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IDA/R2017-0124/2

May 12, 2017

FROM: Acting Vice President and Corporate Secretary

Senegal

Supporting Gas Project Negotiations and Enhancing Institutional Capacities Project

Change in Procedure from Absence-of-Objection to Regular Discussion and Scheduling of Item

At the request of Ms. Ulbaek and Mr. Happe, the President's Memorandum and Recommendation on a proposed credit to Senegal for a Supporting Gas Project Negotiations and Enhancing Institutional Capacities Project (IDA/R2017-0124), that was distributed for consideration on an absence-of-objection procedure with a closing date of May 12, 2017, is being scheduled for discussion on **a date to be determined.**

Distribution:

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

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IDA/R2017-0124/1

April 25, 2017

Closing Date: Friday, May 12, 2017 at 6 p.m.

FROM: Vice President and Corporate Secretary

Senegal

Supporting Gas Project Negotiations and Enhancing Institutional Capacities Project

Project Appraisal Document

Attached is the Project Appraisal Document regarding a proposed credit to Senegal for a Supporting Gas Project Negotiations and Enhancing Institutional Capacities Project (IDA/R2017-0124), which is being processed on an absence-of-objection basis.

Distribution:

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Document of

The World Bank

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Report No: PAD2321

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF EUR€ 27.2 MILLION
(US$ 29 MILLION EQUIVALENT)

TO THE

REPUBLIC OF SENEGAL

FOR THE

SUPPORTING GAS PROJECT NEGOTIATIONS AND ENHANCING INSTITUTIONAL CAPACITIES PROJECT

April 21, 2017

Energy & Extractives Global Practice
Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective March 31, 2017)

Currency Unit =	Euro
EUR€ 0.93624192	= US$1

FISCAL YEAR
January 1 - December 31

Regional Vice President:	Makhtar Diop
Country Director:	Louise J. Cord
Senior Global Practice Director:	Riccardo Puliti
Practice Manager:	Christopher Gilbert Sheldon
Task Team Leader(s):	Ilhem Salamon

ABBREVIATIONS AND ACRONYMS

API	American Petroleum Institute
Bbl	Barrel
BoE	Barrel of Oil Equivalent
BP	British Petroleum
CAD	Current Account Deficit
CAMEL	Algerian Liquid Methane Corporation (*Compagnie Algérienne de Méthane Liquide*)
CAPEX	Capital Expenditure
CFAF	CFA Francs
CGI	General Tax Code (*Code Général des Impôts*)
CHG	Compressed Hydrogen Gas
CNG	Compressed Natural Gas
COS-PETROGAZ	Strategic Petroleum and Gas Steering and Development Monitoring Committee (*Comité d'Orientation Stratégique et de Suivi du Développement du Pétrole et du Gaz*)
CPS	Country Partnership Strategy
CT	Corporate Tax
DA	Designated Account
DH	Directorate of Hydrocarbons *(Direction des Hydrocarbures)*
DWT	Deadweight Tons
E&P	Exploration & Production
EA	Environmental Assessment
EITI	Extractive Industry Transparency Initiative
FEED	Front End Engineering Design
FID	Final Investment Decision
FLNG	Floating Liquefied Natural Gas
FM	Financial Management
FPSO	Floating Production Storage and Offloading
GAC	Governance and Anticorruption
GDP	Gross Domestic Product
GES-PETROGAZ	Executive and Strategic Management – Strategic Steering and Development Monitoring Committee for Petroleum and Gas (*Gestion Exécutive et Stratégique du Comité d'Orientation Stratégique et de Suivi du développement du Pétrole et du Gaz*)
GoSN	Government of Senegal
GRS	Grievance Redress Service
GTA	Grand Tortue Ahmeyim
HFO	Heavy Fuel Oil
IBRD	International Bank of Reconstruction and Development
ICA	Intergovernmental Cooperation Agreement
IDA	International Development Association
IFR	Interim Unaudited Financial Report
IMF	International Monetary Fund

IRR	Internal Rate of Return
JOA	Joint Operating Agreement
LNG	Liquefied Natural Gas
LPDSE	Energy Sector Development Policy Letter
M&E	Monitoring and Evaluation
MEDER	Ministry of Energy and Development of Renewable Energy (*Ministère de l'Énergie et du Développement des Énergies Renouvelables*)
MEFP	Ministry of Economy, Finance and Planning *(Ministère de l'Économie, des Finances, et du Plan)*
MMBbl	Million Barrels
MT	Million Tons
NOC	National Oil Company
NGO	Non-Governmental Organization
OPEX	Operating Expenditure
PAP	Priority Action Plan
PDO	Project Development Objective
PETROSEN	National Oil Company of Senegal
PSC	Production Sharing Contract
PSE	Emerging Senegal Plan (*Plan Sénégal Emergent*)
SESA	Strategic Environmental and Social Assessment
SMHPM	Mauritanian Hydrocarbons and Mining Resources Corporation (*Société Mauritanienne des Hydrocarbures et du Patrimoine Minier*)
SNDES	National Strategy for Economic and Social Development *(Stratégie Nationale de Développement Economique et Social)*
SoE	Statement of Expenditures
TA	Technical Assistance
Tcf	Trillion cubic feet
ToR	Terms of Reference
UUOA	Unitization and Unit Operating Agreement
WAEMU	West African Economic and Monetary Union
WB	World Bank
WD	Water Depth

BASIC INFORMATION

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

[ ] Situations of Urgent Need of Assistance or Capacity Constraints

[ ] Financial Intermediaries

[ ] Series of Projects

Approval Date	Closing Date	Environmental Assessment Category
12-May-2017	31-Dec-2023	B - Partial Assessment

Bank/IFC Collaboration
No

Proposed Development Objective(s)

Support the government's capacity to drive negotiations towards final investments decisions and lay the foundations for the gas sector's contributions to the economy through enhanced legal and regulatory framework and capacity building.

Components

Component Name	Cost (US$, millions)
Support for hydrocarbon project negotiations	13.00
Enhancement of the strategic and policy framework	2.00
Institutional diagnostic and capacity building	12.00
Stakeholders engagement campaign	1.00
Project management and coordination	1.00

Organizations

Borrower :	Ministere de l'Economie et des Finances et du Plan
Implementing Agency :	Gestion Exécutive et Stratégique du Comité d'Orientation Stratégique et de Suivi du Développement du

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

Total Project Cost:	Total Financing:	Financing Gap:
29.00	29.00	0.00
	Of Which Bank Financing (IBRD/IDA): 29.00	

Financing (in US$, millions)

Financing Source	Amount
International Development Association (IDA)	29.00
Total	**29.00**

Expected Disbursements (in US$, millions)

Fiscal Year	2017	2018	2019	2020	2021	2022	2023
Annual	0.03	2.84	5.85	7.06	6.40	4.99	1.83
Cumulative	0.03	2.87	8.72	15.78	22.18	27.17	29.00

INSTITUTIONAL DATA

Practice Area (Lead)

Energy & Extractives

Contributing Practice Areas

Climate Change and Disaster Screening

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

Gender Tag

Does the project plan to undertake any of the following?

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

No

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

No

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

No

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

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

9. Other	Substantial
10. Overall	Substantial

COMPLIANCE

Policy

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

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

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

Legal Covenants

Sections and Description

(Schedule 2.I.A.1) The Recipient shall maintain: (i) PETROSEN as Project implementing agency, with functions, staffing and resources satisfactory to the Association, until GES-PETROGAZ is operational as Project implementing agency, with staffing, resources and terms of reference satisfactory to the Association; and (ii) GES-PETROGAZ with staffing, resources and terms of reference satisfactory to the Association until the completion of the Project.

Sections and Description

(Schedule 2.I.B.1) The Recipient shall: (i) through PETROSEN, carry out the Project in accordance with PETROSEN Project Manual; (ii) through GES-PETROGAZ, shall adopt, not later than six (6) months after the Effective Date, a revised Project Manual satisfactory to the Association; and (iii) not amend, abrogate, waive or permit to be amended, abrogated or waived, the aforementioned Project Manual, or any provision thereof, without the prior written consent of the Association.

Sections and Description

(Schedule 2.I.E.1) The Recipient shall ensure that a Master Plan for Oil and Gas Development is prepared in accordance with terms of reference approved by the Association. If the Master Plan for Oil and Gas Development is finalized during Project implementation, the Recipient shall prepare a Strategic Environmental and Social Assessment of the oil and gas sector acceptable to the Association.

Sections and Description

(Schedule 2.II.B.4) The Recipient shall by not later than six (6) months after the Effective Date: (i) select one external auditor and one internal auditor, both with qualifications satisfactory to the Association; and (ii) recruit an accountant pursuant to termsof reference and with qualifications and experience satisfactory to the Association.

Conditions

Type	Description
Disbursement	Notwithstanding the provisions of Part A of this Section, no withdrawal shall be made for payments made prior to the date of this Agreement, except that withdrawals up to an aggregate amount not to exceed € 2,000,000 may be made for payments made prior to this date but on or after May 1, 2017, for Eligible Expenditures under Category (1).

PROJECT TEAM

Bank Staff

Name	Role	Specialization	Unit
Ilhem Salamon	Team Leader(ADM Responsible)	Oil and Gas	GEEX2
Ana Francisca Ramirez	Team Leader	Operations	GEEX2
Cheick Traore	Procurement Specialist(ADM Responsible)	Procurement	GGO07
Fatou Fall Samba	Financial Management	Financial Management	GGO26

	Specialist		
Alexandra C. Bezeredi	Safeguards Specialist	Lead Social Safeguards Specialist	GSU01
Alistair Watson	Team Member		GEEDR
Aminata Ndiaye Bob	Team Member	Country Office	AFCF1
Faly Diallo	Team Member	Disbursement	WFALA
Hayat Taleb Al-Harazi	Team Member	Operations	MNARS
Heather B. Worley	Team Member	Citizen Engagement	GEESO
Helen Ba Thanh Nguyen	Team Member	Program Assistant	GEEX2
Hocine Chalal	Environmental Specialist	Lead Environment Specialist	GEN07
Honore F. Le Leuch	Team Member	Fiscal Specialist	GEEDR
Jinghua Zhou	Team Member	Operations	GSU01
Juliana Chinyeaka Victor	Team Member	Monitoring and Evaluation	GEESO
Julio Ricardo Loayza	Team Member	Senior Economist	GMF08
Karan Capoor	Team Member	GHG Emission	GEESO
Mademba Ndiaye	Team Member	Communications	AFREC
Nina Inamahoro	Team Member	Operations	GEEX2
Patrice Philippe Marie Joseph De Martin De Vivies	Team Member	Senior Oil and Gas Advisor	GEEDR
Pierre Rene Bauquis	Team Member	LNG Development Expert	GEEX1
Robert W. Bacon	Team Member	Oil and Gas Economist	GEEX2
Ruxandra Costache	Counsel	Country Lawyer	LEGLE

Extended Team

Name	Title	Organization	Location

SENEGAL
SUPPORTING GAS PROJECT NEGOTIATIONS AND ENHANCING INSTITUTIONAL CAPACITIES

TABLE OF CONTENTS

I. STRATEGIC CONTEXT

A. Country Context

1. The Republic of Senegal is located in the western-most part of Africa's Sahel region and has a national territory covering 196,722 km². Senegal borders Mauritania in the north, Mali in the east, Guinea to the southeast, and Guinea-Bissau to the southwest. It also borders The Gambia, a sovereign enclave occupying a narrow sliver of land along the banks of the Gambia River and sharing a maritime border with Cape Verde. Over the last decade, Senegal averaged an annual population growth rate of just under 3 percent, bringing its total population to 15.1 million by 2015, of which 44 percent live in urban areas.

2. Senegal is one of the most stable countries in Africa. Since its independence from France in 1960, the country has considerably strengthened its democratic institutions. Most notably, it had three peaceful political transitions under four presidents[1]. In March 2016, the Government pushed through a package of 15 constitutional reforms in a national referendum, which strengthened the powers of Parliament, shortened presidential terms from seven to five years, and entrenched a two-term limit. As a result, the next presidential election is expected in 2019.

3. Over the course of 2015, Senegal's macroeconomic performance was strong, with a Gross Domestic Product (GDP) growth rate of 6.5 percent – a rate not attained since 2003, and is estimated to have remained robust in 2016 as all components of demand were strong. GDP growth is projected to continue accelerating gradually to about 7 percent over 2017–2020 as the primary sector continues its strong growth due mostly to agriculture and extractive industries, while services also show a growth rate over the average, particularly due to commerce, transport, communication, and real estate. This spurt in growth is remarkable, particularly when compared to other African economies, which have registered a marked slowdown as a result of a depressed global environment characterized by the still fragile recovery in the euro zone and slowing growth in China. As a result, Senegal was the second fastest growing economy in West Africa, behind Côte d'Ivoire.

4. The main driver of the strong economic performance in 2015 was higher private sector demand, which reflected positive effects on the national income of a good harvest and improving terms of trade for Senegal stimulated by lower energy and transport prices combined with the ambitious public investment program carried out by the Government, which was up by almost 0.4 percent of GDP in 2015. Notably, Senegal also witnessed a much stronger contribution of exports to GDP growth in 2015, or 3.6 percentage points out of 6.5 percent growth, as exports increased by almost 13 percent in real terms. At the sectoral level, higher growth in 2015 was mainly due to larger contributions from the agricultural and industrial sectors. Services remained the engine of growth, accounting for over one third of economic expansion, while industry's contribution increased to approximately 23 percent as a result of the solid performance of the chemical industry and construction sector. Meanwhile, the agricultural sector accounted for nearly 35 percent of GDP growth in 2015 mainly due to good rainfall and various targeted government programs in favor of rice production and horticulture value chains.

5. Despite the country's recently improved economic performance, poverty remains high and predominantly

[1] Leopold Sedar Senghor (1960–1980), Abdou Diouf (1981–2000), Abdoulaye Wade (2000–2012), and since March 2012, Macky Sall

rural, affecting 46.7 percent of the population. Lackluster economic growth prior to 2014 and repeated shocks in recent years have further hampered progress, with poverty incidence decreasing by only 1.8 percentage points between 2006 and 2011 and the number of poor increasing to 6.3 million in 2011. Most of the poor live in rural areas, where poverty is deeper and more severe, and live mainly off agriculture. In urban areas, the poor are mainly unemployed or working in the informal sector, typically in trade.

6. The long-term underperformance of the Senegalese economy reflects enduring structural constraints and persistent infrastructure gaps. The structural constraints arise from weaknesses in sector policies and the business environment, while infrastructure gaps also affect energy, transport, and communications. While macroeconomic policy has been adequate, limited fiscal space and strict monetary arrangements provide little room for spurring growth. Improving the business climate has been a priority for the Government, and Senegal twice scored as a top reformer recently. However, the country still ranks in the lower tier of international rankings for ease of doing business. Improving the country's competitiveness by addressing key real sector and infrastructure constraints is therefore an essential element in enhancing the ability of the economy to create productive livelihoods and employment opportunities.

7. In July 2016, the Government of Senegal (GoSN) approved a revised 2016 Budget Law, which adds another US$373 million in public spending. Overall, the government budget increased by approximately 5.3 percent in 2016, which is roughly equivalent to 32 percent of GDP. On the external front, rapidly growing exports helped reduce the current account deficit (CAD) from nearly 9 percent of GDP in 2014 to 7.6 percent of GDP in 2015 despite higher imports linked to stronger growth. Similarly, higher revenues supported government efforts to progressively close the fiscal gap, which fell from a deficit of 8.5 percent of GDP in 2014 to 7.7 percent in 2015. Owing to a consolidating fiscal policy, the public debt ratio increased at a slower pace in 2015. Debt increased to an estimated 56.8 percent of GDP, but remains sustainable.

8. Securing the revenue base is an important objective for the authorities if they are to preclude future increases in borrowing or budget deficits, especially as the economy's positive prospects depend heavily on the Government's ability to sustain and accelerate structural reforms to address persistent supply-side constraints while maintaining fiscal discipline. The immediate priority is to increase tax mobilization through continued capacity building and the modernization of tax administration as well as the rationalizing of spending related to wages and salaries. In addition, a decrease in the current expenditure to a total expenditure ratio from 80 percent in 2015 to 75 percent in 2016 will contribute to a reduction in the deficit while allowing for an increase in the investment ratio, as well as the development of social safety nets.

B. Sectoral and Institutional Context

Sector Context

9. Exploration has been conducted for a long time in Senegal, leading until 2014 to very small petroleum discoveries, some of them onshore, the others non-commercial. Owing to continuous promotion efforts over the past decades, MEDER, supported by PETROSEN, has been able to attract petroleum companies, small at first but recently larger, particularly since the promulgation of the 1998 Law, which was designed to make exploration and exploitation more attractive and to give greater consideration to environmental issues in the country's various geographical environments, including onshore, shallow water, and deep offshore. Until 2013, natural gas reserves and production were very small, at just 363 million and 41 million m3, respectively. All gas sold in 2013

was delivered by pipeline to SOCOCIM, a cement producer (about 22 million m3) and SENELEC (about 18 million m3), the latter for the purpose of generating electricity. Senegal's sedimentary basin is divided into 18 separate blocks: eight onshore blocks and 10 offshore blocks. Over the entire basin, only Gadiaga-Sadariatou Field on the onshore Tamna block was in production in 2013.

10. Over the last few years however, Senegal has made world-class oil and gas discoveries. Two major discoveries have the potential to transform the economy of Senegal: the SNE deep offshore oil discovery; and the Grant Tortue Ahmeyin (GTA) ultra-deep offshore gas discovery, which straddles maritime boundary with Mauritania. While the appraisal of these new prospects are nearing finalization, it become apparent that the GoSN will need to develop a new sector policy and to strengthen all key institutions which will be involved in the future management of the hydrocarbon resources.

Government Policy Context

11. In 2014, the Emerging Senegal Plan (PSE, 2014–2035) was adopted by the Government as its strategic framework for the country's long-term economic and social development. Over the shorter term, the PSE is articulated into five-year Priority Action Plans (PAP), the first of which covers 2014–2018 and which provide greater granularity on implementation. The PAP identifies strategic areas, lines of action, and projects and programs within a budget framework, outlining the investments to be made during the five-year period. The PSE's three strategic areas are: (i) the transformation of the economy's structures to support strong and sustainable growth; (ii) expanding access to social services and social protection and preservation of conditions for sustainable development; and (iii) enhancing good governance through institutional strengthening and promoting peace, security, and African integration.

12. The policy framework for the oil and gas sector is set in the Energy Sector Development Policy Letter (LPDSE) covering 2012-2017, adopted in October 2012 and integrated into the PSE. The LPDSE outlines ambitious objectives for improving the sector's performance in the medium to long term. Overall, the objective of the policy is to improve the reliability and affordability of access to modern electricity services in a sustainable manner by: (i) ensuring energy security and increasing energy access for all; (ii) developing an energy mix combining thermal generation, bioenergy, and renewables and taking advantage of the opportunities flowing from regional interconnections to access low-cost hydropower; (iii) continuing and accelerating the liberalization of the energy sector by encouraging independent production and sector institutional reform; (iv) improving the competitiveness of the sector to lower the cost of energy and reduce sector subsidies; and (v) strengthening sector regulation. The LPDSE has four key objectives regarding the oil and gas sector, namely: (i) intensification of the promotion of the sedimentary basin; (ii) enhancement of the legal and regulatory framework; (iii) reinforcement of production capacities; and (iv) securitization of the capacities of storage conditions. The LPDSE was formulated before the oil and gas discoveries had been made and will thus need to be adjusted as soon as the resource appraisal is completed.

Legal and Regulatory Framework

13. The current legal and regulatory framework for the legal upstream oil and gas sector is defined by the following laws: (i) Petroleum Code Law No. 98-05 of January 8, 1998; (ii) its Application Decree No. 98-810 of October 6, 1998; and (iii) General Tax Code Law No. 2012-32 of December 31, 2012. The Petroleum Code is relatively up-to-date, concise (71 articles), and aligned with the (then) main good practices for designing flexible

petroleum laws in developing countries similar to Senegal in terms of petroleum prospection and potential when it was promulgated nearly two decades ago. The Code deals with upstream activities only (exploration and exploitation, including petroleum processing and transportation of production) regarding petroleum (oil and natural gas). The Law empowers the Government to enter into upstream petroleum agreements of various types, including concession contracts and production sharing contracts (PSC), which was then a relatively new type of arrangement for the country and since 1998 has become the default scheme used for new upstream petroleum agreements in Senegal. Since the promulgation of the 1998 Code, around 20 PSCs have been signed, of which 14 were effective at the end of now. These are based on the model PSC issued by decree. Each PSC must be approved by Presidential decree and published in the Official Gazette (art. 17 and 34 of the Code). Therefore, all petroleum agreements are now public in Senegal. It is worth mentioning that the 1998 Petroleum Code correctly specifies that the country's Investment Code is not applicable to the upstream sector, and therefore the benefits and advantages awarded to qualified investors under the Investment Code are not applicable to upstream operations. This declaration prevents potential uncertainties when both codes are applicable.

14. In the meantime, the upstream petroleum fiscal regime is provided for in the Petroleum Code and the general tax legislation of Senegal, in particular the General Tax Code (Code Général des Impôts, CGI). The Petroleum Code contains specific tax provisions in its Chapter 7 (art. 41 to 49) dealing with the taxes or contributions applied to upstream activities, either under concession contracts, where the main taxes are royalty, corporate tax (CT), and the progressive additional profits tax triggered by a profitability criterion, or under PSCs, where the main government revenues are CT in addition to the Government's share in Profit Petroleum. The Petroleum Code provides for some tax exemptions, which have been partly transferred into the CGI since 2012. The Petroleum Code also stipulates that some tax rules may be clarified in a Petroleum Agreement. This right applies (for example) to rules for tax depreciation and to the specific CT rate applied to a given Petroleum Agreement, which may therefore differ from one agreement to another depending on their signing date. A new CGI was enacted in 2012 under Law 2012-32 of December 31, 2012, which contains short provisions dealing with petroleum activities and petroleum enterprises and mostly related to specific tax exemptions. However, the new CGI does not specifically clarify the determination of the CT taxable base for PSC holders and does not address the specificities of upstream petroleum operations. See Annex 5 for further details.

