of a waste sort/transfer/landfill station. All environmental and social mitigation measures listed in the ESIA and complementary studies have been consolidated in an ESMP. The ESMP was presented to all stakeholders in July 2016 and approved by the MINEPDED. ESMP is currently under implementation.

150. NHPC is setting up its Environmental and Social Management System (ESMS) to support implementation and monitoring of the ESMPs. This ESMS will clearly define: (i) E&S requirements; (ii) roles and responsibilities of each partner in the implementation and supervision of ESMP; and (iii) timeline and resources required for implementation. NHPC has currently a qualified E&S team on the ground and will strengthen this capacity throughout the lifecycle of the Project. Environmental and social mitigation measures linked to construction activities were incorporated in the bidding documents for the EPC contractors. EPC contractors have submitted their draft ESMP as part of tendering requirements. The ESMP will be revised prior to the commencement of construction works to ensure they have the capacity and procedures in place to manage identified E&S risks.

151. ***PS 2 – Labor and Working Conditions***. NHPC has a current workforce of about 60 employees and will have a total of about 180 employees during the operation of the hydropower plant. The Project has a five-year construction schedule and the workforce will be approximately 1,500 at peak construction. NHPC has hired a human resources manager and is developing its human resources policy and procedures, for instance related to salaries, benefits, working hours, overtime and employment demobilization after construction. NHPC will also include a commitment to support women employment in their direct hiring.

152. NHPC has included a set of labor and working conditions requirements in the EPC contracts that provide the ability to terminate contractor relationship for serious or repeated PS2 violations. For example, specific EPC contract clauses (i) describe penalties that can be used as leverage to address late payment of salaries of contractors' workers; and (ii) provide technical requirements for workers' accommodation aligned with IFC/EBRD workers' accommodation guidance note (2009). NHPC will also monitor E&S performance of contractors and sub-contractors and undertake internal labor audits during the construction period. A grievance mechanism will be established covering all workers, including contractors and sub-contractors. As mentioned above in the lessons learned section, a Social Dialogue Committee, similar to the one in place for the Lom Pangar Project, will be set up during construction and NHPC will be observer in the meetings. The Lom Pangar Social Committee Dialogue played a crucial role in addressing workers grievances during construction, particularly as the Project Grievance Redress Mechanism (GRM) was only aimed at addressing complaints raised by PAPs (from resettlement etc.). In the Project, the GRM scope has specifically been extended to collect and address workers complaints. A specific focus has also been given in contract documents to EHS provisions to reflect lessons learned from the Lom Pangar Project and, thus, endeavor to address the main sources of grievances observed in the Lom Pangar Project (decent accommodation, EHS supervision etc.).

153. Each contractor will produce a site specific Occupational, Health and Safety Plan and related procedures that refer to identifying and minimizing hazards to workers; providing appropriate equipment; identifying preventive and protective measures; training of workers; documenting and reporting accidents, diseases, incidents, and near misses.

154. ***PS 3 – Resource Efficiency and Pollution Prevention***. During construction, mitigation measures at the construction site will include standard construction pollution prevention and control measures, such as: (i) solid and hazardous waste handling and disposal; (ii) domestic/camp wastewater treatment; (iii) storage and handling of hazardous materials; (iv) housekeeping; (v) control of erosion and storm water runoff; and (vi) noise, vibrations, and dust abatement measures; among others.

155. These mitigation measures have been outlined by the EPC contractor for civil works in its ESMP (i.e., waste management plan, hazardous materials management plan and effluents management plan). A monitoring plan will be put in place by the civil works EPC contractor to regularly monitor: (i) treated domestic/sanitary effluents; (ii) treated effluents from concrete batching plants; (iii) treated lixiviates from landfill station; (iv) treated drainage from mechanical workshops; and (v) particulate emissions along access roads and sensitive receptors. Results will be reported as part of the EPC contractor monthly report to NHPC.

156. In addition, NHPC will weekly monitor water quality along the Sanaga River. NHPC will review this information to ensure that effluents and air emissions comply with Cameroonian regulations and applicable WBG EHS Guidelines. If non-compliances are identified, NHPC will require the civil works EPC contractor to implement immediate corrective actions.

157. ***PS 4 – Community Health, Safety and Security.*** With about 1,500 workers mobilized on site at peak of the construction effort, this labor-influx can lead to adverse social and environmental impacts on local communities. Such adverse impacts may include increased demand and competition for local social

and health services, as well as for goods and services, which can lead to price hikes and crowding out of local consumers, increased volume of traffic and higher risk of accidents, increased demands on the ecosystem and natural resources, social conflicts within and between communities, increased risk of spread of communicable diseases, and increased rates of illicit behavior and crime. Employment generation is a big expectation in the Project area. Seven villages will likely see a migrant labor influx and in order to limit the influx of migrants, EPC contractors have committed to hire about 50 percent of the required workforce locally, and implement a work schedule that allows migrant workers to regularly return home so that it dissuades families of workers to move into the area.

158. To reduce the impact of immigration on affected communities, NHPC will implement several mitigation measures in coordination with local authorities which are detailed in the Migratory Influx Management Plan. NHPC will also include gender specific mitigation measures within its Migratory Influx Management Plan to ensure negative impacts on women due to the Project are addressed. Additionally, NHPC will support the Ministry of Fisheries to control access to the reservoir allowing only fishermen of the directly impacted villages to exploit the resource, and therefore mitigating the risk of influx migration by fishermen as occurred in Lom Pangar.

159. To manage interactions between migrant workers and local communities, NHPC will ensure that EPC Contractors implement a code of conduct and action plan to prevent negative impacts on communities, GBV and violence against children both at management and worker level. NHPC will ensure that all workers and management are trained (and sign-off) on the code of conduct and disciplinary procedures implemented. In addition, NHPC will implement a communication campaign to explain what is the expected behavior of workers in host communities and how can a member of the community file a related complaint at NHPC's office located in Batchenga. NHPC's grievance redress mechanism will acquire the necessary expertise to handle this type of complaint.

160. *Community exposure to disease*. NHPC will coordinate measures among all EPC contractors and subcontractors to ensure all workers have access to free HIV/AIDS consultation, screening, retroviral medication and means of protection to avoid the spread of the disease, and coordinate any awareness and communication campaign among workers and the population in general.

161. *Dam Safety.* In March 2015, an independent PoE (with expertise on dam safety and environmental and social safeguards) performed a review of the dam's detailed feasibility study, which included aspects of dam safety (i.e. stability, ability to withstand a 100,000-year flood, and auscultation system). Recommendations provided by the panel were adopted by NHPC. In addition, the World Bank is providing, through the IDA-financed Hydropower Development on the Sanaga River Basin Technical Assistance Project, the financing of a Dam Safety PoE to supervise and provide advice through the construction, initial filling, and start-up of operations of Nachtigal HPP. The dam safety measures will be outlined in the Project's dam safety emergency plan to be completed and approved at least one year before the impoundment of the dam.

162. *Security forces*. NHPC is in the process of finalizing its security risk assessment. Based on the outcomes of the security risk assessment, NHPC will develop a security management plan. NHPC has retained a Security Officer to engage with the GoC to ensure public security arrangements do not pose a threat to the safety of workers and Affected Communities. The deployment, conduct, training, and incident follow-up of public security personnel shall be discussed with the army in depth and shall be ideally documented via a Memorandum of Understanding or similar.

163. ***PS 5 – Land Acquisition and Involuntary Resettlement.*** The development of the Project will entail the temporary and permanent loss of land and fishing grounds for populations in the dam impact area, transmission line, and NHPC base camp in Batchenga. RAPs have been prepared for these three areas: (i)

Dam: individual compensation will be provided to 147 PAPs whose agricultural plots amounting to 142 ha will be expropriated (22 percent of the land is cultivated by women); (ii) *Transmission line:* Individual compensation will be provided to 565 PAPs whose 100 ha of agricultural plots will be affected; (iii) *NHPC base camp:* 207 PAPs will be impacted by the loss of 19 ha of agricultural land.

164. As of October 2017, about 90 information and consultation meetings with more than 4,000 participants (i.e. PAPs, local authorities) have been organized by the NHPC E&S team to explain the RAP process, to explain and present the results of the assets inventory and the eligibility and compensation matrix. Expropriation and compensation decrees were signed in July 2017 for the dam, and in February 2018 for the transmission line and NHPC base camp. Compensation payments for the dam area were finalized in December 2017 with only compensation for two PAPs to be completed, and transactions for the acquisition of replacement land concluded in May 2018. No grievances related to compensation payments for the dam are outstanding. Compensation payments for the transmission line right-of-way and NHPC's base camp in Batchenga are expected for the third quarter of 2018. Only five households will be physically displaced. The two houses for families living in the dam area are under construction and will be ready before August 2018. NHPC is in the process of buying the lots for the three households living in the transmission line right-of-way.

165. NHPC retained a local NGO who met with each impacted household (both spouses present) to explain the compensation payment amount and discuss best options to use the money to ensure they restore their income generating activities. Implementation of livelihood restoration measures will be closely monitored by NHPC E&S team and socio-economic data will be collected annually by the consulting firm that prepared the RAPs through statistically sound sampling methodologies until the third year after the filling of the reservoir.

166. ***PS 6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources***. The Project is not located in any of Conservation International's Biodiversity Hotspot or High Biodiversity Wilderness Area, or within an Endemic Bird Area. There are no Protected Areas or Internationally recognized areas for biodiversity within or near the Project area, either upstream or downstream. The river is classified as Modified Habitat due to the extreme changes in minimum flow rate resulting from operation of the Lom Pangar regulation reservoir upstream of the Project.

167. In addition to the ESIA, NHPC conducted several complementary studies: (i) an inventory of the flora and fauna was conducted in 2014 to determine if endangered, endemic, or migratory species are present in the Project area of influence; and (ii) an ichthyologic study to identify fish species composition and abundance was performed from January to October 2014. Several Ecosystem Services were identified within the Project area, including fishing, sand mining, traditional medicines, wood collection, bushmeat hunting, and freshwater.

168. Studies identified two aquatic plants (Leddermaniella) and nine fish species which triggered critical habitat. To comply with the requirements of PS6, a Project Biodiversity Action Plan (BAP) was developed, and specific mitigation measures to address these impacts are described, including "net gain" for critical habitat. NHPC is reviewing this BAP to strengthen the mitigation of impacts by the transmission line. Mitigation measures to reduce the risk of bird collision will be improved.

169. To ensure compliance with PS6, continued long-term commitment is required to the collection of ecological and hydrological (flow/water level) data at key locations downstream of the dam during construction and operation, and the subsequent refinement of the Environmental Flow Release regime in response to changes observed to optimize conditions for the Leddermaniella and priority endemic fish species present. The Environmental Flow Release strategy will be separately consolidated and documented as part of the overall Project ESMP. Moreover, it should be integrated (and supported) within the wider

Integrated Water Resources Management Plan for the Sanaga basin that is being developed with the support of the World Bank and AFD.

170. ***PS 8 – Cultural Heritage***. NHPC has developed an Archaeology Mitigation Plan. NHPC will hire a team of archeologists before earthworks commence who will be stationed on site and will be responsible for the implementation of the plan. EPC contractors are contractually required to develop a chance find procedure as part of their integrated management system and to communicate to NHPC, at least 15 days in advance, the perimeter of each new area to be stripped as to allow archeologists to evaluate the risk of chance finds and put in place the necessary procedures. NHPC will sign a Memorandum of Understanding with the Ministry of Culture as suggested in the Archaeology Management Plan.

171. ***Stakeholder Engagement***. NHPC community relations team have a very successful engagement with local communities and local authorities. Since 2015, they have established a grievance mechanism and are implementing several programs to address resettlement impacts. The current SEP was last updated in April 2016; it is being updated for the construction phase and includes a greater emphasis on the strategy for information disclosure, communication channels, and content to be used. NHPC intends to focus on neighboring communities regarding construction schedules, employment, and community health and safety; and coordination with nearby land based construction projects (Yaoundé water supply, Sanaga bridge), which could potentially contribute to social conflict and benefit opportunities.

Institutional Arrangement for Safeguards Management.

172. NHPC has strong capacity and has demonstrated commitment to these issues during the preparation of the Project. NHPC's E&S team is comprised of eight qualified professionals who have been on site since 2014 playing an active role in the identification of the Project's environmental and social risks and mitigation measures, and ensuring the implementation of an effective stakeholder engagement strategy and grievance mechanism. NHPC's E&S team, with the support of qualified consultants, has also actively participated in the Government-led census of land to be expropriated to ensure that the RAPs comply with WB/IFC/MIGA PSs. NHPC's E&S team will remain on-site for the duration of construction, ensuring continuous engagement with communities. NHPC will hire five additional professionals to ensure the implementation of the ESMP and the complementary mitigation action plans (e.g., RAPs, livelihood restoration for sand miners, management plan of migratory influx, cultural heritage action plan, and biodiversity action plan).

173. EDF CIH will act as Owner's Engineer to ensure that execution of works by the EPC contractors comply with established cost, quality, delivery deadlines, as well as compliance with EHS contractual requirements. EDF CIH will retain one Safety Engineer (54 months), one Environmental Engineer (39 months), and two EHS inspectors to monitor contractors' EHS performance. All EPC contractors will also appoint their own personnel for the implementation of their ESMPs.

174. More broadly, the country has stable environmental and social institutions, namely MINEPDED, the Ministry of Domain, Cadastral and Land Registration Affairs, and the Ministry of Social Affairs, which are central ESIA authorities. The country has also a comprehensive environmental and social legal framework, including the 1996 Environmental Law and its implementation decrees. Any project for which an environmental assessment is carried out, is subject to the administrative and technical supervision of the competent authorities. This supervision focuses on the effective implementation of the ESMP included in the ESIA. The Order No 0010/MINEP of April 3, 2013 requires a setup in each Division of the country of a Committee for the technical and administrative supervision of ESMP. However, only one Divisional committee has not yet been set up in the Project area. In addition, permanent budget for external oversight of ESMP is not fully integrated into the Ministry's planning process. Regional ESMP Unit, divisional Environmental inspections, and Environmental Assessment unit and divisional committees do not have

adequate financial provision. They lack adequate equipment for fieldwork, and Senior staff lack personal vehicles. A central ESIA database is lacking.

F. Other Safeguards Policies Triggered

175. ***Safety of Dams (OP/BP 4.37)*** has also been triggered for this Project. Dam safety concerns, in particular, potential dam break flooding, are an integral part of the WBG's review of any hydropower development. In March 2015, an independent PoE appointed by IFC and the GoC performed a review of the Project's detailed feasibility study, which included aspects of dam safety (i.e. stability, ability to withstand a 10,000-year flood, and auscultation system). Recommendations provided by the panel were adopted by NHPC. In addition, a new dam safety PoE, financed through the IDA-financed Hydropower Development on the Sanaga River Basin Technical Assistance Project, will be recruited four months prior to start of construction, to provide advice through the construction, initial filling, and start-up of the dam, including any design or operational precautions to ensure that the Project is consistent with World Bank safeguard policies. NHPC will commission a dam break analysis to identify with certainty downstream infrastructure and people at risk and identify appropriate warning systems and other measures to address flood events, rapid water level rises in case of peaking power production and potential dam failures. Dam safety plans will be prepared prior to the first impoundment in accordance with Safety of Dams Policy. In particular, the dam safety measures shall be outlined in the Project's dam safety emergency plan and adequate resources shall be budgeted for its implementation and maintenance. As part of the dam's operation and maintenance plan, NHPC shall also develop and implement a dam safety surveillance program.

G. IFC and MIGA Project Information Disclosure

176. The IFC Summary of Investment Information (SII) and ESRS for the Project were disclosed to the public through IFC's Project Information Portal (https://disclosures.ifc.org) on June 19, 2017 and the SII has been re-disclosed on March 2, 2018 after a non-material update.

177. IFC and MIGA support their clients in addressing E&S issues arising from their business activities by requiring its real sector clients to set up and administer appropriate grievance mechanisms and/or procedures to address complaints from Affected Communities in relation to E&S issues arising from IFC's/MIGA's clients' business activities. In addition, Affected Communities have unrestricted access to the Compliance Advisor Ombudsman (CAO), the independent accountability mechanism for IFC and MIGA. The CAO is mandated to address complaints from people affected by IFC/MIGA-supported business activities in a manner that is fair, objective, and constructive, with the goal of improving E&S Project outcomes and fostering greater public accountability of IFC and MIGA. Independent of IFC/MIGA management, and reporting directly to the WBG President, the CAO works to resolve complaints using a flexible, problem-solving approach through its dispute resolution arm and oversees Project-level audits of IFC's/MIGA's E&S performance through its compliance arm. Complaints may relate to any aspect of IFC/MIGA-supported business activities that is within the mandate of the CAO. They can be made by any individual, group, community, entity, or other party affected or likely to be affected by the environmental or social impacts of an IFC/MIGA-financed business activity. Complaints can be submitted to the CAO in writing to cao@worldbankgroup.org.

H. World Bank Grievance Redress

178. Communities and individuals who believe that they are adversely affected by a 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 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 GRS, please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

179. The Project grievance mechanism is contained in the SEP, and is operational since 2014. Stakeholders can present grievances verbally or in writing to NHPC's Grievance Officer stationed in NHPC offices in Batchenga. NHPC's grievance mechanism will be operational for the duration of the Project's construction and during the 35-year operational concession period. The GRM will be adjusted to the stepped up risks expected during construction, such as labor and migration influx, and GBV. As prescribed by law, a Social Dialogue Committee will be created to address worker grievances. NHPC will regularly review and adapt its grievance resolution mechanism to effectively respond to the changing nature of registered complaints.

Annex 1: Results Framework and Monitoring

CAMEROON: Nachtigal Hydropower Project, P157734

Results Framework

A. Indicators and Targets:

Project Development Objectives

PDO Statement

The Project development objective is to increase the availability of renewable energy power and leverage private finance for the Nachtigal Hydropower Project.

These results are at	Project Level							
PDO Indicator Name	**Baseline**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**End Target**
Generation capacity of energy constructed (MW) (Corporate Results Indicator)	00.0	00.0	00.0	00.0	00.0	360.0	420.0	420.0
Additional operating net capacity available (MW)	00.0	00.0	00.0	00.0	00.0	350.0	408.0	408.0
Private cumulative Capital Mobilized for the Nachtigal Hydropower Project (EUR million), of which from cumulative local sources (EUR million equivalent)	00.0 00.0	38.6 23.2	78.6 63.1	126.4 87.5	174.3 111.7	233.1 141.5	351.6 161.6	351.6 161.6
Avoided global GHG emissions (teqCO_2)	00.0	00.0	00.0	00.0	00.0	500,000	836,000	836,000

Intermediate Indicator Name	Baseline	2018	2019	2020	2021	2022	2023	End Target
Construction of the civil works (% of progress)	0 %	20%	51%	76%	90%	97%	100 %	100%
Supply, erection and commissioning of equipment (% of progress)	0 %	5%	21%	44%	73%	96%	100 %	100%
Construction of the transmission line (% progress)	0 %	10%	43%	77%	85%	98%	100 %	100%
Implementation of the ESMP (% progress or milestones)	0 %	20%	40%	60%	75%	85%	90 %	100%
Trial run results of the Nachtigal hydropower Project meet owner ‘s performance targets (yes/no)	No	No	No	No	No	No	Yes	Yes
Project–related grievances registered under the Project grievance redress mechanism and addressed (percentage)	00.0	95.0	95.0	97.0	98.0	99.0	100.0	100.0

B. M&E Plan for Indicators:

Indicator Description				
Project Development Objective Indicators				
Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Generation capacity of energy constructed (MW) (Corporate Results Indicator)	Generation capacity in MW of hydropower energy constructed under the Project	Quarterly	Progress report	NHPC, ENEO
Additional operating net capacity available (MW)	Generation capacity in MW available from the Nachtigal hydropower Project	Quarterly	Progress report	NHPC, ENEO
Private Capital Mobilized for the Nachtigal Hydropower Project (EUR million), of which from local sources EUR million equivalent)	Private capital mobilized for the construction of the Project (EUR million), of which local currency funding mobilized for the construction of the Project (EUR million equivalent)	Quarterly	Progress report	NHPC
Avoided global GHG emissions (teq CO_2)	GHG emissions avoided under the Project calculated calculated considering the total emissions avoided is 0.362 teqCO_2/MWh generated by NHPC	Quarterly	Progress report	NHPC

Intermediate Results Indicators				
Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Construction of the civil works (percentage of progress)	Percentage of progress in the construction of the civil works, as evidenced by the progress of invoicing for GC contract. 100 percent when tests for the commissioning of the works have been completed successfully	Every six months	Project implementation report	NHPC, ENEO, SONATREL, GoC
Supply, erection and commissioning of equipment (percentage of progress)	Percentage of progress in the supply, erection and commissioning of equipment, as evidence by the progress of invoicing for EM1 contract. 100 percent when tests for the commissioning of the plant have been completed successfully	Every six months	Project implementation report	NHPC, ENEO, SONATREL, GoC
Construction of the transmission line (percentage progress)	Percentage of progress in the construction of the transmission line, as evidenced by the progress of invoicing for the EM2 contract. 100 percent when tests for the commissioning of the plant have been completed successfully	Every six months	Project implementation report	NHPC, ENEO, SONATREL, GoC
Implementation of the ESMP (percentage progress or milestones)	Percentage of progress of the ESMP implementation based on percentage of budget allocated to ESMP disbursed.	Every six months	Project implementation report	NHPC, GoC
Trial run results of the Nachtigal hydropower Project meet owner ‘s performance targets (yes/no)	Test the performance of the Project against owner’s performance targets during the trial runs	According to trial run schedule	Pre-commissioning tests reports	NHPC, GoC
Project–related grievances registered under the Project grievance redress mechanism and addressed (percentage)	Percentage of Project –related grievances registered under the Project grievance redress mechanism and addressed	Every six months	Project implementation report	NHPC, GoC

C. IFC Anticipated Impact Measurement and Monitoring (AIMM) Rating:

1. **Summary**: The Project has an AIMM rating of **Excellent** based on an AIMM score of 120. IFC expects the Project to add low-cost clean power generation capacity required to support access expansion plans in Cameroon, and deliver significant economy-wide effects including employment and value added. The anticipated market creation effects include improved competitiveness, deriving from the establishment of an enabling framework to mobilize private investors and commercial financing in the development of large hydropower Projects in Cameroon. The replacement of imported fuels with a domestic resource for power generation is also expected to enhance resilience of the power system.

2. **Assessment of Project Outcomes** – The Project outcomes rating is **Very Strong** with **medium** likelihood of achievement. The likelihood assessment is supported by: (i) the strong engagement of development partners in the power sector in Cameroon over the past decade, including IFC's own support during the Project development phase; (ii) strong support from GoC evidenced by its willingness to implement a broad range of sector reforms that facilitated the Project's financial close; (iii) exceptional hydrology, on account of the WB-financed Lom Pangar regulating dam, which will boost Nachtigal's firm all-season capacity; and (iv) technical strength of the Project sponsors (EDF and IFC) and EDF's positive track record implementing similar Projects in emerging markets. This is tempered by some Project risks that have a bearing on the delivery or timeliness of Project outcomes, including high interface risk resulting from the several Project components handled by multiple partners with varying institutional capacities; E&S risks that might trigger negative stakeholder responses against the Project; high distribution losses and financial stress faced by ENEO, which pose some risk to the expansion of the distribution network.

3. The main Project outcomes include:

- *Stakeholder effects:* The Project contributes to achieving the main objectives of the country's power sector development plan, among them, increasing electricity access rates. Cameroon has a low electricity access rate of 50 percent with just over 1 million customers connected to the grid. The Rural Electrification Master Plan approved in March 2017, has a target to increase the share of the population living in electrified localities from 74 percent in 2016 (with large rural-urban and north-south regional disparities) to 88 percent by 2022, adding a targeted 50,000 customers to the grid annually. Hydropower is forecast to play a key role in the country's ability to expand access. According to the country's own forecasts, hydropower will represent about 75 percent of the energy mix by 2023, up from about 60 percent in 2017. Nachtigal is identified as one of the anchor baseload plants for grid access extension in Cameroon's Least-cost Electricity Sector Development Plan 2015-2035. The plant adds 420 MW of baseload capacity, 32 percent of the current installed generation capacity. IFC expects that the Project will generate 2,900 GWh of electricity, amounting to 40.8 percent of the grid's total output pre-completion. This output is enough to serve 453,000 customers, based on ENEO's current supply per customer. To measure progress against these effects, IFC will track GWh of generation produced (see Results Measurement below).

  IFC expects the Project to contribute to reducing the average cost of service to residential and commercial customers. At US$0.14 per kWh, the average end-user tariff in Cameroon exceeds both the regional average (US$0.13 per kWh), and the regional average for countries with hydro-based power systems (US$0.10 per kWh). The relatively large share of imported fuels (HFO and diesel, accounting for 27 percent of total installed capacity) in the country's electricity generation mix, level of transmission and distribution losses, seasonal need for emergency generation, and the daily need for emergency generation during peak hours, explain the high cost of service. In addition to stabilizing supply and reducing the need for emergency generation, the Project delivers electricity at a competitive levelized tariff of around EUR 0.06 per kWh which contributes to lowering the average generation cost

of service[32]. The Project also displaces captive diesel generators used by firms to supplement grid based energy during peak periods and dry seasons, thereby reduce the cost of electricity supply for firms. IFC estimates the unit cost for diesel generators in Cameroon at US$0.47 per kWh which is much higher than the average end-user tariff of US$0.14 per kWh.

- *Economy-wide effects:* By alleviating a deficit in the power sector, the Project will increase economic productivity in Cameroon and create jobs. The 2016 World Bank Enterprise Survey for Cameroon identified electricity as a major constraint for 51.6 percent of private enterprises. Improving access and reliability of electricity is also identified as the highest ranking and most feasible solution to poverty alleviation in Cameroon, per the country's 2016 WBG SCD. IFC expects the Project to result in FCFA 102.2 billion value added annually (equivalent to an additional 0.33 percentage points on the country's annual GDP growth which was estimated at around 4 percent in 2017) and create about 27,110 sustained jobs[33]. The WB estimates the Project's economic rate of return at 20.9 percent (against an annual financial return of 9.5 percent) reflecting the opportunity cost of natural gas based generation in terms of cost of service. Accounting for CO2 emissions savings, the economic rate of return increases to 27.9 percent. To measure progress against these effects, IFC will track the annual economic rate of return and direct construction and full-time jobs over the life of the Project (see Results Measurement below).

- *Environmental effects:* The Project will generate energy from a renewable energy source, improving the carbon footprint of the power sector in Cameroon. Cameroon's hydro capacity will increase by at least 50 percent following the Project's commissioning, helping to increase the share of hydro in the country's generation mix from 60 percent in 2017 to about 70-75 percent in 2023. The Project will also displace captive diesel back-up generators used by firms, as well as facilitate the decommissioning of thermal capacity installed under the country's emergency program implemented in 2013. IFC estimates that the Project will have an emissions intensity of 2.4 gCO_2/kWh, lower than the country's electricity grid emissions intensity of 364 gCO_2/kWh. Relative to a natural gas based power plant, GHG emissions savings of 1,042,175 tons of CO_2 per year are expected. To measure progress against these effects, IFC will track GHG emissions avoided (see Results Measurement below).

  The WBG has classified the Project as Category A, reflecting adverse environmental and social impacts that may be significant and irreversible. Potentially significant impacts include the loss of natural habitat due to flooding and the infrastructure footprint, and the environmental and social risks associated with the construction and operation of facilities. The Project and its associated assets (e.g. the dam and transmission line) entail compensation for 917 PAPs. These potential impacts will be mitigated and managed through application of WB/IFC/MIGA PSs, and oversight on dam safety provided by the PoE to be established, at the latest at first disbursement, as part of the WB Hydropower Development on the Sanaga River Basin Technical Assistance (WB TA) Project.

4. **Assessment of Contribution to Market Creation** – The contribution to market creation rating is **Very Strong** with **medium** likelihood. The likelihood assessment is supported by the likely delivery of some market creation effects from the Project's successful execution—given its strategic importance, advanced stage of reforms and procurement frameworks being operationalized by the Project, and strong

[32] The WB estimates a potential reduction of between 4.9 and 6.2 percent over the period 2018-2030. The magnitude of the Project's impact on the average generation cost of service in the short term will be partly determined by the cost of transmission and distribution infrastructure associated with new generation assets.

[33] These estimates are generated through an infrastructure model developed by IFC. The underlying methodology relies on relatively strong assumptions, including unlimited resources and supply responses in the domestic economy, fixed prices, no substitution effects and a static/unchanged structure of economy going forward. Thus, reported results should be interpreted as an approximation that provides orders or magnitude of expected economic impacts. The estimates are based on the same production and revenue assumptions used in the Project's financial analysis.

Government and development partners' support for the Project and the power sector in Cameroon, including ongoing WB Projects: a TA program that will facilitate procurement of at least one additional generation asset through PPP and a DPF that will contribute to improving the financial sustainability of the sector. However, some uncertainties remain regarding the full implementation of outstanding sector reforms. In addition, projects in the pipeline are still at very early stages of development, and will entail substantial public investments to finance associated transmission infrastructure and backstop contractual obligations. Additional capacity is also partly justified by demand forecasts that rely on the materialization of large-scale local industrial projects and the successful completion of interconnections with neighboring countries.

