



**PETROSEN**  
EXPLORATION & PRODUCTION



# NEW INVESTMENT OPPORTUNITIES IN SENEGAL OIL & GAS

# AGENDA



**COUNTRY OVERVIEW**



**PETROSEN PRESENTATION**



**EXPLORATION HISTORY**



**DISCOVERIES INVENTORY**



**SENEGAL OPEN BLOCKS**



**TAX & FISCAL TERMS**



**WHY INVEST IN SENEGAL**



# COUNTRY OVERVIEW

## Official name

Senegal

## Capital

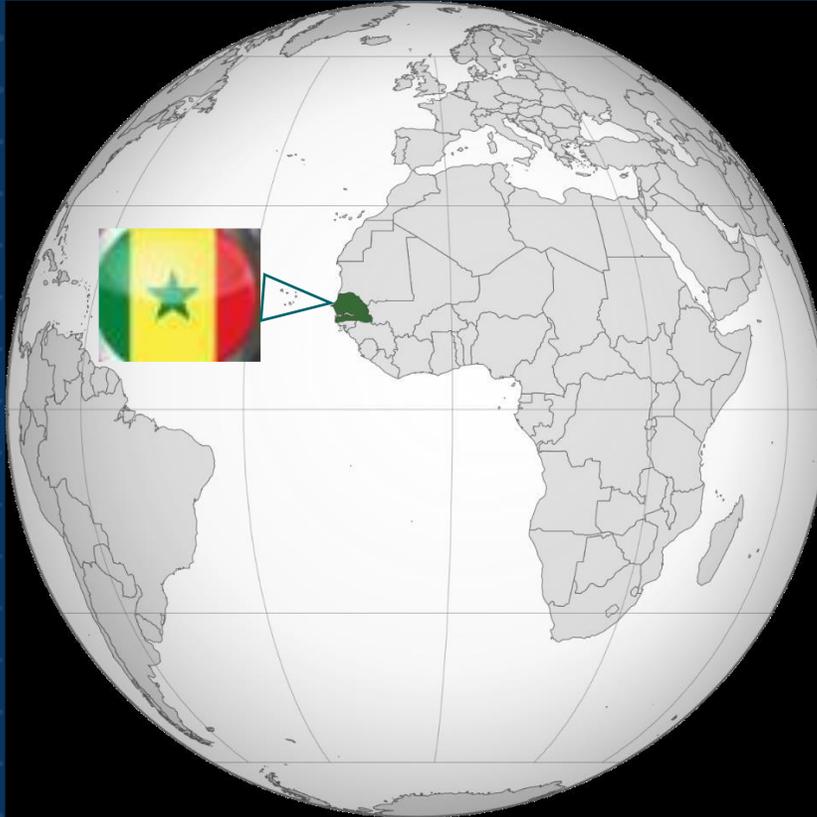
Dakar

## Currency

1 Euro = 655.96

FCFA

1 USD ~ 550 FCFA



## Official language

French

## Area

196,722 km<sup>2</sup>

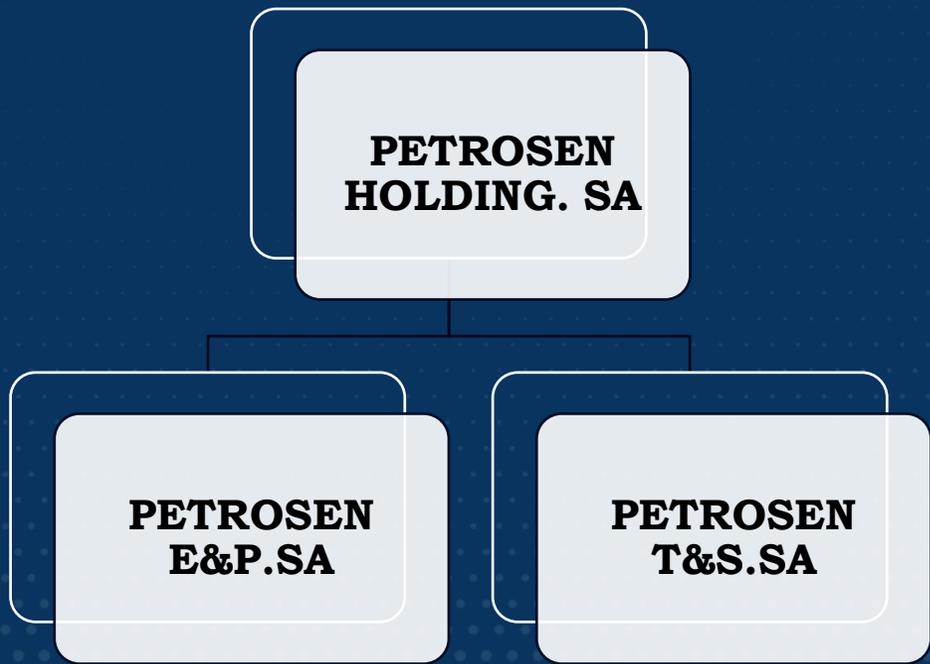
## Population

~ 17 millions



**A COUNTRY WITH HIGH POTENTIAL IN  
TERM OF DEVELOPMENT**

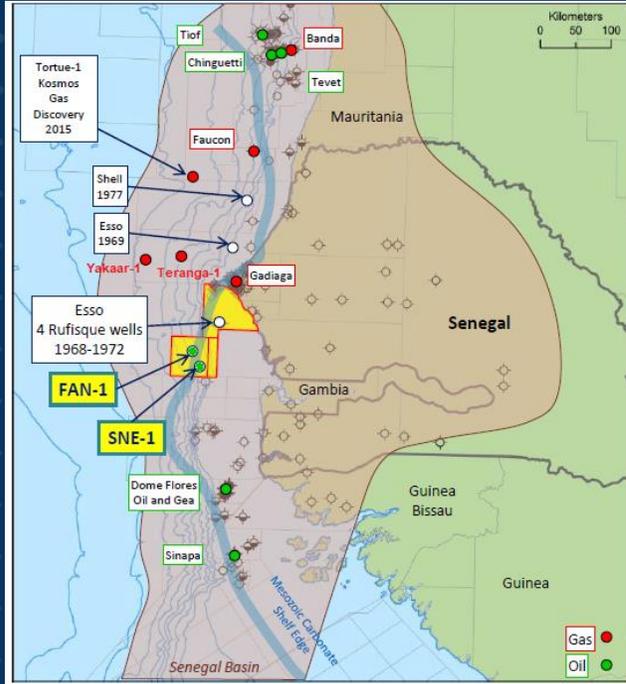
# PETROSEN PRESENTATION



# EXPLORATION HISTORY

## Seismic Data & Wells

- 60 900 km of 2D seismic
- 27150 km<sup>2</sup> of 3D seismic
- Excellent offshore coverage
- +180 exploration wells (1 well/ 1337 km<sup>2</sup>).
- Still an Under explored Basin