Institutional Framework

15. Until the creation of the Strategic Petroleum and Gas Steering and Development Monitoring Committee (COS-PETROGAZ) in 2016, the Ministry of Energy and Development of Renewable Energy (Ministère de l'Energie et du Développement des Energies Renouvelables, MEDER) was the only entity responsible for the oil and gas sector. The upstream oil and gas arms of MEDER are the Directorate of Hydrocarbons (DH) and the National Oil Corporation of Senegal (PETROSEN), which was created in May 1981 with a state participation of 99 percent. MEDER ensures the implementation of the laws promulgated by the President of Senegal with respect to both onshore and offshore oil and gas exploration and production activities, hydrocarbon imports, exports, and marketing as well as crude oil refining, transportation, storage, and petroleum products distribution. Institutional roles and responsibilities in the upstream oil and gas sector are as follows:

16. **President of the Republic**: Under the Petroleum Code, the President's role in the oil and gas sector consists in:

a. Awarding and renewing exploration licenses or authorizations (by decree);
b. Awarding temporary production authorizations (by decree);

c. Awarding and renewing concessions or authorizations (by decree); and
d. Approving oil and gas exploration and production contracts, including PSCs (by decree).

17. **The Ministry of Energy and Development of Renewable Energy**: The Ministry is the supervising entity responsible for the implementation and monitoring of the Government's policy for the oil and gas sector. Based on the Petroleum Code, it is responsible for oil and gas sector operations and is tasked with the following mandate:

a. Protecting certain areas of the country from oil and gas operations (by executive order);
b. Awarding prospection authorizations (by executive order);
c. Authorizing construction works for oil and gas transportation (by executive order);
d. Opening up oil and gas exploration areas to competition;
e. Accepting or refusing applications for petroleum exploration areas; and
f. Signing petroleum agreements, including PSCs, following Ministry of Finance's recommendations of financial and fiscal terms.

18. **PETROSEN**: PETROSEN is a public limited company created in 1981 operating under the technical supervision of the Ministry of Energy. It is an instrument of Senegal's implementation of oil and gas policy. As defined by the Petroleum Code (No. 98-05 of January 8, 1998) and its implementing decree (No. 98-810 of October 6, 1998), PETROSEN is active in the upstream, midstream, and downstream oil and gas sectors. In upstream oil and gas, its mission is to evaluate the country's hydrocarbon resources, promote the development of these resources by international oil companies, oversee petroleum development, and monitor contract compliance. PETROSEN is thus in charge of the preparation and negotiation of all petroleum conventions and PSCs, which are signed by MEDER and the petroleum companies. PETROSEN is entitled to a contributing participating interest in any exploitation project in a range of 10 percent up to the maximum rate stipulated in the conventions or PSCs (generally 20 percent). To that end, it is a signatory to all Joint Operating Agreements (JOA) entered into with the petroleum companies. In the downstream oil and gas sector, PETROSEN is a strategic stakeholder in the refinery process. In the upstream sector, it is responsible for:

a. Promoting Senegal's sedimentary basins;
b. Representing the GoSN and managing national interests in the oil and gas sector, particularly with regards to PSCs;
c. On behalf of the GoSN, managing the minority participation interest PETROSEN may be granted in petroleum conventions and PSCs;
d. On behalf of the GoSN through its subsidiaries or in association, intervening in all operations relating to production, processing, transformation, valuation, and transportation of hydrocarbons;
e. Commercializing and exporting hydrocarbons extracted in Senegal regarding its participation interests in production;
f. Technical monitoring and control of oil and gas operations; and
g. Preparing and negotiating all petroleum agreements and contracts in collaboration with MEDER.

19. **COS-PETROGAZ**: In October 2016, the GoSN established by decree the COS-PETROGAZ to provide strategic guidance, as well as define and oversee policies regarding hydrocarbon development. COS-PETROGAZ is embedded within the Office of the President of Senegal. COS-PETROGAZ has been effective since December 2016. It is headed by the President of Senegal, and includes key cabinet members, including MEDER. It is managed by a Secretariat created in November 2016 and composed of a Permanent Secretary and an Adjunct Secretary, who have already been appointed. COS-PETROGAZ is expected to meet every quarter or at the President's

request. The COS-PETROGAZ Secretariat will be the executive arm of the recently created body, while the GES-PETROGAZ will be the administrative body and PETROSEN the operating instrument. Specifically, COS-PETROGAZ key roles and responsibilities include:

a. Defining, overseeing, monitoring, and verifying the implementation of the national oil and gas policy;
b. Implementing strategies and programs for the promotion and development of hydrocarbon projects;
c. Approving oil and gas studies pertaining to reserves assessment and development;
d. Approving strategies submitted by private operators;
e. Approving action plans for the creation of an entity devoted to research and training in the oil and gas sectors;
f. Approving local content and policy for oil and gas development;
g. Mobilizing funds from ministries, public entities, and donors for promotion of oil and gas projects; and
h. Ensuring that good governance practices are followed in the development of the hydrocarbon sector.

20. **GES-PETROGAZ**: The October 2016 Decree also created an implementation unit, in charge of executive and strategic management, the Gestion Executive et Stratégique (GES-PETROGAZ), housed in the MEDER. It is responsible for the day to day coordination and management of all technical assistance project activities in the oil and gas sector, as well as the implementation of all relevant decisions by the MEDER and COS-PETROGAZ.

21. **The GoSN** has developed an institutional framework with all relevant bodies needed to oversee the negotiations of its oil and gas project development projects. During the negotiations that will lead to the Final Investments Decisions (FID) needed to start oil and gas development works, the GoSN will have to strengthen this institutional framework in order to bring it up from the level needed to oversee exploration to the required level to oversee effective development, production, and commercialization. When projects near FID, it will become important to decide on a strategy for future petroleum revenue management, which may include the creation of a sovereign fund. Further institutional capacity building will thus be needed post-FID.

Oil and Gas Exploration

22. While further exploration is expected to lead to new prospects, the two main oil and gas discoveries made since 2014 are described hereinafter.

23. **Sangomar Deep Offshore Block**. In late 2014, Cairn Energy PLC (40 percent, operator) in partnership with ConocoPhillips (35 percent), FAR (15 percent), and PETROSEN (10 percent) made two significant discoveries. First, the FAN-1 well, drilled to a water depth of 1,430 meters, reached a reservoir initially estimated to contain 330 Million Barrels (MMBbl) of oil; and second, the SNE-1 well, drilled to a water depth of 1,000 meters, reached a reservoir initially estimated to contain a range of contingent oil resources from 270 to over 900 MMBbl, as well as several trillion cubic feet (Tcf) of gas, the characteristics of which have not been disclosed. An appraisal campaign for the SNE discovery is still in progress, and included a 3D seismic campaign in 2015 and four delineation wells (SNE-2, SNE-3, BEL-1, and SNE-4) drilled in 2016. Further appraisal work is planned for 2017, including a minimum of two wells and well testing. This campaign confirmed the quality of the crude oil (32° API), the productivity of the wells, as well as the likely development concept for the project (Floating Production Storage and Offloading – FPSO). In July 2016, Woodside Petroleum Ltd agreed to a binding purchase and sale agreement with ConocoPhillips to acquire all of the company's interests in Senegal, which is currently under approval. In the Sangomar deep offshore block, the concept for the development of SNE oil and gas resources still needs to be finalized, and the appraisal program for FAN is to be developed.

24. **Tortue and Teranga**. In 2015, Kosmos (90 percent, operator) in partnership with the Mauritanian Hydrocarbons and Mining Resources Corporation – SMHPM, 10 percent) made a discovery in the Ahmeyim-1 – Tortue 1 offshore well in southern Mauritania close to the border with Senegal. In early 2016, Kosmos (60 percent, operator) in partnership with Timis (30 percent) and PETROSEN (10 percent) reported another offshore gas discovery in Senegal in the Geumbeul-1 well located roughly five kilometers from the Ahmeyim-1 well. Both drilling operations reached the target formation at a water depth of approximately 2,700 meters and a well depth of over 5,000 meters. Moreover, both exploration wells encountered about 100 meters of net gas pay. In March 2016, the Ahmeyim-2 well, which was drilled in Mauritania, encountered 78 meters (256 feet) of net gas pay. The drilling confirmed reservoir continuity on both sides of the border. In May 2016, Teranga-1 was successfully drilled in the Cayar deep offshore block in Senegal. The latter is not part of Tortue but of a larger inboard trend extending from Marsouin in Mauritania to Teranga in Senegal which may hold 25-50 Tcf of gas. However, the appraisal program for Grand Tortue-Ahmeyim will have to be completed before a thorough assessment of the nature and size of the reservoirs can be provided along with the specifications of the gas and its deliverability. Late December 2016, British Petroleum (BP) signed a farm-in agreement with Kosmos Energy to acquire a 62 percent working interest, including development operatorship, of Kosmos' exploration blocks in Mauritania, and a 32.50 percent effective working interest in Kosmos' Senegal exploration blocks. BP is planning to drill four additional wells and then decide on a project development concept this year in the hope of a Final Investment Decision (FID) by end of 2018. Given the large size of the resources and low international market price trends for LNG, the operator is seeking to develop the resource in phases. The first phase would be a low-cost solution meant to establish Senegal and Mauritania as producing countries in a timely manner. An innovative near-shore floating LNG (FLNG) concept is thus part of preliminary and screening studies.

Challenges Ahead for Oil and Gas Development

25. Now that world-scale discoveries have been made offshore in Senegal, operators are working on finalizing the appraisal of the oil and gas resources and defining the project development concepts[2], as required before they can make an FID. The period separating the moment resources are discovered from the moment a decision is made on whether and how to develop them (i.e., the FID) involves critical work. Often underestimated in new producing countries, the work needed during this period is substantial and directly impacts the fiscal and non-fiscal revenues that the resource exploitation will bring to the host country. With oil and gas discoveries come expectations of fiscal revenues and local content, and there is generally greater public interest in how to invest these revenues and train people for future industry needs rather than in how best to choose a project development concept, supplement the petroleum law and the PSC, and set-up or reinforce institutions.

26. Yet, the choice of a project development concept will irreversibly define the project's socioeconomic and fiscal impacts as well as its ability to bring more than fiscal revenues for a country. During the early screening phase, it is essential that all relevant development concepts be screened. In countries such as Senegal and Mauritania, where the limited access to affordable electricity is one of the key binding constraints on growth, it is essential to make sure that the concepts under preliminary analysis include options for gas destined for domestic power generation. While such concepts may not always be commercially viable, there can be instances where they compete with concepts excluding gas for power generation, and access to concessional financing can make a difference. Some project development concepts come with more local content than others, and it is

[2] Conceptual Study stands in the oil and gas industry at the very early stage of a Greenfield project to identify all the possibilities and conditions to develop this project and process the hydrocarbons production.

important to make sure they too are analyzed as needed. Such concepts are not always optimal, especially when market prices trends are low and key infrastructures underdeveloped. Yet, expectations of local content are often higher than what is feasible, and ruling out such concepts without a rationale can add substantial time and costs to project negotiations. It is therefore important for governments to proceed methodically and focus on their responsibilities on firming up an FID before widening their efforts to training people to future industry needs and managing future revenues. Once operators near an FID, based on factors that can optimize the government's fiscal revenues and other positive externalities, the timing for petroleum revenue buildups and training needs become clearer. Governments focus should then switch from supporting efforts needed to firm up the project investment decision to planning how best to manage the revenues that will be generated by the project after its development.

27. During the conceptualization phase, governments and operators must work in collaboration to finalize all agreements needed for an FID. While the greatest part of the work falls to the lead operators, governments must grant approval for a large number of decisions. In new producing countries, governments often need to complete the legal and regulatory framework so that it covers all critical uncertainties that could affect the feasibility of the project. For instance, if a Petroleum Law and PSC do not specify the fiscal regime that will apply to the liquefaction of the gas, the fiscal, legal, and regulatory framework will need to be supplemented to remove this uncertainty. Governments will also be asked to review the Front End Engineering Design (FEED) of oil and gas development concepts as well as field developments, which typically requires new capacity. Before they make an FID, private operators will also have to make sure that project financing is adequate and that all parties, including national oil corporations, can assume their share of development and production costs. In such cases, this suggests that the Government should determine its stake and secure ways to finance it ahead of time. In the development of LNG, the private operator will lead the gas marketing strategy and find buyers for the gas. However, the Government may still need to provide clearance for the gas marketing strategy and gas sale agreements in a timely manner.

28. Key landmarks that need to be achieved by the Government of Senegal in the earliest stage of evaluating the discoveries of Sangomar Deep Offshore Block and Grand Tortue – Ahmeyim include the following:

a. Ratification of an Intergovernmental Cooperation Agreement (ICA) for the development of the transnational resource, which will leverage cooperation between Senegal and Mauritania;
b. Adoption of a Unitization and Unit Operating Agreement (UUOA) complying with the ICA;
c. Approval of project development concepts for SNE and Grand Tortue discoveries that optimize fiscal revenues under existing PSCs and other positive impacts for the country (e.g. gas for domestic power generation) while meeting investors' requirements; and
d. Identification of the optimal share of PETROSEN in SNE and Grand Tortue developments and option(s) for financing this participation.

29. The proposed World Bank Technical Assistance (TA) will support the GoSN's efforts to mobilize the capacity needed to partner with private operators to ensure progress toward completion of these specific landmark and broader needs for an FID.

C. Higher Level Objectives to which the Project Contributes

30. The proposed TA will will help ensure that Senegalese oil and gas development projects take place in an environment conducive to private sector investments aligned with the public interest. Supporting GoSN

negotiations toward FIDs will be achieved by mobilizing international third-party expertise, strengthening key institutions, enhancing the fiscal, legal, and regulatory framework, and engaging with all stakeholders while ensuring that all stakeholders join in the efforts needed for oil and gas developments to contribute to the country's economic growth in a resilient and sustainable way. Through this modest TA (US$29 million), the GoSN will enhance its capacity to secure over US$10 billion in investments from oil and gas private operators. In the short run, the TA is expected to help the GoSN make sound progress toward FIDs on SNE and the first phase of the Tortue development. In the long term, it should contribute to the production and commercialization of these oil and gas resources and accelerate FIDs in the next phases of Tortue developments as well as FAN development. This TA could thus play a catalytic role in leveraging private investments, which will in turn generate tens of billions in fiscal revenue flows over the life of the projects. In addition, the proposed technical assistance will develop the social platforms necessary for sharing with the greater public reliable information on the timing and scope of potential fiscal revenues, employment opportunities, and other local content through stakeholder engagement and communication campaigns, further contributing to reducing poverty and promoting inclusive growth nationwide.

31. Strengthening the Government's institutional capacity and engaging with citizens will be instrumental to ensuring optimal project outcomes, as well as setting up realistic expectations regarding the potential revenues generated by oil and gas developments. When gas price trends were higher and LNG was structurally undersupplied, it was easier for governments to negotiate onshore solutions requiring the construction of large infrastructure that could be developed using a local workforce. Given current market price trends and the structural oversupply of LNG, such solutions are increasingly seen as too lengthy and costly. Innovations in floating solutions, such as near-shore FLNG concepts, are attracting increasing interest. While offshore LNG solutions typically bring less local content than onshore LNG solutions, they strike a balance between maximizing local content and the reality of unfavorable market conditions and investment requirements. To secure FIDs, Senegal will have to develop realistic expectations regarding short-term revenue generation and local job creation. Unrealistically high expectations regarding local content typically result in delays in FIDs or in the decision not to proceed with the investment. Therefore, throughout the life cycle of the oil and gas development, starting from the negotiations phase, a functional and strengthened communications strategy – at the local and national level – is required in order to set realistic expectations among citizens and include broader population in the development process. The Government's strengthened capacities to communicate with citizens and manage expectations will enable it to successfully negotiate options offering the best and most sustainable economic returns for the country.

32. The proposed project is aligned with Pillar I of the Senegal Country Partnership Strategy (CPS) entitled "Accelerating Growth and Generating Employment" (FY13-17) (Report No. 73478-SN). Building upon the foundation, which is aimed at strengthening the governance framework and building resilience, the CPS includes two focal pillars: (i) accelerating inclusive growth and creating employment; and (ii) improving service delivery. In addition, the proposed project is designed to extend beyond the life of the current CPS and is aligned with the third sustainability pillar of the Systematic Country Diagnostic currently under preparation. As the CPS intends to support the priorities of the National Strategy for Economic and Social Development (SNDES 2013-2017), as well as Senegal's efforts to pursue a path to higher growth and shared prosperity over the medium term, the proposed technical assistance is therefore fully in line with all three pillars of the SNDES, which is clustered around three broad priority areas: (i) growth, productivity, and wealth creation through private sector development and employment promotion; (ii) human capital, social protection, and sustainable development with a focus on sustainable capacity building as well as large-scale risk management; and iii) good governance, institutions,

peace, and security. As such, the project also fully supports the World Bank Group's twin goals of ending extreme poverty and boosting shared prosperity.

33. The proposed TA is also aligned with the World Bank's updated Governance and Anticorruption (GAC) agenda, with interventions focused on strengthening governance systems and processes to enhance governments' predictability, credibility, and accountability. To this end, the proposed TA will support activities that will help reduce government spending by further involving the private sector and leveraging regional and international markets.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

34. To support the government's capacity to drive negotiations toward final investments decisions and lay the foundations for the gas sector's contributions to the economy through enhanced legal and regulatory frameworks and capacity building.

B. Project Beneficiaries

35. At the macro level, the beneficiaries of the proposed project will be, first of all, the Senegalese people in general through planned activities that will contribute to: (i) strengthening the Government's capacity in the oil and gas sector to generate sustained benefits and economic growth for the country; (ii) better socioeconomic returns from oil and gas investment and broad stakeholder engagement in the country; and (iii) potentially significant increases in access to reliable power through future gas-to-power development. Secondly, the extractives industry will benefit significantly from an improved oil and gas investment climate, enhanced legal, regulatory, and institutional frameworks, and government counterparts with greater capacities, which together will facilitate economic efficiency and extraction-related business activities.

36. At the micro level, direct beneficiaries of the proposed technical assistance include:

a. Government institutions, especially MEDER, the Ministry of Economy, Finance and Planning (MEFP, *Ministère de l'Économie, des Finances, et du Plan*), COS-PETROGAZ, GES-PETROGAZ, and PETROSEN and their staff involved in managing the oil and gas sector through capacity building activities; and
b. Civil society, including community-based and non-governmental organizations (NGO) and associations that would benefit from communication campaigns, citizen engagement activities, and an improved information platform on oil and gas sector development, decision-making, and impacts.

C. PDO-Level Results Indicators

37. Achievement of the intended PDO will be monitored by the following indicators:

- Development concept for Grand Tortue Ahmeyim (GTA) and SNE determined;
- Unitization agreement for the GTA reservoir developed;
- Oil and gas policy and strategy developed;
- Master plan for oil and gas development formulated;
- Institutional diagnostic conducted and results publicly disseminated;

- Communications strategy and roadmap for government agencies developed and implemented.

III. PROJECT DESCRIPTION

A. Project Components

38. **Component A – Support for hydrocarbon project negotiations (US$13 million)**: The objective of this component is to help the GoSN engage in a timely and constructive manner with the Government of Mauritania and PSC holders to ensure the sustainable development of its oil and gas resources. International experts on the technical, fiscal, legal, marketing, and financial fronts will be contracted to ensure that project negotiation is prepared based on best available knowledge. Specific activities to be implemented under this component include the following forms of support, through the development of a series of agreements, for the negotiation of SNE and Grand Tortue Ahmeyim (GTA) development:

a. Support the Government's negotiation team effort to clear the operator's resources estimate, as well as the methodology used to delineate SNE and GTA – the transnational gas resources, which will be subject to intergovernmental cooperation and unitization.
b. Help the Government's negotiation team clear the concept for the development of SNE and GTA, future field development plans, and engineering studies.
c. Help the Government complete the legal, fiscal, regulatory framework needed to progress towards FID for SNE and GTA, clear the intergovernmental cooperation agreement and the unitization agreement for GTA, and develop the series of operational, fiscal, marketing and financial agreements needed for SNE and GTA.
d. Support government efforts to identify the fiscal impact of the various LNG development concepts, close project financing, and identify the optimal share of the national company in the gas and LNG developments and how to finance it.
e. Help the Government's negotiation team clear SNE and GTA marketing agreements and identify optimal gas to domestic power options for SNE and GTA.

39. **Component B – Enhancement of the strategic and policy framework (US$2 million)**: The objective of this component is to support the GoSN develop an oil and gas sector policy and strategy. Specific activities to be implemented under this component include:

a. **Oil and gas sector policy and strategy**: This activity intends to support government efforts to develop an oil and gas policy, articulating how the country will manage the sector (upstream, midstream, and downstream) and assess the share of future oil and gas production that could be delivered to shore (gas-to-power, refining, other industrial usages). Preliminary input for future local content and revenue management policies will be developed as background material for the oil and gas policy;
b. **Master Plan**: All background work needed to develop or update the sector policy and strategy and to ensure its implementation will be financed under this project activity. This includes the development of an oil and gas master plan, which will articulate whether and how developments in Senegal will support the power sector or any other local industry. The master plan will be developed after the preliminary concept studies have been finalized and a pre-FEED[3] is approved for the development of SNE and GTA. It

[3] A pre-FEED is an engineering design study that is based on broad market cost estimates, and not yet on actual quotations

will assess the social and environmental risks associated with the project development concept, as well as the readiness of Senegalese safeguards designed to mitigate risks adequately.

40. **Component C – Institutional diagnostic and capacity building (US$12 million)**: The objective of this component is to identify the needs for capacity building, develop tailored training programs, and support the Government's effort to mobilize instrumental ad hoc expertise:

a. **Institutional diagnostic**: This activity is aimed at providing a detailed analysis of the operations and internal policies and procedures of government institutions involved in oil and gas exploration and production benchmarked against international good practices. The targeted institutions will include relevant line Ministries (Energy, Economy, Finance, Transport, Infrastructure, and Environment), as well as PETROSEN. The diagnostic will contribute to short- to medium-term training and organization and staffing strategies for public institutions involved in the development of oil and gas.
b. **Training**: This activity is meant to provide high-level training to oil and gas decision-makers (COS-PETROGAZ, line Ministers, PETROSEN, and parliamentarians), as well as in-depth training to the staff of PETROSEN, GES-PETROGAZ, and Ministries directly involved in project negotiation and their future execution.
    - High level training aims to facilitate the decision-making process on legal provisions that would be needed to supplemental the Petroleum Code, the adoption of an ICA, the ratification of a unitization agreement, the clearance of concepts for oil and gas developments, etc. Study visits to LNG production sites similar to those that could be developed in Senegal could also be offered to a small targeted audience under this activity.
    - In-depth training will be based on industry needs and subject to a preliminary capacity audit, which will ensure that trainees have the capacity to absorb the proposed training. The training will be delivered after the capacity audit is completed, and the training program will be tailored for oil and gas engineers, economists, and lawyers.
c. **Instrumental Staffing**: This activity is meant to support government efforts to mobilize additional expertise in petroleum engineering, LNG project development, oil and gas economics, project finance, and the oil and gas fiscal and legal framework. Experts will be recruited as consultants and predominantly support COS-PETROGAZ, the Ministry of Energy, and PETROSEN. To ensure sustainability, short term experts will be twinned with permanent staff where relevant.