5. The Project's main contributions to market creation are:

- *Competitiveness:* The Project is a product of extensive WBG engagement in the power sector in Cameroon aimed at unlocking bottlenecks and leveraging private sector investments and commercial financing to develop the country's large hydropower resources. The Government aims to develop hydropower generation assets on the Sanaga river basin, with an estimated 4,200 MW potential that can be developed through large hydropower sites. Although GoC has been implementing reforms that increased private sector participation in some segments of the market, the reforms failed to attract private sector investments to the expected scale in the development of greenfield generation assets, with two thermal power IPPs currently in operation at comparatively higher feed-in tariffs. There has been slow progress in attracting private investors and commercial financing into large hydropower generation, where investors face more binding constraints, including high social and environment risks, and high upfront costs.

  The WBG has supported GoC in addressing key bottlenecks to private sector participation in the development of greenfield hydropower generation assets, through (i) privatization of the utility to enhance its operational performance (IFC); (ii) investments in transmission and distribution infrastructure to unlock capacity bottlenecks and enable addition of more generation capacity to the grid (WB); (iii) construction of the Lom Pangar regulating dam that stabilizes and increases all-season water flows on the Sanaga river, increasing hydrology of generation assets downstream (WB); (iv) an ongoing WB TA (2017-2024) Project aimed at building capacity of the public institutions involved in the development of hydropower projects on the Sanaga river to effectively perform tasks such as integrated planning, system optimization, site identification and selection, operation of hydropower cascade-wide storage, implementation of hydrology risk mitigation mechanisms, and preparation of bidding documents for future projects; and (v) an ongoing WB DPF series (2017-2020) classified as an "MFD-enabler" Project, which supports policy actions essential to maintain the financial sustainability of the energy sector and attract private capital, including institutionalizing a mechanism for payment of energy bills by the public sector and revising the energy policy for industries to reduce subsidies and their related fiscal burden. These activities contribute to creating an enabling environment for private sector participation in the development of generation capacity.

  Nachtigal—the first hydro PPP to benefit from this upstream work—is considered a flagship Project that operationalizes this sector framework and demonstrates the feasibility of leveraging private sector investment and commercial financing for future hydropower developments on the Sanaga River Basin. Besides the upstream work, the WBG implemented additional activities to ensure financial close for the Project (establishing a contractual structure that allows for optimal risk sharing among stakeholders, undertaking grid reinforcement and extension works to enable the dispatch of Nachtigal, facilitating adoption of specific fiscal commitments by GoC to ensure financial sustainability of ENEO) contribute to strengthening the sector framework, and further reduce Project preparation risks and uncertainty faced by private investors in future Projects. The framework set parameters for more transparent and swift negotiation of future PPPs with potential investors. Cameroon has a target to develop more than 3,000 MW of hydropower capacity by 2035, under its median growth scenario. Pipeline projects that

might benefit from the nascent framework for private sector-led development of hydropower generation assets in Cameroon include the planned 270 MW Song Dong Project, and others that have been prioritized for their location and cost under the power sector development plan[34]. The ongoing WB TA Project will facilitate procurement of at least one additional generation asset through PPP, while the DPO supports policy actions aimed at achieving financial sustainability for the sector.

- *Resilience:* The Project adds power generation capacity from a locally available energy resource, positioning Cameroon's power system to better weather potential energy supply shocks. At present, Cameroon experiences dry season and peak period supply shortages. With the commissioning of Lom Pangar, the regulating dam and main reservoir upstream of Nachtigal, all-season flow on the Sanaga river basin increased by 40 percent. IFC expects the Project to provide more stable capacity during the dry season, contributing to stabilizing grid-based electricity supply. As seasonal and peak shortages are met through HFO and diesel generation capacity (accounting for 27 percent of the generation mix), a gas-fired plant (17 percent of installed capacity) as well as emergency generators, which rely on more costly imported fuels, the Project also reduces the sector's susceptibility to oil price volatilities and improves its capacity to recover costs. The Project's lower tariff will also contribute to lowering the fiscal burden of the power sector, by reducing compensation payments (covering the revenue gap between the cost of service and the end-user tariff).

  Yet, the Project is part of a strategy to increase the share of hydro in the generation mix to 75 percent, through generation assets concentrated on the same river basin, thus exposed to related variations in hydrology. Although reservoirs such as the Lom Pangar dam play an important role in regulating water flows, the increasing share of hydro in the generation mix necessitates adoption of additional mechanisms to effectively manage the sector's exposure to hydrological risk. The identification of hydrology risk mitigation mechanisms, development of reservoir management plans, and sector-wide engagements on the same, currently being implemented as part of the WB TA Project, aim to mitigate this potential risk.

6. *Results Measurement* – The Project's performance indicators that will be tracked in the Development Outcome Tracking System (DOTS) are presented below[35]:

Table 3: Monitorable Indicators (Development Outcome Tracking System)

	Brief outcome description	**Indicator**	**Baseline and year**	**Target and Year (not to exceed 5 years)**
Financial Performance	Returns to all capital providers	Project cost and completion date	Project cost EUR 1,184 million	Project completed **within a budget of +/- 10 percent of the total of EUR 1,184 million by 2024**
		Annual FRR	N/A	EUR annual FRR > EUR annual WACC over the life of the Project

[34] e.g., the Ndock and Song Mbengue hydro Projects.

[35] During the FY18 AIMM pilot period, IFC will continue to use DOTS; over the course of FY18, IFC hopes to refine DOTS so that it will be fully integrated with the AIMM system.

	Brief outcome description	Indicator	Baseline and year	Target and Year (not to exceed 5 years)
Economic Performance	Returns to society	Annual ERR	N/A	Annual ERR > annual WACC over the life of the Project
	Benefits to employees	Construction and permanent jobs	N/A	Employment generation of 27,110 economy-wide, including 1250 construction jobs and 130 full-time jobs over the life of the Project
	Benefits to the government	Tax payments to the GoC	N/A	Estimated to be equal to FCFA 6 billion per annum by 2025
	Benefits to consumers	Power generation (GWh)	N/A	At least least 90 percent of the 2,900 GWh average annual electricity quantity generated by 2025.
Environmental and Social Performance	GHG Emissions Avoided	Tons of CO2 equivalent emissions avoided	Zero	Approximately 1,042,000 tons of CO2 equivalent avoided per year by 2025.
	Design and Implement E&S Standards	The Project will follow WB/IFC/MIGA PSs	NA	Compliance with World Bank/IFC/MIGA PSs over the life of the Project
Private Sector	Support to the private sector	Follow-up energy investments in Cameroon by other players	Zero	One follow-on investment on the Sanaga river by other private sector investors by 2030.

Annex 2: Detailed Project Description

CAMEROON: Nachtigal Hydropower Project, P157734

Hydrologic and Geological Settings

1. The Sanaga River is the largest river in Cameroon and its basin covers almost one third of the country. It flows for 918 km and covers a drainage basin of about 140,000 km^2. The main tributaries of the Sanaga are the Mbam, the Lom, and the Djerem. The Lom and Djerem converge into the Sanaga upstream of Nachtigal Amont. The Mbakaou reservoir (active volume of 2.5 billion m^3) on the Djerem and the Lom Pangar reservoir (active volume of six billion m^3), recently commissioned, allow regulating the natural inflows into the Nachtigal intake structure, improving the Project energy output in the dry season.

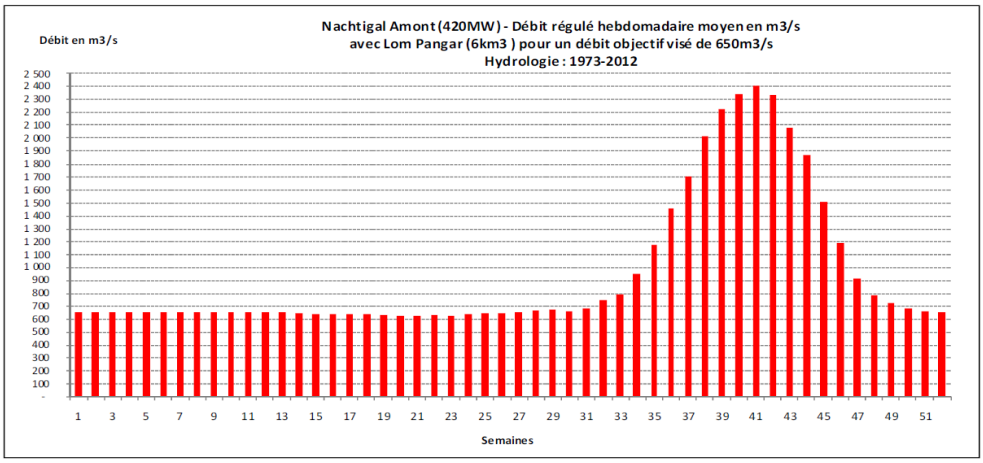
Picture 2.1: Lom Pangar Dam and Reservoir

Source: World Bank.

2. Precipitation is homogenous on the Sanaga River catchment upstream from Nachtigal, with a mean annual rainfall around 1,650 mm. Mean monthly rainfall measurements show two distinct rainy seasons: one between March and June concentrating 44 percent of annual precipitation, and a second one between September and November concentrating 41 percent of annual precipitation. The highest precipitations occur in October. Based on the extended record, 1973-2012, the mean annual discharge at the dam site is 947 m^3 per second. In the 40 years of the extended record, the mean annual discharge has ranged from 631 m^3/s in 1988 to 1,132 m^3/s in 1976. Dry season extends from December to May. The lowest discharge is observed in March (average monthly flow rate for March being 106 m^3/s, with a minimum of 32 m^3/s in 1989) whereas the maximum discharge is observed in October (average monthly flow rate for October being 2,412 m3/s, with a maximum of 3,502 m^3/s in 1996).

3. Thanks to Mbakaou and Lom Pangar regulation, it will be possible to maintain a target flow rate of 650 m^3/s in the dry season at Nachtigal. The assumption on the target flow has been validated through extensive hydrologic review during the Lenders' technical due diligence.

Figure 2.1: Expected Weekly Flow Rates at Nachtigal with Releases from Mbakaou and Lom Pangar



Source: EDF.

4. Flood estimates are required for the design of the diversion works during construction and of the spillway structures. The flood peak values associated with a return period of 100 years has been estimated at 5,500 m^3/s while the extreme flood discharge corresponding to 10,000-year return period for the spillway design has been calculated at 7,500 m^3/s.

5. The geological settings at the Nachtigal site are a complex of gneisses of the Precambrian bedrock made of a layer of weathered gneiss up to five meters thick and fresh and sound gneiss underneath. The geological integrity and stability of the sites of the main Project layout components (e.g., dams, canals, and powerhouse) have been analyzed in the framework of the detailed feasibility study finalized in March 2015. They have also been reviewed by the geologist of an independent PoE hired by the consortium in January 2015. These geological conditions have been qualified as "simple and favorable" by the PoE's geologist. The main works shall be founded on sound rock and the design has been considered appropriate for the geological conditions of the site. In addition, the civil works for the Nachtigal Project do not include any underground works, which reduces significantly the exposition to the geological risk during construction.

Project layout and main facilities

6. In general, simple and proven designs have been favored for all structures and machines to reduce costs and increase the reliability to the hydroelectric facilities.

7. The main structure hosts an overflow spillway made up of a labyrinth weir on the right bank and two radial gates in the center used for flood management and for controlling the reservoir levels. Two flap gates installed on top of these radial gates are used for small water releases and to pass the floating debris downstream. The maximum spillway capacity at 514.70 m NGC is 7,500 m^3/s equivalent to a 10,000 year flood.

8. The block in the main dam comprised between the labyrinth spillway and the gated spillway hosts five temporary openings used for the river diversion during construction. One opening will be transformed into a small generating unit designed to turbine the ecological flow and deliver to the local 30 kV network feeding the Project's auxiliaries. In case of unavailability of the Environmental Release Generation Unit, the Environmental Release is made through the top flap gates or the radial gates.

9. The power intake is located on the left bank and comprises three openings feeding a headrace channel nearly 3 km long. The headrace channel is concrete lined and has a trapezioidal cross section having

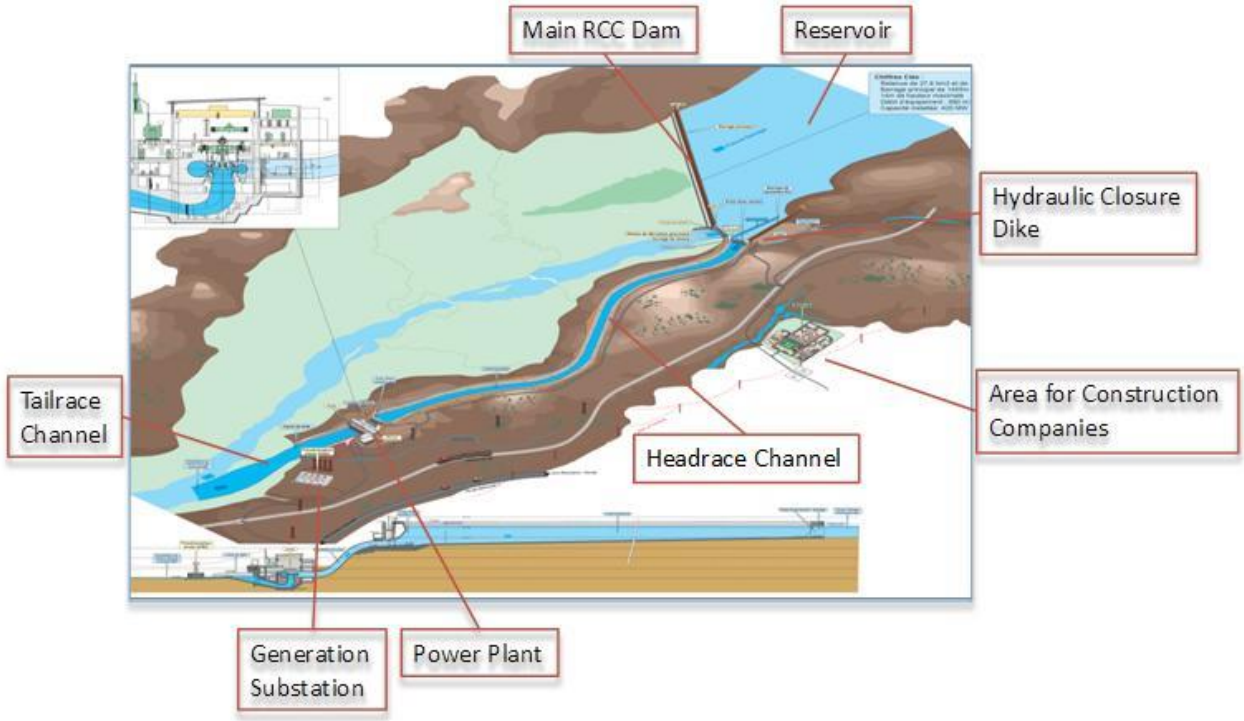
top width of 60 m. The end section of the headrace is equipped with seven circular conduits with internal diameter of 5.6 m feeding the seven Francis turbines with vertical axis of 60 MW each. The seven generating units will be hosted in a surface powerhouse 142 m long, 47 m wide, and 36 m high. An 800-m long tailrace channel will return the turbined flows into the main course of the Sanaga River.

10. The Project also includes the construction of a 225-kV switchyard and transmission line, nearly 50 km long, to connect the Nachtigal switchyard to the existing Nyom 2 sub-station which represents the connection point with the grid. The transmission line will be constructed by NHPC and transferred to GoC and operated and maintained by SONATREL after the commercial operations date.

11. The power station's full operating net capacity at the generation substation is expected to be 408 MW. Baseload-equivalent capacity in the dry season, thanks to upstream regulation offered by the reservoirs of Mbakaou and Lom Pangar, is expected to be 278 MW.

12. The hydroelectric facilities consist of the following elements (see Figure 2.2):

Figure 2.2: Overview of the Project Layout



Source: NHPC.

Figure 2.3: View of the Nachtigal main dam

Source: NHPC.

Figure 2.4: View of the Nachtigal Power House

Source: NHPC.

13. The construction works will be carried out through two main lump sum turnkey EPC contracts (Génie Civil – Civil Engineering ("GC") and Electro-Mechanical 1 ("EM1")) and two additional smaller lump sum turnkey EPC Contracts (Electro-Mechanical 2 ("EM2") and Staff Housing – Cité d'Exploitation ("CE")), based on FIDIC book contract type. The 225-kV transmission line and the 30 kV local lines are part of the package EM2. Preparatory works such as the access roads and the preparation of the platforms could be executed in advance before the financial close.

14. The Project owner NHPC will mandate EDF as Owner's Engineer, which will perform, amongst others, the review and validation of the contractors' design, the coordination of the different EPC contractors, the construction supervision, and the claims management.

15. Construction works are expected to start shortly after Financial close and last for 57 months.

Operation and Maintenance

16. NHPC will undertake O&M of the Project but with, in particular, the provision of technical support and staffing from EDF, under Technical Services and Personnel Supply Contracts. Such a strategic approach has been implemented successfully in several hydropower Projects worldwide. SONATREL is responsible for the maintenance of the Nyom 2 substation and the transmission line once it is transferred by NHPC to GoC and then operated and maintained by SONATREL.

17. The O&M team will be gradually mobilized during the construction period, in order to be fully operational when the dam and the first generating unit are commissioned. As is customary for Projects of this nature, NHPC will have to meet availability targets during the operation period

18. The O&M team of NHPC will comprise a management team, an operation team, and a maintenance team, a quality, health, safety, and environmental team, and an administrative team for a total of about 50 employees at commercial operation date and throughout the operation period. The O&M team will be mobilized during the construction period, in order to be fully operational at the time of commissioning and testing of the dam and the first generating unit. Relevant training will be provided to all operators recruited by NHPC.

Annex 3: Implementation Arrangements

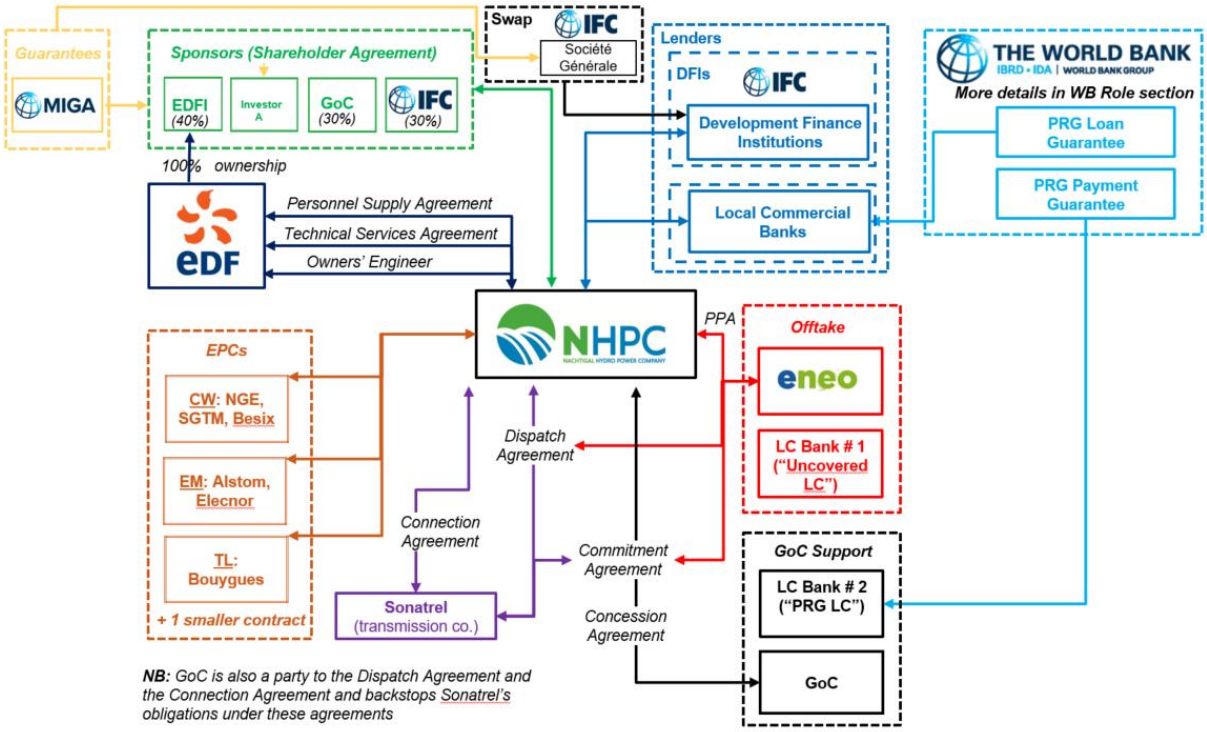
CAMEROON: Nachtigal Hydropower Project, P157734

Project Institutional and Implementation Arrangements

1. The Project Company will undertake the design, financing, construction, operation and maintenance of the Project over the 35 years of the concession.

2. The contractual structure has been deemed bankable and well-balanced in particular in the context of ambitious sector reforms undertaken by GoC. NHPC will enter into a PPA with ENEO and an amended Concession Agreement with GoC. In addition, GoC, NHPC, ENEO, and SONATREL will enter into a Commitment Agreement. ENEO and GoC will enter into a Government Support Agreement. GoC, NHPC, ENEO and SONATREL will enter into a Dispatch Agreement and GoC, SONATREL and NHPC will enter into a Connection Agreement.

Figure 3.1: Project Contractual Structure



Source: NHPC.

Electricité de France (EDF)

3. French utility EDF is the industrial sponsor of the Project and has been a key developer of the Project since the start in 2013. EDF, one of the largest utilities in the world, is involved in all segments of the energy value chain: generation, transmission, distribution, energy supply, and trading with a portfolio of more than 130 GW of generation capacity spread throughout Europe, South America, North America, and Asia. EDF is Europe's largest renewable energy producer and has an important historical footprint in the hydropower sector. EDF's current net installed hydropower generation capacity stands at 21.4 GW (on a consolidated basis) most of which is in Europe.

4. EDF had total revenues, consolidated EBITDA, and net profit, respectively, of EUR 69.6 billion, EUR 13.7 billion, and EUR 3.2 billion in 2017 and is currently rated A-, A3, and A- by S&P, Moody's, and Fitch, respectively. EDF will invest through its wholly-owned subsidiary EDFI, which is the holding company for EDF's investments abroad. EDFI has more than 20 subsidiaries including Nam Theun 2 Power Company.

Construction Phase

5. The construction works will be carried out through four lump sum turnkey EPC Contracts, that were competitively awarded (for more detail, see the procurement section below) to a set of experienced consortia in hydropower infrastructure as described below:

(a) *Civil works (GC)*: a consortium with the appropriate combined experience, consisting of (i) NGE Contracting (a subsidiary of NGE, an engineering services firm with proven experience in France, mostly in urban infrastructure); (ii) *Société Générale des Travaux du Maroc* (the leading civil engineering contractor in Morocco with significant experience in dam construction), and (iii) NV Besix (the largest Belgian construction and engineering group with some experience in Cameroon). The GC contractors will be supported by engineering consultants Tractebel and ISL. These two international and well-known companies have been active in Cameroon for the last 40 years. It is understood that Tractebel and ISL will act as contractor's engineer through permanent presence of experienced staff at site;

(b) *Electromechanical works for the hydropower plant and the substation (EM1)*: a consortium comprising (i) GE Hydro France (a subsidiary of GE Renewable Energy, and one of the Alstom power business acquired by GE Power in 2015), which is a top-tier contractor with significant expertise worldwide; and (ii) Elecnor, which has significant experience in large-scale hydropower, in particular in Africa and South America;

(c) *Transmission line (EM2):* works will be performed by Bouygues Energies & Services, which has strong knowledge of and experience in Cameroon in particular and extensive experience in electricity systems in Africa generally; and

(d) *Owner's housing village* will be built by Cameroon-based *Société Générale de Construction*.

6. The construction interface will be managed by NHPC with the support of EDF as Owner's Engineer. Key interface risks are concentrated on: (i) the civil works and electro-mechanical works in the power plant; and (ii) the electro-mechanical work in the power plant and for transmission. The capacity of NHPC and its Owner's Engineer to manage the interface and communication between the various contractors and efficiency of communication within the consortia will be a key element of success during construction.

Operation Phase

7. NHPC will undertake the O&M of the Project with technical support and staff from EDF. Such approach has been successfully implemented in several hydropower Projects worldwide. The O&M team of NHPC will comprise 50 employees at completion and throughout the operation period. The O&M team will be mobilized and trained during the construction period in order to be fully operational at the time of commissioning and testing of the dam and the first generating unit. The transmission line is required to be transferred from NHPC to GoC once the Project reaches commercial operations. SONATREL will then be responsible for the O&M of the transmission line.

8. EDF will provide support throughout the operation period by providing staff and technical services to NHPC. This will allow for proper training of local staff and ensure that adequate skills are deployed for major maintenance.

Financial Management, Disbursements and Procurement

Financial Management

9. There is no obligation related to the disbursement of an IBRD-financed procurement or procurement-related disbursements. IBRD will provide a payment guarantee to NHPC as well as a loan guarantee to support commercial debt to NHPC (see Paragraphs 133 and 134 of main text).

Procurement

10. Under the World Bank's Policy on Investment Project Financing, applicable to guarantee Projects, goods and services must be procured with due regard to economy and efficiency. The Sponsors provided Lenders and IBRD with information on the procurement process used to competitively select the sub-contractors to the main EPC contractor, as well as on the building blocks of the EPC price. IBRD´s review concluded that the overall procurement of the Nachtigal Project met general principles of industry-wide standards of economy, efficiency, and transparency for this scale and type of procurement (see Paragraphs 135 to 141 of main text).

Environmental and Social (including E&S Review Summary and E&S Action Plan)

11. Addendum 1 and 2 of this annex present respectively the E&S Review Summary and the E&S Action Plan disclosed in June 2017.

12. The following section lists all environmental and social impact assessment studies, as well as all E&S management plans[36].

Environmental and social impact assessment studies:

a. *Projet d'aménagement hydroélectrique de Nachtigal — Cameroun. Étude d'impact environnemental. Novembre 2006.* Tecsult. Sogreah. Nachtigal Hydropower Project — *Cameroon*. Environmental impact assessment. November 2006. Tecsult. Sogreah
b. *Projet hydroélectrique de Nachtigal. Mise à jour de l'étude d'impact environnemental et social. Septembre 2011. AECOM. Sogreah.* Nachtigal Hydropower Project. Update of the environmental and social impact assessment. September 2011. AECOM. Sogreah.
c. *Barrage de Nachtigal. Expertise de l'impact sédimentaire sur la rivière Sanaga. Artelia. Mai 2014.* Nachtigal Dam. Impact on sediments in the Sanaga River. Artelia. May 2014.
d. *Addendum à l'étude d'impact environnemental et social de septembre 2011. Etat initial de la qualité de l'air. CARFAD. Juin 2014.* Addendum to the 2011 Environmental and Social Impact Assessment. Air quality baseline. CARFAD. June 2014.

[36] Key prorject documents are disclosedon on the IFC website:
https://disclosures.ifc.org/#/projectDetail/ESRS/37673
https://disclosures.ifc.org/#/landing

e. *Addendum à l'étude d'impact environnemental et social de septembre 2011. Rapport final sur le bruit et la qualité de l'eau. Juin 2014.* Addendum to the 2011 Environmental and Social Impact Assessment. Noise and water quality baseline. June 2014.

f. *Addendum à l'étude d'impact environnemental et social de septembre 2011. Etude biodiversité. Inventaires flore et faune complémentaires. CARFAD. Septembre 2014.* Addendum to the 2011 Environmental and Social Impact Assessment. Biodiversity study. Inventory of flora and fauna. CARFAD. September 2014.

g. *Addendum à l'étude d'impact environnemental et social de septembre 2011. Etat initial des peuplements piscicoles de la Sanaga à Nachtigal. Dr. Bitja-Nyom and Dr. Antoine Pariselle. Avril 2015.* Addendum to the 2011 Environmental and Social Impact Assessment. Baseline of fish populations in the Sanaga River - Nachtigal. Dr. Bitja-Nyom and Dr. Antoine Pariselle. April 2015.

h. *Project hydroélectrique de Nachtigal Amont. Étude et plan de gestion économique et social des sablières. Egis Cameroun. Septembre 2015.* Nachtigal Amont Hydroelectric Project. Economic and social assessment and management plan of sand quarries. Egis Cameroun. September 2015.

i. *Project hydroélectrique de Nachtigal. Étude et plan d'action des capacités locales et de la main d'œuvre. CARFAD. Septembre 2015.* Nachtigal Hydroelectric Project. Assessment and action plan for local capacity and workforce. CARFAD. September 2015.

j. *Etudes environnementales complémentaires du projet hydroélectrique de Nachtigal. Etude de la floraison de Ledermanniella. Septembre 2015.* Complementary Environmental Studies to the Nachtigal Hydroelectric Project. Ledermaniella flowering study. September 2015.

k. *Projet Hydroélectrique de Nachtigal Amont EDF Cameroun. Note d'expertise pour le débit réservé de du projet de Nachtigal. Compte Rendu. Artelia. Octobre 6, 2015.* Nachtigal Amont Hydroelectric Project EDF Cameroon. Expert report regarding the environmental flow release for the Nachtigal Project. Minutes. Artelia. October 6, 2015.

l. *Complément à l'étude d'impact environnemental et sociétale EIES 2011. Synthèse des impacts du Projet Hydroélectrique de Nachtigal Amont sur les peuplements piscicoles. EDF-CIH. Novembre 2015.* Addendum to the 2011 Environmental and Social Impact Assessment ESIA. Synthesis of the impacts of the Nachtigal Amont Hydroelectric Project on fish populations. EDF-CIH. November 2015.

m. *Projet de développement du projet hydro-électrique de Nachtigal Amont. Note d'aide à la décision relative au débit réservé du projet. EDF-CIH. Novembre 2015.* Nachtigal Amont Hydroelectric Project. Note to support decision regarding the environmental flow release for the Project. EDF-CIH. November 2015.

n. *Intérêt d'un retrait de la végétation aérienne dans l'emprise du réservoir de Nachtigal. EDF-CIH. Decembre 2015.* Analysis regarding the removal of aerial vegetation in the Nachtigal reservoir. EDF-CIH. December 2015.

o. *Projet Hydroélectrique de Nachtigal Amont. Mise à jour de l'EIES de 2011 sur les nouveaux aspects du projet : centre technique d'enfouissement des déchets, activités d'extraction / carrière de latérite, rejet de la centrale de traitement des eaux. Artelia. Mai 2016.* Nachtigal Amont Hydroelectric Project. 2011 ESIA update on new aspects of the Project: landfill and waste transfer facitlity, laterite quarry, wastewater treatment plant. Artelia. May 2016.

p. *Rapport final de l'étude sur le nouvel état initial sanitaire des populations concernant le projet Nachtigal amont au Cameroun. Ginger CREDES. Juin 2017.* Health baseline of the population in the area of influence of the Nachtigal Amont Project in Cameroon. Ginger CREDES. June 2017.

q. *Étude d'impact environnemental cumulatif du projet hydroélectrique de Lom Pangar, AECOM, 2011*. Cumulative Environmental Impact Assessment of the Lom Pangar Hydroelectric Project, AECOM, 2011. A detailed CIA was conducted for the Lom Pangar Hydropower Project and other downstream hydropower Projects, including the Nachtigal Hydropower Project.

r. Understanding the Impact of Climate Change on Hydropower: the case of Cameroon, World Bank. 2014 Climate risk assessment for hydropower generation in Cameroon. The impact of climate change on hydropower in Cameroon concluded that the Lom Pangar and Nachtigal storage and hydropower Projects should be limited and could vary between -15 percent and +5 percent of the base case value (present hydrology).

s. Environmental and Social Review Summary (ESRS)[37], IFC.