41. **Component D – Stakeholders engagement campaign (US$1 million)**: The main objective of this component is to mobilize international third party expertise needed for the GoSN to develop a communications strategy and information campaign to engage effectively and sustainably with all key stakeholders on issues relating to oil and gas development projects in SNE and Grand Tortue. This component, which will create and maximize synergies with the Senegal Extractive Industry Transparency Initiative (EITI) activity on communications campaign, will include the following activities:

a. **Audit**: This activity will support the assessment of current communications options and mechanisms and institutional capacities needed to communicate, inform, and engage with key target audiences across relevant government agencies, including the Presidency, COS-PETROGAZ, the Ministry of Energy and Development of Renewable Energies, and PETROSEN. The needs assessment will outline priority

from bidding service companies.

communications mechanisms and institutional capacities that will need to be put in place across, as well as within, relevant government actors.

b. **Communications strategy**: This set of activities will support the development of the stakeholders mapping needed to identify key audiences for GoSN communication. It will also provide a survey of key stakeholders and target audiences' opinions, perceptions, interests and communication preferences around oil and gas development issues. Finally, it will develop a Communication Strategy and Roadmap (from present day to FID and post-FID) and support government efforts to implement it.
c. **Stakeholders engagement campaign**: This set of activities will support the development and implementation of an information and engagement campaign. Based on the communications strategy developed under this component, the stakeholders engagement campaign will inform and engage citizens on oil and gas development issues in Senegal, both pre- and post-FID.
d. **Capacity-building for oil and gas sector development communications**: This set of activities will aim to develop and execute a training program for key GoSN staff who will play a critical role in the implementation of the communication strategy and engagement campaign.

42. **Component E – Project management and coordination (US$1 million)**: The proposed component will help develop the capacity of GES-PETROGAZ, housed in the MEDER, to manage all project activities financed under the World Bank TA. More specifically, it will support the costs associated with the recruitment of a procurement specialist, accountant, administrative and financial director, and other instrumental staff as needed to build the GES-PETROGAZ procurement, financial management, and monitoring and evaluation, as well as safeguards and management capacities in a sustainable manner. The proposed component will also support PETROSEN, which will provide instrumental support to GES-PETROGAZ, until the latter is fully staffed.

B. Project Cost and Financing

43. **The proposed credit in the amount of US$ 29.0 million is designed as an Investment Project Financing through an IDA Credit to the Republic of Senegal.**[4] The GoSN has requested that the credit be in Euro under the IDA Single Currency Lending Pilot Program.

Project Components	Project cost	IBRD or IDA Financing	Trust Funds	Counterpart Funding
A – Support for hydrocarbon project negotiations	US$ 13 million	US$ 13 million		
B – Enhancement of the strategic and policy framework	US$ 2 million	US$ 2 million		
C – Institutional diagnostic and capacity building	US$ 12 million	US$ 12 million		
D – Stakeholders engagement	US$ 1 million	US$ 1 million		

[4] In accordance with current Republic of Senegal per capita income and IDA 17 lending criteria, the credits will be financed under the Single Currency IDA regular credit terms, with 38-year maturity including a 6-year grace period. The single currency amount (EUR 27.82 million) will be converted to the final SDR amount for commitment authority and country allocation management purposes on the day of project approval. For information, the estimated value of the credit in Special Drawing Rights (SDR) is SDR 21.4 million

campaign		
E – Project management and coordination	US$ 1 million	US$ 1 million
Total Costs	US$ 29 million	US$ 29 million
Total Project Costs	US$ 29 million	US$ 29 million
Front End Fees		
Total Financing Required	US$ 29 million	US$ 29 million

C. Lessons Learned and Reflected in the Project Design

44. *Developing a common understanding of the milestones and conditions for progress towards an FID.* Based on industry and policy experience, the time elapsing between the first discoveries and actual oil and gas shipment can be much lengthier than what governments might hope. This is particularly the case in the LNG industry as the need to liquefy the gas for its commercialization adds substantial project costs. Various factors can explain the difference between a timely and successful project and a less successful one for a country. Some of these factors, such as market price trends at the time of the discoveries, cannot be influenced by governments. The key lesson for governments is therefore that key decision-makers must work together flawlessly and have a thorough understanding of the milestones and conditions for progress toward an FID. This is needed to develop a negotiation strategy based on realistic outlooks, manage public expectations, and engage constructively with private operators. Annex 4 describes the key phases of LNG projects, which are generally considered to be among the most complex in the oil and gas industry, as well as success stories and lessons learned in the industry from over 50 years of LNG project development and implementation.

45. *Managing outlook and expectations for extractives-derived benefits for long-term sustainable fiscal performance.* Unrealistic government outlooks and public expectations generally result in delays in FID (in Mozambique, the first FID was initially contemplated for 2013 but remains pending) and skyrocketing budget deficits (as in Mozambique, where production is still years away, and Ghana, a new deep offshore producer since December 2010) due to premature investments in non-petroleum sectors and public infrastructures, unaffordable rises in public wages, uneconomic strategic investments (such as new refineries), and subsidies. Importantly, Ghana benefitted from substantial TA and enacted a detailed petroleum revenue management law following good practices. However, it overestimated the ramping up of petroleum revenues and ended up spending too quickly and committing too early, resulting in excessive debt. It is therefore very important to understand the timing of oil and gas project developments and ramping up of petroleum revenues. Until an FID is implemented, the focus must be on negotiation, strengthening institutions, and stakeholders' engagement.

46. *Obtaining technical, legal, fiscal, marketing and project financing expertise at the earliest stage possible to facilitate achievement of FID.* During negotiations, government decision-makers must have a thorough understanding of the socioeconomic and fiscal impacts of the technical concept, as well as the technical, legal, marketing, and project financing agreements they will be required to clear. In new producing countries, this generally requires the recruitment of international third-party expertise. This impact analysis must be conducted early in the process to avoid cases where governments refuse to move forward with a concept after its detailed

engineering is finalized and both the sales contracts and the capital costs are ready to be engaged for its execution (e.g., Arzew GL3Z in Algeria, Abadi FLNG in Indonesia), or cases where they may want to renege on other commitments made to operators. This would negatively affect not only petroleum-related developments but also any private sector investments being contemplated in a country.

47. *Enforcing legal and regulatory framework and enhancing governance to avoid "resource curse".* When the FID is implemented, the focus should switch to the preparation and enactment of a petroleum revenue management law, the design of a prudent fiscal rules and fiscal path, and the development of petroleum funds. As is the case for any resource-rich country, Senegal will also be running the risk of a "resource curse" that could negatively affect the country's economic performance, bring fragility, and make the country vulnerable to violent conflicts. Unless effectively managed, the sector development could lead to a "paradox of plenty" rather than growth, shared prosperity, and poverty reduction. Political decision-making rooted in good governance principles of transparency and accountability will be needed to make the extractive resources of the country a blessing and not a curse.

48. *Promoting citizen engagement and open communications platform throughout the life-cycle of oil and gas projects to ensure inclusive development.* During negotiation and throughout the life of the development, sustainable oil and gas project management also requires the strengthening of an information platform at both the local and the national level to set realistic expectations among citizens and include the broader population in the development process. For this reason, it is important to carry out participatory communication and stakeholder campaigns in parallel with other proposed activities in order to enhance citizen engagement in the oil and gas sector, harness transparency and accountability in the sector, and promote inclusive development in the country.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

49. Through the newly set-up GES-PETROGAZ housed in MEDER and created by Presidential Decree, the GoSN will execute the proposed TA. It will carry out all activities planned under the authority of MEDER and a high-level Steering Committee, COS-PETROGAZ, through the COS-PETROGAZ Secretariat. The GES-PETROGAZ benefits from the support of the Director of Hydrocarbons in MEDER, who serves as focal point for the proposed World Bank TA in charge of day-to-day coordination and management. All actions taken by the GES-PETROGAZ focal point are dictated by the final approval or decisions made in MEDER and COS-PETROGAZ through its Secretariat. GES-PETROGAZ also benefits from the support of PETROSEN, which provides on a one time basis a procurement specialist, an administrative and financial director, an accountant, and legal and technical experts.

50. The temporary staffing capacity supported by PETROSEN will last until GES-PETROGAZ recruits as part of this TA: (i) an internal auditor and a chief accountant of high technical capacity for the financial management and the reporting requirements; (ii) a procurement specialist to ensure that all activities financed by the project are committed following World Bank procurement guidelines; and (iii) an assistant tasked with providing administrative assistance to the whole team. Such transfer of responsibilities for the management of the proposed TA will require obtaining approval from MEDER and COS-PETROGAZ as well as a review and non-objection from the World Bank. The GES-PETROGAZ constitutes an opportunity to build the capacity of the MEDER and its Hydrocarbons Department. Both through the temporary arrangements which will rely on

PETROSEN and through long-term arrangements, the administrative (financial management and procurement), as well as the technical capacity of the MEDER will be strengthened.

51. To ensure smooth project implementation, a Project Manual will be developed to articulate how the operations planned under the proposed project will be undertaken by GES-PETROGAZ. In particular, the Manual will outline implementation arrangements, project costs and parallel arrangements, disbursement, financial management, procurement arrangements, internal controls, etc. The World Bank team (based in Washington and Senegal) will provide technical support during implementation, monitor operational progress, and provide fiduciary oversight and clearances.

B. Results Monitoring and Evaluation

52. The overall Monitoring and Evaluation (M&E) responsibility rests with GES-PETROGAZ complemented by close World Bank supervision. A Results Framework and Monitoring matrix tracking inputs, outputs, and outcomes bas been developed for the proposed TA along with key performance indicators and milestones (Annex 1). Where applicable, gender-disaggregated data will be included and examined during the M&E process. More specifically, the objectives of the M&E of this project include: (i) ensuring the efficiency of project activities; (ii) providing accurate and timely information to help management make the right decisions; (iii) providing accurate and timely information needed to adjust or modify activities in relation to the evolution of the context during project implementation; (iv) ensuring transparency; and (v) improving project management. Strengthening client capacity for implementation and conduct M&E in the oil and gas sector as an integral part of the project will also enable the relevant institutions to keep track of environmental and social safeguards implementation and compliance for future oil and gas development projects.

53. The M&E team of GES-PETROGAZ will be responsible for the overall M&E process, including data collection and reporting, and will produce monthly, quarterly, and annual project activity reports, including procurement and financial summary reports, to the World Bank as well as the COS-PETROGAZ secretariat. Bi-annual reviews, the first one of which must take place six months following effectiveness, should provide detailed analysis of implementation progress toward achieving the project development objectives and include evaluations of financial management and post-review procurement aspects.

54. Key milestones in the results monitoring and evaluation process will include the following:

a. **Status Reports**: With inputs from the supervising ministries and COS-PETROGAZ, GES-PETROGAZ will prepare status reports on the implementation of the project activities. These reports must be submitted to the World Bank on a bi-annual basis. The goal of status reporting is to ensure timely support and feedback from the GoSN on the activities planned under this TA. These reports will also include the status of the PDO level indicators as well as intermediate indicators contained in the Results Framework (Annex 1) where applicable.
b. **Completion Report**: With inputs from the supervising ministries and COS-PETROGAZ, GES-PETROGAZ will prepare a completion report within six months of project closing date to ensure that the objectives outlined in the Project Appraisal Document are duly achieved and that there is a plan for sustainable continuation.
c. **Financial Statements**: GES-PETROGAZ is required to prepare financial statements and interim financial reports that reflect the operations, resources, and expenditures related to the activities detailed in the

Project Appraisal Document. Periodic independent auditing of financial statements may be required as needed.

C. Sustainability

55. From the outset, the GoSN has demonstrated strong commitment and ownership of the proposed TA, with the President of Senegal being the prime advocate for the need to enhance the country's institutional capacities to negotiate oil and gas project developments. In addition to having the support of the President, the project is built on existing governance and oversight structures, including COS-PETROGAZ, its secretariat, and GES, which was created as part of the government's engagement to a sound and methodical management of oil and gas resources.

56. Institutional sustainability will be enhanced through the capacity building activities (Component C) of the TA which will seek to strengthen key government agencies capacities to implement new functions linked to the oil and gas sectors. Financial sustainability will be enhanced through this TA, which will support the Government's ability to attract and secure additional private sector investments in oil and gas developments. The proposed technical assistance will build on and scale up the government's engagement to enhance the governance of the extractive sector by complying with the EITI, a global standard for transparency and accountability. EITI's active networks of parliamentarians and ambassadors will be used to seek additional funding for complementary activities such as the creation of an Oil and Gas Institute.

57. Moreover, the GoSN has emphasized that the proposed TA could be followed by additional assistance in order to support the Government beyond the FID and toward project execution and development before production begins.

D. Role of Partners

58. Donor engagement in the oil and gas sector in Senegal has been limited and piecemeal due to the sector's nascent history. The World Bank will use its convening power to help Government of Senegal scale up engagement of other donors in strategic activities with financial and technical support.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

59. Overall risk is rated substantial due to: (i) the history of oil and gas development worldwide[5]; (ii) weak institutional capacity to manage the nascent oil and gas sector in Senegal; (iii) the complexity of mega projects, which depend on several Ministries and their capacity to coordinate effectively; and (iv) the fact that the TA supports a shared resource with Mauritania. However, given the key risk mitigation measures in place, the Government's commitment to ensuring that the oil and gas sector develops successfully and contributes

[5] Based on decades of industry and policy experiences, it appears that the time between the first discoveries and the time of actual oil and gas shipment can be a lot lengthier than what governments might hope. During this lengthy process, many factors and uncertainties, such as international oil and gas price, political stability, etc., can influence the eventual development of the project.

sustainably to the country's overall economic and sustainable growth, and the fact that the two oil and gas developments are led by seasoned operators, the PDO is likely to be achieved and the long-term benefits of the proposed TA outweigh the risks identified. However, the PDO's achievement will be determined by GoSN's take up and use of knowledge and technical opinions offered by the technical assistance.

60. **Macroeconomic risks are rated *substantial***, since many countries with oil and gas prospects have experienced dramatic changes in their current account, saving rate, public spending and investment, shortly after the discoveries are made, while GDP takes time to increase. Mitigating measures have been built into the project design in the form of capacity enhancement.

61. **Political and governance risks are rated as *substantial***. Senegal is one of the most stable countries in Africa, and ranks 64 out of 176 on the Corruption Perception Index 2016 (Transparency International, 2016). However, political sensitivity and potential local conflict of interests associated with the recent oil and gas discoveries may pose certain challenges for smooth project implementation. In addition to managing expectations related to economic benefits derived from oil and gas production, in particular the management of the Tortue reservoir, which straddles the Senegal Northern boundary with Mauritania, could present a particular challenge as the two countries have a history of cooperation, but also of confrontation over natural resources. Identifying potential sources of grievances or governance weaknesses early on prior to the generation of oil or gas revenues can contribute to mitigating conflicts and improving resource revenue allocations down the line. The GoSN is aware of these risks at the early stage of exploration. Mitigating measures for potential political and governance issues have been built into the project design in the form of strict coordination mechanisms and include COS-PETROGAZ, the high-level Steering Committee headed by the President assisted by key members from the cabinet.

62. **Institutional capacity for implementation and sustainability risks are *substantial***. Responsibilities for project implementation falls under GES-PETROGAZ, which is newly formed within MERED and thus has no previous experience of executing similar activities. To ensure quality execution from the outset, GES-PETROGAZ will use PETROSEN's human capacity (including procurement specialists, financial management experts and accountants, and upstream oil and gas specialized lawyers and engineers) until dedicated staff can be mobilized as long term GES-PETROGAZ employees. The MERED's Director of Hydrocarbons acting as focal point with the World Bank will provide periodic reports to both MERED and the COS-PETROGAZ secretariat. In addition, a Project Manual will be required to articulate how the planned activities will be undertaken by GES-PETROGAZ. The World Bank task team will provide technical support during implementation, monitor operational progress, and provide fiduciary oversight and clearances. Since the institutional architecture for sector management is new, different agencies and their branches such as COS-PETROGAZ Permanent Secretariat, GES-PETROGAZ and PETROSEN are likely to compete for financial resources and decision-making in the initial phases of project implementation.

63. **Fiduciary risks are *substantial*.** While PETROSEN has a good record in implementing projects, including World Bank financed projects, GES-PETROGAZ does not yet have a dedicated fiduciary staff. This risk is mitigated through robust interim and capacity transfer arrangements.

64. **Procurement risks are *high*.** The country has no experience in this kind of project even if it has a refinery, and therefore there is no experience in the kind of studies foreseen under this new project. The project will be implemented under the coordination of the DH (from the MEDER), with technical bodies in particular GES-PETROGAZ. These arrangements are currently benefitting from the support of PETROSEN's procurement unit

which is familiar with the World Bank procurement guidelines and consultant guidelines, both dated in January 2011 and updated in July 2014, as well as with the Senegal procurement regulations. This unit has competencies in procurement transactions in the oil sector. However, due to the procurement of specific consulting services that are required under the project, there are some risks, as mentioned below. In addition, this project is subject to the use of the World Bank New Procurement Framework (the NPF) and its subsequent regulations, in particular the World Bank "Procurement Regulations for Borrowers under Investment Project Financing – Goods, Works, Non-consulting Services and Consulting Services", dated July 1, 2016 ("the Procurement Regulations"). This project will also be the first time for the project stakeholders to use these Procurement Regulations, which will bring additional risks.

65. The risks that have been identified include: (i) insufficient knowledge on the side of the stakeholders in the procurement required for the particular and highly specialized advisory services with high technical, economic, and legal contents; (ii) the technical staff involved in project preparation and implementation, may not easily have the ability, neither to make the appropriate linkages between procurement and the project objectives, nor to provide with adequate inputs in procurement documents and in procurement decisions, which may also lead to poor contract monitoring; and (iii) occurrence of eventual delays and their impacts on the procurement process, the approval of contracts, and contract management/execution due to the possibility of external influence because of the specificity and the sensitivity of the project. Based on the above, the risks mitigation measures have been identified and are summarized in the "appraisal summary", with detailed description in "Annex 2: Implementation Arrangements" of this document.

66. **Environmental and social risks are *substantial***. The TA itself will not have major environmental and social impacts. However, it does have eventual implications for addressing the environmental and social impacts related to oil and gas development. The Master Plan for Oil and Gas Development will ensure that broad environmental and social risks in the sector are addressed and an assessment is commissioned to examine the readiness of the Senegalese safeguards related regulatory framework to deal with current oil and gas development projects.

67. **Stakeholders related risks are *substantial***. While the primary direct beneficiaries of the proposed project are government industries, it involves a broad body of stakeholders ranging from private oil and gas operators to civil society and local community members, who may have diverse interpretations, expectations, levels of interest in the proposed project. To mitigate risks from stakeholders as well as to engage them throughout the project's life cycle, an information and communication campaign will be carried out as one of the project component to inform citizens early on of: (i) the steps required to develop an oil and gas and LNG project; (ii) the possibility of an extended period before production can commence and revenues can flow; and (iii) the possible impacts from the project in order to mitigate undue expectations.

68. **Other risks linked to the oil and gas development projects (technical) themselves are *substantial***.

69. **Exploration & Production (E&P) risks are *moderate*.** While oil and gas exploration is by nature a risky activity until production begins and sometime even after, the risks related to SNE development are rated as moderate.

a. **Resource Risks are *low***. The appraisal campaign developed for SNE demonstrates good productivity potential, which generally implies low production costs. However, the reservoirs are deep and complex,

and their production will likely require horizontal wells with multiple perforations. These risks will be mitigated when the future production wells are tested over a period of time by the operator as needed to "de-risk" the production profiles and recoverability of the resource. The appraisal campaign developed for GTA is not yet finalized but has already demonstrated that there should be substantially more gas than what is needed for the first phase of GTA LNG development.

b. **Economic risks are *moderate to substantial***. Because of the deep offshore location of GTA, the costs of its development could be substantially higher than expected if the long-term productivity of the wells is lower than expected and the number of producing wells is higher than currently anticipated. These risks is currently mitigated by the record low prevailing offshore drilling and construction prices. While there is no indication that such prices should experience any substantial rebound for now, this could occur in the form of future increases in oil and gas prices. In the same context, a seamless process will be needed from SNE project definition to its execution to keep development project of SNE's scale at project costs and within schedule. However, this risk is lower than for GTA since the development remains simpler. Sensitivity studies of the project economics and government revenues to oil and gas prices and capital expenditures are summarized in the Economic Analysis section and Annex 8. They highlight the good robustness of the projects and their estimated breakeven prices and how the risks are fairly shared between the investors and the government.

c. **Reputational risks are *substantial.*** The risk that the oil and gas development projects do not progress as expected towards a FID or that they face delays would negatively impact the reputation of the World Bank. Success will depend on how the GoSN takes up and uses the knowledge and opinions offered by the technical assistance. Component D is likely to contribute to mitigating these risks, in addition to close monitoring of project progress and perceptions in Senegal.

d. **Coordination risks with Mauritania are *substantial*.** A similar technical assistance is under preparation for Mauritania, yet both countries are choosing to develop activities separately but in a coordinated manner. There are indeed risks that disagreements over the opinions resulting from the third party advice financed by the TA would arise. For example, the technical assistance for the reservoir studies and related production studies would present some added difficulties should Mauritania choose a different scope for its technical assistance in comparison with Senegal. To reduce the risks of this happening the team will consider the design of a possible solution to manage potential disagreements (third party experts, or other solutions). However, the team recommends that the nature and content of the possible technical differences should be assessed before devising a conflict resolution / solution mechanism.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

70. The future economic and financial benefits of SNE and GTA cannot be attributed to the proposed World Bank TA, nor can they be quantified since too many external factors would have to be considered. The economic analysis for the proposed TA can only be conducted on the basis of "with TA vs. without TA" considerations. In this context, the main benefits of the proposed TA are due to the fact Senegal is new to world-scale oil and gas developments, such as SNE and GTA, which will represent the largest private investments ever made in the

country. The economic benefits of the project would thus derive from improved decision-making with respect to the development of the gas reserves. It is not possible to quantify the increased likelihood that an optimal decision will be reached as a result of this project, nor to quantify the economic benefits that would accrue from such a decision as there are too many unknowns at this stage in terms of the quantity and quality of the reserves, the costs of the various technology choices, and the international price of oil and gas.

71. However, experience from other natural resource extraction projects indicates that there are a number of ways in which the economy may be affected by an LNG project. The construction phase may generate substantial direct employment, but much of this will be of skilled labor, which has to be imported (this is especially true for an off-shore project). The construction phase is of limited duration, and the temporary injection of demand this brings about will not generate long-term jobs in the local economy. Although the operational phase of the project would be expected to last for many years, LNG production is highly capital intensive and generates few permanent direct jobs. The construction and operation of large-scale plants requires other inputs, some of which can be provided by the local economy. Many of these are in the service sector (transport, catering, etc.) and have the potential to create substantial indirect employment opportunities. Although many of these jobs do not demand high skill levels, there is usually a premium for workers who are particularly well-qualified in their particular sector. Economies with shortages of such workers often see a rapid increase in wages for the best qualified, leading to higher wage differentials within occupations.

72. In addition to these direct and indirect demand effects, there will be induced effects as the impact of increased wages and employment creates higher consumption. Where there are bottlenecks in local supply, imports of such goods are likely to increase. House prices too will come under pressure from both expatriate contract workers and local employment created by the rapid build-up of the hydrocarbons sector. Where the gas discoveries are sufficiently substantial for the Government to decide to divert some supply to domestic production (for power generation or other industrial uses), further important impacts will be felt. Both power and local industry would require some construction along with its associated local demand. The creation of a gas-to-power link should also result in increased power supply, thus reducing the cost of outages and reliance on heavy fuel oil (HFO). The use of domestically produced gas in the power generation sector not only reduces pollution from combustion but can also provide some reduction in risks from volatility in international oil prices.

73. Another channel through which gas production will impact the economy is fiscal revenue flowing from the gas producers. The Government will have a number of options on how to use this additional tax revenue, ranging from saving the revenue in a resource fund, spending some or all of the revenue, or distributing the revenue through tax reductions or welfare payments. The uncertainty over the magnitude of the future revenue stream combined with the likelihood that it will vary substantially over time as a result of variation in production over time, progressive variation in the Government' share in the PSC profits in relation to levels of production, variation in international oil and gas prices, and variation in CT payments means that the Government will have to make an outline plan and then gradually adjust it over time as circumstances change. The needs of the country for infrastructure investment to raise productivity and for social investment in health and education suggest that these will be priority areas for the first years of hydrocarbon revenues.

74. While a financial analysis of the proposed TA would not be relevant, the analysis developed in annex 8 is meant to provide a preliminary understanding of the broad range of revenues that GoSN could expect from the development of SNE and GTA discoveries. It is important to underline that these calculations are not meant to reflect the operators or government views, but to confirm that the oil and gas project developments happening

off shore Senegal have the potential to be transformational for the country, hence the rationale for the proposed World Bank engagement.

B. Technical

75. The proposed TA builds on several decades of World Bank assistance in the extractive industries in Africa, as well as on the success stories and lessons learnt from decades of Industry practice (see annex 7).

76. Since the TA is predominantly meant to support government capacity to drive negotiations toward final investment decisions. It is based on a thorough analysis of the key milestones of oil and gas, and LNG project developments, with a focus on what is the responsibility of Governments during such negotiations. The proposed technical assistance has been designed to provide GoS with all the support needed to timely review and clear the various studies and agreements to be developed by the private operators, while avoiding any duplication of work done by the operators since this would not only bring no value, but could be costly and time consuming. The detailed terms of references prepared to tender the activities financed under this TA provide a clear definition of the work that needs to be done by the set of consultants who will be supporting government efforts to negotiate. There are also no duplication of work in the various consultancies planned under this project.

77. The training activities will be based on an institutional diagnostic, and will be tailored based on existing capacity and future industry needs. The oil and gas operators will be closely associated to the diagnostic and the design of the training program, since there are ideally positioned to define future industry needs and will be themselves developing substantial effort to build capacity in the nascent oil and gas sector.

78. Stakeholder's engagement strategy and the communication campaign are built on best available practices.

C. Financial Management

79. The objective of the FM assessment was to determine whether GES-PETROGAZ has acceptable financial management arrangements in place that satisfy the World Bank's Operation Policy/Bank Procedure (OP/BP) 10.00. These arrangements would ensure that the implementing entity: (i) uses project funds only for the intended purposes in an efficient and economical way; (ii) prepares accurate and reliable accounts as well as timely periodic financial reports; (iii) safeguards assets of the project; and (iv) has acceptable auditing arrangements. The FM assessment was carried out in accordance with requirements under OP/BP 10.00 and financial management manual for World Bank investment project financing operations, issued on February 4, 2015 and effective from March 1, 2010.

80. A quick assessment revealed that the financial management capacity of the GES-PETROGAZ to implement this project was weak. The FM system had the following capacity constraints: (i) lack of adequate FM staff; (ii) weak internal control; and(iii) lack of an adequate accounting and reporting system. As a result, GES-PETROGAZ will be required to: (i) set up an acceptable FM arrangement including the development of the project financial and administrative manual; (ii) recruit an accountant with qualification and experience satisfactory to the World Bank; and (iii) set up an adequate accounting and reporting system.

81. The conclusion of the assessment is that the financial management arrangements in GES-PETROGAZ are

not adequate and do not meet the World Bank's minimum requirements under OP/BP10.00. The overall risk for the project is rated Substantial. To mitigate the risk posed by the inadequacy of the financial management arrangements in GES PETROGAS, it has been agreed that the project will be managed during a transition phase by PETROSEN. PETROSEN has strong financial arrangement in place, even if it has no experience in managing a World Bank-funded project. The PETROSEN Financial management system is adequate to handle the project's activities until GES-PETROGAZ mobilizes capacity acceptable to the World Bank: (a) The FM team includes, a Financial Director, and four (4) accountants; (b) the existing FM team and the internal auditor have qualification and required experience to manage the FM activities; (d) the existing administrative and financial manual of procedures is adequate; (e) the accounting system is operational and allows a segregate accounting for the project activities; and (f) unqualified opinions were issued on financial statements of the 2013, 2014 and 2015 for PETROSEN. To compensate the lack of experience in managing World Bank funded project, the World Bank FM staff will provide quick support and brief the team on World Bank financial management requirements.

D. Procurement

82. Procurement for the proposed project will be carried out in accordance with the World Bank's "Procurement Regulation for IPF Borrowers: Procurement in Investment Financing Projects for Goods, Works, Non-Consulting Services and Consulting Services" published by the World Bank on July 1, 2016.The project will be implemented under the responsibility of the DH, with support from technical bodies in particular GES-PETROGAZ and currently benefitting from the support from PETROSEN's procurement unit. The implementation team should include technical specialists, including a procurement specialist who will be appointed under Terms of Reference (ToR) satisfactory to IDA.

83. PETROSEN will support the DH and GES-PETROGAZ in handling procurement activities in line with World Bank New Procurement Framework (the NPF) and the Project Procurement Strategy for Development (PPSD). The project implementation is currently benefiting from PETROSEN's procurement unit which is familiar with World Bank procurement guidelines and consultant guidelines, both dated in January 2011 and updated in July 2014, as well as with the Senegal procurement regulations, but not with the Procurement Regulations, dated July 2016. This unit has competencies in procurement transactions in the oil sector. However, with the high technical level of the project and its sensitivity, the stakeholders may face some challenges that constitute the risks currently and summarized in the "Key Risks" section of this document.

84. The risk mitigation measures that are included as part of the project activities, are summarized below and detailed in "Annex 2: Implementation Arrangements" of this document. They include:

(i) ensuring: (a) that a qualified procurement specialist proficient in World Bank-funded projects is appointed (Note: proficiency under The World Bank Procurement Regulations will be a plus); and (b) technical experts specialized in each technical area that is relevant for the project execution are mobilized within COS-PETROGAZ and provide inputs as needed for the review and development of all relevant procurement documents and procurement decisions as well as during contract management/execution.
(ii) ensuring that: (a) the procurement activities including contract management/execution are fully covered in the Project Manual and available/known to all relevant staff; and (b) particularly, in case of delays in contracts approval, such delayed approvals are closely monitored; and
(iii) ensuring that a contract monitoring system is established and enforced.

E. Social (including Safeguards)

85. The proposed TA precedes the preparation of feasibility and environmental and social studies, and final investments decisions are not anticipated to take place in the short to medium term, thus exerting no environmental and social safeguards related risks to the communities or to the country at large. However, the TA has eventual implications for environmental and social impacts and thus has an Environmental Assessment (EA) rating of Category B. To take preventive measures, the (ToR) for the Master Plan for Oil and Gas Development will ensure that the plan addresses broad environmental and social risks in the sector. Once the Master Plan is developed, the Government plans to prepare a Strategic Environmental and Social Assessment of the oil and gas sector in Senegal. In addition, to prepare the country and the GES-PETROGAZ for future oil and gas development projects, an assessment will also be commissioned to examine the readiness of the Senegalese safeguards related to the regulatory framework applicable to oil and gas development projects. Finally, World Bank staff will work with the Government to provide the Government with legal and technical advice on good international practice regarding environmental and social management in the oil and gas sector.

F. Environment (including Safeguards)

86. The same arrangements apply from the above (Social).

G. World Bank Grievance Redress

87. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit *http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service*. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

VII. RESULTS FRAMEWORK AND MONITORING

Results Framework
COUNTRY : Senegal
Supporting Gas Project Negotiations and Enhancing Institutional Capacities

Project Development Objectives

Support the government's capacity to drive negotiations towards final investments decisions and lay the foundations for the gas sector's contributions to the economy through enhanced legal and regulatory framework and capacity building.

Project Development Objective Indicators

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Development concept for Grand Tortue and SNE determined		Yes/No	N	Y	Once	Status Reports; Completion Report	GES-PETROGAZ
Description: Development concept proposed by the private operator is validated by the Government, and eventually determined by the private operator and the Government.							
Name: Unitization agreement for the Grand Tortue reservoir developed		Yes/No	N	Y	Once	Status Reports; Completion Report	GES-PETROGAZ

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Description: Unitization agreement for jointly developing the Grand Tortue reservoir with Mauritania is developed by the Government using technical expertise provided by international experts.							
Name: Oil and gas policy and strategy developed		Yes/No	N	Y	Once	Status Reports; Completion Report	GES-PETROGAZ
Description: Oil and gas policy and strategy developed by the Government using technical expertise provided by international experts.							
Name: Master plan for oil and gas development formulated		Yes/No	N	Y	Once	Status Reports; Completion Report	GES-PETROGAZ
Description: Master plan for oil and gas development in the country formulated by the Government.							
Name: Institutional diagnostic conducted and results publicly disseminated		Yes/No	N	Y	Once	Status Reports; Completion Report	GES-PETROGAZ
Description: Institutional diagnostic of key ministries and PETROSEN conducted by international experts recruited by the Government, with findings of the diagnostic being publicly available.							
Name: Communications strategy and roadmap for government agencies		Yes/No	N	Y	Once	Status Reports; Completion Report	GES-PETROGAZ

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
developed and implemented							
Description: Communications strategy and implementation roadmap for the Government developed by international experts recruited by the Government, and the strategy as well as roadmap applied by the Government as one of the stakeholder engagement tools.							

Intermediate Results Indicators

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Intergovernmental cooperation agreement developed and cleared		Yes/No	N	Y	Once	Status Reports; Completion Report	GES-PETROGAZ
Description: Intergovernmental cooperation agreement for joint development of Grand Tortue reservoir with Mauritania developed by the Government using technical expertise provided by international experts, and the final agreement approved by the Government.							

Name: Unitized delineation and estimation of the transnational gas resource area produced		Yes/No	N	Y	Once	Status Reports; Completion Report	GES-PETROGAZ
Description: Unitized delineation and estimation of the transnational gas resource area regarding the Grand Tortue reservoir produced by international experts recruited by the Government.							

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: SNE and Grand Tortue marketing agreements developed		Number	0.00	2.00	Once	Status Reports; Completion Report	GES-PETROGAZ
Description: SNE and Grand Tortue marketing agreements developed by international experts recruited by the Government.							
Name: Financing structure and sources of funds for National Oil Corp's share of oil and gas development identified		Yes/No	N	Y	Once	Status Reports; Completion Report	GES-PETROGAZ
Description: Financing structure and sources of funds for National Oil Corp's share of oil and gas development identified by international experts recruited by the Government.							
Name: Petroleum accounting review conducted		Yes/No	N	Y	Once	Status Reports; Completion Report	GES-PETROGAZ
Description: Petroleum accounting review conducted by experts recruited by the Government.							
Name: Instrumental staff members recruited to fulfill technical and fiduciary capacities		Number	0.00	5.00	Once	Status Reports; Completion Report	GES-PETROGAZ

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Description: Ad-hoc advisor(s) on oil and gas development, procurement specialist and accountant recruited by the GES-PETROGAZ to support the technical and fiduciary capacities of MEDER, COS-PETROGAZ and PETROSEN.							
Name: Assessment on the current existing communications options/mechanisms and institutional capacity regarding communications conducted		Yes/No	N	Y	Once	Status Reports; Completion Report	GES-PETROGAZ
Description: Assessment on the current existing communications options/mechanisms and institutional capacity regarding communications in key ministries conducted by experts recruited by the Government.							
Name: Survey of citizens conducted with summary of findings publicly disclosed		Number	0.00	6.00	Annual	Status Reports; Completion Report; Survey Reports	GES-PETROGAZ
Separate focus group discussions for female citizens conducted		Number	0.00	12.00	Bi-annual	Status Reports; Completion Report; Focus Group Reports	GES-PETROGAZ
Description: Communications and citizen engagement experts recruited by the Government develop methodology, conduct citizen engagement surveys, and publicly disclose findings of the survey.							
Name: Training sessions conducted on institutional		Number	0.00	15.00	Once	Status Reports; Completion	GES-PETROGAZ

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
capacity building						Report; Training Reports	
High level training sessions conducted for oil and gas sector decision-makers including ministers and parliamentarians		Number	0.00	5.00	Once	Status Reports; Completion Report; Training Reports	GES-PETROGAZ
In-depth training sessions conducted for oil and gas engineers, economists, and lawyers in PETROSEN, GES-PETROGAZ and Ministries involved in future oil and gas project negotiation and execution		Number	0.00	5.00	Once	Status Reports; Completion Report; Training Reports	GES-PETROGAZ
Training sessions conducted on implementation of the communications strategy and engagement campaign in the oil and gas sector		Number	0.00	5.00	Once	Status Reports; Completion Report; Training Reports	GES-PETROGAZ

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Description: Company recruited by the Government that specializes in providing trainings in the extractives industry conduct tailored trainings to build institutional capacities in key ministries and agencies.							
Name: Number of participants to the training sessions on institutional capacity building		Number	0.00	100.00	Once	Status Reports; Completion Report; Training Reports	GES-PETROGAZ
Number of Ministers participated in the training sessions on oil and gas development and negotiations		Number	0.00	5.00	Once	Status Reports; Completion Report; Training Reports	GES-PETROGAZ
Number of Parliamentarians participated in the training sessions on oil and gas development and negotiations		Number	0.00	30.00			
Number of female Parliamentarians participated in the training sessions on oil and gas development and negotiations		Number	0.00	12.00			
Number of oil and gas engineers, economists, and lawyers participated		Number	0.00	30.00	Once	Status Reports; Completion Report; Training Reports	GES-PETROGAZ

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
in the trainings based on industry needs and subject to a preliminary capacity audit							
Number of participants to the trainings on implementation of the communications strategy and engagement campaign in the oil and gas sector		Number	0.00	35.00	Once	Status Reports; Completion Report; Training Reports	GES-PETROGAZ

Description: Total number of participants in the tailored trainings provided by the company recruited by the Government that specializes in conducting trainings in the extractives industry, as well as in trainings provided by communications and citizen engagement experts recruited by the Government.

Target Values

Project Development Objective Indicators

Indicator Name	Baseline	End Target
Development concept for Grand Tortue and SNE determined	N	Y
Unitization agreement for the Grand Tortue reservoir developed	N	Y
Oil and gas policy and strategy developed	N	Y
Master plan for oil and gas development formulated	N	Y
Institutional diagnostic conducted and results publicly disseminated	N	Y
Communications strategy and roadmap for government agencies developed and implemented	N	Y

Intermediate Results Indicators

Indicator Name	Baseline	End Target
Intergovernmental cooperation agreement developed and cleared	N	Y
Unitized delineation and estimation of the transnational gas resource area produced	N	Y
SNE and Grand Tortue marketing agreements developed	0.00	2.00
Financing structure and sources of funds for National Oil Corp’s share of oil and gas	N	Y

Indicator Name	Baseline	End Target
development identified		
Petroleum accounting review conducted	N	Y
Instrumental staff members recruited to fulfill technical and fiduciary capacities	0.00	5.00
Assessment on the current existing communications options/mechanisms and institutional capacity regarding communications conducted	N	Y
Survey of citizens conducted with summary of findings publicly disclosed	0.00	6.00
Separate focus group discussions for female citizens conducted	0.00	12.00
Training sessions conducted on institutional capacity building	0.00	15.00
High level training sessions conducted for oil and gas sector decision-makers including ministers and parliamentarians	0.00	5.00
In-depth training sessions conducted for oil and gas engineers, economists, and lawyers in PETROSEN, GES-PETROGAZ and Ministries involved in future oil and gas project negotiation and execution	0.00	5.00
Training sessions conducted on implementation of the communications strategy and engagement campaign in the oil and gas sector	0.00	5.00
Number of participants to the training sessions on institutional capacity building	0.00	100.00
Number of Ministers participated in the training sessions on oil and gas development and negotiations	0.00	5.00
Number of Parliamentarians participated in the training sessions on oil and gas development	0.00	30.00

Indicator Name	Baseline	End Target
and negotiations		
Number of female Parliamentarians participated in the training sessions on oil and gas development and negotiations	0.00	12.00
Number of oil and gas engineers, economists, and lawyers participated in the trainings based on industry needs and subject to a preliminary capacity audit	0.00	30.00
Number of participants to the trainings on implementation of the communications strategy and engagement campaign in the oil and gas sector	0.00	35.00

ANNEX 1: DETAILED PROJECT DESCRIPTION

COUNTRY : Senegal
Supporting Gas Project Negotiations and Enhancing Institutional Capacities

1. The proposed TA has five components (Component A – Support for hydrocarbon project negotiations; Component B – Enhancement of the strategic and policy framework; Component C – Institutional diagnostic and capacity building; Component D – Stakeholders engagement campaign; and Component E – Project management and coordination), which will be implemented during a five year timeframe. During the first 18 months, implementation will focus on the most urgent activities, for which ToR have already been completed (Component A - Support for hydrocarbon project negotiations; Component D – Stakeholders engagement campaign and Component E – project management coordination). From mid-term, all other activities will (Component B – Enhancement of the strategic and policy framework, and Component C – Institutional diagnostic and capacity building) start implementation.

2. This annex provides a description of the activities, which will be implemented in the first 18 months.

3. **Component A – Support for hydrocarbon project negotiations**. There is no typical timeframe for the negotiation of an LNG project. Based on industry experience, the time elapsing between the first discoveries and actual shipment can take a few years or a few decades. While there are factors that Government cannot influence, many negotiations have been lengthier than what was initially anticipated because of a lack of capacity to make informed decisions in a timely manner. Importantly, the decisions made through the adoption of a project concept developed by private operators are irreversible in most respects and must be fully understood by the Government at an early stage in the negotiations. These decisions define the cost and profitability of the project for all parties as well as the revenues the Government may derive from the project. The choice of a concept may also produce irreversible consequences for gas to domestic power generation, employment opportunities, etc. To avoid facing undesired outcome, this project component aims to support the GoSN by providing it with an understanding of the likelihood of project concepts, as well as their social, economic, and fiscal impacts. This project component thus aims to support GoSN so that key decision-makers can work together flawlessly with a thorough understanding of the milestones and conditions for progress toward an FID.

(a) **Reservoir Engineering**. The negotiations of oil and gas and LNG projects require solid reservoir engineering expertise from the lead operators, and an excellent capacity of the Government to clear operators' requirements in a timely manner. Under the proposed TA, the World Bank will support GoSN efforts to mobilize third party expertise as needed to engage in a timely manner with the operators. The GoSN (through PETROSEN) will be required to form a technical opinion on the cross-border gas resource assessment of Tortue West and Grand Tortue/Ahmeyin, which have been developed by the lead operator. In a like manner, GoS will need to rely on good reservoir engineering capacity to provide clearance on the methodology proposed for delimitating the gas resource that will be subject to a unitization agreement and joint development, as well as the inter-governmental cooperation agreement; and propose amendment if needed. Finally, it will be instrumental for the GoSN to rely on good reservoir engineering capacity to review and clear the unitization agreement in a timely manner.

(b) **LNG Project Engineering.** Under this activity, the project will help GoSN mobilize the expertise needed

to approve the concept for the development of GTA and SNE, future field development plans, and engineering studies. Clearing an LNG concept development can be particularly challenging for governments. While it is the responsibility and expertise of the lead operators to conduct extensive and thorough analytical work, the Governments will need to feel the ownership and fully endorse the concept in order to clear it. When market conditions are challenging, as is currently the case, commercially viable concepts can be limited to low cost options with narrower benefits for host countries than what higher gas market price trends allow. In such instances, it is important for Governments to get world class expertise needed to clear a concept in a timely manner and with the comfort needed to reassure stakeholders it is the best for all parties. This is all the more important for countries, such as Senegal, with a vibrant civil society that needs to be reassured that private sector development is totally aligned with public interests. Under this project activity, the World Bank will also support the GoSN's effort to review all the technical studies, developed by the lead operator to screen potential concepts for gas production, treatment and liquefaction and identify the optimal concept for the Grand Tortue/Ahmeyin development. Such studies could potentially offer amendments to the proposed concept for Grand Tortue/Ahmeyin gas liquefaction project including the gas pipelines for the supply of Senegal and Mauritania domestic markets. Finally, the World Bank will support the GoSN's effort to review all other technical work needed for the clearance by the Senegalese authorities and PETROSEN of the studies (pre-FEED, FEED) and agreements needed for a Final Decision on the project concept.