E&S management plans:

a. *Project hydroélectrique de Nachtigal. Plan de Gestion Environnementale et Sociale. Artelia. Octobre 2016*. Nachtigal Hydroelectric Project. Environmental and Social Management Plan. Artelia. October 2016.

b. *Project hydroélectrique de Nachtigal. Plan de Gestion des Afflux Sociaux. Egis International. Egis Cameroun. Septembre 2015*. Nachtigal Hydroelectric Project. Migratory Influx Management Plan. Egis International. Egis Cameroon. September 2015.

c. *Projet hydroélectrique de Nachtigal Amont. Mécanisme de gestion des requêtes et des plaintes. NHPC. Octobre 2015*. Nachtigal Amont Hydroelectric Project. Grievance Mechanism. NHPC. October 2015.

d. *Projet Hydroélectrique de Nachtigal Amont. Plan de restauration des moyens d'existence lies aux carrières de sable affectées par le projet. Artelia. Octobre 2016*. Nachtigal Amont Hydroelectric Project. Livelihood Restoration Plan for Sand Miners Affected by the Project. Artelia. October 2016.

e. *Etude archéologique complémentaire à l'étude d'impact environnemental et social du projet de construction du barrage de Nachtigal-Amont et plan de gestion des ressources archéologiques. IRD. Juin 2016*. Archaeological assessment and management plan complementary to the ESIA for the construction of the dam Nachtigal-Amont. IRD. June 2016.

f. *Plan d'Action de Réinstallation et d'indemnisation (PAR) Construction Barrage Nachtigal Amont. ENDA & Georgius KOPPERT. Septembre 2016*. Resettlement and Livelihood Restoration Action Plan (RAP) for the Dam Nachtigal Amont. ENDA & Georgius KOPPERT. September 2016.

g. *Plan d'Action de Réinstallation et d'indemnisation (PAR). Projet Barrage Nachtigal Amont. Partie Ligne Haute Tension Barrage-Yaoundé & Cité de l'exploitant Batchenga. ENDA & Georgius KOPPERT. Janvier 2017*. Resettlement and Livelihood Restoration Action Plan (RAP). Project Nachtigal Amont. High Voltage Transmission Line Dam-Yaoundé & NHPC basecamp in Batchenga. ENDA & Georgius KOPPERT. January 2017.

h. *Projet Hydroélectrique de Nachtigal Amont. Élaboration du plan de gestion environnemental et social (PGES) détaille: lot 2a - plan d'action biodiversité (PAB). Artelia. Octobre 2016*. Nachtigal Amont Hydroelectric Project. Environmental and Social Management Plan (ESMP): lot 2a - Biodiversity Action Plan (BAP). Artelia. October 2016.

i. *Projet Hydroélectrique de Nachtigal Amont. Plan d'actions de développement économique local (PADEL). Octobre 2016*. Nachtigal Amont Hydroelectric Project. Local Economic Development Action Plan (PADEL). October 2016.

[37] ESRS and ESAP have been reviewed and approved by NHPC on May 30, 2017.

j. *Cadrage de la stratégie de compensation des espèces piscicoles situées en habitat critique. NHPC. Mai 2017*. Compensation strategy for fish species triggering critical habitat. NHPC. May 2017.

k. *Stratégie des mesures d'accompagnement pour la conservation de Ledermanniella sanagaensis et Ledermanniella thalloidea. NHPC. Mai 2017*. Mitigation measures for the conservation of *Ledermanniella sanagaensis and Ledermanniella thalloidea*. NHPC. May 2017.

l. *Élaboration du plan de gestion environnemental et social (PGES) détaille : lot 2b – Etude d'impacts aval et cumulatifs. Artelia. Aout 2017*. Environmental and Social Management Plan (ESMP): lot 2b – Assessment of Cumulative and Downstream Impacts. Artelia. August 2017.

m. Environmental and Social Action Plan (ESAP), IFC.

n. Lenders' Environmental and Social Action Plan (ESAP)[38].

13. The Project grievance mechanism is contained in the SEP and is operational since 2014. Stakeholders can present grievances verbally in local offices or in writing to NHPC's Grievance Officer stationed in NHPC offices in Batchenga. NHPC's grievance mechanism will be operational for the duration of the Project's construction and during the 35-year operational concession period. NHPC will regularly review and adapt its grievance resolution mechanism to effectively respond to the changing nature of registered complaints.

Monitoring and Evaluation

14. The Project-level monitoring and evaluation framework will track progress during implementation, measure intermediate outcomes, and evaluate Project impacts. NHPC will be responsible for coordination and monitoring of the complete Project progress and prepare Project progress reports. NHPC will also facilitate coordination between energy sector actors as required and be a focal point for the World Bank supervision of the Project.

15. IBRD's, IFC's and MIGA's key indicators to be monitored and used in the evaluation of outcomes are presented in Annex 1. Specific data for gathering and reporting, including responsibility thereof, have been identified and agreed on with NHPC and GoC. Indicators will be monitored mainly on the basis of quarterly reports to be made available by NHPC.

Role of Partners

16. The Project is a PPP between the NHPC, the GoC, and multilateral and bilateral DFIs that have expressed interest in providing a syndicated loan in foreign currency to the Project as well as local commercial banks that have expressed interest in providing a syndicated loan in local currency to the Project as beneficiaries of the proposed IBRD Guarantee.

[38] An updated Lenders' ESAP following the involvement of the European DFIs and the environmental and social due diligence by Mott McDonald/ERM as independent E&S advisor has been reviewed by NHPC.

Addendum 1. Amended Environmental and Social Review Summary (ESRS)

Disclaimer

1. This ESRS is prepared and distributed in advance of the IFC Board of Directors' consideration of the proposed transaction. Its purpose is to enhance the transparency of IFC's activities, and this document should not be construed as presuming the outcome of the Board of Director's decision. Board dates are estimates only. Any documentation which is attached to this ESRS has been prepared by the Project sponsor and authorization has been given for public release. IFC has reviewed this documentation and considers that it is of adequate quality to be released to the public but does not endorse the content.

Project Description:

2. Nachtigal Amont HPP ("Nachtigal") is a 420 MW run-of river hydropower plant (HPP) located in the Sanaga River, 65 km north east from Yaoundé (Cameroon). The Project is being developed by Nachtigal Hydro Power Company ("NHPC") whose shareholders are EDFI (40 percent), the Republic of Cameroon (30 percent) and IFC (30 percent). Construction of the Project is estimated to cost around 1.07 billion EUR. In addition to IFC's equity as Project developer, the proposed investment is up to 130 million EUR A loan. IFC will also act as Global Coordinator for up to 650 million EUR of parallel loans in Euros or in local currency. The World Bank (WB) is engaged in the power sector in Cameroon providing advice on the Electricity Sector Development Plan covering the period 2015-2035 ("PDSE 2035") and developing a Technical Assistance Project for hydropower development on the Sanaga River that should also support Nachtigal and the overall sector framework. WB will provide a Partial Risk Guarantee (PRG) to this Project.

3. Construction is organized in four separate engineering, procurement and construction (EPC) contractor tenders: (i) civil works (LOT GC); (ii) installation of electro-mechanical equipment (LOT EM1); (iii) construction of high and medium voltage transmission lines (LOT EM2); and (iv) construction of NHPC base camp (LOT CE). Construction is expected to start in end 2018 - early 2019 and commissioning of the last turbine is expected in in 2023. The Project's main components include:

- A roller compacted concrete dam on the Sanaga River, comprised by an overflow section with a total length of 1455 m and maximum height of 13.6 m, and a non-overflow section with a length of 553 m and a maximum height of 16 m to create a 27.8 million m^3 reservoir with a surface of 4.21 km^2 at normal operating level.
- A headrace lined canal about 3.3 km long and 14m deep on average to transfer water to the hydroelectric power plant with a maximum flow rate of 980 m^3/s corresponding to the design flow of the hydroelectric power plant equipment.
- A hydroelectric power plant with an installed capacity of 420 MW (seven 60 MW Francis turbines able to operate either as a run of river plant or an intermediate peaking plant).
- A secondary 4.5 MW power plant to generate electricity from the environmental flow (riparian release) to be discharged downstream of the dam.
- A double busbar 225 kV generation substation and a 50.3 km 225 kV double circuit transmission line equipped with two bundle conductors to transport the power produced from the power plant generation substation to the Nyom 2 connection substation.
- Spoil disposal areas for the temporary storage of approximately 1.8 million m^3 of excavated material.
- A quarry for the extraction of approximately 170,000 m^3 of laterite.
- A concrete plant to produce approximately 130,000 m^3 of concrete.
- 6.5 km of permanent roads to access the hydroelectric power plant and dam.
- A temporary construction base camp with capacity for up to 700 workers.

- A 1 ha temporary landfill for the sorting, pretreatment and disposal of non-hazardous solid waste generated by EPC contractors and NHPC offices and base camp.

4. NHPC has a 35-year operation concession of the hydropower plant (and relative generation substation), while the transmission line will be built by NHPC and then transferred to the State of Cameroon to be operated by SONATREL. The HPP will be operated mainly as a baseload power plant. Nachtigal HPP will form part of a hydropower cascade on the Sanaga River. Lom Pangar regulation reservoir, funded in part by the World Bank, is located upstream from Nachtigal. With a storage capacity of 6 billion m^3 reservoir, this large dam was completed in 2016; its main purpose is to regulate water flows along the Sanaga river to increase hydroelectric production by two existing and seven planned HPP located downstream. The two existing HPPs on the Sanaga River are the 384 MW Song Loulou and 277 MW Edéa HPPs, and the six large HPPs proposed downstream of Nachtigal HPP as part of a cascade along the Sanaga River include Nachtigal Aval (200 MW), Kikot (540-1000 MW), Grand Ngodi (1140 MW), Song Mbengué (1140 MW), Song Ndong (250 MW) and Edea Amont (capacity not specified).

Overview of IFC's Scope of Review:

5. Since joining the Project consortium in 2013, IFC has reviewed and commented on all E&S studies and documents prepared for the Project, including an ESIA prepared by the consortium Aecom/Artelia/Ere in 2006 and updated in 2011, as well as complementary baseline studies (e.g. noise, air quality, health, biodiversity) and associated mitigation plans commissioned between 2014 and 2016 to meet international standards. IFC has also reviewed comments provided by an independent PoE (one environmental, one social and one health expert) retained to review all E&S studies and plans commissioned by NHPC.

6. IFC E&S Specialists visited the site in April 2015 and December 2015 to review baseline studies and mitigation plans with NHPC's E&S team and to meet the Ministries of Forestry and the Environment as well as conservation agency IUCN and conservation NGO WWF. A joint WB/IFC appraisal visit took place on November 14 – 18, 2016 and September 2017. The appraisal included interviews with NHPC's CEO and E&S team, meetings with local authorities in Batchenga, and meetings with Affected Communities in the villages of Ndji and Ndokoa.

Identified Applicable PSs:

7. While all PSs are applicable to this investment, IFC's environmental and social due diligence indicates that the investment will have impacts which must be managed in a manner consistent with the following PSs

PS1: Assessment and Management of Environmental and Social Risks and Impacts
PS2: Labor and Working Conditions
PS3: Resource Efficiency and Pollution Prevention
PS4: Community Health, Safety and Security
PS5: Land Acquisition and Involuntary Resettlement
PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
PS8: Cultural Heritage

8. This Project does not trigger PS 7 Indigenous People as no indigenous peoples have been identified in the Project's area of influence.

9. If IFC's investment proceeds, IFC will periodically review the Project's ongoing compliance with the PSs.

Environmental and Social Categorization and Rationale:

10. Nachtigal involves the development of a large scale 420 MW HPP, including a 15-m high and 2,000 m long dam, a reservoir with a surface area of 421 ha, and the partial dewatering of a 3.3 km river stretch. The Project will form part of a hydropower cascade which will have cumulative impacts. Nachtigal is located in natural and modified habitats where terrestrial and aquatic biodiversity values exist. The Project will directly impact 917 PAPs through agricultural land expropriation and restrictions on use, and approximately 120 fishermen, 80 fish traders and 900 sand miners will be temporarily or permanently economically displaced. During its peak construction period, the Project will employ a workforce of nearly 1500 of which approximately one-half will be provided accommodation with the attendant stress that such a population influx will have on the cost of goods and services, public security and social cohesion. Given all these factors and in accordance with the IFC Policy on Environmental and Social Sustainability, Nachtigal has been designated as a Category A Project because it may cause significant adverse E&S impacts that may be diverse and irreversible.

Environmental and Social Mitigation Measures

11. *IFC's appraisal considered the E&S management planning process and documentation for the Project and gaps, if any, between these and IFC's requirements. Where necessary, corrective measures, intended to close these gaps within a reasonable period of time, are summarized in the paragraphs that follow and (if applicable) in an agreed Environmental and Social Action Plan (ESAP). Through the implementation of these measures, the Project is expected to be designed and operated in accordance with PSs objectives*.

PS 1 - Assessment and Management of Environmental and Social Risks and Impacts

12. ***Identification of Risks and Impacts:*** The ESIA was commissioned by Alucam (previous Project developer) for the consortium Aecom/Artelia/Ere in 2006 and was then updated in 2011, following which complementary studies were undertaken after the involvement of IFC and EDF (see below). The scope of the updated ESIA includes the main components of the Project and ancillary infrastructure such as the transmission line, access roads, quarries, and spoil disposal areas, among others. The environmental

compliance certificate was obtained from the GoC in 2014 under the condition that the E&S management plan was updated and expanded. In 2014, owing to the involvement of EDF and IFC as Project developers, a series of complementary studies were commissioned to update the evaluation of Project impacts and define detailed mitigation plans with regards to: (a) land acquisition and involuntary resettlement of PAP around the dam and along the transmission line; (b) economic displacement of sand miners; (c) loss and fragmentation of habitat for aquatic and terrestrial fauna and flora; (d) migratory influx; (e) public health; (f) cultural heritage; (g) pollution prevention during construction; (h) opening of a laterite quarry; and (i) installation of a sort/transfer/landfill station. The complementary studies were completed from November 2014 to March 2017. The MINEPDED issued the certificate of compliance with E&S requirements in April 2017.

13. A detailed CIA was conducted for Lom Pangar HPP and other downstream hydropower Projects, including Nachtigal HPP (AECOM, 2011), which mainly focused on the potential negative impacts on the estuary of the Sanaga. To address the impacts identified in the CIA, the Electricity Development Corporation (EDC) of Cameroon is commissioning an Integrated Water Resources Management Plan (IWRMP) for the Sanaga river. The Project ESIA includes a brief analysis of Nachtigal HPP's cumulative impacts on the Sanaga's hydrology and hydrodynamics. The assessment concludes that Nachtigal will not modify the river's hydrology and that the main impacts will derive from the flow regulation effect of the Lom Pangar dam upstream. While the ESIA identified the reduction in the transportation of sediments downstream from Nachtigal HPP as a potential impact, a subsequent study conducted by a consulting firm in 2014, evidenced the significant reduction in sand sediments along the Sanaga river due to sand mining operations. Therefore, the study concludes there should be no significant additional impacts on the river morphology due to the sediment retention effects by the Nachtigal dam. Aquatic ecology impacts associated with the Lom Pangar HPP upstream are discussed in the PS 6 section below.

14. A study commissioned by the World Bank in 2014 on the impact of climate change on hydropower in Cameroon concluded that the Lom Pangar and Nachtigal storage and hydropower Projects are economically robust and climate resilient Projects. The study concluded that based on the presently available climate Projections for the 21st century, the energy generation by the Edea, Song Loulou, Lom Pangar and Nachtigal power plants could vary between -15 percent and +5 percent by 2050; results for 2080 are similar.

15. ***Management Programs:*** All E&S mitigation measures listed in the ESIA and complementary studies have been consolidated in an ESMP. For each mitigation measure, the ESMP describes: (i) the activities to be performed; (ii) organizations responsible for implementation; (iii) reference to EPC contractual requirements in tender dossiers when applicable; (iv) performance indicators and monitoring protocols; and (v) assigned budget. E&S mitigation measures linked to construction activities were incorporated in the tender dossiers for the four EPC contractor LOTs (GC, EM1, EM2, CE). These requirements have been included by the EPC Contractors in their preliminary Integrated Environmental, Health & Safety and Social Management Plans and accompanying sub-plans (e.g. waste management plan, hazardous materials management plan, etc.), which have been presented as part of their technical offers. All this documentation has been evaluated by EDF Center of Hydraulic Engineering (EDF-CIH) as part of the tender process. Finalized versions of EPC contractors' Integrated Environmental, Health & Safety, and Social Management Systems shall be submitted to IFC prior to the commencement of construction works (see ESAP action no. 1).

16. Before commissioning of Nachtigal HPP, NHPC shall develop an E&S management system in line with the requirements of IFC Performance Standard 1 to mitigate the E&S risks and impacts linked to the operation of the hydropower plant (see ESAP action no. 2 and 3). Likewise, before commissioning and during the 35-year operation concession, NHPC shall ensure its E&S team has the capacity to effectively manage the E&S risks and impacts linked to the operation of the hydropower plant (see ESAP action no 4).

17. ***Organizational Capacity and Competency:*** **NHPC's E&S team** is comprised of eight qualified professionals who have been on site since 2014 playing an active role in the identification of the Project's E&S risks and mitigation measures, and ensuring the implementation of an effective stakeholder engagement strategy and grievance mechanism. The team, with the support of qualified consultants, has also actively participated in the government-led census of land to be expropriated to ensure that the RAPs comply with WB/IFC/MIGA PSs. NHPC's E&S team will remain on-site for the duration of construction, ensuring continuous engagement with communities. In addition, NHPC will hire five additional professionals to ensure the implementation of the ESMP and the complementary mitigation action plans (i.e. RAPs, livelihood restoration for sand miners, management plan of migratory influx, cultural heritage action plan, biodiversity action plan).

18. **EDF-CIH** will act as Assistant to the Contract Authority (AMOA for its acronym in French) to ensure that execution of works by the EPC contractors comply with established cost, quality, delivery deadlines, as well as compliance with EHS contractual requirements. AMOA will retain one Safety Engineer (57 months), one Environmental Engineer (42 months), and one EHS inspector to monitor contractors' EHS performance. All EPC contractors will also appoint their own personnel for the implementation of their integrated management plans.

19. NHPC (through AMOA) will plan regular meetings that must be attended by all EPC contractors. NHPC and the AMOA will have the authority to issue immediate full or partial stop work orders to any of the EPC contractors if unsafe working conditions are detected until remedial works required to secure site safety have been carried out.

20. ***Emergency Preparedness and Response:*** All EPC contractors have drafted emergency preparedness and response plans, which will be reviewed and integrated in coordination with the AMOA to ensure actors can effectively respond in case of an emergency. NHPC shall likewise develop an emergency preparedness and response plan to address emergency situations during the operation of the hydropower plant. This plan will include adequate warning systems and other measures to address flood events, rapid water level rises in case of peaking power production and potential dam failures (see ESAP action no. 18, described under PS4–Dam Safety below).

21. ***Monitoring and Review:*** As part of their E&S Integrated Management Systems, EPC contractors shall implement regular inspections, quarterly internal audits, and senior management reviews. A summary of the results with associated corrective measures shall be regularly submitted in due time to NHPC (see ESAP action no. 1). EPC contractors will also present monthly reports to NHPC covering key E&S performance data, deliverables and KPIs. This information shall be analyzed by NHPC to evaluate contractors' E&S performance and take the necessary corrective actions (ESAP action no. 2). The information shall be also summarized in Quarterly E&S Monitoring Reports to be presented to IFC during the entire duration of the construction. The reports will also include information on the progress status of the implementation of all E&S action plans and the effectiveness of the mitigation measures. Monitoring and Review during operations will be an integral component of NHPC's E&S Management System (see ESAP action no. 2 and 3). Regular E&S Monitoring Reports shall be presented to IFC throughout the duration of the loan.

PS 2 – Labor and Working Conditions

22. NHPC has a current workforce of about 45 employees and will have a total of about 180 employees during operation of the hydropower plant. Working conditions and terms of employment for NHPC employees are defined in an internal work regulations document approved by the Ministry of Labor of Cameroon in 2017. The GoC has ratified all ILO fundamental conventions. All employees will be provided with a copy of their contract and the internal work regulations at recruitment. NHPC shall also document,

implement and communicate human resources policies and procedures in line with IFC Performance Standard 2 requirements (see ESAP action no. 5).

23. The Project has a 57 months construction schedule and the workforce will number approximately 1500 at peak construction. Approximately half of the total staff working for EPC contractors responsible for civil works (LOT GC) and for the installation of electro-mechanical equipment (LOT EM1) will be housed in a workers accommodation that will form part of the main construction base camp. Local workers will be allowed to live in their home villages. Transportation from their home villages (up to a maximum distance of 35 km) to the construction site will be provided daily by the EPC contractors. Staff working for the EPC contractor responsible for the construction of the 225kV transmission line (EM2) will be lodged by their own means. The EM2 workforce will number less than 200 at peak construction. Transportation to the construction site will be provided daily from the EM2 EPC contractor base camp to the work sites.

24. During the duration of construction, NHPC shall monitor contractors to ensure they comply with the Labor Code of Cameroon and IFC Performance Standard 2 requirements. In particular, NHPC shall regularly monitor that (i) contractors have internal work regulations approved by the Ministry of Labor of Cameroon which are communicated and explained to employees at the time of recruitment; (ii) workers are covered by social security; (iii) workers are provided with a copy of their contract; (iv) no workers' personal identification is retained against their will; (v) contractors have a system to adequately record and compensate for overtime work; and (vi) workers' wages comply with the remunerations established by applicable collective bargaining agreements or official tariffs (see ESAP action no. 6). NHPC shall also ensure that contractors have a system to verify workers' age, and that no children below the minimum working age (15 years) is engaged in any type of work and no children between 15 and 18 years old is employed in hazardous work (see ESAP action no. 7). NHPC shall ensure that EPC contractors make all workers aware of the existence of a worker grievance mechanism managed by the EPC contractors with NHPC input, and shall facilitate access to it (see ESAP action no. 8).

25. The EPC contractor for civil works (LOT GC) is responsible for the construction and maintenance of their construction basecamp and shared basecamp facilities (recreation, medical center, etc.), and for the provision of basic services. The EM1 EPC is responsible for the construction and maintenance of their construction basecamp (accommodation and construction facilities) and will pay a fixed fee to access the basic services provided by the GC EPC contractor (water, electricity). The GC EPC contractor has provided detailed plans of the accommodations and the services that it will provide as part of its technical offer. These plans are in line with good industry practice. During construction works, NHPC shall regularly monitor the workers' accommodation provided by the GC and EM1 EPC contractors to ensure that it complies with contractual clauses and workers are provided a safe and healthy living environment. If non-compliances are identified, NHPC will require the GC and EM1 EPC contractors to take immediate corrective actions (see ESAP action no. 9).

26. As part of the technical offers, each EPC contractor has provided a preliminary Occupational Health & Safety Plan and job hazard analyses. NHPC will supervise that these plans are finalized and implemented through awareness communication, training, implementation of controls, and provision of adequate personal protective equipment (PPE). Each contractor is responsible for the training of its own personnel and visitors. The Occupational Health & Safety Plan of the GC EPC contractor includes mandatory EHS training to its workers before accessing the construction site; the training will last 0.5 days for skilled workers and accompanied visitors and three days for non-skilled workers. Training on basic trades for non-skilled workers (e.g. engines driver, formwork carpenter, crane operator, etc.) also includes safe work procedures and required personal protective equipment (PPE). Additional EHS training on aspects such as first aid, fire brigades, job safety analysis, work permits for hazardous jobs, toolbox meetings, pre-task briefings, work in confined spaces, etc., will be mandatory for managerial staff and team leaders. Training will be delivered by qualified personnel and its effectiveness will be evaluated. The GC EPC contractor

will also implement a safety awareness and communication campaign which will include information panels in all its work zones, toolbox meetings, pre-task briefings, annual safety and environmental time out, and the HSE Chairman's Award. The EM1 and EM2 EPC contractors have similar training plans. The EM1 and EM2 EPC contractors have developed an EHS training matrix defining the required training for each job category.

PS 3 – Resource Efficiency and Pollution Prevention

27. ***Pollution prevention during construction:*** Mitigation measures at the construction site will include standard construction pollution prevention and control measures, such as (a) solid and hazardous waste handling and disposal; (b) domestic/camp wastewater treatment; (c) storage and handling of hazardous materials; (d) housekeeping; (e) control of erosion and storm water runoff; and (f) noise, vibrations, and dust abatement measures; among others. These mitigation measures have been outlined by the EPC contractors for the activities under their responsibility. The EPC contractor for civil works (LOT GC) has included in its environmental management plan and sub-plans (i.e. waste management plan, hazardous materials management plan and effluents management plan). Potential pollutants in wastewater from concrete batching plants include cement, sand, aggregates and petroleum products. These substances can adversely affect water quality by increasing the pH and turbidity. As the Project will require 130,000 m^3 of concrete, the GC has integrated in its environmental management plan the installation and operation of settling pits to treat wastewater from concrete batching plants as included in the Project's ESMP. Fugitive dust can be a serious nuisance for workers and communities close to the construction site and along access roads. Fugitive dust control measures proposed by the GC EPC contractor include covering trucks hauling loose materials and cleaning mud off truck wheels. NHPC shall ensure that these mitigation measures are effective and require the GC EPC contractor to implement further mitigation measures if necessary.

28. The GC EPC contractor will put in place a waste sorting/transfer station and landfill. Non-hazardous waste produced by the other EPC contractors and their subcontractors and NHPC offices and base camp in Batchenga will also be treated or finally disposed in this sorting/transfer/landfill station. An environmental impact assessment for the sorting/transfer/landfill station was commissioned by NHPC in 2016. The operation mode and mitigation measures were included in the tender dossier for LOT GC and are outlined in the contractor's environmental management plan. The environmentally sound disposal of hazardous waste will be the individual responsibility of each EPC contractor. The GC EPC contractor has already identified an authorized company for the treatment of recyclable dangerous waste (i.e. used oils, used tires, batteries, CFLs) and will identify authorized companies for the treatment of medical waste, non-recyclable dangerous waste (i.e. oil rags), and non-hazardous recyclable materials before the commencement of the works. The other EPC contractors (EM1 and EM2) will also identify authorized companies for the treatment of all hazardous (recyclable or not) and medical waste.

29. A monitoring plan will be put in place by the EPC contractors to regularly monitor effluents and emissions under their responsibility: (a) treated domestic/sanitary effluents; (b) treated effluents from concrete batching plants; (c) treated lixiviates from landfill station (GC only); (d) treated drainage from mechanical workshops; (e) air emissions from diesel generators (GC only); and (f) particulate emissions along access roads and sensitive receptors (GC only). Results will be reported as part of the EPC contractors' monthly report to NHPC. In addition, NHPC will monitor water quality in the Sanaga river. NHPC will review this information to ensure that effluents and air emissions comply with Cameroonian regulations and applicable IFC EHS Guidelines. If non-compliances are identified, NHPC will require the responsible EPC contractor to implement immediate corrective actions.