(c) **Legal, fiscal, and regulatory framework.** Under this project activity, the project will help the GoSN mobilize the legal and fiscal expertise needed to progress toward FID for both SNE and GTA. The World Bank will assist GoSN so that it can ensure the finalization and clearance of the Intergovernmental Cooperation Agreement between Senegal and Mauritania as well as the principles of the Unitization Agreement. To engage constructively and proactively with the operators towards an FID, the GoSN will also benefit from legal and fiscal advice on the LNG project structure so as to clarify whether the LNG facilities are within the limits of the PSC's or outside these limits. Given the size of the investments that need to be engaged for the liquefaction, it is essential to ensure that the operator can have a full visibility and the assurance needed to make their investments. In the context of the oil and gas and LNG development, GoSN might also need to develop and adopt in a timely manner additional laws, regulations and agreements, inter- alia operating agreements, financing agreements and marketing agreements. Finally, the World Bank will support GoSN efforts to assess the possible major legal risks which could affect PETROSEN and the Republic of Senegal as part of the new oil and gas development.

(d) **Project financing.** This activity will expedite the GoSN efforts to assess the project financing structure of the upstream and liquefaction facility as well as the underlying project financing principles that would apply for the various project' components (field development, pipelines and liquefaction facilities). It will also support the GoSN efforts to evaluate the potential impact of different financing options for development project, based on the main technical choices to be made regarding the liquefaction facilities. The GoSN will also need to calculate its revenue share (i.e. LNG share plus taxation on profit) based on the various potential technical schemes for similar LNG sale profiles and prices assumptions and to get specialized advice on the financing of the National Company's share in the project, both for the field and upstream facilities as well as for the LNG facilities.

(e) **Gas and LNG Marketing.** Under this activity, the World Bank will support GoS effort to be attuned to world gas and LNG markets. Support will also be provided to ensure that the GoSN can benefit from a

thorough understanding of LNG marketing strategies that could apply to the Grand Tortue/Ahmeyin LNG project (one single seller or different sellers; one single market or a variety of markets; split between long and short term; a split between F.O.B and CIF, etc.), and how the Government's and PETROSEN's LNG shares (resulting from the production sharing contract) could be marketed. Finally, marketing advisors would help GoSN assess options for domestic use of gas (power generation, fertilizer, etc).

4. **Component C – Institutional diagnostic and capacity building.** Senegal is a brand-new actor in the oil and gas industry and does not yet have experience in engaging with oil and gas sector operators on the various agreements needed for FIDs. While the immediate objective of this TA is to support the GoSN to progress towards negotiations of SNE and GTA, at a higher level, it seeks to build in-house capacity for the Government to sustain long term development in the oil and gas sector. Through this component, the proposed project aims to identify the needs for capacity building, develop tailored training programs, and support the Government's effort to mobilize instrumental ad hoc expertise:

(a) **Institutional diagnostic**: This activity is meant to provide a detailed analysis of the operations and internal policies and procedures of Government institutions involved in oil and gas exploration and production benchmarked against international good practices. The targeted institutions will include relevant line Ministries (Energy, Economy, Finance, Transport, Infrastructure, and Environment), as well as PETROSEN. The diagnostic will contribute to short- to medium-term training and organization and staffing strategies for public institutions involved in the development of oil and gas. It will also include staffing and human resources retention considerations.

(b) **Training**: This activity is meant to provide high-level training to oil and gas decision-makers (COS-PETROGAZ, line Ministers, PETROSEN, and parliamentarians), as well as in-depth training to the staff of PETROSEN, GES-PETROGAZ, and Ministries directly involved in project negotiation and their future execution.

- High level training aims to facilitate the decision-making process on legal provisions that would be needed to supplement the Petroleum Code, the adoption of an ICA, the ratification of a unitization agreement, the clearance of concepts for oil and gas developments, etc. Study visits to LNG production sites similar to those that could be developed in Senegal could also be offered to a small targeted audience under this activity.
- In-depth training will be based on industry needs and subject to a preliminary capacity audit, which will ensure that trainees have the capacity to absorb the proposed training. The training will be delivered after the capacity audit is completed, and the training program will be tailored for oil and gas engineers, economists, and lawyers.

(c) **Instrumental Staffing:** This activity is meant to support the Government's effort to mobilize additional expertise in petroleum engineering, LNG project development, oil and gas economics, project finance, and the oil and gas fiscal and legal framework. Experts will be recruited as consultants and predominantly support COS-PETROGAZ, the Ministry of Energy, and PETROSEN.

5. **Component D – Stakeholders engagement campaign**: A lack of planned and effective communications has the potential to negatively impact the development of oil and gas resources and its contributions to the country's economic growth, social and environmental development. Therefore, the design and implementation

of a communications strategy and campaign is an essential element of ensuring the economic, social and environmental sustainability of oil and gas development projects in Senegal. The importance of effective communications with civil society, the media and citizens became clear in the early stages of project development since the Sangomar and Grand Tortue discoveries. In the absence of a coherent communications strategy and stakeholder engagement plan, the GoSN found itself in a reactive position with regards to the media and civil society's concerns. This included a long period of negative articles in the country's media, which stemmed from corruption allegations surrounding oil and gas governance. Therefore, an effective communications strategy and campaign is needed to engage with all relevant stakeholders from citizens, to civil society, as well as the public and private sector, who will be involved in the different stages of oil and gas development projects in Senegal. In addition, the nature of the oil and gas resources (off-shore reservoirs for both oil and gas resources, and shared gas resources with Mauritania), as well as how they will be developed by the operators and national companies offers a set of complex challenges and opportunities in terms of economic, social and environmental development as well as governance frameworks. This component will be implemented in close coordination with the private sector.

6. Under this project component, the project will support GoSN's efforts to work with key stakeholders such as the Presidency, COS-PETROGAZ, the MEDER, PETROSEN, investors and the wide public with the development of a communications and engagement strategy and campaign in order to engage effectively and sustainably with the key stakeholders on issues relating to oil and gas development projects in SNE and Grand Tortue. To this end, the World Bank will help the GoSN develop:

(a) An audit of current communications options and mechanisms and institutional capacities needed to communicate, inform, and engage with key target audiences across relevant government agencies, including the Presidency, COS-PETROGAZ, the MEDER, and PETROSEN.

(b) A needs assessment outlining priority communications mechanisms and institutional capacities that will need to be put in place across, as well as within, relevant government actors.

(c) A communications strategy and implementation roadmap based on a stakeholders mapping meant to identify key audiences for GoSN communication around oil and gas, as well as a survey of key stakeholders and target audiences' opinions, perceptions, interests and communication preferences around oil and gas development issues.

(d) A stakeholders engagement campaign to support the development of an information and engagement campaign, based on the communication strategy, which will inform and engage a critical mass of citizens and civil society in addition to other relevant actors, including researchers, parliamentarians, media, etc. on oil and gas development issues in Senegal, both pre- and post-FID.

(e) Capacity-building for oil and gas sector development communications through training program for key GoSN staff who will play a critical role in the implementation of the communication strategy and engagement campaign.

7. **Component E – Project management and coordination.** During the first 18 months of the project, the World Bank will support the Government's effort to mobilize the fiduciary expertise needed for GES-PETROGAZ, update PETROSEN's operation manual, and develop an operation manual for GES-PETROGAZ.

ANNEX 2: IMPLEMENTATION ARRANGEMENTS

COUNTRY : Senegal
Supporting Gas Project Negotiations and Enhancing Institutional Capacities

Project Institutional and Implementation Arrangements

1. The project's institutional and implementation arrangements are described in Section IV of this project document.

Financial Management

2. The project's financial management arrangements will consist of the following elements.

3. **Internal Control and Internal Auditing arrangements:**

a. **Internal Control arrangements**. The PETROSEN existing manual of financial and administrative procedures is adequate, for the transition period. However, it should will be updated in order to (a) Clarify roles and responsibilities of all stakeholders and (b) Give clear description of budget monitoring and reporting process. In addition, GES-PETROGAZ should adopt a project manual of financial and administrative procedures that: (i) Clearly defines FM procedures; (ii) Gives a clear description of operations documentation; (iii) Provides a clear description of the internal control systems that will be used by the project; (vi) Maintains an appropriate safeguard of the assets and funds.

b. **Internal Auditing arrangements**. Depending on the level of residual risks, other arrangements to strengthen the internal audit may be required, and the PETROSEN internal auditor may cover the project activities.

4. **Accounting Arrangements**. PETROSEN has a multi-entities computerized accounting system which is adequate to take into account project activities. The GES-PETROGAZ will set up an adequate accounting and reporting system acceptable to the World Bank. The current accounting standards in use in Senegal for ongoing World Bank-financed projects will be applicable. SYSCOA is the assigned accounting system in West African Francophone countries. Project accounts will be maintained on an accrual basis, supported with appropriate records and procedures to track commitments and to safeguard assets. Annual financial statements will be prepared by implementing in compliance with SYSCOA standards

5. **Budgeting Arrangements.** The project coordination unit will prepare an annual budget based on agreed annual work program and annual procurement plan. The budget will be adopted by the COS before the beginning of the year and its execution will be monitored on a quarterly basis. Annual draft budgets will be submitted for the World Bank's non-objection. Periodic reports of budget monitoring and variance analysis will be prepared by the FM team. More details are provided in the Manual.

6. **Financial Reporting Arrangements.** GES-PETROGAZ will prepare quarterly Interim Financial Report (IFRs) for the project in form and content satisfactory to the World Bank. These IFRs will be submitted to the World Bank within 45 days after the end of the quarter to which they relate. PETROSEN will prepare and agree with the World Bank on the format of the IFRs by negotiations. GES-PETROGAZ will also prepare Project' Financial Statements in compliance with SYSCOA and World Bank requirements.

7. **External Auditing Arrangements**. The Financing Agreement will require the submission of Audited Financial Statements for the project to IDA within six months after the end of each fiscal year end. The audit report should reflect all the activities of the project. An external auditor with qualifications satisfactory to the World Bank will be appointed to conduct annual audits of the project financial statements. Audit reports are due within six months following the end of the year. The first audit will include special audit opinion of expenditures occurred during the transition period.

8. The following actions need to be taken in order to enhance the financial management arrangements for the Project.

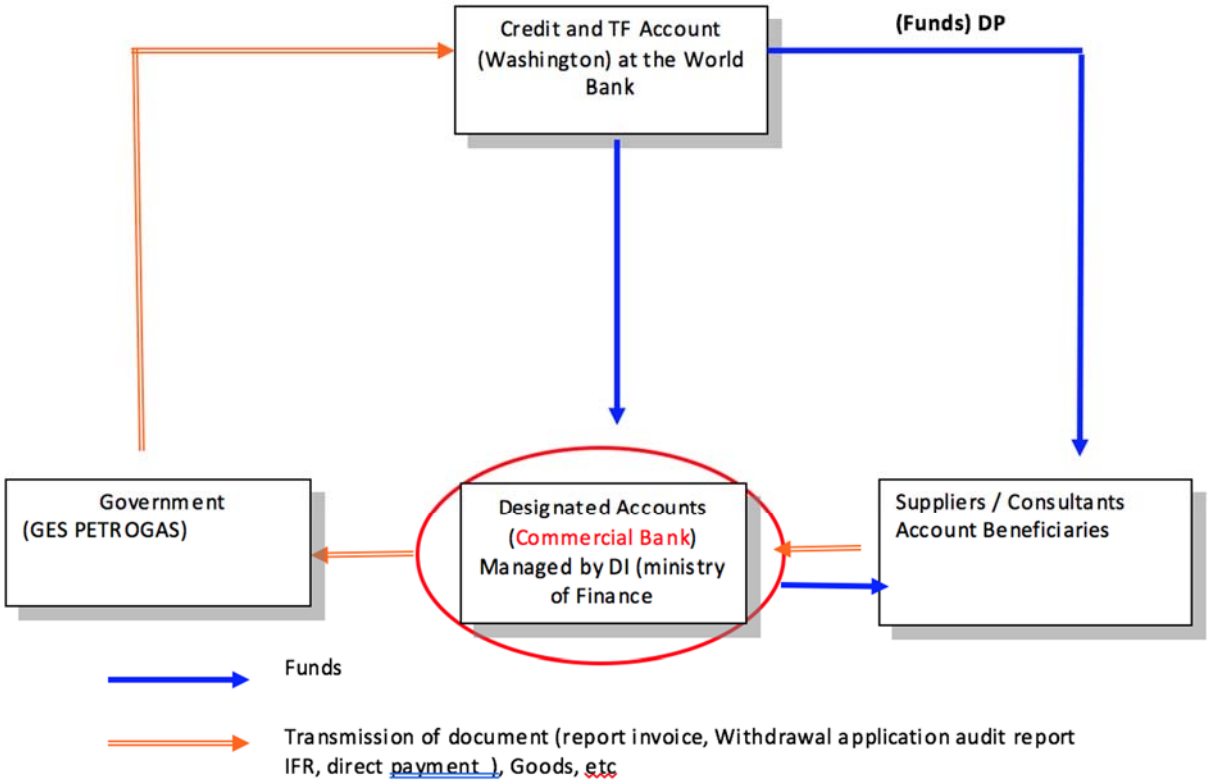
Table 2.1: Financial Management Action Plan

	Action	Date due by	Responsible
1	Revise the project manual Recruitment of an accountant with experience and qualification satisfactory to the Association	Not later than six months after effectiveness	GES-PETROGAZ/PETROSEN
2	Selection of the auditor	Not later than six months after effectiveness	MEFP/PETROSEN

Disbursements

9. The following disbursement methods may be used by the project: reimbursement, advance, direct payment and special commitment as specified in the Disbursement Letter and in compliance with the World Bank Disbursement Guidelines for Projects, dated February, 2017. Disbursements will be transactions-based whereas withdrawal applications will be supported with Statement of Expenditures (SOE). A Designated Account (DA) will be opened in a commercial bank acceptable to the Association to facilitate payment for eligible expenditures. The DA will be managed according to the disbursement procedures described in the manual of administrative and financial procedures in compliance with the Disbursement Letter. The DA would be managed by the Beneficiary, in coordination with PETROSEN first, and thereafter with GES-PETROGAZ. The allocation of the DA will cover approximately four months of expenditures. The funds flow arrangements for the project are described in the Funds Flow Chart below.

Figure 2.1 Funds Flow Chart



10. The summary disbursement table is as follows:

Category	Amount financed by IDA US$	% financed by IDA
Goods, non-consulting services, consultants' services, Incremental Operating Costs and Training under the Project	29,000,000	100%
Total	29,000,000	100%

Procurement

11. The project implementation will be the responsibility of the GES-PETROGAZ, under the coordination of the Direction des Infrastructures of the MEDER. Because the sensitivity of the project, stemming from the very high expectations from all stakeholders in the country (the Government including the public administration

entities, the political parties, the civil society, and the private sector, the project implementation arrangement is under of the oversight of the Minister of MEDER and it benefits from the support of the highest authority in the country.

12. The procurement activities for the proposed project will be managed by the procurement unit of PETROSEN which will received the support and training needed for efficient procurement. Given the highly specialized nature of the consulting companies, which will be recruited to support project negotiation, it is important that the technical expertise needed for the procurement and supervision of these contracts are available as needed and work flawlessly with the procurement experts. These arrangements and mandatory responsibilities will be outlined in the Project Manual which will be made available/known to the staff. Through this manual, the project implementation stakeholders will ensure that (i) the procurement activities including procurement preparation, procurement decision making, contract approvals and contract execution are fully covered; and (ii) a contract monitoring system is in place to deliver on a timely manner.

13. So the country engagement is total and the oversight is enforced. Despite the current risks with some lack of experience in procurement and contract management in the specific area of this project, the expectations are that the different entities involved in the implementation will make efforts to perform in their work and to deliver towards the timely achievement of the project objectives.

Key procurement risks / characteristics identified

14. **Procurement arrangements** (based on the project procurement strategy for development): Procurement for the proposed Project will be carried out in accordance with the World Bank's " Procurement Regulation for IPF Borrowers: Procurement in Investment Financing Projects for Goods, Works, Non-Consulting Services and Consulting Services" published by the World Bank in July 2016.The project will be implemented under the responsibility of DH, with support from technical bodies in particular GES-PETROGAZ and currently benefitting from the support from PETROSEN's procurement unit. The implementation team should include technical specialists, including a procurement specialist who will be appointed under ToR satisfactory to IDA. In addition, "Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants", dated October 15, 2006 and revised in January 2011 and as of July 1, 2016 will apply.

15. **Risks identified under the project**: PETROSEN will support the DH and GES-PETROGAZ in handling procurement activities in line with World Bank New Procurement Framework (the NPF), the Project Procurement Strategy for Development (PPSD), as well as the subsequent regulations, in particular the World Bank "Procurement Regulations for Investment Project Financing – Goods, Works, Non-consulting Services and Consulting Services", dated July 2016 ("the Procurement Regulations"). The project implementation is currently benefiting from PETROSEN's procurement unit which is familiar with World Bank procurement guidelines and consultant guidelines, both dated in January 2011 and updated in July 2014, as well as with the Senegal procurement regulations, but not with the Procurement Regulations, dated July 2016. This unit has competencies in procurement transactions in the oil sector. However, with the high technical level of the project and its sensitivity, the stakeholders may face some challenges that constitute the risks currently identified under the project. These risks include:

i. insufficient knowledge on the side of the stakeholders in the procurement of specific consulting services financed under the TA, since these services are highly specialized advisory services, with high technical,

economical, and legal content. GES-PETROGAZ being newly set-up, may need some time before being proficient in procurement (procurement planning, procurement activities, procurement transactions, and contracts management);

ii. the technical staff involved in the project preparation and implementation, may not easily have the ability, neither to make the appropriate linkages between procurement and the project objectives, nor to provide with adequate inputs in procurement documents and in procurement decisions, which may also lead to poor contract monitoring; and

iii. occurrence of eventual delays and their impacts on the procurement process, the approval of contracts, and contract management/execution due to the possibility of any external influence because of the specificity and the sensitivity of the project; this may delay the [project implementation and, in this case, impact the project objectives.

16. The procurement risk associated with the Project is rated as *High*.

Risks mitigation measures

17. The risk mitigation measures that are included as part of the project activities, include:

i. ensuring:
   (a) that a qualified procurement specialist proficient in World Bank-funded projects is appointed (proficiency under The World Bank Procurement Regulations will be a plus); and
   (b) Experts in all relevant technical areas needed for successful project implementation provide technical inputs to GES-PETROGAZ as needed to develop relevant procurement review and documents, make procurement decisions and manage/execute contracts

ii. ensuring that:
   (a) the procurement activities including procurement documents preparation, procurement decision making, contract approvals and contract execution are fully covered in the Project Manual and is available/known to all staff involved; and
   (b) particularly, in case of delays in contracts approval, such delayed approvals are be closely fast tracked;

iii. ensuring that: a contract monitoring system is established and enforced.

Summary of the procurement arrangements for the activities within the project[6]

[6] Note: these arrangements will include the preferred arrangement for low value, low risk activities: they include mostly additional needs for: office equipment; information, communication and technology devices; limited number of vehicles, etc …, all for the overall functioning of the entities that are in charge of the project management during implementation. Based on their low value and their availability on the national market, they will be procured in most cases, through Request for proposals, using national approach. In exceptional cases that may occur, Request for proposals using international approach would be explored.

Activity (Contract) title, description and category	**Estimated Cost US$**	**Bank oversight**	**Procurement Approach/ Competition** National/ International Open/Limited/Direct/Sole source	**Selection methods** Pre/post Qualification SPD (RFP/RFB) Competitive Dialogue Framework Agreement E-Reverse auction QCBS/QBS etc. Negotiation Best and Final Offer Value Engineering	**Evaluation Method** Rated Criteria (VfM) Lowest Evaluated Cost
Recruitment of a consulting company specialized in reservoir engineering, reserves certification and unitization.	1 million	Prior	International	QCBS	Rated Criteria
Recruitment of a company specialized in deep sea gas projects and in LNG projects	3.5 million	Prior	International	QCBS	Rated Criteria
Recruitment of a consulting company specialized in legal and fiscal matters in the oil and gas industry	3.5 million	Prior	International	QCBS	Rated Criteria
Recruitment of a Consulting company specialized in gas upstream financing and gas liquefaction project financing	1 million	Prior	International	QCBS	Rated Criteria
Recruitment of a Consulting company specialized in natural gas and marketing analysis and marketing of LNG worldwide	1 million	Prior	International	QCBS	Rated Criteria
Recruitment of ad-hoc advisors for the Ministry of Energy specialized in LNG development	1 million	Prior	International	QCBS	Rated Criteria
Recruitment of ad-hoc advisors for the COS specialized in LNG development	1 million	Prior	International	QCBS	Rated Criteria
Recruitment of a company in charge of developing an oil and gas master plan	0.5 million	Prior	International	QCBS	Rated Criteria

Recruitment of a consulting company specialized in oil and gas (including LNG) in charge of (i) developing an institutional needs assessment; (ii) developing a business strategy and staffing plan for Petrosen; (iii) developing staffing plans and strategies for key Ministries ; and (iv) delivering training program	5 million	Prior	International	QCBS	Rated Criteria
Recruitment of a company in charge of developing the communication strategy	1 million	Prior	International	QCBS	Rated Criteria
Recruitment of a Procurement Specialist	0.15	Prior	National	Individual Consultant	Negotiation
Recruitment of a Consultant in charge of developing the project implementation manual	0.05	Prior	National	Individual Consultant	Negotiation
Audit	0.05	Prior	National	QCBS	QCBS

Environmental and Social (including safeguards)

18. The project's environmental and social aspects are described in Section IV of this project document.

Monitoring and Evaluation

19. The project's monitoring and evaluation aspects are described in Section IV of this project document.

Role of Partners (if applicable)

20. The project's involvement of partners is described in Section IV of this project document.

ANNEX 3: IMPLEMENTATION SUPPORT PLAN

COUNTRY : Senegal
Supporting Gas Project Negotiations and Enhancing Institutional Capacities

Strategy and Approach for Implementation Support

1. The strategy for implementation support has been developed based on the design of the technical assistance and its risk profile. It aims at providing "Supporting Gas Project Negotiations and Enhancing Institutional Capacities" project team with the technical support needed to ensure safeguards and fiduciary compliance with World Bank guidelines, as well as to carry out all risk mitigation measures defined during project preparation. More specifically, the strategy includes the following pillars:

- **Technical:** the World Bank supervision team will work in close collaboration with GES-PETROGAZ, PETROSEN, and CO-PETROGAS and their international consultants to ensure that the support provided through this TA meet industry and international standards. Monthly conference calls including the World Bank team, the GES-PETROGAZ, and cognizant representatives from relevant contractors will take place to identify issues at the strategic and Team level and help resolve them. The project team shall not interfere with the technical day to day decisions of the contractors of the project under any circumstances.

- **Environmental and Social Safeguards:** the World Bank team will ensure quality supervision of the master plan financed under the project and stands ready to change the risk rating from B to A of the project in the unlikely event a FID is prepared during the life of the TA.

- **Procurement:** the World Bank team will provide sufficient support to the Team to ensure timely review, evaluation and submission of key bidding documents. Support will also include necessary training and workshop provided to the Team staff in charge of procurement prior to the beginning of project implementation. In addition, oil and gas and LNG specialists will be part of the implementation support process and will help ensure a rapid clearance process of procurement documents by providing a technical support to the project team.

- **Financial Management:** Supervision of project financial management will be performed applying a risk based approach. The supervision will review project financial management systems including but not limited to accounting, reporting and internal control. Based on the outcome of the FM risk assessment, the following implementation support plan is proposed. The objective of the implementation support plan is to ensure GES-PETROGAZ maintains a satisfactory financial management system throughout the life of the project.

FM Activity	Frequency
Desk reviews	
Interim financial reports review	Quarterly
Audit report review of the program	Annually
Review of other relevant information such as interim internal control systems reports.	Continuous as they become available
On site visits	
Review of overall operation of the FM system	Annual for Implementation Support Mission
Monitoring of actions taken on issues highlighted in audit reports, auditors' management letters, internal audit and other reports	As needed
Transaction reviews (if needed)	As needed
Capacity building support	
FM training sessions	During implementation and as and when needed.

- **Information Sharing:** A monitoring and evaluation specialist will ensure follow up on the Result Framework, track relevant information required to provide periodic updates on lessons learnt from project design and implementation and prepare a "lessons learnt" section that can be disclosed as part of the part of the Implementation Support Review.

Implementation Support Plan and Resource Requirements

2. The task team will consist of experts in oil, gas, operations, environment, social, procurement, finance, and economics. Formal supervision and field visits will be carried out at least twice a year.

Time	Focus	Skills Needed	Resource Estimate	Partner Role
First twelve months	Intergovernmental Cooperation Agreement, Unitization agreement, pre-FEED for oil and gas project concepts, Approval by Government of Field Development Plans, Fiduciary oversight Communication and citizen enagement	Project management, Oil and gas legal and fiscal expertise, Oil and gas project engineering expertise, Reservoir engineering Fiduciary experts	12 staff weeks, 12 staff weeks, 12 staff weeks 6 staff weeks 12 staff weeks	

		Communication experts	12 staff weeks
12-48 months	Master Plan, Capacity Enhancement FID	Project management, Oil and gas legal and fiscal expertise, Oil and gas project engineering expertise, Reservoir engineering Fiduciary experts Communication experts	12 staff weeks, 12 staff weeks, 12 staff weeks 6 staff weeks 12 staff weeks 12 staff weeks
Other			

ANNEX 4: INTERGOVERNMENTAL COOPERATION AGREEMENT AND INTERNATIONAL UNITIZATION AGREEMENT RELATED TO CROSS-BORDER FIELDS AND INSTALLATIONS

Principles for joint exploitation of cross-border fields and installations between two states

1. Following the discovery of the Tortue gas field, Senegal and Mauritania face the challenge of developing long-term cooperation for the joint appraisal, development, and production of a cross-border field along with their related installations to their mutual benefit and taking into account existing production sharing contracts (PSCs) entered into by each country with their respective investors. The maritime border between the two countries being well delineated and without any pending dispute, there is no need to contemplate a "joint development zone."[7] Along with their respective PSC holders, Senegal and Mauritania are actively trying to draw on international best practices to develop a cooperation agreement and a unitization agreement. Lessons learned in decades of oil and gas cross-border development projects are clear on the merits of a cooperative approach between countries. Where territories are not disputed, this means that part of the solution consists of setting up a unitization agreement, articulating the modalities according to which the joint development will occur, and coordinating how resource development will be conducted by all PSC holders in separate tracts overlying the cross-border reservoirs in conformity with a prior intergovernmental cooperation treaty. Early North Sea bilateral treaties (e.g., the UK/Norway Treaty of 1976 in respect of the Frigg field and the recent 2005 Framework Agreement between those two countries concerning cross-boundary petroleum cooperation) could be used as a starting point for Tortue. Although the Frigg field Treaty and the 2005 Agreement were not designed for Liquefied Natural Gas (LNG) development, seminal agreements offer useful lessons for the Tortue development, which will be one of the very first cases of LNG development conducted on a transnational gas resource.

2. Generally, the principles for governing cooperation between two states with respect to cross-border petroleum reservoirs and fields and their related installations are now provided for under a bilateral framework Intergovernmental Cooperation Agreement (ICA) or Treaty entered into between the two states. The primary internationally recognized principle is that the cross-border reservoirs and fields must be appraised, developed, and produced as a unit under the supervision of the two countries in order not to waste resources and for optimal petroleum recovery. An international Unitization and Unit Operating Agreement (UUOA) prepared in conformity with that ICA is then agreed by all the existing PSC holders concerned by the unit and submitted for approval to the two states. An immediate challenge and therefore priority for Senegal and Mauritania is to develop the foundations for a successful ICA agreed between the two countries. To do so, all parties should thoroughly analyze the specificities of LNG development versus oil or non-LNG gas development and anticipate possible development and installation schemes.

3. When required, amendments to existing PSCs regarding the cross-border project may be agreed upon with the relevant state. Under the ICA, existing PSCs will continue to govern the relationship between either state and its respective PSC holders. However, these are unlikely to adequately address all the relevant issues for a cross-border LNG development and will likely need to be amended or supplemented with additional midstream host government agreements.

Objectives of bilateral Intergovernmental Cooperation Agreement (ICA) or Treaty

[7] By contrast, as a result of a maritime border dispute between Guinea Bissau and Senegal, a joint development zone has been established since 1993 between the two countries for petroleum and fishing activities.

4. The object of an ICA is to provide a framework for the joint appraisal, development, and production of a cross-border project consisting of two main components: (i) a cross-border field subject to unitization; and (ii) installations related to that field (such as pipelines, gas processing plants, and, for the Tortue case, probably a NGL plant and an LNG plant). The field straddling the border must be exploited as a unit by a single operator on both sides of the border. The location of the installations may be in either country, inside or outside the unit area, on the basis of the selected optimum exploitation scheme, and not justified by political considerations. Those installations may also be used for non-unitized fields by third parties under principles to be provided for in the ICA.

5. The ICA generally provides that it does not affect the sovereign rights or the jurisdiction each state has under international law over the continental shelf which pertains to it. All installations on the continental shelf of a state is under the jurisdiction of that state. To facilitate cross-border projects, the two states must use their best efforts to encourage (where possible) common health, safety, and environmental standards. However, each state retains its own taxation rights regarding the activities and production conducted under its jurisdiction. Therefore, the tax regime in effect in a country and the PSCs signed by a given state continue to have effect without any changes subject to appropriate apportionment of the unit production, revenue, costs, and expenses related to the cross-border project. The development plan regarding the exploitation of the cross-border field as a unit and its installations is approved separately by each country in conformity with the ICA, its legislation, regulation, and applicable PSCs.

6. The key objective of the ICA is to foster cooperation between the two countries in order to encourage timely decisions for carrying out the cross-border project and prevent the countries involved from impeding the project, for example by unreasonably withholding authorizations or approvals of activities, plans, programs, or budgets. Moreover, the ICA contains provisions dealing with the exchange of confidential information between the two states, including over available wells and seismic data related to the unit area. To meet that cooperation objective, a joint commission involving the two countries is established. In addition, the ICA signed by the two countries, but not the PSC holders, is generally ratified as a treaty by the two states.

7. The ICA contains a provision requiring PSC holders in both states related to the cross-border project to enter into an UUOA. In case of conflict, the UUOA supersedes existing Joint Operation Agreements (JOA) with specific PSCs, which remain in force. The ICA sets forth an obligation for the two states under the UUOA to provide, at a pre-defined initial date, for their joint approval the estimated cross-border field reserves and their apportionment between the two countries. Possible future redeterminations of such apportionment are also set forth. If both countries do not approve the reserves and their apportionment, the ICA provides for an independent expert determination, which will be binding on all parties. The selection of that expert determination and guidelines for its mandate are established in the ICA under a detailed procedure. The states may decide in the ICA on some basic principles for addressing adjustments regarding production, costs, production sharing, and taxation resulting from reserves and apportionment redeterminations, with more detailed procedures set out in the UUOA. It is agreed that the UUOA to be prepared and signed by the PSC holders must comply with the ICA and must be approved by the two states.

Objectives of the inter-corporation Unitization and Unit Operating Agreement (UUOA)

8. The scope of an UUOA has become better defined taking into account the experience accumulated in unitization throughout the world. While the apportionment of reserves between parties and the process for

subsequent redetermination can be difficult to agree upon in any intra-country unitization given the high stakes, the issue is amplified in cross-border field contexts due to the increased number of stakeholders and the additional geopolitical dimension. It is also made more challenging in the case of LNG development since the investments required are typically substantially larger. Aside from reaching an agreement on the initial apportionment, there are practical issues such as adjustments to production, costs, and taxation that arise following a redetermination that needs to be carefully considered and addressed. These issues arise because even small movements in the apportionment of reserves may lead to a requirement to make substantial (retrospective) adjustments to address any over- or underpayment of costs or over- or under-lifting of hydrocarbons on the basis of the prior apportionment implying also fiscal adjustments. Such adjustments may be effected by cash payments over pre-defined periods, which invariably will have production sharing and tax consequences, or through further adjustments to entitlement to hydrocarbons over a set period of time to adjust for historic over- and under-lifting. Agreeing on appropriate redetermination and adjustment mechanics in the context of an LNG project can be more difficult due to the large amounts of capital expenditures involved in constructing the facility and because the LNG produced will almost certainly be sold under committed long-term contracts. Thus, in the absence of any joint marketing arrangement, any redetermination has the potential to result in PSC holders of one country ceasing to receive a sufficient share of production to meet their delivery obligations, and the PSC holders of the other country having excess volumes that need to be marketed. Typically, unitization agreements include principles for future apportionment and redetermination.

9. Deciding on the correct approach for the pace of apportionment and redetermination is a matter of balancing the need for fairness against time constraints and the cost and disruption of each subsequent redetermination. Ideally, a reasonably accurate apportionment will be agreed before or at the time of the firm investment decision (FID) as this will reduce the chances of a significant redetermination along with sizeable adjustments and associated complications being required at a later date. However, there may be insufficient information at the start of the project prior to the drilling of the development wells to determine the reserves with a sufficient degree of accuracy, or the time it would take to do so may delay commencement of the project. If there is sufficient information to give the respective governments confidence that the initial project (in the event of a phased development plan) will not substantially deplete the field, the first redetermination can potentially be deferred until the time of the second phase of the project (e.g., under the 2015 intra-country unitization agreement for the Rovuma basin in Mozambique).

ANNEX 5: CURRENT PETROLEUM LEGAL, CONTRACTUAL, AND FISCAL REGIME IN SENEGAL IN COMPARISON WITH MAURITANIA

1998 Petroleum Code for upstream (exploration and exploitation) operations

1. The current legal and regulatory framework for upstream petroleum in Senegal of 1998 is relatively up-to-date, concise (71 articles), and globally consistent with the (then) main good practices for designing flexible petroleum acts in developing countries similar to Senegal in terms of petroleum prospection and perspectives when it was promulgated nearly two decades ago. However, this framework should be progressively developed and updated regarding some issues, in particular those of a regulatory nature. The legal framework is mainly based on Law 98-05 of January 8, 1998, known as the Petroleum Code, and its decrees of application (including Decree No. 98-810 of October 6, 1998). The Code deals with upstream activities only (exploration and exploitation, including petroleum processing and transportation of production) regarding petroleum (oil and natural gas), but not with midstream or downstream matters. The Law empowers the Government to enter into upstream petroleum agreements of various types, including concession contracts and production sharing contracts (PSC). The PSC format is a relatively new type of arrangement for the country and since 1998 has become the default scheme used for new upstream petroleum agreements. Since the promulgation of the 1998 Code, around 20 PSCs have been signed, of which 14 are effective as of now. They are based on the model PSC issued by decree. Each PSC must be approved by Presidential Decree and published in the Official Gazette (art. 17 and 34 of the Code). Therefore, all petroleum agreements are now public in Senegal.

2. The 1998 Law was designed to make exploration and exploitation more attractive and to give greater consideration to environmental issues. Exploration has been carried out for a long time in Senegal, leading until 1998 to very small petroleum discoveries, some of them developed onshore, the others non-commercial. Thanks to the continuous promotion efforts of the past decades, MEDER supported by PETROSEN has been able to attract petroleum companies, small at first but recently larger, in particular since the promulgation of the 1998 Law, in the various geographical environments of Senegal: onshore, shallow water, and deep offshore.

3. The Petroleum Code correctly stipulates that the Investment Code is not applicable to the upstream sector, and therefore the benefits and advantages awarded to qualified investors under the Investment Code are not applicable to upstream operations. This stipulation prevents possible uncertainties when both codes are applicable.

Upstream petroleum fiscal regime applicable in Senegal

4. The upstream petroleum fiscal regime is provided for in the Petroleum Code and the general tax legislation of Senegal, in particular the General Tax Code (CGI). The Petroleum Code contains specific tax provisions in its Chapter 7 (art. 41 to 49) dealing with the taxes or contributions applied to upstream activities, either under concession contracts (where the main taxes are the royalty, the corporate tax (CT), and the progressive additional profits tax triggered by a profitability criterion) or PSCs (where the main government revenues are the CT in addition to the Government's share in Profit Petroleum and PETROSEN's participating interest net cash flows). The Petroleum Code provides for some tax exemptions, which have been partially transferred into the CGI since 2012. The Petroleum Code provides that some tax rules may be clarified in a petroleum agreement, including its annexed accounting procedure. This authorization applies (for example) to the rules for tax depreciation, interest deductions, and the specific CT rate applied to a given petroleum agreement, which therefore may differ from

one agreement to another depending on their signing date.

5. A new CGI was enacted at the end of 2012 under Law 2012-32 of December 31, 2012. It contains a small number of short provisions dealing with petroleum activities and enterprises related mostly to specific tax exemptions. However, the CGI does not specifically clarify the determination of the CT taxable base for a PSC holder, nor does it address the specificities of upstream petroleum operations. Experience in other countries has often shown that guidance notes on taxation are highly desirable in order to ensure full consistency between the tax provisions in a Petroleum Code, those in a CGI and, when authorized, those stipulated in a petroleum agreement. One of the objectives of such documents are to identify and address any possible tax inconsistencies or interpretation issues. To that end, it is recommended that a tax review of the upstream tax regime currently applicable in Senegal be conducted, including a review of current petroleum costs accounting and tax returns, thus allowing for the identification possible uncertainties and ensuring in the long run a smooth implementation of the upstream petroleum tax regime and contracts.

Production sharing contract regime applicable in Senegal

6. The rights and obligations of a company (or a group of companies under an unincorporated consortium holding a PSC) conducting petroleum operations within a given exclusive area are defined in the PSC[8] entered into with MEDER and approved by Presidential Decree. The signed PSCs are very close to the model PSC, with the exception (among others) of the clauses dealing with exploration work obligations, cost petroleum ceilings, profit petroleum sharing, and PETROSEN participation. Table 5.1 summarizes the main terms of the PSCs applicable to the promising recent oil and natural gas discoveries under appraisal, namely the 2004 PSC in respect of the deep offshore Sangomar/Rufisque zone and more recently the two PSCs of 2012 in respect of the Saint Louis and Cayar deep offshore blocks, respectively. It should be noted from Table 5.1 that the fiscal terms of the PSCs have become more favorable to the Government over the last decade, in line with an international trend resulting from the global increase in the petroleum price over the 2004–2013 period (with the exception of the 2008–2009 financial crisis). During the exploration phase, several farm-in agreements were signed as part of each PSC by new companies willing to enter into and finance the continuation of petroleum activities as more encouraging subsoil data are becoming available.[9]

7. The PSCs listed in Table 5.1 are all in their exploration phase. Discoveries of potentially commercial oil and gas have been made and are under appraisal. Only conceptual development plans are under preparation.[10] As provided for in the Petroleum Code and the PSC, the contract-holders may apply, when justified, for a "retention period" (3 years for oil and 5 years for natural gas) to extend the exploration phase of a potentially commercial discovery. The exploitation phase of a PSC and the award of the exploitation rights regarding a commercial field starts upon approval by the Government of a comprehensive field development plan, including the plan for any related facilities. The approval of the development plan also includes the approval of a mutually agreed "delivery point" (or points). Such selection has an impact on the scope of the activities performed under the PSC and of

[8] The Petroleum Code also authorizes concession contracts. In Senegal, there is now a concession contract related to a very small gas field entered into around 2000. All new contracts are PSCs. This explains why this annex only describes the PSC contractual regime.
[9] Regarding the Sangomar/Rufisque PSCs, (FAR) farmed out part of its interest in 2014 to Cairn and ConocoPhillips and obtained total work carry obligations of US$196 million for drilling exploration wells. ConocoPhillips sold its interest to Woodside in August 2016. Kosmos just realized (end 2016) a farm-out to BP of part of its interest in six PSCs in Senegal and Mauritania.
[10] Concerning the Tortue project, a BP press release of December 19, 2016 stated that the FEED development plan study is planned in 2017 for a firm investment decision (FID) on the project expected in 2018.

those activities defined as falling outside the PSC regime framework, which may be subject to a different tax regime from the upstream fiscal regime in order to encourage midstream infrastructure, in particular regarding oil and gas processing, LNG plants, and transport activities. The determination of the delivery point is a key decision for gas development projects to be fully assessed by the country.

Comparison with the Mauritanian upstream legal, fiscal, and contractual framework

8. The current legal and regulatory framework applicable to the upstream sector in Mauritania is governed by Law No. 2010-033 of June 20, 2010, as amended by Law No. 2011-044, referred to as the Petroleum Code of Mauritania. This Code also deals with upstream petroleum fiscal issues as well as the General Tax Code, which is also applicable to petroleum activities. This law, enacted 12 years later than the Senegal Petroleum Code, is therefore more up-to-date and detailed.

9. The applicable contractual regime in Mauritania is also the PSC, based on the model PSC issued under Decree No. 286-2011 of November 15, 2011. Mauritania introduced the PSC regime in early 1980s for all its new petroleum contracts. Table 5.2 provides the main terms of the Mauritanian PSCs related to the Tortue project and its possible extensions.

10. While the overall legal, regulatory, fiscal, or contractual structure looks similar between Senegal and Mauritania, either country applying PSCs with a profit petroleum on a before-CT basis and imposing a small participation by a National Oil Company (NOC), there are differences between some provisions, as illustrated in Tables 5.1 and 5.2. In fact, this situation is regularly encountered in any region of the world when comparing the upstream legal, regulatory, contractual, and fiscal provisions applied in two neighboring countries at a given period.

Table 5.1: Main terms of selected PSCs in Senegal

Term	Sangomar & Rufisque PSC	Saint Louis Block PSC, or Cayar Block PSC	Comments
Signing date	July 15, 2004	January 17, 2012	
Partners as of January 2017	Cairn (operator), 40% FAR, 15% ConocoPhilips/Woodside, 35% PETROSEN, 10%/18-20% [*PSC was initially entered into by Hunt Petroleum]*	BP (operator, development), 32.48% Kosmos, (operator, exploration), 32.51% Timis, 25% PETROSEN, 10%/20% [*Initial contractor was Timis; Kosmos farmed in 2014, BP end of 2016*][11]	Initial signatories were respectively Hunt Petroleum and Petro-Timis PETROSEN has an option to increase its paying interest from development Sale to Woodside is pending possible

[11] BP entered into those 2 PSCs in Senegal and 4 PSCs in Mauritania under a farm-in arrangement with Kosmos in December 2016, which is being submitted for approval to the two respective countries. The total consideration for the two-countries farm-ins consists of three components (a cash payment upfront plus carry obligations related to exploration and development) amounting to US$916 million, and a contingent bonus as an overriding production on liquids, which may reach US$2 billion. Source: BP press release of December 19, 2016.