30. The construction of the concrete dam and channel will require about 1.8 million m^3 of soil and rock to be temporarily or permanently stored on site. Additionally, 157 ha will be permanently and 134 ha will be temporarily cleared of vegetation for Project components, the laterite quarry, and installation of the

basecamp. The topsoil, amounting to approximately 270 thousand m^3, will be stored separately to be used for revegetation purposes. Waste rock and soil from excavations will be reused in other civil works. Nonetheless, the mix of rocks and soil used in the cofferdams will have to be permanently disposed at the end of construction as this will not be suitable for other civil works. Before any earthworks take place, the GC EPC contractor shall present NHPC a spoil management plan detailing the areas where the material will be temporarily stored and the measures to avoid erosion and deposition of sediments in the Sanaga river. For materials requiring permanent storage, the GC EPC contractor shall update the spoil management plan to detail permanent storage areas and management before the end of the construction phase (see ESAP action no. 10). No additional land will be acquired for the temporary or permanent storage of spoil.

31. ***Pollution prevention during operations:*** The risk of eutrophication of the reservoir is considered low as the only industrial effluents from a sugar refinery located upstream (1-2 m^3/s) are minimal compared to the flow of the Sanaga river (650 m^3/s during the dry season with water flow regulation from the Lom Pangar dam). In addition, the maximum water residence time in the reservoir (27.8 million m^3) is estimated to be 12 hours only. The main water quality risk during operations is associated to a potential future increase in the agricultural development of the surrounding area. The infestation of the reservoir with water hyacinth was not identified as a risk by the ESIA. Nevertheless, NHPC will constantly monitor the presence of water hyacinth in the reservoir to prevent the spreading of this water pest. To avoid contamination of the river downstream the powerhouse, NHPC will install water oil separators to remove any oil that might leak from the equipment.

32. ***GHG emissions:*** The area to be flooded is composed of 112 ha of forest on the right river bank and islands, and 108 ha of shrub savanna. The forest is mainly composed of heavily modified secondary forests with cacao plantations. The presence of valued timber is very limited. Based on a multi-criteria analysis performed by EDF-CIH, NHPC has decided not to remove the vegetation from the area to be submerged. Maintaining the vegetation will provide favorable habitat for the reproduction of fish, and the benefit of the short water residence time is that the quality of the water (concentration of O_2) will depend more on the quality of the entering flow than on the decomposition of organic material inside the reservoir. A partial removal of the vegetation will be considered to facilitate access to the reservoir by fishermen. In addition, estimated emissions of Greenhouse Gases (GHG) from the submerged aerial vegetation (77,000 teqCO_2) are limited over the long term compared to expected annual GHG emissions from the reservoir (150,000 teqCO_2 per year). Total emissions will translate on a GHG emissions intensity of around 0.07 teqCO_2/MWh considering an expected annual electricity generation of 2,250 GWh. From the perspective of net GHG emissions, the Project will decrease the average GHG emissions intensity of the electrical grid in Cameroon from about 0.3 to 0.4 teqCO_2/MWh.

PS 4 – Community Health, Safety and Security

33. ***Migrant influx in Affected Communities:*** The villages that will likely see a migrant influx are Ndji (estimated population 849), Ndokoa (pop. 273), Minkouma (pop. 122), Olembe (pop. 637), Nalassi (pop. 642), Emana-Batchenga (pop. 1353), and Ballong I (pop. 1493). To limit the influx of migrants, the EPC contractors have committed to maximizing local hiring. It is anticipated that at least 50 percent of the required workforce (all EPC contractors combined) will be hired locally. The EPC contractors have also committed to implementing a work schedule that allows migrant workers to regularly return home so that it dissuades families of workers to move into the area. In addition, to promote local employment, the EPC contractors will put in place shuttle buses to daily transport workers from/to their homes up to 35 km from the worksite. To control interactions between migrant workers and Affected Communities, the GC EPC contractor will install a fenced base camp able to receive up to 700 workers (GC and EM1). Each EPC contractor has developed a code of conduct and disciplinary procedures that will be explained to its workers at the time of induction and will be posted in French and local languages around the base camp. The code of conduct includes rules related to aspects that affect neighboring communities. NHPC shall ensure that

the code of conduct and disciplinary procedures also include the prohibition to engage in any type of sexual behavior with minors and any type of abuse or violence against women (see ESAP action no. 11), and shall implement a communication campaign to raise awareness on what is the expected behavior of workers in host communities and how can a member of the community file a related complaint at NHPC's office located in Batchenga. NHPC's grievance redress mechanism shall acquire the necessary expertise to handle this type of complaint (see ESAP action no. 12). The communication campaign shall particularly target young women and teenagers to effectively raise their awareness on the risks of HIV/AIDS and unwanted pregnancies, and that most of the migrant workers will return to their place of origin where they most likely have families, once construction has concluded.

34. Despite the aforementioned measures, influx of migrants in the area is expected. To reduce the impact on Affected Communities, NHPC will implement a number of mitigation measures in coordination with local authorities which are detailed in the Migratory Influx Management Plan. These include: (i) local land use planning for the communes of Batchenga, Ntui and Mbandjock to identify areas of urban expansion to receive migrant populations; (ii) channeling of newcomers to urban areas; (iii) reinforcement of existing control systems (i.e. local police, watchdog village committees); (iv) monitoring of inflationary trends and implementation of food security measures if required; and (v) improvement of public infrastructure (i.e. seven boreholes in villages and extension of water distribution network in two small cities; construction and operation of six additional classrooms; strengthening of existing and construction of a new public health center). NHPC will also include gender specific mitigation measures within its Migratory Influx Management Plan to ensure negative impacts on women due to the Project are addressed (see ESAP action no. 13). NHPC has used a conservative scenario of a population influx of about 1,500 people to budget the required investments in mitigation measures. If population influx is more than the expected scenario, NHPC shall review its Migratory Influx Management Plan in coordination with local authorities and other large infrastructure Projects in the area to ensure its adequacy.

35. ***Community exposure to disease:*** The impounding created by dams often results in an increase in water related vector borne diseases such as malaria, schistosomiasis, and filariasis (including onchocerciasis). In addition, the in-migration of workers may result in an increase in sexually transmitted diseases and human immunodeficiency virus (HIV), and an increase in accidents can also be expected as result of the increase in vehicle traffic. A study was commissioned by NHPC in 2015 to understand the epidemiological profile and the condition of the public health infrastructure in the area. Based on the responses of health care personnel, leading causes of morbidity in the area are malaria, typhoid, and HIV/AIDS. In fact, the area is already favorable to the spread of HIV/AIDS and other STDs due to the influx of truck drivers working in the sand mining business. NHPC completed an epidemiological survey in the second quarter of 2017 to obtain more precise baseline data on the incidence of diseases in the impacted areas. As part of NHPC's ESMS, health indicators have been defined with local health services, and support will be given to local health services to monitor those indicators throughout the duration of the Project (see ESAP action no. 2). This information shall be summarized and reported annually in the Annual E&S Monitoring Report (AMR) to be presented to IFC.

36. NHPC has contractually required EPC contractors to implement measures to avoid or minimize transmission of communicable diseases that may be associated with the influx of labor, for example, awareness campaigns on the prevention of malaria, onchocerciasis, and HIV/AIDS and other STDs; provision of insecticide-treated mosquito nets to all accommodated workers, provision of working clothes with long sleeves to reduce risk of insect bites, free condoms, and HIV consultations and voluntary screenings. NHPC shall coordinate measures among all EPC contractors and subcontractors to ensure that all workers have access to free HIV/AIDS consultation, screening, retroviral medication and means of protection to avoid the spread of the disease, and coordinate any awareness and communication campaign among sex workers and the population in general (see ESAP action no. 14).

37. ***Traffic safety:*** The transportation of Project personnel, material and equipment will substantially increase traffic on the Route Nationale 1 (RN 1). To mitigate the risks of traffic accidents, NHPC will coordinate with the Ministry of Travaux Publics to ensure the installation of traffic signs and speed bumps in sensitive areas (e.g. markets, schools) and the control of vehicle speed limit by the local police force. As part of NHPC contractual clauses, EPC contractors shall be required to implement transport safety measures. The EPC contractors' transportation management plans shall include: (i) speed limits; (ii) the adoption of limits for trip duration to avoid overtiredness; (iii) the avoidance of dangerous routes and times of the day to reduce the risk of accidents; (iv) specific requirements for vehicular maintenance; (v) specific requirements for drivers' licensing and training; (vi) alcohol tests and awareness campaigns to emphasize safety aspects among drivers; and where feasible (vii) the use of speed control devices (governors) and remote monitoring of driver action. These measures shall apply to all in-house and contracted transportation (see ESAP action no. 15).

38. ***Hazardous material management and safety:*** The GC EPC contractor has developed a detailed management plan to control risks from the storage, use and transportation of hazardous material. NHPC will ensure that control measures are implemented by the GC EPC contractor as planned, and that the EM1 and EM2 EPC contractors finalize and implement a more detailed plan.

39. ***Exposure to noise, vibration, dust and light pollution:*** The villages that will be mostly impacted from construction operations will be Ndji (pop. 849) and Ndokoa (pop. 273), which are located about 1 km away from construction sites. As part of its E&S integrated management system, the GC EPC contractor has defined measures to mitigate the impact of noise, vibration, dust, air pollutants, and light pollution on the nearby villages. NHPC shall ensure that the GC EPC contractor also implements a blasting risk management plan, which shall include a communication strategy with Affected Communities to inform and manage perceptions of the risks of blasting activities. The plan shall also include pre-blast and after-claim property condition surveys to prevent unfounded claims of damage caused by vibration and air overpressure. Property condition surveys shall include also properties along construction access roads in the hydroelectric facility DUP area to prevent unfounded claims of damaged due to vibrations caused by heavy trucks (see ESAP action no. 16).

40. ***Dam Safety:*** According to ICOLD's definition of a "large dam", Nachtigal is a large dam as it will be between 11 and 16 m high and have a total crest length of 2008 m. In March 2015, an independent POE appointed by IFC and the GoC performed a review of the Project's detailed feasibility study, which included aspects of dam safety (i.e. stability, ability to withstand a 10,000-year flood, and auscultation system). Recommendations provided by the panel were adopted by NHPC. In addition, the WB technical assistance Project for the hydropower development on the Sanaga river, includes the financing of a Dam Safety POE to supervise the construction of Nachtigal HPP. The WB and IFC will appoint this independent Dam Safety POE four months prior to start construction. Once the final Project design is finalized, NHPC will commission a dam break analysis to identify with certainty downstream infrastructure and people at risk and identify appropriate warning systems and other measures to address flood events, rapid water level rises in case of peaking power production and potential dam failures (see ESAP action no. 17). The dam break analysis is a condition of the concession agreement; NHPC will only receive the exploitation permit under condition of having performed the study. The dam safety measures shall be outlined in the Project's dam safety emergency plan and adequate resources shall be budgeted for its implementation and maintenance (see ESAP action no. 18). As part of the dam's operation and maintenance plan, NHPC shall also develop and implement a dam safety surveillance program (see ESAP action no. 19).

41. ***Security forces:*** Access to the construction basecamp will be controlled through the use of cameras, badges and a team of 30 unarmed surveillance and security personnel under the responsibility of the GC EPC contractor. In addition, the GoC has declared Nachtigal a Project of national priority and will station 51 military personnel on site to protect its perimeter and sensitive areas. To confirm the level and types of

security arrangements that the Project will need, NHPC shall carry out a security risk assessment to identify the likely security threats during construction and operation that would require a response by security personnel, and the potential impact that such response might have on community members. Based on the outcomes of the security risk assessment, NHPC shall develop a security management plan which shall include: (i) the objectives of the plan; (ii) the policies and standards that guide security management; (iii) an overview of the security situation (i.e. security risks and private/public security arrangements); (iv) a description of physical security approach (i.e. barriers, surveillance, control centers); (v) security operating procedures (i.e. access-control, incident response, security patrols, travel security, material storage and control, firearms security); (vi) management structure and responsibility for the control and supervision of security forces; (vii) management of private security forces (i.e. screening, equipment, training); (viii) management of relations with public security forces; (ix) incident reporting and inquiry; and (x) community engagement. The security management plan shall be regularly reviewed and revised by competent professionals (see ESAP action no. 20). NHPC shall ensure that companies retained for the provision of security services during construction and operations have a system to ensure effective oversight and accountability of security personnel with respect to key PS 4 requirements (e.g., vetting of personnel, training in the use of force and appropriate conduct, procedures in the event of any incident or alleged violation) (see ESAP action no .21). In addition, NHPC has retained a security officer to engage with the GoC to ensure public security arrangements do not pose a threat to the safety of workers and Affected Communities. The deployment, conduct, training, and incident follow-up of public security personnel shall be discussed with the army in depth and shall be ideally documented via a Memorandum of Understanding or similar, to ensure these are aligned with key PS 4 requirements (see ESAP action no. 22). NHPC's grievance redress mechanism shall work as a confidential channel for concerns or complaints about private and public security personnel by community members (see ESAP action no. 12).

PS 5 – Land Acquisition and Involuntary Resettlement

42. ***Resettlement and Livelihood Restoration Measures for physically and economically displaced persons in areas declared as being subject to eminent domain:*** The development of the Project will entail the temporary and permanent loss of land and fishing grounds for populations in the dam impact area, transmission line, and NHPC base camp in Batchenga. RAPs have been prepared for these three areas. A Ministerial decree declaring an area of 1792 ha around the future dam and 247 ha of right of way for the transmission line as subject to eminent domain (compulsory purchase, or DUP using the French acronym) was issued on November 10, 2014. The "Commission de Constat et d'Evaluation" (CCE) was then established by Cameroonian authorities on March 5, 2015 to lead the resettlement process, and a comprehensive assets inventory was conducted from August 2015 to May 2016. The cutoff date for compensation eligibility was established by NHPC as the date the team carried out the assets inventory. The census team was comprised of CCE, a representative of the Project developers (NHPC E&S Department) and a consulting firm retained by NHPC to prepare the RAP. No construction activities will take place before the expropriation decree has been issued by the Presidency, and PAP have received their compensation payments.

43. **Dam:** Four villages – Ndji, Ndokoa, Minkouma and Bindandjengue – with a total population of 1,470 inhabitants, are directly impacted by the dam. In these villages, individual compensation will be provided to 147 PAP (corresponding to 138 households) whose agricultural plots amounting to 142 ha will be expropriated (22 percent of the land is cultivated by women). The average agricultural area loss per PAP is one (1) ha. According to self-reported data, PAP own an average of 5.9 ha each and about 40 percent of this land is forested and kept as reserve. PAP will receive in-cash compensation at market value for lost agricultural crops (i.e. one harvest for annual crops and for perennial crops the number of years replacement plants will take before they enter into production). In addition to cash compensation for lost crops, all PAP will receive compensation for expropriated agricultural land in the form of either land-for-land replacement, or cash compensation.

44. Land compensation criteria take into account the fallow period needed to maintain soil fertility and accounts for population growth. Each affected hectare of annual crops will be compensated with three (3) hectares of replacement land, and each hectare of perennial plantations will be compensated with 1.5 ha. As a result of awareness campaigns by NHPC E&S team over the last year, 91 out of 147 PAP have opted for land-based compensation. These PAP will also receive an allowance for the clearing of their new plots which amounts to the same area of land they had under cultivation. Most of the PAP that have opted for cash compensation for lost land have stated that they will have enough land to continue their agricultural activities even after losing the expropriated area. At this point, replacement land has been identified in the area for all PAP and a protocol has been agreed with traditional ("chefs de village" and "chefs de groupement") and governmental authorities (sous-prefects) to ensure that land transfers are recognized under customary law. Replacement agricultural lands are located within a radius of 3-4 km and have been selected by each PAP individually. Vulnerable PAP, i.e. the elderly, single mothers, persons with disabilities, have also been identified to ensure they receive additional assistance to restore their livelihoods as per the mitigation measures detailed in the RAP. Three out of 138 affected households will also lose their dwellings: NHPC will rebuild these dwellings with improved materials and will ensure that the affected households obtain land titles under conventional law.

45. In addition to the loss of private agricultural lands, affected villages will lose access to non-timber forest products (NTFP) in the DUP. NTFP provide a small source of revenues (3.2 percent of total annual revenues) but can be an important source for household consumption. A survey was conducted to understand to what extent NTFP will be accessible throughout the construction and operation of the HPP. Mitigation measures will include the propagation of NTFP in private agricultural land, the inventory of NTFP accessible outside the DUP, and the management of an agroforestry area accessible to the affected villagers. These mitigation measures will be implemented as part of the RAP and the Biodiversity Action Plan. In addition, to compensate for the lost access to NTFP, NHPC will provide villages with a limited fixed monetary amount to be invested in health and education infrastructure during construction and the entire duration of the concession.

46. Fishing will be prohibited in the DUP from the start of construction to reservoir filling, which is estimated to last five years. Once the reservoir is filled, fishing will still not be allowed in the 3.3 km dewatered stretch of the Sanaga river (from the dam to the turbines) and 500 m upstream of the dam for safety reasons. In addition, fishermen will have to adapt to new fishing conditions in the reservoir. Around 117 fishermen and 83 fish traders (mostly women) have been inventoried and recognized by village chiefs in the DUP. NHPC will provide a small cash allowance to these PAP so that they are able to reach fishing grounds upstream and downstream of the DUP during the transition time; fishermen will also receive bicycles for this purpose. Once the reservoir is filled, NHPC will provide support to regulate and prioritize access of these PAP to the resevoir, help them adapt to new fishing conditions, and improve fish processing infrastructure. These livelihood restoration measures are included in the RAP.

47. **Transmission line:** The Project will entail the construction over a 2-year period of a 50 km high voltage transmission line from Nachtigal HPP to Nyom2, just outside of Yaoundé. The transmission line runs through 25 villages with an estimated population of 22,000 inhabitants. The total area impacted by land use restrictions in the right of way is 247 ha of which 120 ha are cultivated. Individual compensation will be provided to 563 PAP whose agricultural plots will be affected. The average affected agricultural area per PAP is 0.2 ha. According to self-reported data, PAP own an average of 5.8 ha each and about 56 percent of this land is forested and kept as land reserve. In addition to cash compensation corresponding to the replacement value of lost crops (i.e. one harvest for annual crops and for perennial crops the number of years replacement plants will take before they enter into production), PAP will receive a one-time payment in order to allow them to continue their agricultural activities during construction in leased land.

48. As land presently used for trees and shrubs (69 ha), most importantly cocoa, will only allow for low agricultural crops after the transmission line is constructed, a compensation will be provided to allow PAP acquire replacement land. In addition, titled land (37 ha) will be compensated allowing PAP to acquire and title land elsewhere. NHPC will also implement a livelihood restoration program. Among the proposed measures are: (a) support for land preparation; (b) distribution of improved seeds for the first new crops; (c) basic agricultural kits; (d) access to agricultural extension courses and training. As for the DUP-dam, vulnerable PAP have been identified to ensure they receive additional assistance to restore their livelihoods. The route of the transmission line has been designed as to minimize relocations; only three households will have to be relocated. A limited number of public and private infrastructure (i.e., five wells and water sources, shelters, etc.) have been inventoried and will be compensated.

49. Out of the 247 ha impacted by the right of way, 81 ha are covered by forests. PAP and villagers in general will lose access to NTFP in these areas. Even though NTFP provide a small source of revenues (2.1 percent of total annual revenues), these can play an important role in household consumption. While individual compensation will be provided for the lost NTFP in and around the agricultural fields and PAP will receive NTFP seedlings as part of the livelihood restoration measures, no individual compensation will be provided for the lost access to NTFP in forested areas. NHPC will provide all villages with a one-time payment at the end of the construction to be invested in health and education infrastructure.

50. **NHPC base camp:** During operations NHPC will establish its base camp in the small town of Batchenga located 15 minutes away from the future hydroelectric power plant. NHPC offices have also been installed in Batchenga since 2014. An area of 19 ha has been selected in agreement with the local authorities. Two hundred and seven PAP will be impacted by the loss of agricultural land in the villages of Emana-Batchenga (17 ha, 199 PAP) and Balong I (2 ha, 8 PAP). Impacted infrastructure is limited to a water well; and no physical relocation will be necessary. Compensation payments have been calculated using the same criteria as in the RAP for the dam and transmission line. NHPC has found replacement land (22 ha) less than 4 km away to compensate affected families and a committee with representatives of the affected families and local traditional authorities was set up to ensure the replacement land had the following characteristics: proximity, similar agricultural potential, and absence of contestations.

51. As of October 2017, about 90 information and consultation meetings with more than 4,000 participants (i.e. PAP, local authorities) have been organized by NHPC E&S team to explain the RAP process, and to present the assets inventory, and the eligibility and compensation matrix. Each PAP has been presented a census form for his/her approval detailing the agricultural crops to be compensated; the forms are signed by the PAP, CCE, NHPC, and the village chief. In addition, PAP are also informed of the additional monetary compensation for loss of access to natural resources and the livelihood restoration measures included in the RAPs. Stakeholders have been informed about NHPC's grievance mechanism, which has been in place since April 2015 and has already resolved multiple complaints related to the assets inventory.

52. Expropriation and compensation decrees were signed in July 2017 for the dam, and in February 2018 for the transmission line and NHPC base camp. Compensation payments for the dam area were finalized in December 2017, and transactions for the acquisition of replacement land concluded in May 2018. No grievances related to compensation payments for the dam are outstanding. Compensation payments for the transmission line right-of-way and NHPC's base camp in Batchenga are expected for the third quarter of 2018. Only five households will be physically displaced. The two houses for families living in the dam area are under construction and will be ready before August 2018. NHPC is in the process of buying the lots for the three households living in the transmission line right-of-way. NHPC also retained a local NGO to meet with each impacted household (both spouses to be present) to explain the compensation payment amount they receive and discuss best options to use the money to ensure they restore their income generating activities. Money is not paid in cashbut through transfers to local microfinance institutions and

to a bank in Yaounde for larger amounts, which will offer to open accounts free of charge. Construction works will only start after compensation payments have taken place.

53. The RAPs for all affected areas have been prepared by a qualified consulting firm in close collaboration with NHPC E&S team. The RAPs are in line with the requirements of IFC Performance Standard 5. The consulting firm also collected socio-economic information for each group of PAP (i.e. farmers, fishermen, fish traders) to estimate their sources of revenues and calculate a quality-of-life index to be monitored throughout the Project's life. Implementation of livelihood restoration measures will be closely monitored by NHPC E&S team and socio-economic data will be collected annually by the consulting firm through statistically sound sampling methodologies until the third year after the filling of the reservoir. If data show a deterioration on the quality of life of PAP – farmers, fishermen, or fishtraders – NHPC will provide additional resources to mitigate negative impacts and allow for the restoration of livelihoods.

54. ***Livelihood Restoration Measures for sand miners:*** Sand mining along the Sanaga river is actively practiced due to demand for construction materials from Yaoundé where a 20 ton truck load of sand can be sold for 100 to 200 EUR. The activity is regulated by the Ministry of Mines which issues annual extraction permits. Most of the permit holders are local elites who have the financial resources to obtain the permits and invest in access roads. Sand mining in the area is not mechanized and is a strenuous and hazardous activity. Workers dive down several meters to gather sand from the river bottom with buckets and stockpile it on canoes; fatalities are not uncommon. Sand mining started in the area in the 1980's and extraction has increased progressively to match the sand contributions from the river. A study commissioned in 2014 evidences the disappearance of sand banks along multiple sites of the Sanaga river and roughly estimates around 600,000 m^3 the annual amount of sand extracted from the Sanaga river until the confluence with the Mbam. However, sand miners in the last couple of years have already noticed a decrease in the availability of sand after the completion of Lom Pangar's reservoir located upstream.

55. Nachtigal's reservoir will result in changes in flow limiting the availability of sand downstream of the dam. The 2011 ESIA indicates the area to be impacted stretches from Nachtigal's reservoir to the confluence of the Sanaga and Mbam rivers, about 50 km downstream the reservoir. It is estimated that sand mining provides around 900 direct jobs in the impacted area and an undefined number of indirect jobs (i.e. manufacturing of canoes, food catering, lodging, and transportation). Districts and villages also benefit from a percentage of the "extraction tax". NHPC E&S team with support of a qualified consulting firm conducted surveys in March 2015, July 2015 and January-February 2016 to inventory people engaged in the sand mining value chain. NHPC identified 51 quarry owners (persons who have extraction permits) but the identification of workers is still uncertain as the number declared by quarry owners is largely higher than the workers identified during the surveys. This can be explained by the fact that sand mining is a seasonal activity and there is high mobility of workers between quarries. To better account for people eligible for compensation, NHPC carried out an additional survey campaign from October 2016 to March 2017. NHPC E&S team visited every sand quarry site for multiple days to ensure they accounted for all workers. The list of beneficiaries was verified in July 2017 by validation committees which include local authorities and village representatives. Consultations were carried out in April 2015, July 2015 and January 2016 to present the results of the first survey campaign and identify compensation options. Consultations were organized with different focus groups (e.g. quarry owners, workers, food caterers, etc.) to ensure meetings did not get controlled by most influential groups. In the meetings most PAP have expressed their preference of monetary compensation. Results of the livelihood restoration plan for sand miners (PRME) were presented to PAP between July and October 2017.

56. Of the 51 identified sand quarries, 20 are located in the Project DUP and are therefore directly impacted by permanent restriction on physical access to the sand resource due to Project land acquisition. The remaining 31 quarry sites downstream of the DUP will not be directly affected by land acquisition-

related restrictions on access to their sand mining operations – i.e. the river segments which they mine will not be acquired or developed by the Project – but will be nevertheless impacted by the decreasing availability of sand: sediments accumulating at the tail of the reservoir will not be flushed but will be extracted by an authorized mechanized operator. While the provisions of PS 5 apply only to the 20 quarry sites located in the DUP, the Project recognizes that people owning and/or working at all 51 sites will be economically displaced, albeit to varying degrees. To avoid potential conflicts between sand miners, the Project has developed a single livelihood restoration plan that will provide the same level of compensation and support for alternative livelihood options to all the identified PAP without distinguishing where the quarry site is located.

57. NHPC has estimated the annual income for direct (i.e. quarry owners, managers, workers) and indirect PAP (i.e. canoe manufacturers, food caterers) and developed an eligibility compensation matrix. Direct PAP will receive cash-payments corresponding to annual loss of revenues, estimated at six (6) months of revenues, and indirect PAP will receive payments estimated at three (3) months of revenue. Quarry owners will also receive 70 percent of the investments made in the last 15 years to obtain the permits and prepare access routes and riverbanks. NHPC will also provide a travel allowance for migrant workers. As is the case for PAP affected by land expropriation, those PAP whose sand mining activities are impacted will have preferential access to low skill jobs during construction works, and will benefit from livelihood restoration initiatives for which NHPC will sign agreements with local implementation partners. The compensation matrix was presented to sand miners in October 2017, but the individual amounts will be disclosed closer to the date when compensation will be paid to avoid sand miners use the information as a collateral for informal loans. NHPC shall document and report to IFC the consultation process on the compensation matrix and final agreements with PAP (see ESAP action no. 23).

58. With the construction of the dam, sand will accumulate at the tail of the reservoir. An authorized operator for sand exploitation in the reservoir shall be selected by the GoC, NHPC participating in the definition of operating conditions. Quarry owners impacted by the dam have expressed their expectation to be prioritized in this operation. However, as the extraction of sand from the reservoir will require sophisticated machinery, it is unlikely that the quarry owners in the area will be awarded the contract. Information on the contractual requirements shall be widely disseminated to avoid erroneous expectations. To compensate for lost revenues from the "extraction tax" paid to districts and villages, it is proposed to include as part of the contract clauses that 1 percent of revenues from sand extraction be paid into a community compensation fund to be allocated among the districts that will lose the revenues from the sand mining "extraction tax". This is yet to be agreed to by the relevant Government agencies.

59. The same consulting firm monitoring socio-economic indicators for PAP affected by land expropriation will monitor this group of PAP. If data show a deterioration on the quality of life of sandminers who remain in the Project area, NHPC will provide additional resources to mitigate negative impacts and allow for the promotion of alternative livelihood options.

60. Three years after commissioning of Nachtigal HPP, NHPC will conduct an independent Resettlement and Livelihood Restoration Completion audit for all physically and economically displaced PAP demonstrating compliance with IFC PS5, or if necessary, identifying any remaining gaps and corresponding corrective actions with budget and timeline for implementation (ESAP action nr. 24).

PS 6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources

Context

61. The Nachtigal Hydropower Project is located on the Sanaga River in Cameroon within the Northern Congolian Forest Savanna Mosaic ecoregion and Africa Freshwater ecoregion, as these regions are defined

by WWF. The Project is not located in any of Conservation International's Biodiversity Hotspot or High Biodiversity Wilderness Area, or within an Endemic Bird Area. There are no Protected Areas or Internationally recognized areas for biodiversity within or near the Project area, either upstream or downstream. The area consists of humid semi-deciduous forest and savanna, with many areas of savanna and forest mosaic. Much of the forest areas have evidence of human intervention or consist of secondary forest. No invasive alien species were noted in the Project area, except for water hyacinth, which is a common risk in hydropower reservoirs. This risk is addressed under PS3.

62. Several Ecosystem Services were identified within the Project area, including fishing, sand mining, traditional medicines, wood collection, bushmeat hunting, and freshwater. Mitigation actions to address Project impacts on these ecosystem services are outlined in the Biodiversity Action Plan (BAP) through community conservation actions (COPAL, see more details below under Terrestrial Fauna and Flora) and are also addressed under PS5.

63. In January 2016, the flow rate of the Sanaga River was significantly altered by the commencement of operation of the Lom Pangar regulation reservoir located about 250 km upstream of Nachtigal HPP. The Sanaga's flow rate has been changed to an average minimum flow of 650 m^3/s, which is much higher than the minimum natural flow rates on the Sanaga which were often below 300 m^3/s. Due to the likely impacts of this change on aquatic biodiversity communities, the aquatic habitat within the Project area is classified as Modified Habitat.