Term	Sangomar & Rufisque PSC	Saint Louis Block PSC, or Cayar Block PSC	Comments
			exercise of pre-emptive rights by partners
PETROSEN special participation rights	Carried during Exploration/appraisal Paying interest from development	Carried during Exploration/appraisal Paying interest from development	
Current Status of Activities	Exploration/appraisal Phase (until 2019). Appraisal in progress	Exploration/appraisal phase Appraisal in progress. Possible 3–5 years retention period	Entering exploitation phase subject to approval of a Field Development Plan
Royalty on production	Not applicable, though there is an implicit royalty under the PSC	Not applicable, though there is an implicit royalty under the PSC	Government receives its share of Profit Petroleum from start-up of production
Cost Petroleum Limit	70% or 75% of PSC production, depending on water depths/WD (< or > 500 m)	75% of PSC production	Same terms for oil and gas (or BOE equivalent) Recoverable costs defined in the PSC Depreciation applies to CAPEX recovery
Profit Petroleum Split before CT basis (on a sliding daily production scale), Government Share	*<500 m WD*: Government Share from 15% (0–25,000 BoE/D tier) … to 40% (over 100,000 BoE/D) [5 tiers] *>500 m WD*: from 15% (0–50,000 BoE/D tier) … to 40% (over 200,000 BoE/D) [5 tiers]	From 35% (0–30,000 BoE/D tier), … to 58% (over 120,000 BoE/D) [5 tiers]	Same terms for oil and gas (in BoE equivalent) Daily production aggregated in the contract area SNE and FAN fields are located in deep offshore and therefore subject to the above 500 m WD terms
CT rate in PSC & CT tax deductions	33%	25%	Tax deductions under CGI and Accounting Procedure of the PSC are applicable
Applicable law and	Senegal Law at all times Stability clause applicable	Senegal Law at all times Stability clause applicable	Stability clause may apply if legislation

Term	Sangomar & Rufisque PSC	Saint Louis Block PSC, or Cayar Block PSC	Comments
Stability clause			and regulations are aggravated

Table 5.2: Main terms of selected PSCs in Mauritania

Term	Block C8 PSC, Block C12 PSC, Or Block C13 PSC	Block C6 PSC (may contain an extension of the C12 oil Lamentin prospect)	Comments
Signing date	April 5, 2012	November 2016	
Partners as of January 2017	Kosmos (operator, exploration), 28% BP (operator, development), 62% State/SMHPM, 10%/14%	Kosmos (operator, exploration), 28% BP (operator, development), 62% State/SMHPM, 10%/14%	
State special participation rights	Carried during exploration/appraisal Paying interest from development		
Current Status of Activities	Exploration/appraisal phase of 10 years. Exploration and Appraisal in progress. Possible 3 (oil)–5 (gas) years retention period.	Starting exploration	Entering exploitation phase subject to approval of a Field Development Plan
Royalty on production	Not applicable, though there is an implicit royalty under the PSC	Terms not yet available	Government receives its share of Profit Petroleum from start-up of production
Cost Petroleum Limit	55% (oil) or 62% (natural gas)		Recoverable costs defined in the PSC per Exploitation Perimeter. No depreciation applicable for cost recovery
Profit Petroleum Split before CT basis (on an R-factor scale per Exploitation	Government Share from 31% (when R-factor < 1) … to 42% (when R-factor > 3) [6 tiers]		Same terms for oil and gas

Term	Block C8 PSC, Block C12 PSC, Or Block C13 PSC	Block C6 PSC (may contain an extension of the C12 oil Lamentin prospect)	Comments
Area), Government Share	*R-factor = Cumulative cash flows/Cumulative exploration and development investments* *R-factor ring-fencing:* determined per exploitation area		
CT rate in PSC & CT tax deductions	Agreed rate of 27%		Depreciation are applicable to CT determination. Accounting Procedure annexed to the PSC
Applicable law and Stability clause	Mauritania Law at all times and principles of international law Stability clause applicable (with the exception of labor, safety, & environment)		Stability clause may apply if legislation and regulations are aggravated

ANNEX 6: APPROACH AND PRINCIPLES FOR PETROLEUM REVENUE MANAGEMENT ADAPTED TO SENEGAL

1. Given the experience and difficulties encountered in many other developing countries that have become oil and gas producers and exporters, Senegal will need to enter into an efficient petroleum revenue management strategy and plan integrating the latest international best practices to mitigate the identified negative effects often observed and to ensure maximum benefits to the nation. However, designing such as plan is not a priority because the ramping up of petroleum revenues is not expected until 2022–2025, following the firm investment decisions (FIDs) to be made by the operators around 2018.

2. In the period between FIDs being made and the start of oil and gas production being effective, Senegal will have sufficient time to prepare a petroleum revenue management law, develop strong fiscal regulations, plan a fiscal path, and design petroleum funds (if appropriate). The priority will be that all government petroleum revenues, including those from PETROSEN[12], are paid into a central bank account and not transferred when received to the annual budget. The annual Finance Budget Law will determine annually the portion of revenues to be allocated to the budget and to PETROSEN. The fund (or funds) may have several purposes and priorities, as is now recognized under best practices worldwide: (i) medium-term stabilization to mitigate the impact of fluctuating oil and gas prices and anticipate the hard realities of not receiving steady annual upstream petroleum revenues for a number of reasons; (ii) prioritized investments in infrastructure, education, and health and in programs designed to promote economic diversification into non-petroleum tradable activities; and (iii) long-term saving purposes.

3. A variety of issues may influence the way national and local governments manage petroleum resources and the reasons why they may fail to produce the expected economic results. Generally speaking, factors preventing an efficient distribution of petroleum revenues may include: (i) weak institutions; (ii) limited capacity to manage windfall resources; (iii) lack of political commitment; (iv) historical ethnic differences; and (v) political or economic considerations, including breakdowns in or malfunctioning fiscal, institutional, or political decentralization processes (among others). However, each country is different, and in particular, each producing region has its own specific cultural, ethnic, political, economic, and environmental dynamics, which play a key role in the way oil or gas revenues are managed and invested.

4. The primary channel through which oil and gas production will impact the economy consists of government revenue from the oil and gas producers, mainly: (i) the Government's share in the profit petroleum under the PSC; (ii) corporation tax (CT) on profits paid by all PSC holders, including PETROSEN; and (iii) PETROSEN's net revenue after CT payments. The Government will have a number of options for how to use those additional petroleum revenue, ranging from saving part of the revenue in one (or several) petroleum funds, spending some or all of the revenue, or distributing part of the revenue through tax reductions or welfare payments. The uncertainty over the magnitude of the future revenue stream combined with the likelihood that it will vary substantially over time because of changing government revenue under PSCs at different stages of production, variation in production over time, and variation in international oil and gas prices means that the Government will have to make an outline plan and then gradually adjust it over time as circumstances change. The country's needs for infrastructure investment to raise productivity and for social investment in health and education suggest that these will be priority areas for the first years of petroleum revenue.

5. An adverse effect has been observed for countries that make large petroleum discoveries, namely the

[12] NOC free cash flows should be paid during the year to the central account, not wait for the distribution of annual dividends.

"Dutch disease" effect, which suggests that the extra wealth generated will lead to an increase in the price of non-tradables (e.g., services) and higher real wages in this sector (plus exchange rate appreciation). The resulting reallocation of labor and capital toward this sector and away from the tradables sector (e.g., manufacturing or agriculture) leads to a decline in output and employment in these sectors. The magnitude of this effect depends on the size of the petroleum resources discovery relative to the rest of the economy. However, Senegal does not have a large manufacturing sector, and present indications of the size of the petroleum resources are such that it is unlikely that such sectoral shifts will be very large.

6. A second consequential effect, usually named the "resource curse," occurs where the advent of large petroleum rents leads to poor economic performance through rent-seeking behavior and corruption and depends on the strength of the country's institutions. Governments with strong institutions through which to control the development of the sector, involve the general public in explaining the likely course of the sector and its associated benefits to the economy, and are transparent about revenue received and deals made are more likely to avoid the negative aspects of natural resource development.

7. A priority for Senegal will be to continue developing transparency, starting with transparency over already fully implemented PSCs and to be continued with transparency over real petroleum revenue. Such transparency under EITI is already underway. The challenge will be to publish petroleum revenue and any related information in a timely manner, well before EITI reports are issued.

ANNEX 7: SUCCESSFUL EXPERIENCES AND LESSONS FROM LNG PROJECTS WORLDWIDE

Key phases in Execution of Oil and Gas and LNG projects

1. There are three key phases in the execution of oil and gas and LNG project: (i) appraisal of reserves and possible resource development methods; (ii) conceptualization and organization of the project with a view to adoption of an FID; and (iii) execution of works and phased production launch.

2. **Appraisal of reserves and possible resource development methods** is a key phase during which operators develop and implement an optimal delineation program to collect all necessary information on the quality and quantity of the resource and develop it at the lowest cost. During this phase, the resources in place are assessed and sharing arrangements between the parties (the State(s) and license holders) are determined. During this phase, it is critical for the Governments to define a vision for the industries they wish to develop locally in order to effectively determine the volumes that should be delivered over the long term to the domestic, regional, and international export markets. Lastly, this phase includes the formulation of a long-term production strategy based on resources and related development costs. This strategy must clearly indicate the duration of the planned production plateau(s) for the domestic market and regional and international export.

3. **Conceptualization and organization of the project** is a demanding and complex phase that seeks to support the final investment decision-making process. This phase involves several parallel activities, including the following:

a. Studies phase, beginning with preliminary studies of the field and liquefaction options, for which the calibration of costs is based on orders of magnitude and statistical benchmarks taken from other projects for an assessment of the development costs with a theoretical reliability of +/-30 percent. This initial studies phase is followed by concept studies that compare various development concepts, traditionally referred to as “preliminary design studies,” as well as screening or pre-FEED studies. Once the development concepts have been compared and a preferred concept has been selected, a pre-project study is conducted, based on assessments and market analyses (known as FEED studies). These studies are then followed by a basic engineering study based on detailed assessments of quotations for the major aspects of the project. Lastly, a detailed engineering study is prepared to provide a more accurate estimate of development costs (+/-10 percent in theory), which will be reviewed for final decision making.

b. Agreements between companies and the host State(s). To enable companies to make an investment decision about an LNG project, the Government must work with them to validate a plan for the optimal development of the resource, agreements on contractual and fiscal terms, provisions added to the PSCs, agreements on support facilities for the project (port, airport, roads, etc.), agreements on the allocation of positions of responsibility among the stakeholders (national and international operators), the manner in which decisions will be made, technical service and support agreements for development operations, and other agreements (professional training, land acquisition, local content, etc.).

c. Agreements on project execution and operations. The parties must also reach agreements on project execution and operating methods, that is, on the selection of a contractual strategy for construction or execution (EPC, EPIC, EPCC, etc.) or a set of project execution subcontracts. Furthermore, agreements

must be concluded with the engineering and construction company/companies, process licensors, and civil engineering and port facility companies. Lastly, the adoption of agreements on the development phase is also necessary.

d. LNG commercialization agreements. Given the size of the investments required for the development of LNG projects, a number of commercial commitments must be in place before an FID can be made. A business strategy ensuring the financial viability of the project must therefore be developed. This strategy must specify the guaranteed exploitation quantities and the flexibility clauses in exploitation agreements as well as the quantities retained for spot purchases. Commercial agreements between partners must also be concluded with a view to specifying the exploitation rights and obligations of each partner, including those for the national oil corporation. Long-term purchasing agreements must also be concluded, as is customary, and maritime transport agreements may have to be signed if the purchase of vessels or long-term freight agreements are required to execute the business strategy. Lastly, certification of the reserves is also generally required for the commercialization of LNG.

e. Financing agreements. The negotiation and conclusion of project financing agreements is the last crucial step prior to final decision making. During negotiation of the financing agreements, the parties will be expected to clarify and agree on the obligations of the participants in the various project phases. This will be especially important, for example, if banks pull out or partners default. Specific financing from the national oil corporation(s) must be secured prior to any investment decision.

4. Once the entire studies phase has been completed and all aforementioned agreements have been negotiated and initialed (agreements between operators and the host State(s), agreements on project execution and operations, LNG commercialization agreements, and financing agreements), an FID can then be made. All of these agreements are often signed simultaneously, having been previously initialed.

5. **Execution of works and launch of production**. Once an investment decision has been made, works may begin. There is a start-up phase, followed by a production ramp-up phase.

a. Execution of works. The development of the field will involve parallel infrastructure construction (port facilities, power plant or grids, airport, etc.), as well as offshore or onshore production, processing, liquefaction, and export facilities, based on the selected concepts.

b. Production launch phase. The start-up phase is critical as it involves the selection and formation of the project's start-up and operating crews. The responsibility for operations is then transferred on a phased basis from the construction crews to the operating crews. Strictly speaking, the start-up phase will be carried out with support from licensors and from companies specializing in providing support services.

c. Production ramp-up phase. Production is ramped up at a gradual rate (for each of the planned trains) in accordance with the adopted production plateau (between 30 to 40 years, for example). An inventory of resources dedicated to the initial project for the reserves being developed is drawn up during production of the initial trains to assist with any potential decision to have one or more additional trains that are either an FLNG train or a conventional, land-based train.

Lessons learned from 50 years of LNG projects execution

6. Time frames for implementing LNG projects vary greatly. The timelines observed from discovery of gas reserves to delivery of the first LNG shipment range from 5 to 7 years (examples: Bontang LNG, Indonesia: 5 years; Camel LNG, Algeria: 6 years; Arun LNG, Indonesia: 7 years) to 35–36 years (examples: Gorgon LNG, Australia: 35 years; NLNG, Nigeria: 36 years). A review of the projects implemented to date shows that the factors that underpin the different implementation timelines are extremely diverse. Some factors are simply beyond the control of producing countries (LNG price trends that are weak and therefore unfavorable to project development). Other factors are endogenous and can therefore be influenced by the countries themselves (putting in place the legal, fiscal, and regulatory conditions necessary for the development of mega projects, capacity to negotiate effectively the full range of agreements between operators and the State, capacity of the national company to finance its share, etc.).

7. **CAMEL LNG, Arzew - Algeria**: In 1958, Elf and Total made the first gas discoveries in Algeria at Hassi R'Mel. The group then proceeded to study the world's first LNG chain, involving gas deliveries earmarked for the United Kingdom and France. The Algerian Liquid Methane Corporation (CAMEL) was established in 1961 to put in train the first LNG export project. In 1962, Algeria became independent. The LNG export project continued to grow with the signing in the same year of LNG purchase agreements with British Gas and Gaz de France. The first shipment of Algerian methane was delivered in September 1964.

8. **Bontang LNG – Indonesia**: Discovered by Huffco in 1972, the field could only be economically viable if large quantities of gas could be liquefied and exported for sale abroad. Given the cost of constructing a liquefaction plant, it was vital to have in place the guarantees that long-term purchase agreements would provide. These agreements were signed in 1973 with Japanese electricity companies. The first trains were commissioned in 1977.

9. **Gorgon LNG – Australia**: Discovered in 1981 by Chevron, the Gorgon field posed a number of significant challenges because of the difficulty in accessing the field, which is located more than 60 kilometers from an island off the coast of Australia. Exploitation of the resource required technology that did not exist at the time of the discovery, and it was extremely difficult for the company to mobilize the specialized workforce required. Nevertheless, the project afforded a number of concrete and substantial benefits even before it was commissioned in 2016, including: expenditure of US$34 billion on local goods and services, 700 contracts executed by Australian companies, and 10,000 direct jobs.

10. **NLNG – Nigeria**: While non-associated gas resources were discovered in 1963, it was not until 1989 that a decision was made to finance their development. NLNG went on to deliver its first LNG shipment in 1999. The LNG project has encountered a number of major problems that have led to significant delays between discovery and commissioning, including the difficulties faced by the Government in defining and adopting a gas utilization strategy, long and difficult negotiations over the adoption of agreements required for the development of the LNG project, inability to finance the contribution of the national oil corporation during the project development phases, and changes in the choice of concept and technologies throughout the execution of the project. Finally, the project was the subject of serious corruption allegations, and a number of engineering and construction companies were effectively penalized by the judicial systems of their countries for paying bribes to win contracts.

11. Any new LNG project will have to be competitive in terms of unit costs (gas production cost plus liquefaction cost) with the other LNG projects under consideration worldwide. Three types of factors have an impact on the competitively and therefore the completion time of an LNG project. These are: (i) purely technical

considerations; (ii) the quality of the legal, fiscal, and regulatory framework; and (iii) the LNG commercialization strategy and the project financing strategy.

12. The technical factors include, in the first instance, the specific characteristics of the fields and reserves. The most decisive factors include well productivity, which is problematic when well output is low (e.g., Gladstone LNG in Australia); gas composition, which can make treatment both complex and costly (e.g., mercury content of Hassi R'Mel in Algeria); and complexity of the gas reservoirs (e.g., East Kalimantan in Indonesia). Secondly, it should be noted that the location of the reserves has a direct impact on ease of access to the resource. Onshore reserves are generally easier to access than deep sea or ultra-deep sea resources. A reservoir that straddles the concessions of two operators in the same country can introduce a degree of complexity. This is even greater when the reservoir straddles two countries. In addition, the topography of the coastline and its bathymetric profile can have a profound impact on the technical and economic feasibility of a concept. For example, if the coast is extremely shallow, the cost of developing a port for gas tankers may be particularly high. Finally, the quality of the gas—in other words its composition (dry or liquid rich gas) and the stability of the composition—as well as the volumes of gas available over the long term are all factors that determine the technical difficulty of exploiting a discovery and, consequently, the time required for its development.

13. The fiscal, legal, and regulatory framework should make it possible for operators to carry out their activities profitably while guaranteeing that the interests of the State are safeguarded. The most important factors that affect the speed of execution of LNG projects include: (i) the capacity of host countries to provide for an acceptable level of progressivity in relation to the revenue and production sharing provisions contained in production sharing agreements; (ii) the gas clauses outlined in the Petroleum Law; (iii) the oil contracts and other implementing decrees (for the production of both raw gas and LNG); (iv) the fiscal structuring of the production project and liquefaction plant, which can influence the concept choices depending on whether or not the upstream or downstream tax regimes are similar; (v) he sharing of costs and financing among different partners and the portage requirements that the national oil corporation may decide to impose; (vi) gas production sharing, which may involve multiple sources and require specific commitments by each party; (vii) sharing of revenue from gas sales, which may be de-linked from physical gas deliveries and revenue in, for example, a unitization plan; and (viii) the quality of relations among partners, including the national oil corporation, in relation to decision-making processes on annual budgets, award of contracts, recruitment, composition of organizational charts, local content development strategy and other strategies, as well as the quality of the relations between stakeholders and the host country (tax disputes, political risks) and the line Ministries (Ministry of Energy and Oil, Ministry of Finance, Ministry of Environment, etc.).

14. Conditions for commercialization and financing are also decisive factors that influence the timeframe for implementing LNG projects. The capacity of a project to benefit from contractual guarantees for LNG exploitation and the formulas that will determine the prices at which the sales will be effected to make the project bankable are other factors that influence project execution rates. Relatively low capital costs (CAPEX) and exploitation costs (OPEX) will facilitate rapid project execution and enhance the capacity of project operators to win the confidence of financiers (banks and others) in the partners and the host country or countries. Finally, the chances of the project being executed promptly are enhanced when the technical and financial capacity of partners is strong and when they are able to provide sufficient share of the required financing. In any event, it must be noted that LNG project financing involves the creation of ad hoc companies to help shift some of the risks to banks after start-up. Indeed, as is the case for all mega projects, LNG projects have specific financing structures that do not allow creditors recourse vis-à-vis stakeholder companies in the project once implementation has begun, except

in specific circumstances or where collateral undertakings exist.

15. A period of several years is needed to assess the technical, economic, and financial performance of an LNG project before it can be deemed a success. Projects such as Arzew 1 (CAMEL) and Skikda 1 and 2 in Algeria, Kenai in Alaska, Bintulu in Malaysia, Brunei in Brunei, Bontang and Arun LNG in Indonesia, Qatargas and Rasgas in Qatar, and Sakhalin in Russia are projects of proven profitability and may all be classified as indisputably successful. For projects such as Sabine Pass and Corpus Christi in the United States, Gorgon, Gladstone, Ichtys, and Prelude in Australia, Satu FLNG in Malaysia, or even Yamal in Russia, a waiting period of at least 10 years will be necessary before they may or may not be deemed successful.

16. A number of lessons may be drawn from projects that have not fulfilled expectations. For example, protracted negotiations and major concept changes have in some cases resulted in failure (example: NLNG in Nigeria, developed by NNPC, Shell, Total, and Eni, as well as Arzew GL3Z in Algeria, developed by Sonatrach). Some failures were undoubtedly due to poor technical choices and technological error (example: Libya LNG, developed by Exxon, and Snovit LNG, developed by Statoil). In some cases, failure was due to the insufficiency of the resource (example: Egypt LNG, developed by EGPC). Finally, a number of projects have had to be suspended as a result of extreme technical, economic, or political circumstances (examples: Stokman, developed by Gazprom, and Abadi in Indonesia, developed by Shell and INPEX). The lessons learned from implementation of these projects show that it is crucially important that governments secure the expertise necessary for building an optimal legal, fiscal, and regulatory framework and that they conduct systematic and detailed negotiations on all the agreements required for LNG development. Special attention must be paid to the choice of development concepts that will be put to tender and the criteria to be followed in selecting an ideal development concept. The expertise of technical, commercial, financial, and legal consultants is vital to this process as many countries experience difficulty in choosing the best candidates and providing the guidance necessary for them to resolve the problems that arise.

ANNEX 8: MAIN RESULTS FROM THE PRELIMINARY ECONOMIC AND FISCAL MODELING FOR THE SNE OIL FIELD CASE AND THE GTA GAS FIELD CASE
(Initial development phase only, Senegal portion of the GTA field)

Objective of the economic and fiscal modeling

1. The main objective of this economic and fiscal modeling is to provide a tentative broad range of magnitude of the annual petroleum revenues profile that could be generated for the GoSN by the exploitation of the potentially commercial SNE oil and GTA gas discoveries. The approach is to simulate the estimated annual petroleum revenues for the GoSN and the profits of the PSC contractor considering a representative probable field case for each discovery and sensitivity to oil and gas prices constant in real US$ (2017) terms over the field production life varying from US$30 to US$90 per barrel for oil and from US$3 to US$9 per MMBtu for gas and LNG, FOB Senegal. Results are expressed in US$ (2017) unless otherwise stated. All fiscal, debt and interest calculations are made in nominal terms and then converted into US$ (2017). To determine representative GoSN revenues, tentative assumptions on financing of development and FLNG CAPEX are selected as interest is recoverable under the PSC and deductible for CT calculations.

Economic results for the stylized SNE oil field case

2. Economic and fiscal modeling was undertaken on a stylized SNE oil field case assuming a cumulative production profile of 600 million bbls over a period of 27 years commencing in 2022, including a 4-year production plateau of in 2023-2026 at 140,000 bpd, followed by a declining production. Development capital expenditures are assumed to be US$8bn (all costs are expressed in US$ (2017)), averaging US$13.3/bbl while average estimated operating costs amount to US$13/bbl. Estimated exploration and appraisal costs, and decommissioning costs are also considered for the modeling. Costs and production are very tentative at this stage, because no cost or production estimates are currently available from the operator as no FID has been taken and no field development plan is available. Therefore, best tentative guesses can only be done at this stage and are subject to revision.