Terrestrial Habitat, Fauna and Flora

64. Terrestrial Habitats within the Project area consist of humid semi-deciduous forest and savanna ecosystems. Terrestrial Habitats in the DUPs were classified as 1119 ha Natural Habitat and 262 ha Modified Habitat (per PS6). Much of the forest areas have evidence of human intervention or consist of secondary forest. The Project will impact 675 ha of Natural Habitat including 524 ha of forest and 151 ha of savanna. No terrestrial biodiversity values qualify as Critical Habitat.

65. As a complementary study to the ESIA, the Project commissioned an inventory of the flora and fauna in 2014 to determine if endangered, endemic or migratory species are present in the Project area of influence. The inventory identified several priority biodiversity values (but none that trigger Critical Habitat) including giant pangolin (*Smutsia gigantean* – VU), common pangolin (*Phataginus tricuspis* – VU), hippopotamus (*Hippopotamus amphibious* – VU), dwarf crocodile (*Ostealeamus tetracus* – VU), Bannerman's turaco (*Tauraco bannermani* – EN), Martial Eagle (*Polemaetus bellicosus* – VU), and the terrestrial plant *Hymenodictyon pachyantha* – EN (Cameroon IUCN Red List Assessment). No migratory species were identified in the area.

66. The Project developed an ESMP and a Biodiversity Action Plan (BAP) to outline mitigation measures to avoid and minimize predicted negative impacts on terrestrial biodiversity, and to deliver No Net Loss where feasible for terrestrial Natural Habitat and its terrestrial biodiversity values. Mitigation actions include a biodiversity offset where NHPC will provide financial support to the Mpem et Djim National Park (80 km North from the Project site) and the community forest Coopérative des Paysans de la Lekié (COPAL) (20 km East from the Project site) during construction and the 35-year operation concession. These sites were selected after consultation with national and local stakeholders, including government agencies (MINFOF-Direction de la Faune et des Aires Protégées, MINEPDED-Service Biodiversité, Director of Mpem et Djim National Park), NGOs (WWF, UICN), international cooperation organizations (CIRAD, CIFOR, GIZ), and local communities (COPAL). NHPC will provide support to the Mpem et Djim National Park for anti-poaching activities, control of illegal logging, and restoration of 100 ha of forest degraded by illegal logging activities. Additionally, the following management activities are proposed for enhanced protection and restoration of biodiversity values in COPAL: (i) protection of a core

of 250 ha inside a non-degraded 1150 ha of forests initially intended to be logged; (ii) protection of 250 ha of riparian vegetation; (iii) creation of 200 ha of agroforestry plantations acting as buffer zones around the two protected areas; and (iv) enrichment plantations in 1,100 ha. To ensure the effectiveness of the BAP, NHPC has engaged qualified experts to (i) detail the activities to be implemented in the Mpem et Djim National Park and COPAL; (ii) define the biodiversity monitoring and evaluation plan; and (iii) monitor forest cover in the Project area of influence, the Mpem et Djim National Park and COPAL during the Project life.

Aquatic Habitat, Fauna and Flora

67. Aquatic Habitat within the study area (upstream and downstream) covers 663 ha. The river is classified as Modified Habitat due to the extreme changes in minimum flow rate resulting from operation of the Lom Pangar regulation reservoir upstream of the Project (see more on this below under Aquatic Plants). The construction of the dam will (i) transform 264 ha of free flowing river (lotic ecosystem) into a slow flowing reservoir habitat (lentic ecosystem); (ii) dewater 198 ha of river in the right bank reaches downstream of the dam (which will receive water only between September and November when the river flow is above Nachtigal HPP's design flow of 980 m^3/s); and (iii) reduce the flow rate in 179 ha of river in the left bank reaches downstream of the dam (EFlow from 25 to 47 m^3/s). The presence of a 15 m high weir will also block fish movement between downstream and upstream of the Project.

68. Dams hold back sediments resulting in the erosion of the downstream riverbed and riverbanks many kilometers below the dam, which may result in the loss of important habitat for fish species to complete their life histories. Nevertheless, a complementary study to the ESIA conducted by Artelia in 2014, determined that sand mining activities in the area have already depleted sand stocks and the area is already degraded in terms of sand availability for the maintenance of fish and invertebrate habitats.

Fish

69. An ichthyologic study to identify fish species composition and abundance was performed from January to October 2014. Monthly semi-quantitative fish catches were performed at 12 stations along the Sanaga river, and one-time catches were performed at 9 stations along the Sanaga's tributaries. The taxonomic inventory identified 65 fish species and the bibliographic research identified an additional 21 species as potentially present in the area. Out of the 86 species, 13 are endemic to the Sanaga river and among them three are endangered or vulnerable. Discrete Management Units (DMU) for these 13 fish species were established corresponding to approximately 20 percent of the Sanaga watershed. Based on the presence and abundance of the species in the DMU, the Project has determined (and IFC concurs) the DMU as Critical Habitat (CH) for the following 9 fish species: (i) *Labeobarbus mbami* – EN; (ii) *Chrysichthys longidorsalis* – VU; (iii) *Marcusenius sanagaensis* – VU; (iv) *Doumea sanaga* – LC; (v) *Labeo nunensis* – LC; (vi) *Labeo sanagaensis* – LC; (vii) *Synodontis rebeli* – LC; (viii) *Campylomormyrus phantasticus* – LC; and (ix) *Petrocephalus similis* – LC.

70. No anadromous (migrate from the sea up into freshwater to spawn) or catadromous (migrate from freshwater down into the sea to spawn) fish have been identified. On the other hand, potamodromous species (migrate laterally or longitudinally along the river) are numerous. Among the CH species there is the suggestion that *Labeobarbus mbami* – EN migrates from the Sanaga to the tributaries to spawn in flooded forests. Other CH fish with potamodromous migratory behavior are *Synodontis rebeli* – LC (adults migrate to tributaries to spawn), *Marcusenius sanagaensis* – VU (adults search breeding areas in lotic environments), and potentially *Chrysichthys longidorsalis* – VU.

71. To mitigate the Project's construction impacts on aquatic habitat and fish, NHPC will (i) avoid the degradation of fish habitat through the prevention of sediment input and untreated effluents into the Sanaga

river during construction; and (ii) minimize fish mortality during construction through fish rescue from dewatered river sections. To mitigate for the operation impacts on aquatic habitat and fish, the Project will implement the following mitigation measures: (i) maintenance of an environmental flow (EFlow) between 25 and 47 m^3/s in the left bank (179 ha of aquatic habitat) of the dewatered river reach downstream of the dam; (ii) restoration of 156 km of Sanaga tributaries (corresponding to approximately 203 ha of aquatic habitat); (iii) enhancement of 395 km of river reaches inside the Mpem et Djim National Park (corresponding to 408 ha of aquatic habitat); and (iv) implementation of an awareness program to reduce the use of ichthyotoxic products for fishing inside the Mpem et Djim National Park. NHPC will engage partners with adequate expertise for the implementation of these measures.

72. A feasibility analysis for the construction of a fish passage at the dam concluded that a fish ladder would be a challenge due to the high number of fish species with varying migratory inclinations and abilities. In addition, the waterfalls of Nachtigal located just downstream from the proposed dam are already a natural barrier for upstream migration of most species. The report concludes that the optimal mitigation action to maintain the genetic mixing of the various species is a catch-and-release program. International experts have been retained by NHPC to test the use of electrofishing and develop a fish catch-and-release program. NHPC shall provide the results of the experimental electrofishing, details of the proposed catch-and-release program, and assess program effectiveness and efficiency to achieve long term genetic mixing of fish stocks upstream and downstream of the proposed dam (see ESAP action no. 25). Additionally, NHPC shall appoint an independent fish and biodiversity expert for at least 3 years to evaluate if the catch-and-release program is sufficient to maintain the genetic diversity of the fish populations and maintain the migratory fish populations. The independent fish expert shall also provide ongoing advice on the Biodiversity Action Plan for Fish (BAP-Fish) and monitoring of Net Gain for CH fish species. (ESAP action no. 26). If the catch-and-release program is deemed to be insufficient, NHPC will design and build a fish passage before commissioning of the dam.

73. The mitigation measures described above will be implemented to achieve Net Gain for the 9 CH fish species. These measures are described more fully in the BAP-Fish that has been disclosed together with this ESRS.

74. The BAP-Fish includes detailed studies to develop a robust monitoring program to monitor the impacts of Nachtigal HPP on the 9 CH fish species and the effectiveness of mitigation and habitat restoration measures. The monitoring program includes indicators of fish species composition and abundance and fish habitat quality. Results of the analysis of these data will be used to quantify net gain for the 9 CH fish species. Data collection will commence before construction of the dam and will extend throughout the 35-year operation concession. The monitoring program will include an updated biophysical baseline (dry and wet season) to (i) differentiate the impacts of Nachtigal HPP from the impacts of Lom Pangar HPP which started operating in 2016 (see ESAP action no. 27); and (ii) determine the presence and abundance of CH fish species in the Mpem et Djim National Park and targeted tributaries. In addition to the BAP-Fish, NHPC will provide financial support to the Ministry in charge of fisheries to control the access of local fishermen to the reservoir.

Aquatic Flora

75. The 2014 inventories of flora and fauna also revealed the presence of three aquatic plant species that are listed on the Cameroon IUCN Red List: *Marsdenia abyssinica* – Critically Endangered (CR), *Ledermanniella sanagaensis* – CR, and *Ledermanniella thalloidea* – Endangered (EN). In addition to their endangered status, both *Ledermanniella* species are endemic to Cameroon. The DMU for two of the aquatic plant species has been determined as Critical Habitat: (i) *Ledermanniella sanagaensis* – CR; and (ii) *Ledermanniella thalloidea* – EN. Particularly important is the occurrence of *Ledermanniella sanagaensis*, whose distribution is restricted to the Project area based on current evidence (Tier 1 Critical Habitat).

76. To better understand and mitigate impacts on the two Critical Habitat aquatic plant species, NHPC has retained local and international plant experts to conduct a detailed inventory and design the mitigation measures. *Ledermanniella* is a genus of flowering plants in the family Podostemaceae; there are at least 44 species, all native to tropical Africa. *Ledermanniella* is an aquatic plant that requires a period of emersion for its reproductive cycle. Emersion of the *Ledermanniella* in the Project area used to occur between the months of January and April when the flow of the Sanaga river was below 375 m^3/s (before flow regulation by Lom Pangar).

77. The Project commissioned studies by a local plant expert to inventory the stations (sites) of *Ledermanniella* in the area impacted by the Project and study its phenology in 2015 (Pre-Lom Pangar HPP operation), and then in 2016 and 2017 (Post-Lom Pangar HPP operation). In 2015, the inventory documented 35 stations of *Ledermanniella* (both species) within the Project area. In January 2016, the Lom Pangar regulation reservoir located upstream from Nachtigal started partial commissioning. Between January and April 2016 Lom Pangar released an average minimum flow of 450 m^3/s, and the flow was below 375 m^3/s only during two weeks. Field surveys conducted from February to March 2016 were able to locate only five (5) *Ledermanniella* stations, all the others being submerged. As Lom Pangar is now fully operational, releasing a minimum flow of 650 m^3/s, the last field survey conducted in January 2017 was not able to locate any of the previously identified *Ledermanniella* stations.

78. Operation of Nachtigal HPP will modify the flow rate in a way that will benefit the *Ledermanniella* species. Nachtigal HPP will be able to replicate the alternation of periods of immersion and emersion in the dewatered section of the river below the weir, which may allow the *Ledermanniella* to complete its reproductive cycle again. This is predicted by experts to allow the survival of 12 *Ledermanniella* stations located on the left bank of the dewatered section that will receive an EFlow of 25-47 m^3/s, as long as the *Ledermanniella* is able to survive four to five years of total submersion. Other mitigation measures to be implemented by the Project include the transplant of *Ledermanniella* stations located in the right bank of the dewatered section that will not receive the EFlow (or from the Mbam river in case Sanaga stations disappear) to the left bank of the dewatered stretch or tributaries of the Sanaga with adequate conditions.

79. While the feasibility of Nachtigal is dependent on Lom Pangar, this reservoir serves not only Nachtigal but two existing and six additional planned HPPs. Therefore, as the changes in the quantity and timing of downstream water flow, and the consequent modification of the *Ledermanniella* habitat, were not caused by NHPC or by the GoC in anticipation of this specific Project, Lom Pangar is not considered an associated facility under IFC PS 1. Thus NHPC is required to achieve Net Gain with regards to the number of *Ledermanniella* stations that still emerge despite the flow regulation effect by Lom Pangar. IFC and NHPC have agreed that the Project shall achieve Net Gain with respect to the stations identified in the 2017 field surveys. IFC considers therefore that the proposed mitigation measures described above are adequate to achieve Net Gain with regards to the loss of Critical Habitat for *Ledermanniella sanagaensis* and *Ledermanniella thalloidea*. Additional mitigation measures will also include the collection and conservation of seeds in Cameroon at the National Herbarium and at the Botanical Conservatory in Brest, France. NHPC has identified international experts to act as advisors to increase the likelihood of success of all mitigation measures. Mitigation measures and the monitoring plan are described more fully in the Biodiversity Action Plan for *Ledermanniella* (BAP-*Ledermanniella)* that has been disclosed together with this ESRS. The BAP-*Ledermanniella* shall be regularly adapted based on the monitoring results.

PS 8 – Cultural Heritage

80. NHPC hired the Institut de recherche pour le développement (IRD) to carry out in early 2016 archeological investigations in the Project footprint. Archeological artifacts were found in four (4) soil samples and field inspections found ten archeological sites, half of which were assigned high priority, and seven archeological sites, including one of high priority, in NHPC base camp and transmission line

respectively; in addition, field inspections along access roads bordering the headrace canal discovered 24 archeological sites, 14 of which were assigned a high priority. The results of the investigations indicate that the Project's area of influence has been inhabited since the Ancient Iron Age. As part of the study, IRD developed a management plan for cultural heritage to be implemented by NHPC. Key activities included in the plan are (i) protection of archeological sites of high priority (ii) preliminary inspections of the area that will be inundated by the reservoir; (iii) awareness training of EPC contractors; (iv) monitoring of earthworks; (v) preliminary analysis of archeological artifacts in laboratories; (vi) capacity building of local institutions; and (vii) bi-monthly and final reports and publication of results in scientific journals. Additionally, NHPC will regularly monitor the number of chance finds and archeological artifacts discovered during the construction phase.

81. NHPC will hire an expert in archeology before earthworks commence who will be stationed on site and will be responsible for the implementation of the plan. EPC contractors are contractually required to develop a chance find procedure as part of their integrated management system and to communicate to NHPC at least 15 days in advance the perimeter of each new area to be stripped so as to allow NHPC evaluate the risk of chance finds. The international expert retained by NHPC will review the adequacy of the chance find procedure and monitor its implementation by contractors. A certain number of sacred sites and trees were identified during the household surveys conducted for the ESIA. A sacred site was identified in the village of Bindandjengue, in the stretch of the Sanaga river that will be dewatered. The assets inventory conducted in 2015-2016 for the preparation of the dam Resettlement Action Plan (RAP) confirmed the presence of these sacred sites and rituals for the relocation of their ancestors to another site have been agreed with the village. Other sacred sites identified during the 2011 ESIA have not been confirmed by the population or are outside of the affected area.

Stakeholder Engagement:

82. ***Stakeholder mapping / analysis:*** NHPC has identified all Project stakeholders and in particular those that are key to the successful implementation of the land compensation process and livelihood restoration initiatives. Among them are primarily (i) PAP; (ii) authorities of administrative subdivisions (governor, departmental prefects, and district sous-prefects); (iii) decentralized local authorities (majors); (iv) traditional authorities (village chiefs); (v) regional offices of several Ministries (e.g. agriculture, mines, defense, education); (vi) community based organizations (e.g. farmers groups, sand miners cooperatives); (vii) civil society organizations (e.g. human rights, environment, health, etc.); and (viii) local and international NGOs. Identified stakeholders have been mapped based on their level of **importance** and their capacity to **influence** the Project.

83. ***Stakeholder Engagement Plan:*** Once stakeholders were mapped, a detailed SEP was developed by NHPC. The duration of the SEP extends from the development of action plans for the mitigation of the Project's social impacts (i.e. resettlement action plan, livelihood restoration plan, migratory influx plan, local development plan) throughout their implementation. Implementation of these mitigation plans is expected to conclude before or at the end of the construction period. The SEP indicates the objective of each meeting, the stakeholders to encounter, who is responsible in NHPC to organize the meeting, and expected dates. The SEP is regularly reviewed by NHPC's E&S team.

84. ***Information Disclosure:*** A first series of dissemination of information workshops were held in 2006 (1294 participants) and 2011 (452 participants) to present the results of the ESIA and record main expectations and concerns of stakeholders. Public hearings took place once more in January 2014, where more than 1,000 questions and remarks were recorded from the public. These dissemination workshops took place in the towns of Ntui, Ndjoré, Batchenga, Obala, Yaoundé 1er–Nlongkak and Nkolondom III, which correspond to the areas that will be mostly impacted by the dam and transmission line eminent domains. The main expectations expressed during these dissemination workshops were the recruitment of

local workers, improvements in village electrification, improvement of social infrastructure (i.e. schools, health centers, access to water, roads, etc.), be selected as suppliers of sand for the construction site, and transparency in the expropriation process. The main concerns were related to compensation rates, negative health effects of the dam and the transmission line, impact of migrant influx, and impacts of the dam on sand mining and fishing activities.

85. ***Consultation:*** Since the installation of NHPC's E&S team in Batchenga in April 2014, the team initiated a dialogue with identified stakeholders. During August and September 2014, the team held consultation meetings with the Sous-Prefects, mayors and chiefs of the villages that will be directly impacted by the Project (i.e. eminent domain for dam and transmission line). The participation of local authorities is very important as they play a fundamental role in the implementation of local development programs and the resolution of local conflicts and land disputes. During October-November 2014, the team met with governmental programs, research institutes, NGOs, civil society and community based organizations to identify those groups on which NHPC may rely for the implementation of livelihood restoration and other mitigation measures. Multiple information and consultation meetings have been held up to October 2017 in the context of the RAPs, the Livelihood Restoration Plan for sand miners, and the Local Economic Development Action Plan. In total, 75 meetings with more than 1,200 participants have been held for the design of the grievance mechanism, about 90 information and consultation meetings with more than 4,000 participants have been held in the context of the RAPs, 47 meetings with above 1,500 participants in the context of the sand miners Livelihood Restoration Plan for sand miners, and 21 meetings with 340 participants in the context of the Local Economic Development Action Plan.

86. ***External Communications and Grievance Mechanisms:*** The Project grievance mechanism is contained in the SEP. Stakeholders can present grievances verbally or in writing to NHPC's Grievance Officer stationed in NHPC offices in Batchenga. After NHPC has conducted its investigation, a resolution is proposed to the complainant. If the complainant is not satisfied with the resolution, the grievance can be raised to an independent Mediation Committee. If the complainant does not agree with the decision of the Mediation Committee, he/she can present a grievance appeal to the Appeal Committee which is the last level of appeal. During 2014, 75 information meetings with more than 1,200 participants were held to present NHPC's grievance resolution mechanism, and community meetings were held in eight villages to choose Mediation Committees' members. Four workshops have been carried out to train members of the Mediation Committees on their roles and responsibilities. Twelve consultation meetings with 82 participants were also held with local administrative authorities (Sous-prefects, Majors) on the functioning of the grievance mechanism, as they will act as members of the Appeal Committee when required. Reception of grievances started in April 2015. From April 2015 to November 2016, 354 grievances have been recorded and 351 have been resolved. Resolution has required 497 individual interviews, 190 field investigations, and five sessions of Mediation Committees. Currently, most of the grievances have been related to the land compensation process. NHPC's grievance mechanism will be operational for the duration of the Project's construction and during the 35-year operational concession period. NHPC will regularly review and adapt its grievance resolution mechanism to effectively respond to the changing nature of registered complaints.

87. ***Ongoing Reporting to Affected Communities:*** The SEP will be updated and continued during the construction phase, and information will be given to affected communities regarding local labor, grievances redressed, training participation, communities' compensation actions.

Addendum 2. Environmental and Social Action Plan (ESAP)

Actions	**Evidence of Implementation**	**Timing**
Performance Standard 1		
1. NHPC will obtain provisional versions of Integrated Construction phase Environmental, Health & Safety and Social Management Systems (ESMS) from EPC contractors. The EPC contractors' ESMS shall include a system to conduct regular E&S inspections, quarterly internal audits and senior management reviews, and regularly report results with associated corrective actions to NHPC.	EPC Contractors' Integrated Environmental, Health & Safety and Social Management System documentation in form and content satisfactory to IFC.	Prior to first disbursement
2. NHPC will establish a system to collect and analyze data on the Project's E&S performance during construction and operation. The information shall include, but not be limited to: (i) accident rates; (ii) consumption of energy and water; (iii) generation and treatment of hazardous and non-hazardous waste; (v) wastewater quality analysis; (vi) turbidity of the Sanaga river; (vii) air emissions; (viii) implementation of workers' training programs; (viii) epidemiological indicators; and (ix) migrant influx.	Monitoring E&S parameters and protocols satisfactory to IFC.	Prior to first disbursement
3. NHPC will develop an E&S Management System (ESMS) in line with the requirements of IFC Performance Standard 1 to mitigate the E&S risks and impacts linked to the operation of the hydropower plant.	ESMS manual for the operation of Nachtigal HPP in form and content satisfactory to IFC.	Prior to commissioning
4. NHPC will ensure that its E&S team has the capacity to effectively manage the E&S risks and impacts linked to operation of the hydropower plant.	Job descriptions, training plan, CVs and contracts of experts satisfactory to IFC.	Prior to commissioning
Performance Standard 2		
5. NHPC will document, implement and communicate its human resources (HR) policies and procedures in line with IFC Performance Standard 2 requirements.	NHPC HR policies and procedures manual. Provide evidence of communication to NHPC employees.	Prior to first disbursement
6. NHPC will implement a system to monitor EPC contractor and subcontractor's compliance with Cameroonian labor laws and IFC PS2 requirement. These shall include, but not be limited to: (i) internal work regulations - approved by the Ministry of Labor of Cameroon - communicated and explained to employees at the time of recruitment; (ii) workers covered by social security; (iii) workers provided with a copy of their contract; (iv) no personal identification retained against worker's will; (v) contractors' system to adequately record and compensate for overtime work; and (vi) workers' wages compliance with remunerations established by applicable collective bargaining	Applicable policies and procedures, and assigned staff and budget.	Prior to first disbursement

agreements or official tariffs. If non-compliances are identified, NHPC will require contractors to take immediate corrective actions.		
7. NHPC will ensure that EPC contractors and subcontractors have a system to verify workers' age and to ensure that no children below the minimum working age (15 years) is engaged in any type of work and no children between 15 and 18 years old is employed in hazardous work.	Applicable policies and procedures.	Prior to first disbursement
8. NHPC shall ensure that EPC contractors make all workers aware of the existence of a worker grievance mechanism, in accordance with IFC PS2, managed by the EPC contractors with NHPC input, and shall facilitate access to it. EPC contractors shall regularly explain to workers the scope of the grievance mechanism (which type of complaints can be filed) and how the mechanism work.	Applicable policies and procedures, and assigned staff and budget, satisfactory to IFC.	Prior to first disbursement
9. NHPC shall implement a system to monitor workers' accommodations and services provided by EPC contractors to ensure it complies with contractual clauses and workers are provided a safe and healthy living environment. If non-compliances are identified, NHPC shall require EPC contractors to take immediate corrective actions.	Applicable policies and procedures, and assigned staff and budget.	Prior to first disbursement
Performance Standard 3		
10. NHPC shall obtain a spoil management plan from the civil works EPC contractor before beginning of the construction phase detailing the areas where the excavation material will temporarily stored and the measures to avoid erosion and deposition of sediments in the Sanaga river. Measures specific to permanent storage of spoil will be provided before the end of the construction phase.	Spoil management plan satisfactory to IFC.	Prior to first disbursement for temporary spoil storage and management and before the end of the construction phase for permanent spoil storage management
Performance Standard 4		
11. NHPC will ensure that EPC contractors' code of conduct and disciplinary procedures include the prohibition to engage in any type of sexual behavior with minors and any type of abuse or violence against women and girls.	Revised contractors' code of conduct and disciplinary procedures.	Prior to first disbursement
12. NHPC shall acquire or contract the necessary expertise so that NHPC grievance redress mechanism is able to handle complaints related to (i) misconduct of	Applicable policies and procedures, and assigned staff and budget, satisfactory to IFC.	Prior to first disbursement

construction workers in host communities and (ii) potential abuses of private/public security forces, in particular complaints related to violence against women and girls. NHPC shall implement a communication campaign to explain what is the expected behavior of workers and private/public security forces in host communities, and how a member of the community can file a related complaint. The system shall communicate outcomes to complainants and other relevant parties, keeping in mind confidentiality provisions and the need to protect victims.		
13. NHPC shall include gender specific mitigation measures within NHPC Migratory Influx Management Plan to ensure negative impacts on women due to the Project are addressed.	Revised Migratory Influx Management Plan.	Prior to first disbursement
14. NHPC shall coordinate measures among all EPC contractors and subcontractors to ensure all workers have access to free HIV/AIDS consultation, screening, retroviral medication and means of protection to avoid the spread of the disease, and coordinate any awareness and communication campaign among sex workers and the population in general.	Applicable policies, plans and procedures, and assigned budget and staff both from EPC contractors and NHPC.	Prior to first disbursement
15. NHPC shall require EPC contractors to implement transportation management plans. Plans shall include: (i) speed limits; (ii) adoption of limits for trip duration to avoid overtiredness; (iii) avoidance of dangerous routes and times of the day to reduce the risk of accidents; (iv) requirements for vehicular maintenance; (v) requirements for drivers' licensing and training; (vi) alcohol tests and awareness campaigns to emphasize safety aspects among drivers; and where feasible (vii) the use of speed control devices (governors) and remote monitoring of driver action. These measures shall apply to all in-house and contracted transportation.	EPC contractors' transportation management plan satisfactory to IFC.	Prior to first disbursement
16. NHPC shall require the civil works EPC contractor to implement a blasting risk management plan, which shall include a communication strategy with Affected Communities to inform and manage perceptions of the risks of blasting activities. The plan shall include pre-blast and after-claim property condition surveys to prevent unfounded claims of damage caused by vibration and air overpressure. Property condition surveys shall include also properties along construction access roads in the hydroelectric facility DUP area to prevent unfounded claims of damaged due to vibrations caused by heavy trucks.	Civil works EPC contractor's blast management plan satisfactory to IFC.	Prior to first disbursement
17. NHPC shall commission a dam break analysis to (i) identify with certainty downstream infrastructure and people at risk; and (ii) identify appropriate	Dam break analysis.	Six months before commissioning

warning systems and other measures to address flood events, rapid water level rises in case of peaking power production and potential dam failures.		
18. NHPC shall develop and implement a dam safety emergency plan. The plan shall include a warning and alarm system to notify downstream communities when (a) regular operational downstream flows are expected to abruptly increase, and (b) in case of emergency releases. This system must assure that downstream communities understand (i) the different risk situations, (ii) what actions to take and what behaviors to avoid, and (iii) who to contact in case of doubts or emergencies.	Dam safety emergency (preparedness and evacuation) plan including responsible staff and budget. Evidence that the alarm system has been implemented and is operational, and downstream communities have been appropriately trained.	Two months before commissioning
19. NHPC shall develop and implement a dam safety surveillance program.	Dam safety surveillance program including responsible staff and budget.	Two months before commissioning
20. NHPC shall complete a security risk assessment to identify the likely security threats during construction and operation that would require a response by security personnel, and the potential impact that such response might have on community members. Based on the outcomes of the security risk assessment, NHPC shall develop a security management plan.	Security risk assessment and management plan in form and content satisfactory to IFC.	Two months before start of construction
21. NHPC shall ensure that companies retained for the provision of security services during construction and operations have a system to ensure effective oversight and accountability of security personnel with respect to key PS 4 requirements (e.g., vetting, training in the use of force and appropriate conduct, procedures in the event of any incident or alleged violation)	Provisions to be included in contracts with private security forces, and procedures to control the implementation of contractual provisions, satisfactory to IFC.	Two months prior to start construction
22. NHPC shall retain a security officer to engage with the GoC to ensure public security arrangements do not pose a threat to the safety of workers and Affected Communities. The deployment, conduct, training, and incident follow-up of public security personnel shall be discussed with the army in depth and shall be ideally documented via a Memorandum of Understanding or similar, to ensure these are aligned with key PS 4 requirements.	Job description amd CV of security officer. Memorandum of Understanding or documentation of engagement with GoC.	Two months prior to start construction
Performance Standard 5		
23. NHPC shall document and report to IFC the consultation process on the compensation matrix for sand miners and final agreements with PAP.	Documentation recording consultation process and agreements reached.	Two months prior to start construction
24. NHPC shall commission a Resettlement and Livelihood Restoration Completion Audit for all physically and economically displaced PAP demonstrating compliance with IFC PS5 or, if necessary, identifying any	Resettlement and Livelihood Restoration Completion Audit in form and content satisfactory to IFC.	Three years after commissioning

remaining gaps and corresponding corrective actions with budget and timeline for implementation.		
Performance Standard 6		
25. NHPC shall share results of the experimental electrofishing, details of catch-and-release program, and assess program effectiveness and efficiency to achieve long-term genetic mixing of fish stocks upstream and downstream of the proposed dam.	Report of results, details of program and evaluation of program to IFC satisfaction.	As soon as results are available (experiment is planned end of May 2017)
26. NHPC shall appoint an independent fish expert with PS 6 experience for at least 3 years to evaluate if the proposed catch-and-release program is sufficient to maintain the genetic diversity of the fish populations and maintain the migratory fish populations. The independent expert shall also provide ongoing advice on the Biodiversity Action Plan-Fish and monitoring of Net Gain for the critical habitat fish species.	TOR, CV, and contract of independent expert to IFC satisfaction.	Two months prior to Board.
27. NHPC shall collect new fish data for a post-Lom Pangar HPP baseline (dry and wet season).	Report on fish baselines to IFC satisfaction.	July 2018

Annex 4: Implementation Support Plan

CAMEROON: Nachtigal Hydropower Project, P157734

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

2. The level of technical support needed includes staff with energy sector knowledge and expertise; specialized commercial PRG expertise including commercial legal counsel and financial experts; and expertise in hydropower Projects; specialized expertise, including E&S development specialists, hydropower specialists, and power engineering, as well as Monitoring and Evaluation (M&E) expertise. The primary responsibility for this support lies with the Task Team Leader and from a specialized PRG expert (co-TTL), with key inputs from specialized commercial PRG experts.

3. ***Post-Closing PRG Monitoring.*** The level of technical support needed includes staff with energy sector knowledge and expertise; specialized commercial PRG expertise including commercial, legal counsel and financial experts. The primary responsibility for this monitoring lies with the Task Team Leader and from a specialized PRG expert (co-TTL). 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.

Time	*Focus*	*Skills Needed*	*Resource Estimate*	*Partner Role*
First 12 months	Effectiveness, Financial closure ESMP compliance, salvage logging, RAP implementation Commencement of works and construction progress	Task Team Leader and Guarantee co-TTL Legal, Hydropower Specialist, Engineer, Safeguards specialists, and, Country Team	US$200,000	NHPC/MINEE
12th month-72nd month (Including Mid-term Review and Completion Report)	Continued review of progress in construction, contract management, and generation by the IPPs Review of sector technical and financial performance; safeguards; overall reform process Review status of Completion against indicators and PDO.	Task Team Leader & Guarantee co-TTL Legal, Hydropower Specialist, Engineer, Safeguards specialists Country Team	US$120,000 per fiscal year	NHPC/MINEE

Skills Mix Required

Skills Needed	***Number of Staff Weeks***	***Number of Trips***	***Comments***
Team Leader	Estimated to be 5-7 weeks per person per year	2-3 per year	To be adjusted annually depending on available supervision budget
PRG Specialists		2-3 per year	
Energy Specialist		Local staff	
Power and Hydropower Engineers		Local staff	
Social Development			
Environmental			
Legal			

Annex 5: Economic and Financial Analysis

CAMEROON: Nachtigal Hydropower Project, P157734

A. Project Economic Analysis

Summary of Least Cost Expansion Plan

1. Cameroon's PDSE is a long-term least cost power generation expansion plan covering generation and transmission investment over the period 2015-2035. It was originally developed in 2006 and updated in 2014 with IDA support to include the Government's Strategic Vision 2035 and to integrate a more accurate picture of upcoming Projects.

2. The consultancy firm Studi International, in charge of the study, used the Generation, Analysis and Planification model to derive the expansion plan and NEPLAN, a planning software for electrical transmission, distribution and industrial networks to carry out static and dynamic simulations of the grid. An economic analysis of this plan was carried out by the consultancy firm to evaluate its feasibility.

Current Grid

3. The grid managed by ENEO is divided into three sub-grids that are not interconnected: the Northern Interconnected Grid, the Eastern Interconnected Grid, and the SIG. It includes three hydropower plants, and 14 thermal power plants, the majority of which (two hydros and eleven thermal power plants) feed into the Southern grid. On the demand side, the Southern grid accounts for about 90 percent of the medium and low voltage demand. All three high voltage customers, representing aluminium and cement industries, are connected to the Southern grid. This concentration of demand and production highlights the importance of the southern region economically.

4. In 2015, total generation reached 6,426 GWh, of which 1,477 GWh was hydro generated power. The total installed capacity on the grid is estimated at 1,286 MW. Hydropower accounts for about 60 percent of total installed capacity, resulting in a grid that is subject to variations in hydrology. The largest and most efficient thermal plant, Kribi, was commissioned in 2013 with support through IDA guarantees and IFC financing. Gas is supplied to Kribi from the Sanaga Sud gas Project that was developed by Perenco in partnership with Société Nationale des Hydrocarbures.

Table 5.1: Existing Power Plants of at Least 1 MW (Southern Grid)

Name	Category	COD	Capacity (MW)
Southern Interconnected Grid			
Songloulou	Hydro	1991	384
Edea	Hydro	1957-75	276
Kribi	Gas	2013	216
Dibamba	HFO	2009	84
Limbe			85
Logbaba 2			12
Oyomabang 1			19.5
Bafoussam	Liquified Fuel Oil		8
PTU1			40
Oyomabang 2			12.8
Ahala[39]			60

[39] 20 MW from Ahala will be moved to the Northern grid in the course of the year.

Table 5.2: Existing Power Plants of at Least 1 MW (Northern and Eastern Grids)

Northern Interconnected Grid			
Lagdo	Hydro	1983	72
Kousseri	Liquified Fuel Oil		3
Eastern Interconnected Grid			
Bertoua	Liquified Fuel Oil		13
Garoua Boule	Liquified Fuel Oil		1
Total			**1,286.3 MW**

Demand Supply Balance

5. Demand forecast took into account growth in demand from existing and new customers as well as from interconnections with neighboring countries. Demand is also contingent upon the materialization of a number of major industrial and mining Projects currently under development including bauxite, iron ore, nickel, cobalt, and cement, which are all fairly energy-intensive. Two scenarios were developed for the purpose of the PDSE for each of the three regions: (i) high growth scenario, with a projected peak demand growth rate of 7.9 percent (CAGR); and (ii) median growth scenario with a 6.2 percent peak demand growth rate (CAGR) over the 20-year period spanning 2015-2035. Under such scenarios, electricity consumption was expected to grow from 6,500 GWh in 2016 to 24,400 GWh under the median growth scenario and up to 33,400 GWh under the high growth scenario by 2035.

Table 5.3: Demand Projections for the Three Interconnected Grids (PDSE 2014)

	2015	2020	2025	2030	2035	CAGR*
Southern Interconnected Grid						
Peak (MW) – Median	1047	1481	1873	2376	2892	**5.2 %**
Energy (GWh) – Median	5928	8722	11247	14501	17957	**5.6 %**
Peak (MW) – High	1052	1634	2242	3079	4472	**7.3 %**
Energy (GWh) – High	5956	9539	13177	18097	26746	**7.6 %**
Northern Interconnected Grid						
Peak (MW) – Median	70	206	358	451	510	**10.0 %**
Energy (GWh) – Median	355	1228	2079	2656	3032	**10.9 %**
Peak (MW) – High	70	213	381	489	552	**10.4 %**
Energy (GWh) – High	355	1259	2191	2852	3234	**11.2 %**
Eastern Interconnected Grid						
Peak (MW) – Median	19	43	243	492	505	**17.3 %**
Energy (GWh) – Median	74	176	1596	3368	3424	**20.2 %**
Peak (MW) – High	19	44	244	495	510	**17.4 %**
Energy (GWh) – High	74	178	1599	3382	3446	**20.2 %**
Total Energy Demand						
Peak (MW) – Median	1136	1730	2474	3319	3907	**6.2 %**
Energy (GWh) – Median	6357	10126	14922	20525	24413	**6.8 %**
Peak (MW) – High	1141	1891	2867	4063	5534	**7.9 %**
Energy (GWh) – High	6385	10976	16967	24331	33426	**8.3 %**

**Compound Annual Growth Rate.*

6. The plan calls for a scale-up in investment of the country's significant hydropower potential. More than 3,000 MW of hydropower capacity needs to be developed under the median growth scenario and 5,500 MW by 2035. Thermal plants were used to complement hydropower, in particular in the northern region.

7. More conservative demand growth Projections based on data provided by ENEO were used for the Project's economic analysis and the sector's financial analysis.

Economic Analysis of Nachtigal Hydro Power Project

8. The economic justification for the Nachtigal Hydropower Project is assessed by assuming that the incremental net benefits of implementing the Project are derived from the opportunity cost of thermal power plant running on natural gas (open cycle). This is estimated to be a conservative assumption because most probably Nachtigal would firstly displace some expensive generation units running on HFO.

9. The economic benefits identified in the analysis are the following:

i. Savings made by meeting the growth in demand with power from Nachtigal Hydropower Project instead of purchasing the same quantity of power from a conventional thermal power plant running on natural gas.

ii. Net reduction of GHG emissions as a result of replacing power from natural gas power plant with cleaner power from a renewable source (hydro).

10. The economic costs were essentially the capital costs of implementing Nachtigal Hydropower Project and the associated differential in O&M cost.

Assumptions Underlying Analysis

11. The economic viability of the Project is evaluated starting in 2018 with the commissioning of the Project scheduled by the first quarter of 2023. Thus, the first year that benefits accrue from the flow of electricity is assumed to be 2023. The rationale of the analysis is based on building the Natchtigal hydropower plant instead of building new conventional thermal generation running on natural gas. Table 5.4 presents the main assumptions underlying the analysis.

Table 5.4: Main Assumptions for the Economic Analysis

Variables	Natchigal	Gas Thermal Power Plant
Economic parameters		
Discount rate	6%	
US$/FCFA exchange rate	600	
EUR/FCFA exchange rate	655	
Replacement Natural Gas Plant Characteristics		
Capacity (MW)	420	600
Capital Cost (million US$) – excluding contingencies	809	514
Economic life (years)	40	20
Fixed O&M Charge (EUR/year/MW)	42,143	33,375
Variable O&M Charge (EUR/MWh)	N/A	5.365
Heat Rate (SCF/kWh)	N/A	9.135
Gas Cost (EUR/MSCF)	N/A	2.797[40]

[40] Adjusted using the WB natural gas price forecast (October 2017).

Lubricant Cost (FCFA/kWh)	N/A	1,520
Lubricant Specific Consumption (Liter/MWh)	N/A	0.300
Capital Expenditure disbursement		
Year 1	27%	80%
Year 2	19%	20%
Year 3	20%	
Year 4	16%	
Year 5	18%	

Figure 5.1 – Firm Producible Energy in Southern Grid

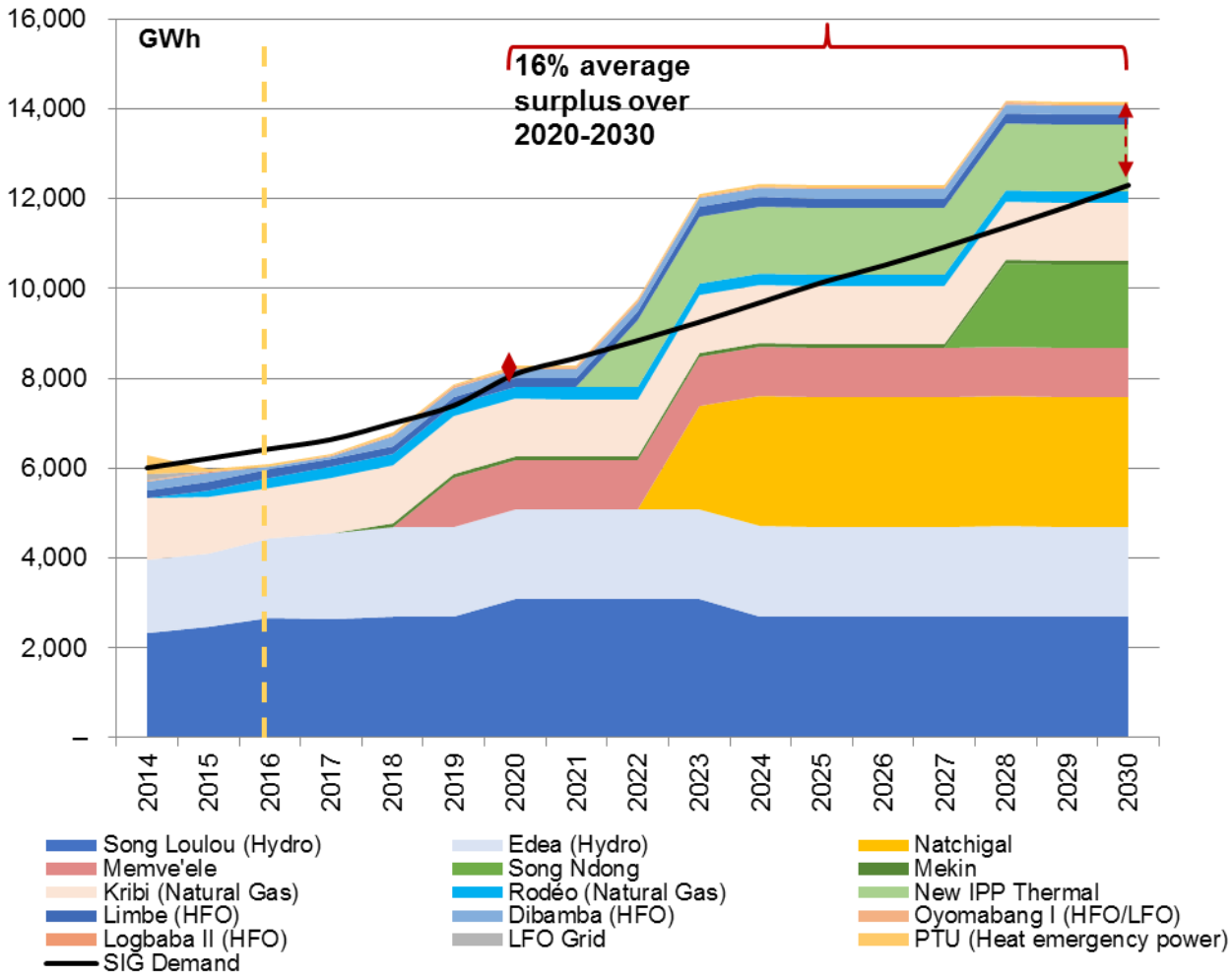
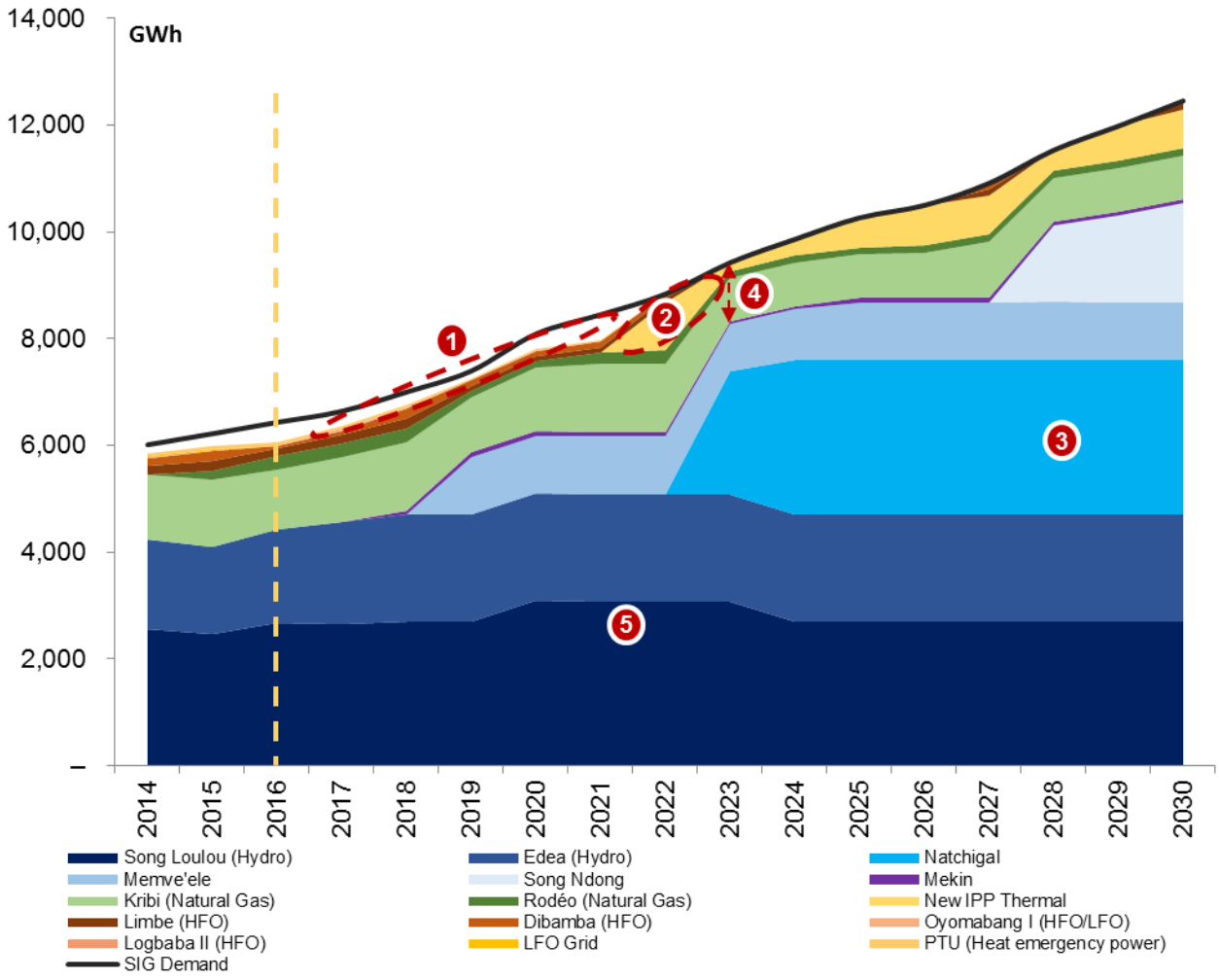


Figure 5.2 – Projected Demand and Dispatch in Southern Grid*



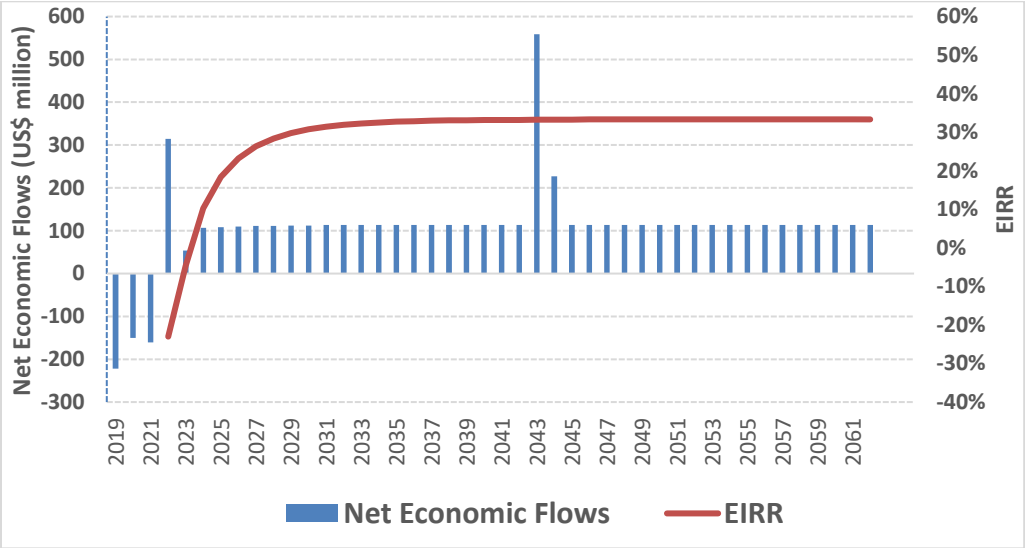
Graph Legend:

1) Additional generation sources are needed as soon as possible to avoid load-shedding and the use of expensive emergency rental units.
2) New 200MW thermal assumed online by 2022 – If it does not come online, existing (more expensive) thermal units will still be needed.
3) Nachtigal is always dispatched given its low cost and high position in the merit order.
4) Dispatch from hydro plants projected to rise from c. 70 percent of total demand in 2017 to c. 90 percent after 2023, thereby displacing most thermal plants until 2030, after which more supply sources will be needed.
5) Song Loulou current maintenance program ends in 2019, with 10-year maintenance program starting one year after Nachtigal's commissioning.

Key Results

12. Based on this assumptions, the proposed Project yields an EIRR of 20.9 percent, excluding net environmental benefits, with an NPV of US$1,193 million (at 6 percent discount rate) over the 40-year Project economic lifetime. If net environmental benefits are included, the EIRR increases to 27.9 percent with a NPV of US$2,227 million using the low shadow carbon price scenario. The EIRR could increase to 33.3 percent with an associated NPV of US$3,260 million if the high shadow carbon price were used instead. Figure 5.3 and Table 5.5 below summarizes the economic analysis results.

Figure 5.3 – Net Economic Flows and Economic Internal Rate of Return



Sensitivity Analysis

13. The overall EIRR and NPV of the Project would remain robust under all sensitivity scenarios, which includes increase in capital costs (Nachtigal), lower natural gas price, and Nachtigal O&M costs. The results of the sensitivity analysis is presented in the table below.

Table 5.5: Results of the Sensitivity Analysis (Switch Values)

Economic Analysis					
Sensitivity Analysis - Switch values					**Comment**
Parameters		**Switch Value**	**Original**	**Change**	
Demand / dispatch constraints	Year	2036	2023	13	Even if Nachtigal is not able to replace gas thermal until 2034, the Project is economically feasible
Low hydrology	%	8%	100%	-92%	Even if Nachtigal is able to generate 8 percent of the base case scenario, the Project is economically feasible.
CAPEX	US$ million	2,208	809	198%	Even if capital costs (economic) increase by 198 percent, the Project is economically feasible

14. A sensitivity analysis shows that the economic viability of the overall Project is robust to credible changes in the underlying parameters. Particularly, the Project is robust even considering reduced economic benefits due to the inability of Nachtigal to displace any source of generation in the medium term. Modeling results show that as long as the plant is able to replace new generation before 2033 (while commissioned in 2022), the Project remains economically feasible. Similarly, the Project is robust to low hydrology patterns; only very low hydrological scenario prolonged in the long run would turn the Project economically unfeasible (assuming that conventional gas thermal power plants are still required to meet the load not served by Nachtigal).

B. Sector Financial Analysis

B.1 - Financial Analysis of ENEO

1. Electricity sales have been increasing regularly in recent years with a tariff kept constant, thanks to growth in LV demand of 5 percent p.a. and increased hydropower capacity, courtesy of Lom Pangar's regulating effect. ENEO's EBITDA has improved in 2016-2017 as quinquennial regulatory targets have been reset to reflect the reality of the company's lackluster performance. Operating cash flows have slightly improved in the same period but are still too low to cover investing and financing cash flows. As for accounts receivable, these have been increasing at a fast pace, more than doubling since 2012, with accounts payable also rising significantly, especially to IPPs (Kribi and Dibamba).

Table 5.6: 2012 – H1 2017 ENEO Financial Summary (IFRS)

Key financials	2012	2013	2014	2015	2016	H1 2017	CAGR 2012-16
(EURm)	Aud.	Aud.	Aud.	Aud.	Aud.	Mgt.	
Income Statement							
Electricity Sales	341	352	378	395	396	215	3.8%
Tariff compensation	14	-	27	9	31	21	21.8%
New Connection and Other revenues	3	1	9	18	18	8	62.1%
Total Revenues	**358**	**353**	**414**	**422**	**445**	**244**	**5.6%**
Opex	(275)	(290)	(321)	(368)	(364)	(196)	7.3%
EBITDA	**83**	**63**	**93**	**53**	**81**	**47**	
EBITDA Margin	*23.1%*	*18.0%*	*22.4%*	*12.6%*	*18.2%*	*19.5%*	
Depreciation	(42)	(41)	(45)	(46)	(45)	(21)	
Net Income	**20**	**11**	**11**	**(30)**	**9**	**11**	
Net Income Margin	*5.6%*	*3.2%*	*2.8%*	*(7.1%)*	*2.0%*	*4.5%*	
Balance Sheet							
Total Assets	**947**	**987**	**1,008**	**1,012**	**1,100**	**1,132**	
PP&E	672	693	680	690	739	736	
Other LT Assets (a)	83	85	77	80	87	86	
Unrestricted Cash	43	47	29	18	8	4	
Accounts Receivable	100	106	138	142	200	234	
Other ST Assets (b)	49	55	83	82	67	73	
Total Equity & Liabilities	**947**	**987**	**1,008**	**1,012**	**1,100**	**1,132**	
Equity	275	286	308	271	283	294	
DFI Debt	189	154	120	86	51	34	
Other LT liabilites (c)	282	327	312	325	363	360	
VAT and Other taxes Payable	33	16	45	76	114	134	
Accounts Payable - IPPs	5	21	26	36	70	74	
Accounts Payable - Others	16	12	18	29	44	48	
ST Debt - Invoice Discounting	-	-	-	35	25	38	
ST Debt - DFI Debt	34	34	34	34	34	34	
ST Debt - Bridge Loan	-	-	-	25	25	15	
Other ST liabilities (d)	114	137	144	95	90	99	
Cash Flow Statement							
Operating cash flows		57	54	27	108	36	
o/w Changes in WC		*16*	*(1)*	*(28)*	*21*	*(24)*	
Investing Cash flows		(3)	(29)	(47)	(59)	(22)	
Financing Cash flows		(46)	(43)	10	(60)	(17)	
Change in Cash & Cash equivalents		**8**	**(18)**	**(10)**	**(11)**	**(3)**	
Working Capital ratios							
Receivables (DSO)	102	109	122	123	164	175	
Payables (DPO)	28	40	49	64	113	114	
Current ratio	0.95x	0.95x	0.94x	0.73x	0.68x	0.70x	

Based on IFRS financial statements; detailed notes to accounts are provided in OHADA (French Acronym for Organisation pour l'Harmonisation en Afrique du Droit des Affaires) financial statements which serve as basis for the elaboration of IFRS financials.

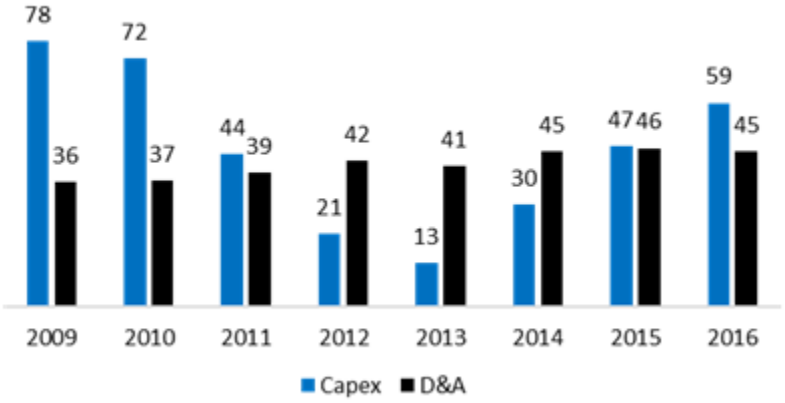
2. As a result of its deteriorating situation, as of June 2017, ENEO had over EUR 300 million of short-term assets, including around EUR 100 million of doubtful debt from LV customers. The company also has more than EUR 400 million of short-term payables and these liquidity woes have led to ENEO drawing on its DSRA in September 2017 to repay the DFI loan installment.

3. **ENEO's profitability** is driven by the amount of the yearly GoC compensation owed to ENEO in lieu of of tariff increases. This compensation amount is narrowly linked and highly sensitive to:

- ➔ Any capex investments that ENEO makes above the amount of depreciation of its asset base – such investments are incentivized via a 15.19 percent return premium incorporated in the regulatory compensation formula. The formula symmetrically penalizes ENEO if it invests less than the depreciation amount, at the same 15.19 percent rate; and
- ➔ The company's operational performance, namely its distribution efficiency vis-à-vis regulatory targets, which highly depends on the quantity and quality of ENEO's capex investments.

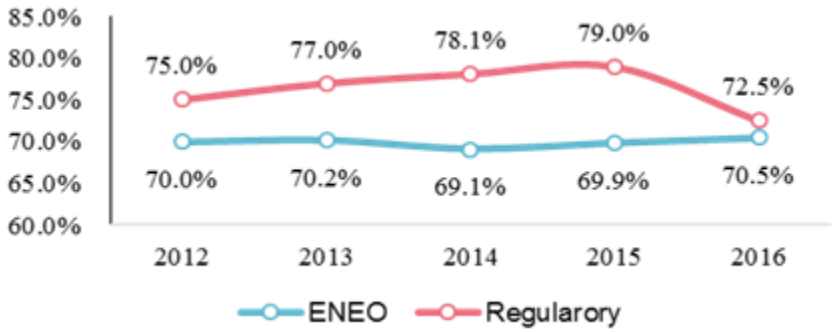
4. For the former profitability driver (capex investments), an annual investment of EUR 46 million would be required to maintain ENEO's depreciating asset base at the same level, but at least EUR 76 million are estimated to be needed yearly to boost the Company's efficiency and reduce its losses. AES Sonel did not deliver on its targets during the 2011-2014 period, which left the company stranded with increasing losses as investments were as low as EUR 13 million in 2013. After taking over ENEO in 2014, Actis increased its capex investments, but the company's liquidity issues and the uncertainty surrounding the concession extension made it impossible to deploy enough capital to considerably reduce distribution losses.