3. The determination of the estimated government petroleum revenues is made in US$ and is modelled taking into account the specific terms of the 2004 Sangomar/Rufisque PSC, applicable to the SNE project located in deep water depths over 500 meters.[13] Details on the PSC terms and the applicable tax regime are provided in Annex 5. The modeled sources of revenues consist namely of the following:

- The government share in the “Profit Petroleum” (equal to the difference between the value of oil production and the “Cost Petroleum” allocated to the contractor for cost recovery purposes) as provided for under the PSC. This share is slightly progressive in relation with a sliding scale of daily field production, starting at 15 percent. No royalty is payable under the PSC terms.
- The CT paid by the contractor (including PETROSEN) on its profits derived from the SNE PSC activities, at a contractual rate of 33 percent stipulated in the PSC.

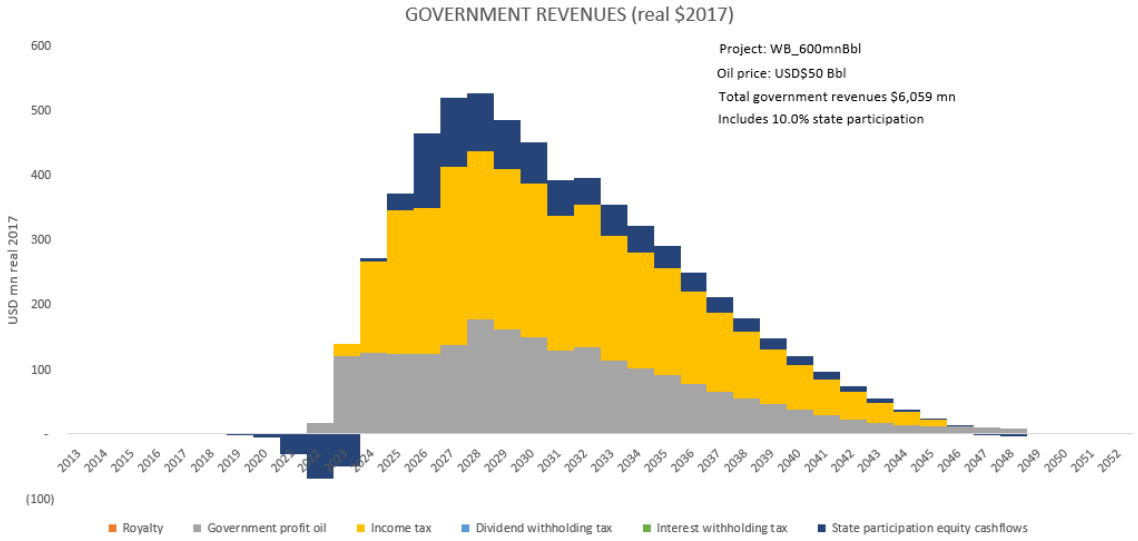
[13] Some simplified assumptions were made at this stage for modeling purposes but not having a material impact on the range of results. The impact of stylized financing on government revenues was modeled (assuming 70% financing of development capex at Libor+3% in real terms). The modeling only considers the direct taxation of profit from the project, and therefore indirect taxes and withholding taxes are not modeled. They may be payable under the Senegal tax regime, subject to tax advice.

- The net revenues resulting from the participation of PETROSEN in the field development and production. A rate of participation of 10 percent is assumed in the base case. As PETROSEN has the right under the Sangomar/Rufisque PSC to increase its participation to 18 percent, a sensitivity to that higher rate was made.

4. The economic and fiscal modeling also determines the average total "government take" (GT) in the undiscounted rent generated from the assumed field case, and the customary economic criteria such as the internal rate of return (IRR), on a pre- or post-tax basis, on a full cycle basis (including exploration and appraisal) or on a post-FID forward basis (excluding exploration and appraisal).

5. Under the low US$50 oil price scenario, the cumulative total GoSN revenues amount to US$6.1 bn ($2017) spread over the production life as displayed in Figure 8.1. While the government share in profit petroleum starts from the commencement of production, effective payments of CT starts a few years later. The results in following Figures and Tables correspond to a PETROSEN participation of 10 percent. Sensitivity results for an 18 percent participation are given below.

Figure 8.1: SNE field case government profile per source of revenues at US$50 per barrel (US$2017)



6. Figure 8.2 illustrates the annual variations of government revenues (total and desegregated per source of revenues) for each of the four price scenarios of US$30, US$50, US$70 and US$90 respectively. Total revenues for the field case over its life vary from US$6.1 bn (at US$50) to US$12.2 bn (at US$70) and US $18.5 (at US$90), as stated in Table 8.1.

7. Table 8.1 displays the amounts of cumulative government revenues under each price scenario and the average annual government revenues for specific periods. Thus, for example the average annual revenues during the first 5 years of production from 2022 to 2026 (including the four years of production plateau) range largely from US$0.2bn to US$1.1 bn when constant prices are US$50 or US$90, all values being undiscounted and expressed in US$ (2017). The average annual revenues are also displayed for the next 5 and 10 years. The estimated average undiscounted government take ranges from 45 to 48 percent in relation to the US$50-90 price

scenarios. Table 8.1 also shows the break-even price for the selected SEN field case corresponding to around US$36/bbl for achieving a 10 percent IOC FID-forward IRR. In this Table, IOC means PSC contractor excluding PETROSEN (named SOC for state-owned company in the Table).

Figure 8.2: SNE field case government revenues profile at $30, $50, $70 and $90 per barrel ($2017)

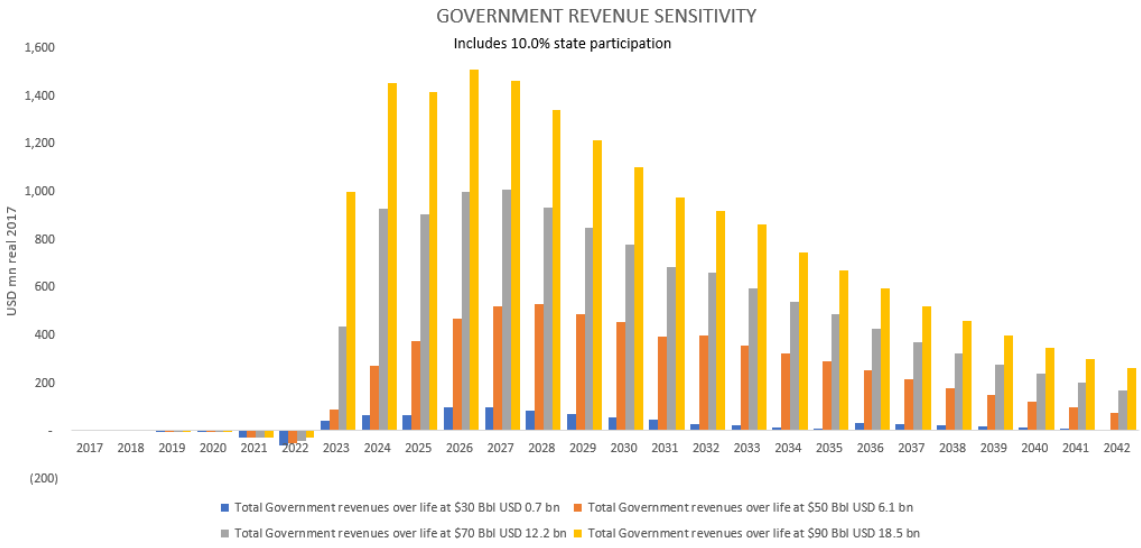


Table 8.1: SNE field case government revenues, IRR and GT at $30, $50, $70 and $90 per barrel ($2017)

Government revenues across a range of oil prices USD mn $2017 unless stated otherwise						
Oil price $ Bbl	USD bbl	30	35.77	50	70	90
Total production up to economic limit	Mn Bbl	572	586	602	617	623
Years of production up to economic limit	years	22	24	27	31	33
Project pre-tax cashflows: FID fwd IRR	% nominal	5.7%	13.0%	28.2%	48.3%	67.7%
IOC equity: FID fwd IRR/ROE	% nominal	n.a	14.2%	33.9%	62.2%	88.6%
IOC lender: FID fwd IRR	% nominal	6.2%	6.5%	6.6%	6.6%	6.6%
IOC equity + lender: FID fwd IRR	% nominal	3.7%	10.0%	20.9%	33.5%	45.4%
State participation equity cashflows: FID fwd IRR/ROE	% nominal	n.a	12.8%	29.6%	54.3%	79.2%
SOC lender: FID fwd IRR	% nominal	6.2%	6.5%	6.6%	6.6%	6.6%
SOC equity + lender FID fwd IRR	% nominal	3.7%	9.3%	19.2%	31.1%	42.5%
Total government revenue over project life	US$ Mn 2017	697	1,917	6,059	12,236	18,485
Average Govt. revenue production year 1 - 5	US$ Mn 2017	40	52	229	644	1,067
Average Govt. revenue production year 6 - 10	US$ Mn 2017	70	136	474	848	1,216
Average Govt. revenue production year 11 - 20	US$ Mn 2017	18	99	237	409	580
Government share	undiscounted	35.9%	37.8%	45.0%	47.5%	48.4%

$35.77 breakeven case (IOC equity + lender IRR = 10%) included for reference

8. Table 8.2 summarizes the main results of a sensitivity study to the SNE development CAPEX increased by +30 percent or decreased by 30 percent versus the SNE field base case, for an oil price of US$50/bbl, indicating the variations of the IRR (pre- and post-tax), the government revenues (cumulative, and per specific periods), and the government share in the rent. When assuming an increase by 30 percent of CAPEX, the field exploitation remains profitable based on usual economic criteria. The impact of the cost overruns is relatively fairly shared

between the respective GoSN and the IOC revenues thru the PSC and corporate tax mechanisms.

Table 8.2: SNE field case. Example of a sensitivity to development capex (+30% and -30%)

Government revenues across a range of Development costs USD mn $2017 unless stated otherwise				
Oil price $ Bbl	USD bbl	50	50	50
Development cost sensitivity	%	130%	100%	70%
Development costs	US$ Mn 2017	10,400	8,000	5,600
Total production up to economic limit	Mn Bbl	602	602	602
Years of production up to economic limit	years	27	27	27
Project pre-tax cashflows: FID fwd IRR	% nominal	18.6%	28.2%	45.5%
IOC equity: FID fwd IRR/ROE	% nominal	23.1%	33.9%	62.2%
IOC lender: FID fwd IRR	% nominal	6.5%	6.6%	6.6%
IOC equity + lender: FID fwd IRR	% nominal	14.3%	20.9%	32.8%
State participation equity cashflows: FID fwd IRR/ROE	% nominal	20.8%	29.6%	51.3%
SOC lender: FID fwd IRR	% nominal	6.5%	6.6%	6.6%
SOC equity + lender FID fwd IRR	% nominal	13.4%	19.2%	29.5%
Total government revenue over project life	US$ Mn 2017	4,533	6,059	7,493
Average Govt. revenue production year 1 - 5	US$ Mn 2017	105	229	391
Average Govt. revenue production year 6 - 10	US$ Mn 2017	355	474	559
Average Govt. revenue production year 11 - 20	US$ Mn 2017	211	237	251
Government share	undiscounted	41.7%	45.0%	46.5%

9. A sensitivity study to the impact of increasing the PETROSEN participation to the maximum contractual 18 percentage rate was made. Under a US$70 price the total government revenues of the SNE field base case are increased from US$12.2 bn to US$13.2 bn. The undiscounted government take is slightly increased to a range of 48-52 percent when prices rise from US$50 to US$90/bbl.

Economic results for the stylized cross-border GTA gas field case (Senegal share only)

10. Similar to the SNE modeling approach, economic and fiscal modeling of GoSN revenues was undertaken on a stylized GTA gas field case, assuming the *GTA limited development and FLNG Option 1 field case* described in the PAD. This case, corresponding, for the time being, to the preferred option of the operator for the initial phase of GTA development, only exploits for LNG exports a small portion of the GTA resources at a pace of 4.6 Mtpa for 26 years (of which 2.3 Mtpa apportioned to Senegal on the assumption that initially the production and costs of GTA the cross-border field is allocated to Senegal, subject to further adjustments). Under Option 1, development capital expenditures allocated to Senegal are assumed to be US$4bn (in $2017), consisting of US$2bn for upstream capex and US$2bn for one converted FLNG unit designed for sales of 2.3Mtpa. Estimated exploration and appraisal costs, and decommissioning costs are also considered in the modeling. Costs and production are very tentative at this stage, because no cost or production estimates are currently available from the operator as no FID has been taken and no field development and no LNG plan are available. Therefore, best tentative guesses can only be done at this stage and are subject to revision when more information becomes

available.

11. The determination of the estimated GoSN petroleum revenues is modelled considering the specific terms of the 2012 Saint Louis and Cayar PSCs, applicable to the GTA project for the portion of production and costs allocated to Senegal. Details on the PSC terms and the applicable tax regime are provided in Annex 5. The modeled sources of revenues for GTA are similar to those of SNE and consist of the following:

- The GoSN share in the "Profit Petroleum[14]" related to Senegal (equal to the difference between the value of gas and condensate production and the "Cost Petroleum" allocated to the contractor for cost recovery purposes) as provided for under the PSC. This share is slightly progressive in relation with a sliding scale of daily field production, starting at 35 percent. No royalty is payable under the PSC terms.
- The CT paid by the contractor (including PETROSEN) on its profits derived from the GTA PSC activities related to Senegal, at a contractual rate of 25 percent stipulated in the PSC.
- The net revenues resulting from the participation of PETROSEN in the field development and production regarding Senegal. A rate of participation of 10 percent is assumed in the base case. PETROSEN has the right under the applicable PSC to increase its participation to 20 percent.
- However, due to the use of a FLNG unit, other fiscal assumptions have to be made for the modeling to address the possible fiscal regime applicable in Senegal to the FLNG, not yet defined. The PAD describes the two fiscal options that could be considered, subject to further negotiations between the parties involved, including Mauritania: (A) the *segmented* fiscal approach where the PSC regime applies to upstream activities and a standard tax regime (with a CT rate of 25 percent) to the FLNG related to Senegal; and (B) the *integrated* fiscal approach where both the upstream and FLNG activities related to Senegal are treated for fiscal purposes under the applicable PSC. For simplification, only the results of the segmented fiscal approach are presented below. The tolling tariff for using the FLNG is assumed to be based on a 10-percent rate of return on the equity related to the FLNG which is funded by equity and debt, with a preliminary hypothesis of a 70 percent debt.

12. As for SNE, the economic and fiscal modeling also determines the average total "government take" (GT) in the undiscounted rent and the IRR of the IOC.

13. Under the low US$5/MMBtu LNG price scenario, the cumulative total GoSN revenues from the Senegal share in the GTA field case amount to US$3.5 bn ($2017) spread over the assumed 26-year production life as displayed in Figure 8.3. While the government share in profit petroleum starts from the commencement of production, effective payments of CT starts several years later due to depreciation and interest. Results in Figures and Tables correspond to a PETROSEN participation of 10 percent; GoSN will slightly increase if PETROSEN elects to participate at the maximum rate of 20 percent.

14. Figure 8.4 shows the annual variations of GoSN revenues (total and desegregated per source of revenues) for each of the four price scenarios of US$3, US$5, US $7 and US$9/MMBtu respectively. Total GoSN revenues for the field case over its life vary from US$3.5 bn (at US$5) to US$7.1 bn (at US$7) and US$10.7 (at US$9), as stated in Table 8.3. GoSN revenues and IRR become low for prices lesser than US$5/MMBtu.

15. As for SNE, Table 8.3 displays the amounts of cumulative government revenues under each LNG price

[14] In the figures, for simplification, the term of « profit oil » is used. It also includes "profit gas" for GTA.

scenario and the average annual GoSN revenues for specific periods. Thus, for example the average annual revenues during the first five years of production, excluding the US$3/MMBtu price, range from US$32 MM (million) to 176 MM when constant prices are US$5 or US$9/MMBtu, all values being undiscounted and expressed in US$ (2017); the average annual revenues are also displayed for the next 5 and 10 years, where average annual GoSN revenues significantly increase after the recovery and depreciation of the CAPEX and deduction of interest. The estimated average undiscounted government take ranges from 42 to 51 percent in relation to the US$5-9/MMBtu price scenarios.

Figure 8.3: GTA field case. Senegal government profile per source of revenues at $50 per barrel ($2017)

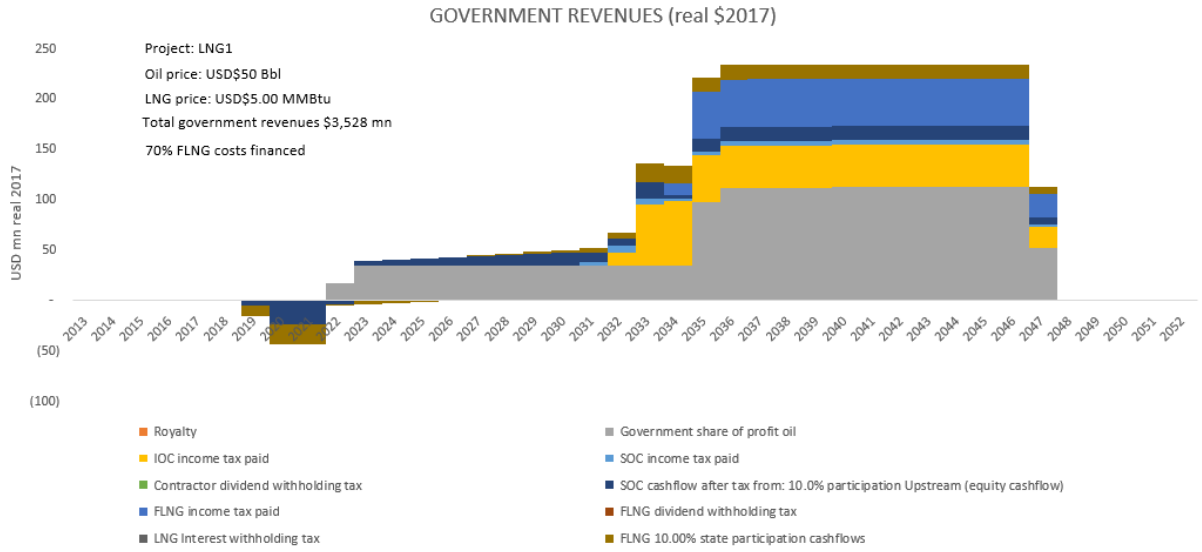


Figure 8.4: GTA field case. Senegal government revenues profile at US$30, US$50, US$70 and US$90 per barrel ($2017)

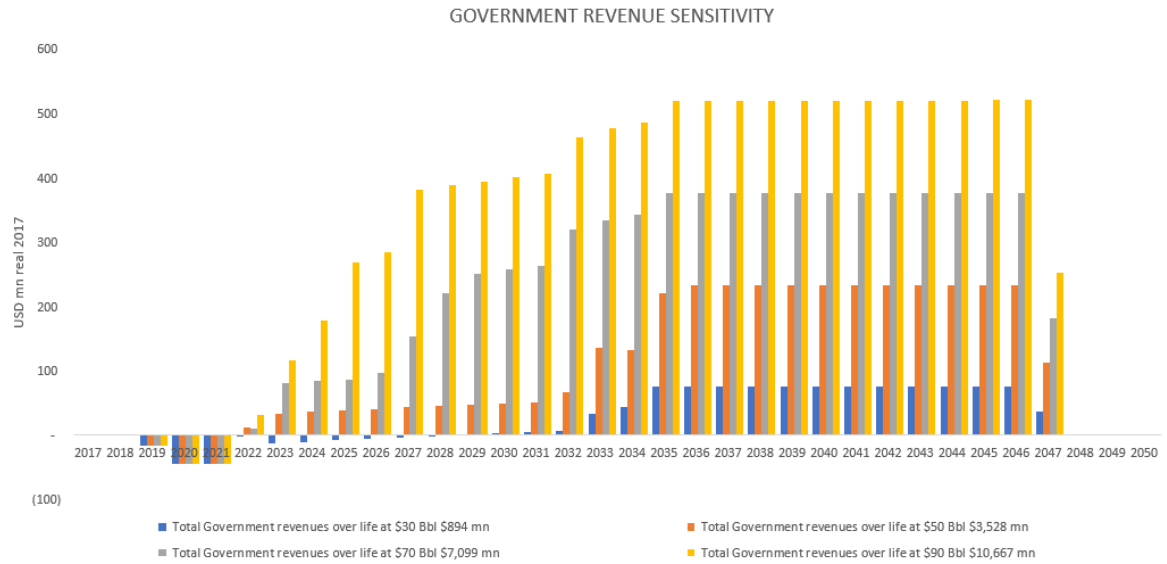


Table 8.3: GTA field case. Senegal government revenues, IRR and GT at US$30, US$50, US$70 and US$90 per barrel (US$2017)

Government revenues across a range of oil prices USD mn $2017 unless stated otherwise; Senegal share of project					
Oil price $ Bbl	USD bbl	30	50	70	90
LNG price	USD MMBtu	3.00	5.00	7.00	9.00
Total production (mn BOE)	Mn BOE	547	547	547	547
Years of production	years	26	26	26	26
Aggregate project pre-tax IRR	**% nominal**	**5.0%**	**12.1%**	**17.6%**	**22.4%**
IOC upstream equity IRR/ROE	% nominal	-6.6%	15.6%	30.0%	43.6%
Upstream lender IRR	% nominal	6.4%	6.4%	6.6%	6.6%
Upstream IOC equity plus lender IRR	% nominal	-2.6%	11.2%	18.4%	23.9%
FLNG equity IRR/ROE	% nominal	10.0%	10.0%	10.0%	10.0%
LNG Project financing lender IRR	% nominal	6.4%	6.4%	6.4%	6.4%
Aggregated Upstream & FLNG equity IRR/ROE	% nominal	2.4%	12.7%	20.1%	27.4%
Aggregate equity plus lenders IRR	**% nominal**	**3.9%**	**9.8%**	**13.4%**	**16.5%**
Total government revenue over project life	USD mn $2017	**894**	**3,528**	**7,099**	**10,667**
Average Govt. revenue production year 1 - 5	USD mn $2017	(8)	32	72	176
Average Govt. revenue production year 6 - 10	USD mn $2017	1	48	229	394
Average Govt. revenue production year 11 - 20	USD mn $2017	62	195	363	507
Government share in aggregate project (undiscounted)	% undiscounted	36%	42%	49%	51%