Figure 5.4 - ENEO Capex Evolution (EUR million)



5. As a result, the second profitability driver, distribution efficiency, remained low compared to targets, which were set too high for the 2011-2015 period. This has led to ENEO's EBITDA falling by EUR 150 million over 2012-2015 because of the difference between target distribution efficiency and real distribution efficiency. The target reset in 2016 improved EBITDA, but this operational metric will continue to negatively impact ENEO's compensation and financials if the company cannot increase its efficiency in tandem with the regulatory target's aggressive evolution over 2016-2020 (by 1 percent p.a.).

Figure 5.5 - Distribution Efficiency (%) - Actual vs. Target



B.2 - Sector Cost of Service

6. The assessment of Nachtigal Hydropower Project on Cameroon power sector cost of service was performed assuming three different energy sale growth scenarios which are based on data provided by ENEO and briefly summarized in the table below:

Table 5.7 - Summary of power demand growth[41] Scenarios – Regulated LV and MV customers[42]

Energy Sold (GWh)		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Demand	Base Growth Scenario	3,584	3,947	4,190	4,361	4,986	5,322	5,680	6,061	6,404	6,767
	High Growth Scenario	3,579	3,943	4,185	4,392	5,107	5,558	6,017	6,513	6,896	7,228
	Low Growth Scenario	3,547	3,865	4,058	4,174	4,522	4,734	4,955	5,186	5,374	5,569

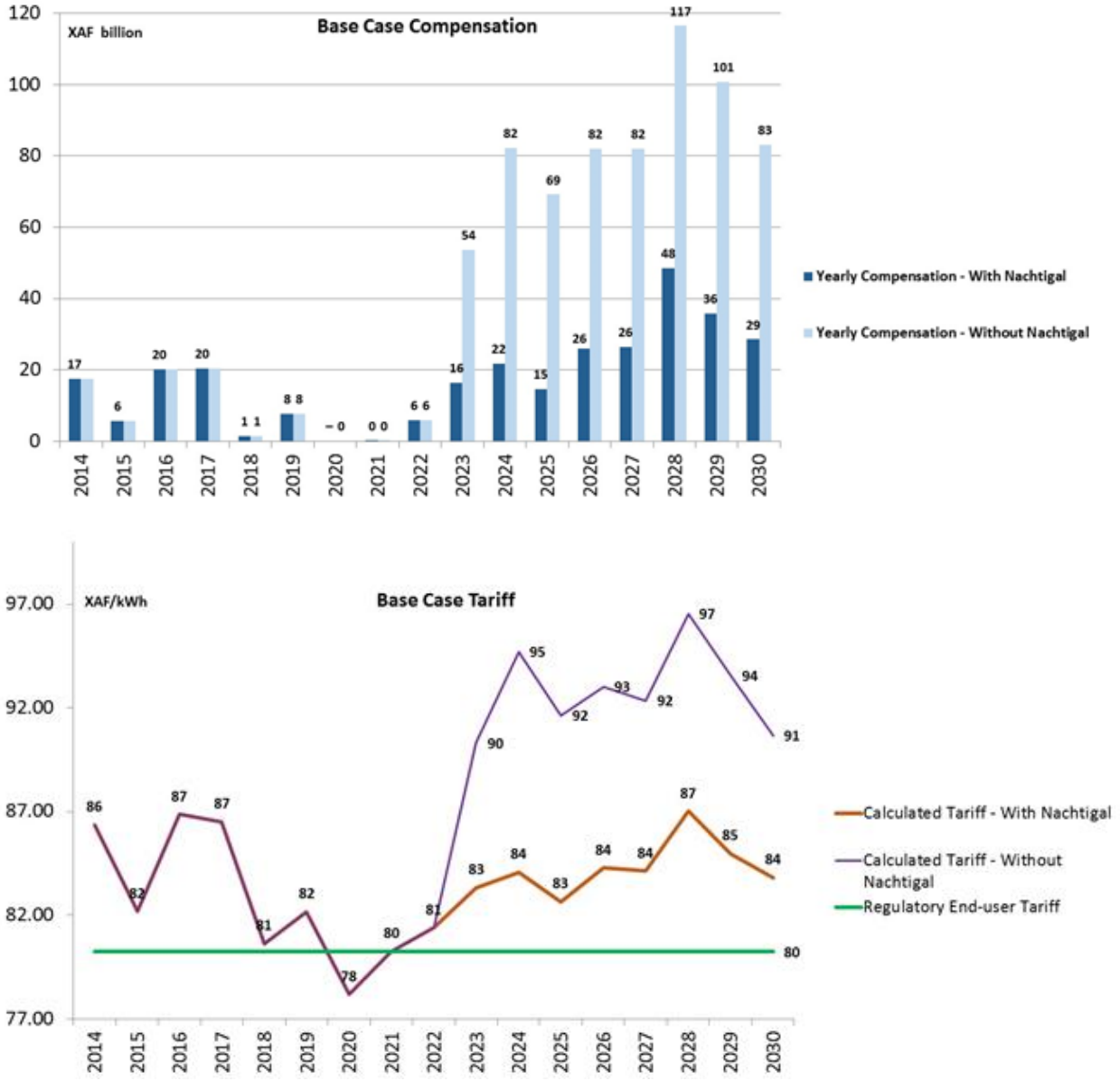
7. With the addition of new hydro power plants with lower costs (Memve'le, Mekin, and Nachtigal), the cost of supplying electricity is projected to decrease. The size of decrease in the cost of service will depend on demand growth and on the size of the transmission investment program contemplated. Until there is a robust growth in demand, the arrival of Nachtigal will initially displace thermal power plants without eliminating the existing capacity and gas "Take or pay" obligations due by the off-taker to the Kribi power plant.

8. The projected path of the power sector cost of service (CoS) will be driven by two main variables, namely (i) the growth in power demand to quickly absorb the initial excess generation capacity, and (ii) the size and timing of the planned generation and transmission Projects. Graphs 5.1-2 below summarizes the impact of Nachtigal on compensation and tariff per kWh in the base case demand growth scenario.

[41] Base, High, and Low growth scenarios assume 2018-2030 demand (GWh) CAGRs of 6.8 percent, 7.9 percent and 4.8 percent respectively

[42] Customers for which the regulated end-user tariff applies – excludes special HV and MV clients

Graphs 5.1-2 - Summary of Nachtigal Impact on Sector Under Base Demand Growth Scenario

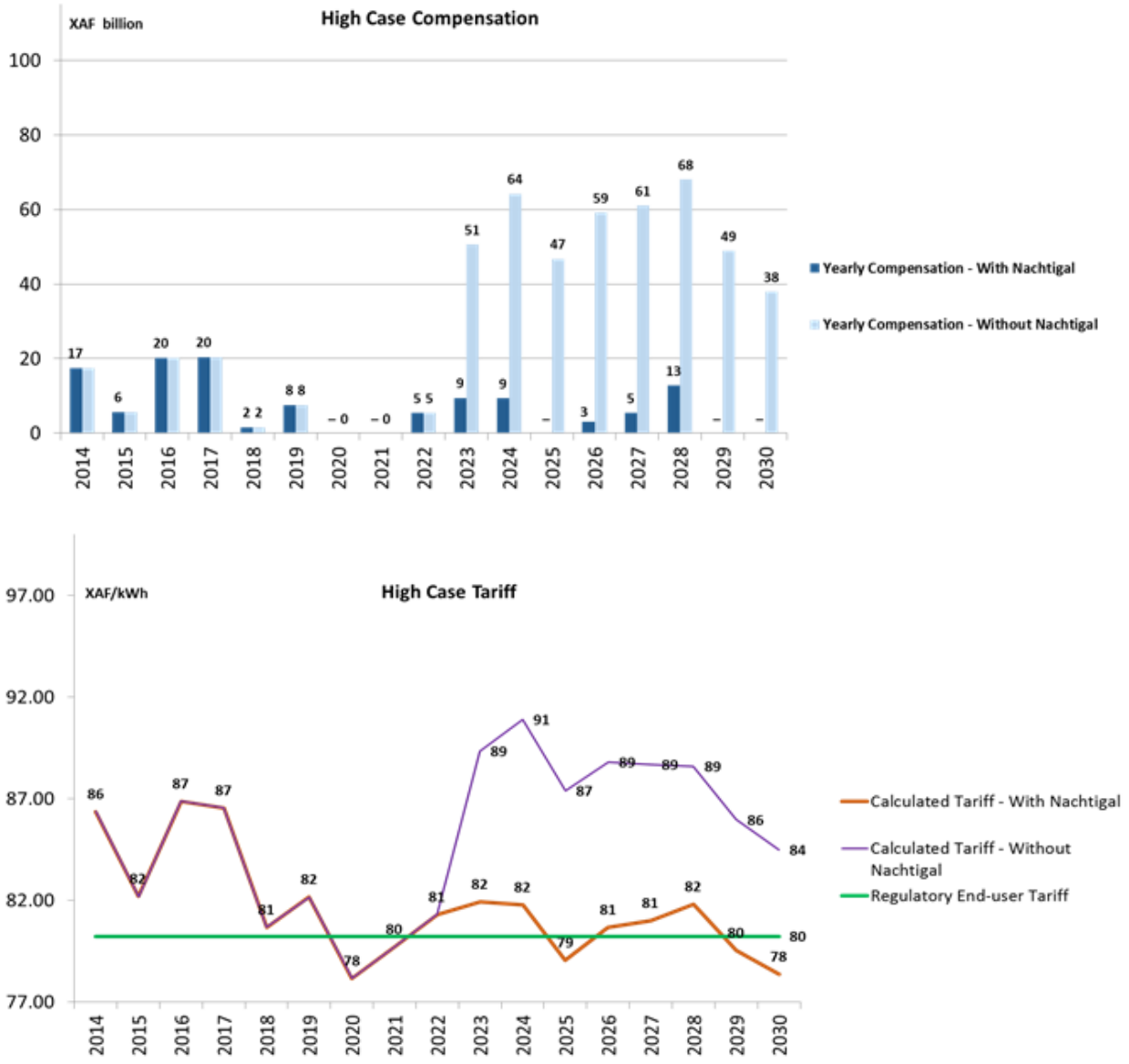


9. In the base case demand growth scenario, the average yearly compensation amount during the period of 2018-2030 is projected to be 18 billion FCFA with the implementation of Nachtigal Project, and 53 billion FCFA absent Nachtigal Project. Under the same scenario, the calculated cost-reflective tariff during the period of 2018-2030 is Projected to be 82.8 FCFA/kWh with the implementation of Nachtigal Project, and 88.1 FCFA/kWh absent Nachtigal Project.

10. Should the scenario of high demand growth materialize, the impact of implementing Nachtigal Hydropower Project on the compensation and tariff will be further enhanced: the average yearly compensation amount during the period of 2018-2030 is projected to be 4 billion FCFA with the implementation of Nachtigal Project, and 35 billion FCFA absent Nachtigal Project. Under the same bullish scenario, the calculated cost-reflective tariff during the period of 2018-2030 is Projected to be 80.5 FCFA/kWh with the implementation of Nachtigal Project, and 85.1 FCFA/kWh absent Nachtigal Project.

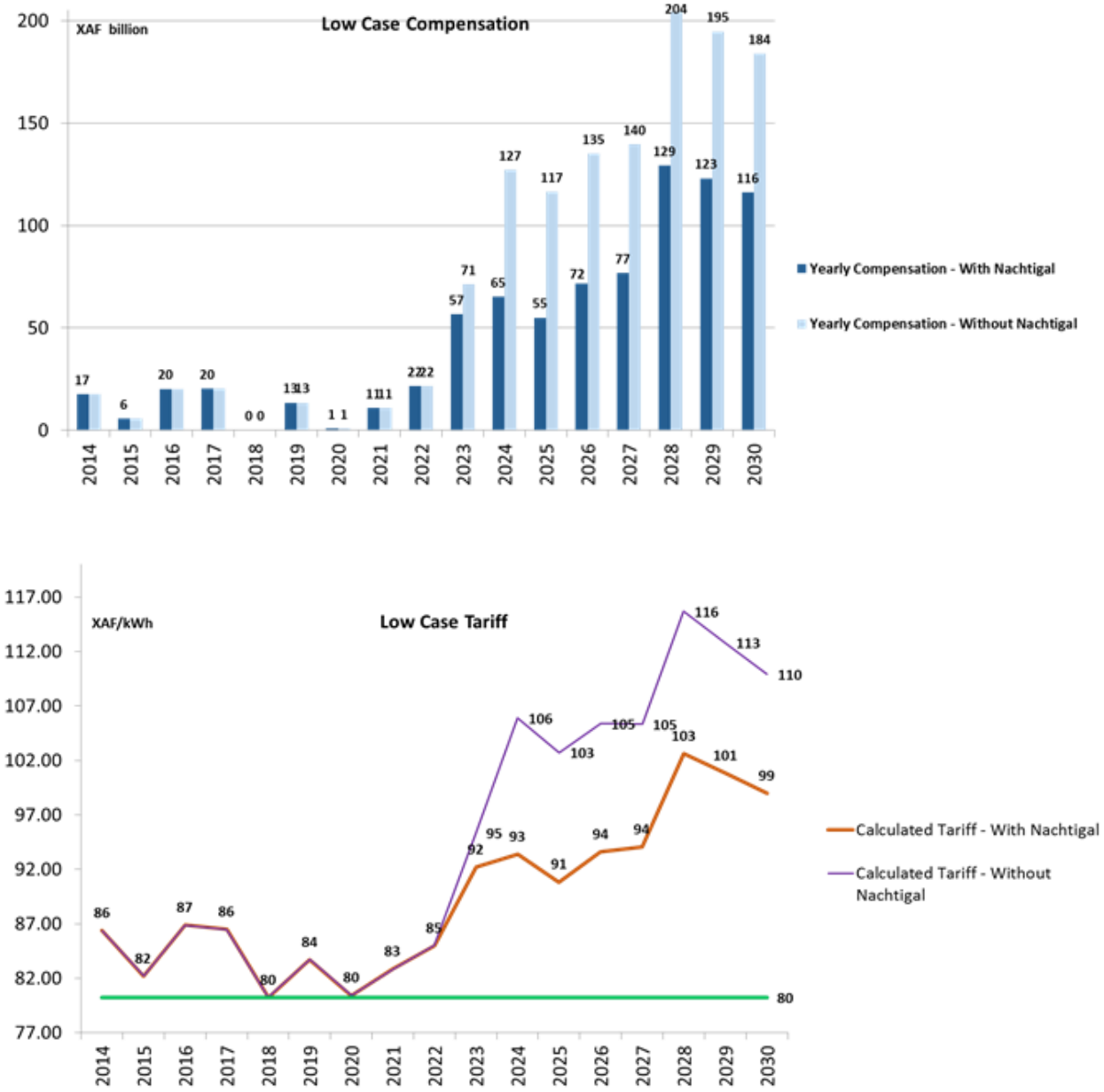
It is also worth noting that under this scenario, there are several years without compensation payments as the cost-reflective tariff falls below the regulatory end-user tariff.

Graphs 5.3-4 - Summary of Nachtigal Impact on Sector Under High Demand Growth Scenario



11. Even in the lower demand growth scenario which will lead to a higher projected cost of service as a result of initial excess capacity that will take longer to be absorbed, the implementation of Nachtigal is still beneficial for the sector: the average yearly compensation amount during the period of 2018-2030 is projected to be 57 billion FCFA with the implementation of Nachtigal Project, and 94 billion FCFA absent Nachtigal Project. Under the same downside scenario, the calculated cost-reflective tariff during the period of 2018-2030 is projected to be 90.7 FCFA/kWh with the implementation of Nachtigal Project, and 97.3 FCFA/kWh absent Nachtigal Project.

Graphs 5.5-6 - Summary of Nachtigal Impact on Sector Under Low Demand Growth Scenario



Annex 6: Guarantee Term Sheets

CAMEROON: Nachtigal Hydropower Project, P157734

Summary of indicative terms and conditions of the proposed IBRD payment guarantee

This term sheet contains a summary of indicative terms and conditions of a proposed IBRD Guarantee which may be provided by the International Bank for Reconstruction and Development ("World Bank" or "IBRD") for the Nachtigal Hydropower Project (the "Project"), subject to further internal discussion and review of the government-related risks for which coverage is needed.

This term sheet is provided for discussion purposes only and does not constitute an offer to provide an IBRD Guarantee. The provision of any IBRD Guarantee is subject, inter alia*, to satisfactory appraisal of the Project by IBRD, compliance with all applicable policies of the World Bank, including those related to environmental and social safeguards, review and acceptance of the ownership, management, financing structure, and transaction documentation by the World Bank, and the approval of the management and Executive Directors of the IBRD in their sole discretion.*

L/C Guarantee	
IBRD-Guaranteed Letter of Credit ("L/C")	
L/C Applicant:	Cameroon
L/C Beneficiary:	Project Company
L/C Bank:	A commercial bank acceptable to IBRD, the L/C Applicant and the L/C Beneficiary. [If necessary given the size of the L/C, the L/C Bank could act as agent of a syndicate of commercial banks that could have a participation in the L/C.]
Maximum L/C Amount:	The maximum amount available for draw under the L/C shall not exceed EUR 86 million (the Euro-equivalent of US$100 million)[43].
L/C Effective Date	At [the Take-Or-Pay Effective Date (as defined in the PPA)]
L/C Validity Period:	[21 years from the signing (issuance) date of the L/C]
Guaranteed L/C:	Revolving standby irrevocable letter of credit (L/C) issued in favor of the L/C Beneficiary by the L/C Bank at the request of the L/C Applicant to backstop the obligations of the L/C Applicant under the State Guarantee (as defined below). Any amounts drawn by the L/C Beneficiary under the L/C that are repaid to the L/C Bank within the L/C Reimbursement Period (as below) would be reinstated.

[43] Assumed to be equivalent to 6 months of ongoing payments under the PPA. [The L/C guarantee will most likely be denominated in euros.]

	The obligation of the L/C Applicant to repay the L/C Bank amounts drawn under the L/C would be guaranteed by IBRD up to the Maximum Guaranteed Amount. Any amounts drawn by the L/C Beneficiary under the L/C that are repaid by IBRD to the L/C Bank under the IBRD Guarantee would not be reinstated. That is, any amount paid by IBRD would be deducted from the Maximum L/C Amount. The L/C shall be available for drawings by the Beneficiary upon filing of a claim on the basis of drawdown mechanisms and the presentation of supporting documentation to be agreed between the parties in the Commitment Agreement [, the Guarantee Support Agreement (see below)] and the L/C instrument.
L/C Drawdown Events (permitted Drawdown under the L/C):	A default by Cameroon to fulfill its obligation under the Commitment Agreement to pay amounts due from ENEO to the Project Company under the PPA where (i) ENEO has failed to pay such amounts when due under the PPA and [(ii) the Project Company has been unable to obtain such payments by recourse to any letter of credit that may be provided by ENEO under the PPA] (such obligation of Cameroon, the "State Guarantee")
L/C Fees:	To be payable by the L/C Beneficiary to the L/C Bank.
IBRD-Guaranteed L/C Reimbursement and Credit Agreement	
The Borrower:	Cameroon
The Lender:	L/C Bank
L/C Reimbursement Period:	Following a draw under the L/C by the L/C Beneficiary, the Borrower would be obligated to repay the L/C Bank the amount drawn under the L/C together with accrued interest thereon within a period of twelve (12) months (the "L/C Reimbursement Period") from the date of each draw pursuant to a Reimbursement and Credit Agreement to be concluded between the Borrower and the L/C Bank. In the event of a timely repayment, the L/C will be reinstated by the amount of such repayment. In the event of a non-payment on the due date, the L/C Bank would have the right to call on the IBRD Guarantee for principal amounts plus accrued interest due from the Borrower under the Reimbursement and Credit Agreement.
Interest Rate Charged by the L/C Bank:	An appropriate 'spread' above EURIBOR acceptable to the L/C Bank and Cameroon and agreed by IBRD[44]. The maturity of the selected EURIBOR base rate should ideally be 1 month.

[44] Since the L/C is guaranteed by IBRD, the 'spread' should reflect IBRD's AAA credit rating in the international market.

IBRD Guarantee Agreement	
Guarantor:	IBRD
Guaranteed Beneficiary:	L/C Bank, as guaranteed lender
Guarantee Face Value:	EUR 86 million (the Euro-equivalent of US$100 million)
IBRD Guarantee:	IBRD will backstop the payment obligations of the Borrower under the Reimbursement and Credit Agreement to the extent that said obligations result from Permitted Drawdown under the L/C and the Borrower has failed to repay the L/C Bank in respect of such Permitted Drawdown in accordance with the Reimbursement and Credit Agreement. That is, if the amount remains unpaid after the expiry of the L/C Reimbursement Period, the L/C Bank would have the right to call on the IBRD Guarantee for the principal amount (equal to the amount drawn under the L/C) plus accrued interest due from the Borrower.
Maximum Guaranteed Principal:	The Guarantee Face Value. Any principal amount paid by IBRD to L/C Bank under the IBRD Guarantee would be deducted from the Maximum Guaranteed Principal and would not be reinstated.
Maximum Guaranteed Amount:	Maximum Guaranteed Principal plus accrued interest thereon in accordance with the Reimbursement and Credit Agreement. IBRD may cover compound interest but IBRD will not cover penalty interest, default interest or charges of similar nature.
Maximum Guarantee Period:	The L/C Validity Period plus 14 months not to exceed 20 years from the L/C Effective Date
Conditions precedent to effectiveness of the IBRD Guarantee:	Usual and customary conditions for financing of this type including but not limited to the following: a) firm commitment for the financing necessary to complete construction of the Project, including satisfactory contribution of equity; b) execution, delivery and effectiveness of all Project and Financing agreements, in form and substance satisfactory to IBRD, including, among others, the Indemnity Agreement, the Project Agreement, the Cooperation Agreement(s), [the Guarantee Support Agreement], the Reimbursement and Credit Agreement and the Commitment Agreement; c) Delivery of all relevant host country environmental approvals required for the operation of the Project, and compliance with all applicable World Bank requirements relating to Sanctionable Practices[45] and environmental and social safeguards, including the World Bank Performance Standards;

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

	d) effectiveness of all required insurance (to include IBRD as an additional insured on third-party liability insurance); e) satisfaction of all conditions precedent for first disbursement under the Financing Documents, save for any condition that requires the effectiveness of the Guarantee Agreement to have occurred; f) payment in full of outstanding fees and expenses of IBRD's external counsel; g) provision of satisfactory legal opinions; h) receipt of English-language versions acceptable to IBRD of the Concession Agreement, [Guarantee Support Agreement] and Commitment Agreement; and i) Payment in full of the Initiation Fee and Processing Fee (if invoiced), Front-end Fee and the first installment of the Standby Fee and/or Guarantee Fee (if invoiced).
Exclusions, Withholding, Limitation/Suspension & Termination Events:	Standard exclusion, limitation/suspension and termination events for transactions of this nature, including, among others, termination event upon the long-term debt of Cameroon in foreign currency obtaining a rating of [investment grade].
Substitution of Guarantee:	If IBRD exercises remedies against the L/C Bank under the Guarantee Agreement for reasons attributable to the L/C Bank, then IBRD may enter into a new Guarantee Agreement with a substitute L/C Bank on substantially the same terms and conditions as the Guarantee Agreement and for the remaining term of the Maximum Guarantee Period.
Subrogation:	If and to the extent IBRD makes any payment under the IBRD Guarantee, IBRD will be subrogated immediately to the extent of such unreimbursed payment to the L/C Bank's rights under the Reimbursement and Credit Agreement.
Governing Law:	English law
<u>Guarantee Support Agreement</u>	
Guarantee Support Agreement:	The L/C Applicant would enter into a Guarantee Support Agreement with the L/C Beneficiary under which the L/C Applicant would undertake to apply for and make available an L/C that may be drawn by the L/C Beneficiary following the occurrence of certain LC Drawdown Events, on the basis of drawdown and dispute resolution mechanisms and supporting documentation to be agreed between the parties and satisfactory to IBRD.[46]

[46] If desired by the parties, the substance of the Guarantee Support Agreement could be included in the Commitment Agreement.

Indemnity Agreement[47]	
Parties:	IBRD and Cameroon ("the Member Country").
Indemnity:	The Member Country will reimburse and indemnify IBRD on demand, or as IBRD may otherwise direct, for all payments under the IBRD Guarantee and all losses, damages, costs, and expenses incurred by IBRD relating to or arising from the IBRD Guarantee.
Covenants:	[Usual and customary covenants included in agreements between member countries and IBRD.] [Additional covenants to be discussed].
Remedies:	If the Member Country breaches any of its obligations under the Indemnity Agreement, IBRD may suspend or cancel, in whole or in part, the rights of the Member Country to make withdrawals under any other loan or credit agreement with IBRD, or any IBRD loan to a third party guaranteed by the Member Country, and may declare the outstanding principal and interest of any such loan or credit to be due and payable immediately. A breach by the Member Country under the Indemnity Agreement will not, however, discharge any guarantee obligations of the IBRD under the IBRD Guarantee.
Governing Law:	The Indemnity Agreement will follow the usual legal regime and include dispute settlement provisions customary for agreements between member countries and IBRD.
Project Agreement	
Parties:	IBRD and the Project Company.
Representations and warranties:	The Project Company will represent, among other standard and Project-specific provisions, as of the effective date, that it (a) it is in compliance with applicable environmental and social laws and the applicable World Bank guidelines, environmental and social safeguard requirements, including the World Bank Performance Standards and other applicable requirements; and (b) neither it (nor its direct and indirect shareholders and any other relevant Project participants, as determined by IBRD), nor any of its affiliates has engaged in any Sanctionable Practices in connection with the Project.
Covenants:	The Project Company will covenant, among other things, that it will: (a) comply with applicable laws, including environmental and social laws, and the applicable World Bank environmental and social safeguards requirements under the World Bank Performance Standards; (b) provide annual audited financial statements and other reports;

[47] There will be a single Indemnity Agreement in respect of both IBRD Guarantees.

	(c) provide certain notices and other information to IBRD; (d) provide access to the Project; (e) not engage in (or authorize or permit any affiliate or any other Person acting on its behalf to engage in) any Sanctionable Practices in connection with the Project; (f) comply with World Bank requirements relating to Sanctionable Practices regarding individuals or firms included in the World Bank Group list of firms debarred from World Bank Group-financed contracts; and (g) obtain IBRD's consent prior to agreeing to any change to any material Project related transaction document to which it is a party which would materially affect the rights or obligations of IBRD under the Guarantee Agreement.
Initiation Fee:	15 bps of the Maximum Guaranteed Principal (but not less than US$100,000) payable by the Project Company.
Processing Fee:	50 bps of the Maximum Guaranteed Principal payable by the Project Company.
Front-end Fee:	25 bps of the Maximum Guaranteed Principal payable by the Project Company at the earliest of i) 60 days after signature of the guarantee agreements and ii) effective date of the guarantee.
Standby Fee:	25 bps per annum, charged periodically and applied to that portion of the guaranteed amount that IBRD has contractually committed and for which IBRD does not yet have financial exposure under the guarantee. The IBRD standby fee is normally charged semi-annually and starts to accrue 60 days after the date of signing of the IBRD Guarantee Agreement. Standby Fee also applies if IBRD limits coverage of the IBRD Guarantee pursuant to any limitation event. Payment of the Standby Fee is the obligation of the Project Company and must be paid in advance on regular payment dates.
Guarantee Fee:	[90-100] basis points per annum. The Guarantee Fee is assessed on IBRD's periodic committed and outstanding financial exposure under the IBRD Guarantee (*i.e.,* the Maximum Guaranteed Principal). Payment of this fee is the obligation of the Project Company and must be paid in advance semi-annually. IBRD will have the right to terminate the IBRD Guarantee in the event the Project Company fails to pay any installment of the Guarantee Fee or Standby Fee in full when due.[48]

[48] The guarantee fee level is determined by the Maximum Guarantee Period: 50bps up to eight years, 60bps from eight to 10 years, 70bps from 10 to 12 years, 80bps from 12 to 15 years, 90bps from 15 to 18 years and 100bps from 18 to 20 years.

Cooperation Agreement[49]	
Parties:	IBRD and ENEO
Cooperation agreement:	ENEO will covenant, among other things, that it will: (i) comply with all its obligations under the transaction documents; (ii) obtain IBRD's consent prior to agreeing to any change to any transaction document which would materially affect the rights or obligations of IBRD under the Guarantee Agreement or any other transaction document; (iii) provide certain notices to IBRD; (iv) take all action necessary on its part, in accordance with and as required by the terms of the Project-related agreements to which it is a party, to enable the L/C Beneficiary to perform all of the L/C Beneficiary's obligations under the Project Agreement, and other relevant transaction documents; and (v) cooperate with IBRD and furnish to IBRD all such information related to such matters as IBRD shall reasonably request; and promptly inform IBRD of any condition which interferes with, or threatens to interfere with, such matters.

[49] There will be a single Cooperation Agreement in respect of both IBRD Guarantees.

Summary of indicative terms and conditions of the proposed IBRD local loan guarantee

This term sheet contains a summary of indicative terms and conditions of a proposed IBRD Guarantee which may be provided by the International Bank for Reconstruction and Development ("World Bank" or "IBRD") for the Nachtigal Hydropower Project (the "Project"), subject to further internal discussion and review of the government-related risks for which coverage is needed.

This term sheet is provided for discussion purposes only and does not constitute an offer to provide an IBRD Guarantee. The provision of the IBRD Guarantee is subject, inter alia*, to satisfactory appraisal of the Project by IBRD, compliance with all applicable policies of the World Bank, including those related to environmental and social safeguards, review and acceptance of the ownership, management, financing structure, and transaction documentation by the World Bank, and the approval of the management and Executive Directors of the IBRD in their sole discretion.*

Local Loan Guarantee	
IBRD-Guaranteed Loan Agreement and Local Loan Purchase Agreement	
Borrower:	The Project Company, as borrower.
Currency:	XAF – Central Africa CFA
Guaranteed Lenders:	[Local commercial lenders to be determined].
Loan Principal Amount:	[Equivalent in the Currency of EUR 171 million (the Euro equivalent of US$200 million)]
Term:	[21] years.
Special loan features:	Loan tenor and amortization profile will need to reflect the contemplated structure of a loan with pre-negotiated extension options at years seven and fourteen, permitting the Guaranteed Lenders to extend their loans for a further seven years at each option date. The Local Loan Purchase Agreement will contain provisions governing how Guaranteed Lenders who opt not to extend their loan to put their loan participations to Cameroon under that Agreement, including if such participations would be held by Cameroon until the Borrower or Cameroon has found replacement commercial lenders for the Local Loan amounts held by Cameroon. The IBRD-Guaranteed Loan Agreement may contain undertakings by the Borrower regarding efforts to find new purchasers eligible for IBRD Guarantee cover of participations in the Local Loan being sold by Guaranteed Lenders.
Repayment of Loan:	Semi-annual
Loan Interest Rate:	A fixed interest rate with a rate reset at each loan extension interval (years seven and fourteen), in each case acceptable to IBRD

Use of the Loan Proceeds:	Proceeds to be used only for design, engineering, procurement, construction, and financing costs of the Project, but expressly excluding developer fees and other costs typically included in World Bank negative list (*e.g.*, acquisition cost for nuclear, military, land or luxury items, or for goods or services from territories that are not a member of the World Bank, etc.).
Local Loan Purchase Agreement:	Agreement among Guaranteed Lenders and Cameroon setting out mechanisms for each Guaranteed Lender to opt either to extend its existing Local Loan participation by another seven-year term at years seven and 14 or to leave the Local Loan Facility (and if so, the modalities for payment of such Guaranteed Lender, including any "put fee" and subject to any other restrictions on such option). The Local Loan Purchase Agreement and the IBRD-Guaranteed Loan Agreement will also contain mechanisms for determining the purchase price of any participations in the Local Loan being sold to Eligible Transferees (as defined below) by Guaranteed Lenders under the Local Loan Purchase Agreement and/or the IBRD-Guaranteed Loan Agreement and mechanisms for assignment of such participations.
Drawdown:	When applicable, pro rata with the other loans of the Project, or in such other proportion acceptable to IBRD.
<u>IBRD Guarantee Agreement</u>	
Guarantor:	International Bank for Reconstruction and Development (IBRD).
Parties:	IBRD and Local Loan Facility Agent
Beneficiary:	Local Loan Facility Agent on behalf of Guaranteed Lenders under the IBRD-Guaranteed Loan Agreement and the Local Loan Purchase Agreement
Guarantee Face Value:	XAF equivalent amount to EUR 171 million (the Euro equivalent of US$200 million).
Guarantee Support:	IBRD will guarantee to the Beneficiary, up to the Maximum Guaranteed Amount, payment of (a) scheduled principal and interest thereon the Guaranteed Lenders would have otherwise received from the Borrower but for the occurrence of an Identified Termination Event[50] and (b) settlement amounts a non-extending Guaranteed Lender would have otherwise received from Cameroon but for the occurrence of a Loan Purchase Payment Default.
Guaranteed Events:	(i) Failure by Cameroon to pay settlement amounts to any Guaranteed Lender that opts not to extend its participation in the Local Loan and exercises its right to have Cameroon buy out its Local Loan participation in accordance with the Local Loan

[50] In order to make a demand under the IBRD Guarantee with respect to an Identified Termination Event, the underlying Identified Termination Event and associated termination compensation amount due from the Member Country must be undisputed.

	Purchase Agreement, which failure shall be continuing for [30] days (a "Loan Purchase Payment Default"); and (ii) Failure by the Borrower to make payments of scheduled principal or interest thereon pursuant to the IBRD-Guaranteed Loan Agreement when due and payable as a direct result of failure by Cameroon to pay any termination amount due to the Project Company under the Commitment Agreement with respect to certain termination events attributable to Cameroon, the transmission company or ENEO (an "Identified Termination Event").
Guarantee Period:	[21 years]
Maximum Guaranteed Amount:	Maximum Guaranteed Principal *plus* Maximum Guaranteed Interest as below.
Maximum Guaranteed Principal:	The aggregate of the principal amount of the IBRD-Guaranteed Loan disbursed and outstanding, not to exceed the Guarantee Face Value.
Maximum Guaranteed Interest:	Interest due and payable on the disbursed and outstanding principal amount pursuant to the IBRD-Guaranteed Loan Agreement. For the avoidance of doubt, IBRD does not cover penalty interest, default interest or charges of similar nature.
Conditions precedent to effectiveness of the IBRD Guarantee:	Usual and customary conditions for financing of this type including but not limited to the following: a) firm commitment for financing necessary to complete construction of the Project, including satisfactory contribution of equity by the Project sponsors; b) execution, delivery and effectiveness of all Project and Financing agreements, in form and substance satisfactory to IBRD, including the Indemnity Agreement, the Project Agreement, the Cooperation Agreement, the Commitment Agreement, the IBRD-Guaranteed Loan Agreement and the Local Loan Purchase Agreement; c) delivery of all relevant host country environmental approvals required for the operation of the Project, and compliance with all applicable World Bank requirements relating to Sanctionable Practices[51] and environmental and social safeguards, including the World Bank Performance Standards; d) effectiveness of all required insurance (to include IBRD as an additional insured on third-party liability insurance); e) satisfaction of all conditions precedent for first disbursement under the financing documents, save for any condition that requires the effectiveness of the Guarantee Agreement to have occurred;

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

	f) payment in full of outstanding fees and expenses of IBRD's external counsel; g) provision of satisfactory legal opinions; h) receipt of English-language versions acceptable to IBRD of the Commitment Agreement and the Local Loan Purchase Agreement; and i) payment in full of the Initiation Fee and Processing Fee (if invoiced), Front-end Fee and the first installment of the Stand-by Fee and/or Guarantee Fee (if invoiced).
Exclusions; Limitation/Suspension, Withholding & Termination Events:	Standard exclusions and limitation/suspension, withholding and termination events for transactions of this nature. During any period commencing upon Cameroon or any non-Eligible Transferee (as defined below) purchasing a Guaranteed Lender's Local Loan participation pursuant to the Local Loan Purchase Agreement or otherwise, and ending upon further sale of such loan participation to one or more eligible commercial lender(s), such loan participation will not benefit from coverage under the IBRD Guarantee. If one or more eligible commercial lenders purchase that participation, then the IBRD Guarantee coverage with respect to that loan participation would resume. Any such period during which Cameroon or an ineligible lender holds a Local Loan participation counts towards the total [21]-year term of the IBRD Guarantee. IBRD's liability under the IBRD Guarantee with respect to any loan participations held by Cameroon continuously for a period of [730] days shall automatically terminate and the Maximum Guaranteed Principal shall automatically be reduced by the amount of the outstanding principal of such loan participations, effective on the first day after such period.
Subrogation:	If and to the extent IBRD makes any payment under the IBRD Guarantee, IBRD will be subrogated immediately to the extent of such unreimbursed payment to the rights of the Beneficiary (or relevant Guaranteed Lenders, as applicable).
Claims and disputes:	With respect to claims relating to Guaranteed Events arising under the Commitment Agreement, claims by the Beneficiary must be made within 90 days of nonpayment with IBRD paying within 60 days thereafter. If there is a dispute between Cameroon and the Project Company as to Cameroon's obligation to pay or the amount of its payment obligation, the Guarantee would be callable only in respect of amounts that Cameroon is obligated to pay, and fails to pay, in accordance with the relevant dispute resolution procedures. For the avoidance of doubt, IBRD will pay only up to the Cameroon liability that has been determined, whether through expert determination, settlement agreement between the parties, arbitral award, or in accordance with contractual procedures acceptable to IBRD, so long as such determination is final and binding (*i.e.*, an arbitral award is not necessarily required).

	With respect to claims arising due to Guaranteed Events under the Local Loan Purchase Agreement, claims by the Beneficiary must be made within 90 days of nonpayment.
Provisional Payments[52]:	IBRD will make Provisional Payments for, if: (i) the Beneficiary is unable (within an agreed time period) to commence or proceed with dispute resolution by reason of court decision, judgment or order in Cameroon to (i) prevent or impede the dispute resolution process, (ii) have the dispute transferred to or determined by the courts in Cameroon, or (iii) otherwise pursue the dispute in a manner not consistent with the agreed dispute resolution mechanism and not agreed by the Beneficiary; and (ii) the Beneficiary has agreed with IBRD that it will use its best efforts to resolve the dispute and the Beneficiary has provided IBRD with acceptable collateral (*e.g.*, irrevocable stand-by letters of credit) to repay IBRD on call the amount of the provisional payment and interest thereon in the event that it is subsequently determined that the liability of Cameroon is less than the full amount of the provisional payment. The obligation of the Beneficiary to repay the Provisional Payments expires after five (5) years if dispute resolution continues to be interrupted.
Restrictions on Assignment:	The Local Loan Facility Agent and the Local Lenders may not without IBRD's prior written consent assign any rights under the Guarantee Agreement, the Local Loan Agreement or the Local Loan Purchase Agreement except to: (i) Cameroon pursuant to the Local Loan Purchase Agreement; (ii) an affiliate of the Local Loan Facility Agent or such Local Lender; or (iii) an entity (other than an export credit agency or other governmental, quasi-governmental or multilateral agency) that engages in making, purchasing or investing in financial assets and that (A) is commercially operated; (B) has not been debarred from World Bank Group-financed contracts; and (C) is not included on the list maintained by the United Nations Security Council Committee established pursuant to United Nations Security Council Resolution 1267 (collectively, "Eligible Transferees").
Governing Law:	English law

[52] Provisional Payments would not apply to claims arising under the Local Loan Purchase Agreement, which are dealt with as set out above.

Additional Agreements	
Indemnity Agreement[53]	
Parties:	IBRD and Cameroon ("the Member Country").
Indemnity:	The Member Country will reimburse and indemnify IBRD on demand, or as IBRD may otherwise direct, for all payments under the IBRD Guarantee and all losses, damages, costs, and expenses incurred by IBRD relating to or arising from the IBRD Guarantee.
Covenants:	Usual and customary covenants included in agreements between member countries and IBRD, including negative pledge covenant by the Member Country[54], covenants by the Member Country relating to performance under the Local Loan Purchase Agreement, and other covenants TBD
Remedies:	If the Member Country breaches any of its obligations under the Indemnity Agreement, IBRD may suspend or cancel, in whole or in part, the rights of the Member Country to make withdrawals under any other loan or credit agreement with IBRD, or any IBRD loan to a third party guaranteed by the Member Country, and may declare the outstanding principal and interest of any such loan or credit to be due and payable immediately. A breach by the Member Country under the Indemnity Agreement will not, however, discharge any guarantee obligations of IBRD under the Guarantee.
Governing Law:	The Indemnity Agreement will follow the usual legal regime and include dispute settlement provisions customary for agreements between member countries and IBRD.
IBRD Project Agreement	
Parties:	IBRD and the Project Company.
Representations and warranties:	The Project Company will represent, among other standard and Project-specific provisions, as of the effective date, that it (i) is in compliance with applicable environmental and social laws and the applicable World Bank guidelines, environmental and social safeguard requirements, and (ii) neither it (nor its direct and indirect shareholders and any other relevant Project participants, as determined by IBRD), nor any of their affiliates has engaged in any Sanctionable Practice in connection with the Project.

[53] There will be a single Indemnity Agreement in respect of both IBRD Guarantees.

[54] If any Lien is created on any Public Assets as security for any External Debt, which will or might result in a priority for the benefit of the creditor of such External Debt in the allocation, realization or distribution of foreign exchange, such Lien shall, unless IBRD shall otherwise agree, *ipso facto* and at no cost to IBRD, equally and ratably secure all payments to IBRD, and the Member Country, in creating or permitting the creation of such Lien, shall make express provision to that effect.

Covenants:	The Project Company will covenant, among other things, that it will (i) use the proceeds of the disbursements under the IBRD-Guaranteed Loan Facility exclusively for the Project and in accordance with the terms and conditions of the IBRD-Guaranteed Loan Agreement, (ii) comply with applicable laws, including environmental and social laws, and the applicable World Bank environmental and social requirements under the World Bank Performance Standards; (iii) provide annual audited financial statements and other reports, (iv) provide access to the Project, (v) not engage (or authorize or permit any affiliate or any other Person acting on its behalf to engage in) in any Sanctionable Practice in connection with the Project, (vi) comply with World Bank requirements relating to Sanctionable Practices regarding individuals or firms included in the World Bank Group list of firms debarred from World Bank Group-financed contracts, (vii) provide certain notices and other information to IBRD, and (viii) obtain IBRD's consent prior to agreeing to any change to any material Project related transaction document to which it is a party which would materially affect the rights or obligations of IBRD under the Guarantee Agreement. In addition, the Project Agreement may contain covenants by the Project Company to use all reasonable endeavors prior to the end of each Local Loan term to induce each Guaranteed Lender to elect to extend its participation in the Local Loan and not exercise its rights under the Local Loan Purchase Agreement to have Cameroon buy out its participation in such loan. In the event the Guaranteed Lenders, whether some lenders or all lenders, exercise their rights to have such participations purchased by Cameroon, the Project Agreement may contain undertakings for the Project Company to use all reasonable endeavors, under the Local Loan Agreement, to find commercial lenders to purchase such participations.
Initiation Fee:	15 basis points of the Guarantee Face Value (but not less than US$100,000) payable by the Project Company.
Processing Fee:	50 basis points of the Guarantee Face Value payable by the Project Company.
Front-End fee:	25 basis points of the Guarantee Face Value payable by the Project Company.
Guarantee Fee:	[50-100[55]] basis points per annum[56]. The Guarantee Fee is charged on any outstanding IBRD financial exposure under the Guarantee (*i.e.*, the Maximum Guaranteed Principal). Payment of this fee is the obligation of the Project Company, however, if the Project Company fails to pay any installment of the Guarantee Fee in full when due, the Beneficiary (or any Guaranteed Lender on behalf of the Guaranteed

[55] The guarantee fee level is determined by the average life of the guarantee: 50bps up to eight years, 60bps from eight to 10 years, 70bps from 10 to 12 years, 80bps from 12 to 15 years, 90bps from 15 to 18 years and 100bps from 18 to 20 years.

[56] Subject to change.

	Lenders) can elect to pay the unpaid amount of the Guarantee Fee and seek reimbursement from the Project Company. The Guarantee Fee must be paid in advance semi-annually on regular payment dates. IBRD will have the right to terminate the Guarantee in the event of nonpayment of any installment of the Guarantee Fee.
Standby Fee:	25 basis points per annum. The Standby Fee is charged periodically and applied to that portion of the guaranteed amount that IBRD has contractually committed and for which IBRD does not yet have financial exposure under the guarantee. The IBRD standby fee is normally charged semi-annually and begins to accrue from 60 days after signature of the agreement providing for IBRD's guarantee. Payment of the Standby Fee is the obligation of the Project Company, however, if the Project Company fails to pay any installment of the Standby Fee in full when due, the Beneficiary (or any Guaranteed Lender on behalf of the Guaranteed Lenders) can elect to pay the unpaid amount of the Standby Fee and seek reimbursement from the Project Company. The Standby Fee must be paid in advance on regular payment dates. The Standby Fee would continue to apply notwithstanding any periods when IBRD limits coverage of the Guarantee pursuant to any suspension/limitation event, or when any loan participations are held by Cameroon or any non-Eligible Transferee and, consequently, are not eligible for IBRD Guarantee coverage. Any such loan participations subsequently sold to Eligible Transferees would be covered by the IBRD Guarantee, provided that the Guarantee Fee and the Standby Fee are paid at the regular rate. Non-payment of any installment of the Guarantee Fee or the Standby Fee, in whole or in part, as required in the Guarantee Agreement, will trigger IBRD's right to terminate the IBRD Guarantee.
Costs and expenses:	The Project Company will indemnify and reimburse IBRD for reasonable out-of-pocket expenses incurred in connection with the consideration of any requests for IBRD's consent, any amendments to documentation, or the preparation for and actual enforcement or protection of rights under the IBRD Guarantee and other documentation. The fees listed above do not cover the cost of IBRD outside legal counsel fees and related expenses which shall be paid directly by the Project Company.
Governing law:	English law

Cooperation Agreement[57]	
Parties:	IBRD and ENEO
Cooperation Agreement:	ENEO will covenant, among other things, that it will: (i) comply with all its obligations under the transaction documents; (ii) obtain IBRD's consent prior to agreeing to any change to any transaction document which would materially affect the rights or obligations of IBRD under the Guarantee Agreement or any other transaction document; (iii) provide certain notices to IBRD; (iv) take all action necessary on its part, in accordance with and as required by the terms of the Project-related agreements to which it is a party, to enable the Borrower to perform all of the Borrower's obligations under the Project Agreement, and other relevant transaction documents; and (v) cooperate with IBRD and furnish to IBRD all such information related to such matters as IBRD shall reasonably request; and promptly inform IBRD of any condition which interferes with, or threatens to interfere with, such matters.

[57] There will be a single Cooperation Agreement in respect of both IBRD Guarantees.

Annex 7: Standard Description of MIGA's Covered Risks

CAMEROON: Nachtigal Hydropower Project, P157734

1. CURRENCY INCONVERTIBILITY AND TRANSFER RESTRICTION

1. Currency Inconvertibility and Transfer Restriction Coverage protects against (i) the inability to convert, from local currency into guarantee currency, loan payments, dividends, profits, and proceeds from the disposal of the guaranteed investment; and (ii) host government actions that prevent the transfer of the guarantee currency outside the host country, including the failure of the Government to grant an authorization for the conversion or the transfer of such currency. Compensation is based on the guaranteed percentage of any payments that cannot be converted or transferred.

2. EXPROPRIATION

2. Expropriation Coverage protects against losses attributable to measures taken or approved by the host government that deprive the guarantee holder of its ownership or control over its investment, or in the case of debt, results in the Project enterprise being unable to meet its obligations to the lender. Both direct and indirect (creeping) expropriation are covered. Compensation for equity is based on the guaranteed percentage of the net book value of the guaranteed investment in the Project enterprise. For debt, compensation is based on the guaranteed percentage of the principal and interest that is in default as a result of expropriation.

3. WAR AND CIVIL DISTURBANCE

3 War and Civil Disturbance Coverage protects against losses arising as a result of military action or civil disturbance in the host country, including sabotage and terrorism, that destroys or damages tangible assets of the Project enterprise or interferes with its operations (business interruption), or, in the case of debt, results in the Project enterprise being unable to meet its obligations to the lender. Compensation is based on the guaranteed percentage of the value of the assets destroyed or damaged or, in the case of business interruption, the net book value of the guaranteed equity investment. For debt, compensation is based on the guaranteed percentage of the principal and interest that is in default as a result of war and civil disturbance.

4. BREACH OF CONTRACT

4. Breach of Contract Coverage protects against losses arising from a repudiation or breach by the host government of a contract entered with the guarantee holder, provided that a final and binding arbitration award or judicial decision has been rendered in favor of the guarantee holder and cannot be enforced against the host government. Compensation is based on the amount that the guarantee holder is entitled to recover from the host government in accordance with the terms of the arbitration award or judicial decision.[58]

5. NON- HONORING OF SOVEREIGN FINANCIAL OBLIGATIONS

5. Non-Honoring of Sovereign Financial Obligation Coverage protects against losses resulting from a government's failure to make a payment when due under an unconditional financial payment obligation or guarantee given in favor of a Project that otherwise meets all of MIGA's normal requirements. It does

[58] MIGA's Convention provides for coverage under Breach of Contract in three different scenarios: (i) when the Guarantee Holder does not have recourse to a judicial or arbitral forum to determine the claim; (ii) a decision by such forum is not rendered within a reasonable period of time; or (iii) such a decision cannot be enforced.

not require the investor to obtain an arbitral award. This coverage is applicable in situations when a sovereign's financial payment obligation is unconditional and not subject to defenses. Compensation is based on the amount that the guarantee holder is entitled to recover from the host government pursuant to the terms of the obligation.

6. NON-HONORING OF FINANCIAL OBLIGATION BY A STATE-OWNED ENTERPRISE

6. Non-Honoring of Financial Obligation by a State-Owned Enterprise Coverage protects against losses resulting from a state-owned enterprise's failure to make a payment when due under an unconditional financial payment obligation or guarantee given in favor of a Project that otherwise meets all of MIGA's normal requirements. It does not require the investor to obtain an arbitral award. This coverage is applicable in situations where the financial payment obligation is unconditional and not subject to defenses. Compensation is based on the amount that the guarantee holder is entitled to recover from the state-owned enterprise pursuant to the terms of the obligation.

Annex 8: Risk Allocation Table

CAMEROON: Nachtigal Hydropower Project, P157734[59]

Risk Type	Risk Description	Parties						
		SPV	ENEO	SON.	**GoC**	IBRD	MIGA	
1. Pre-Construction								
Governmental Authorizations/Permitting	Authorizations from GoC and other agencies				X			GoC in general bears the responsibility to deliver, renew and maintain Authorizations necessary for the implementation of the Project.
	Tax and customs incentives				X			GoC ensures that Project Company will benefit from certain tax and customs benefits available under law. A breach of this leads to certain state compensation to the company.
Site Risk	Land Rights acquisition	-			X			GoC must ensure the transfer to the Project Company of all Land Rights necessary for the works for which the Project Company is responsible (Hydroelectric Facility, Transmission Line) in accordance with the Project Schedule, provided that Project Company pays the compensation according to the Resettlement and Compensation Action Plans.
Environmental and Social Risk	Hydropower Facility and Transmission Line	X						Project Company to implement the ESMP. (Project Company's rights and obligations under ESMP [with respect to Transmission Line] automatically transferred to GoC at transmission line handover date.)
2. Construction								
Cost Overrun	due to Archeological / Geological / Geotechnical / Exceptional rains	X						Treated as Ordinary Force Majeure, for which Project Company may seek extension of timeline but no additional compensation, except that to the extent the extension exceeds 3 months, GOC must indemnify Project Company for up to a maximum of six months of interim interest due to the lenders
	due to Ordinary Force Majeure	X						Project Company bears the risk of additional costs caused thereby and the resulting loss of revenue.
	due to Political Force Majeure		X		X			GoC bears the risks of additional costs or loss of revenue caused by political force majeure. Project Company may seek relief via a tariff adjustment.

[59] This table is intended to illustrate, at a high level of generality, risk allocation with respect to select key risks under certain key Project-related agreements based on drafts reviewed by IBRD as of May 2018. It is not intended to be comprehensive or definitive.

Risk Type	Risk Description	Parties						
		SPV	ENEO	SON.	**GoC**	IBRD	MIGA	
Project Delay	due to delays of construction of the Nyom 2 Connection Substation (N2CS) S/S N2			X	X			The State is responsible for the financing and construction of the N2CS and SONATREL is for its commissioning, operation and maintenance.
	due to reasons attributable to the Project Company	X						Project Company to pay ENEO liquidated damages with a cap, secured by a construction bond
	due to Political Force Majeure or Change of Law				X			Treated as a "Compensation Event", which entitles Project Company to time relief and a Tariff Differential Payment from GoC to compensate the Project Company for the financial consequences of the delay.
	due to Transmission Company's fault			X	X			Same as for Project delay due to Political Force Majeure (*i.e.*, treated as a "Compensation Event")
	due to Ordinary Force Majeure Events	X						Project Company excused from performance, but is not entitled to receive any Tariff Payment Differential. The Project Company would be expected to rely on delay in start-up and business interruption insurance.
Cost Savings	unused Project contingencies (20% of EPC)	X			X			The unused contingencies will be shared on a 50:50 basis between the developer and the Government. The savings will be reflected in a lower tariff.
Hydropower facility	Not up to technical specifications	X						If the minimum required capacity is not achieved during any 12 consecutive months after Actual Commercial Operation Date (ACOD), and the parties agree or an Expert determines that it will not be achieved within a period of 9 months thereafter, it leads to Project Company Termination Event.
Transmission Line	Not up to technical specifications	X						Could prevent Project Company from achieving ACOD by the contractual date, exposing Project Company to liability for Liquidated Damages under the PPA. Failure to achieve ACOD by the relevant long-stop date triggers a Project Company Termination Event.
N2CS / SIG Reinforcement work	Not up to technical specifications				X			Could prevent GOC from completing these by the target date. Failure to do so is treated as a Government Event of Default and a Compensation Event, entitling Project Company to seek time and compensation relief. Further delays can ultimately trigger a Government Termination Event
3. Operations								
Hydrological risk	Waterflow below designed level		X		X			ENEO pays the Project on a capacity basis regardless of water flow.

Risk Type	Risk Description	Parties						
		SPV	ENEO	SON.	**GoC**	IBRD	MIGA	
	Extreme Events (e.g., tsunamis, floods, Exceptional Floods, Exceptional Rains, storms, cyclones, typhoons)	X	X		X			Treated as Ordinary Force Majeure Events. Outages caused by these events not subject to Availability Adjustments (reduction) to the capacity-based Tariff Payment.
Offtake risk	Grid availability			X	X			Outage caused by SIG-related constraints not subject to Availability Adjustments. If GoC or the Transmission Company is at fault, the event will be treated as a Compensation Event.
	Payment risk: billed amount unpaid for 30 days		X		X	X		Project Company will be entitled to draw on: (a) if provided/available, a letter of credit from ENEO equivalent to 2.4 months of PPA payments and, to the extent the unpaid amount remains unsatisfied, (b) then on the State Guarantee and, to the extent GoC fails to pay thereunder, (c) then on the IBRD guaranteed L/C. Failure of GoC to cause the L/C to be issued or maintained or replenished as required is treated as a Government Termination Event.
	Non-renewal of ENEO Concession, change in off-taker				X			GoC undertakes to transfer the obligations of ENEO to a New Acceptable Buyer; until then, the State would be directly responsible for the Tariff Payments owed to the Project Company.
Sub-standard O&M	Industry practice, refurbishing, continuity/quality of service, implementation of dispatch orders, dispatch information, annual plan, planned outage program, other information obligations	X						Project Company Termination Event. GoC may also impose penalties on the Project Company for certain violations.
Increased O&M Cost	Due to external factor	X			X			If the external factor constitutes a Compensation Event (e.g., Political Force Majeure Event, Compensable Change in Law, Government Event of Default, etc.), GoC has an obligation to compensate the Project Company. "External Events" may also entitle Project Company to seek a Capacity Charge Fee adjustment to the extent not compensated as a Compensation Event.
FX Risk – depreciation of CFA franc	Payment of Euro-denominated portion of the tariff		X		X			Euro denominated tariff portion will be converted to CFA franc at the prevailing rate by the time of payment. ENEO may seek to pass-through any FX risks to GoC.

Risk Type	Risk Description	Parties						
		SPV	ENEO	SON.	**GoC**	IBRD	MIGA	
Plant performance	due to Political Force Majeure				X			Tariff Payments from ENEO on the basis of the Effective Capacity of plant; GoC to pay Tariff Payment Differential to make up for the Tariff Payment that the Project Company should have received from ENEO under the PPA in the absence of such event.
	due to Ordinary Force Majeure	X			X			Project Company relieved from performance of obligations with no Tariff Payment Differential
Compensable Change in Law					X			(Treated the same as risk of Plant performance affected by Political Force Majeure above)
Local Loan Tenor extension risk	Local lenders can exercise an exit right in year 7 and 14.				X	X		Under the Local Loan Purchase Agreement, GoC is obligated to buy (at a discount) the loan of a local lender that exercises its put option, if another eligible lender (other than GoC) cannot be found to buy the loan. IBRD will guarantee this purchase obligation of GOC in accordance with the terms of the proposed IBRD Loan Guarantee. (see attached term sheet in Annex 6)
IBRD-Guaranteed L/C risk	GoC breach of obligation to have L/C issued, maintained in force or replenished, by an eligible bank, as required				X	X		Project Company debt service default under the local loan agreement caused by GoC failure to make the Termination Payment following exercise of termination right by Project Company/Lenders is one of the Guaranteed Events that IBRD will cover in the proposed IBRD Loan Guarantee (see generally "early termination risk" below)..
Concession renewal risk	Concession expires after 35 years	X						
Environmental and Social risks		X						Proejct Company has to comply with (A) the ESAP, the ESIA and the ESMP, (B) the applicable requirements of the Performance Standards and (C) Applicable E&S Law for the design, construction, permitting, completion, testing, commissioning, insurance, ownership, operation, maintenance, management and monitoring of the Projec
4. Early termination								
Early termination of PPA and government termination payment	Failure by GoC to pay termination amount due to the Project Company under the Commitment Agreement with respect to termination events	X	X	X	X	X	X	IBRD backstops certain termination payment obligations of GoC following exercise of termination right by Project Company/Lenders for events attributable to GoC (including transmission company termination events) to the local lenders. MIGA provides similar cover to equity investors.

Annex 9: Map IBRD CMR 43639