## Diamniadio en 1961

Several prospects & leads identified @ Maastrichtien

## Dome Flore & Gea en 1967

Almost 1 billion barrels of heavy oil identified in Oligocene foraminiferous limestones.

## Gadiaga 1976 - 1997

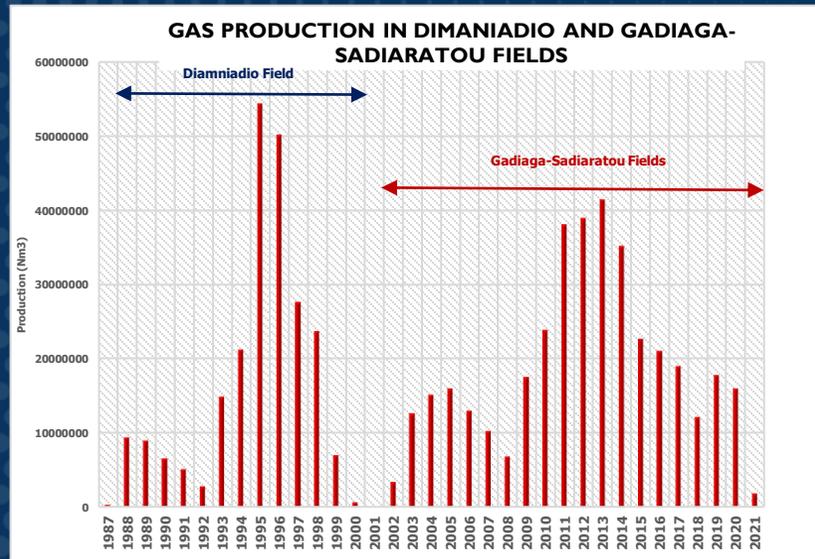
Gas reserves identified in Campanian & Lower Senonian sandstones.

## Sangomar Offshore Deep 2014-2017

Oil & gas discoveries in the Cenomanian, Turonian & Albian sandstone reservoirs.

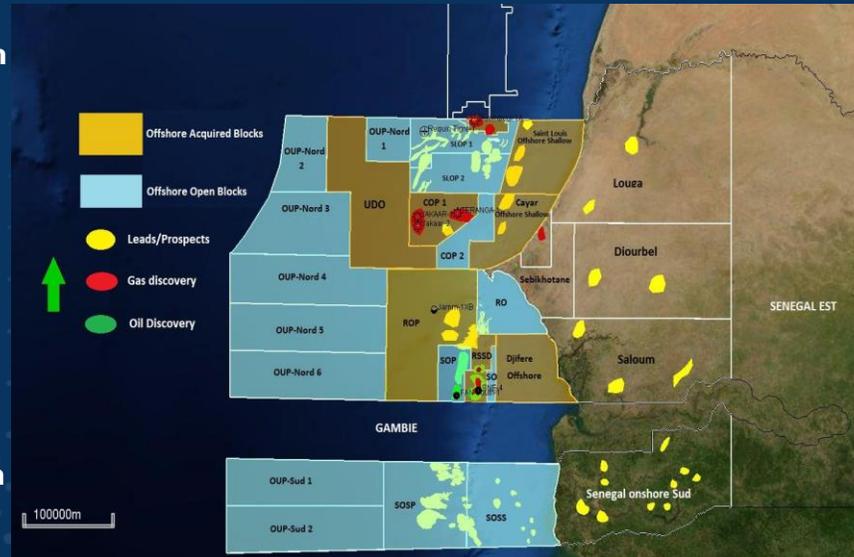
## Saint Louis & Cayar offshore Deep in 2015, 2016, 2017

03 major discoveries of gas into the Cenomanian & Albian sandstone reservoirs.



## Hydrocarbon Discoveries, prospects & leads

Several prospects & leads to test into the basin



# DISCOVERIES INVENTORY



**GRAND TORTUE  
AHMEYIM**



**SANGOMAR**



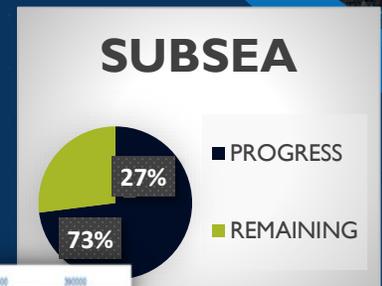
**YAKAAR - TERANGA**



# GREAT TORTUE AHMEYIM PROJECT



Drilling Campaign Completed for Phase I

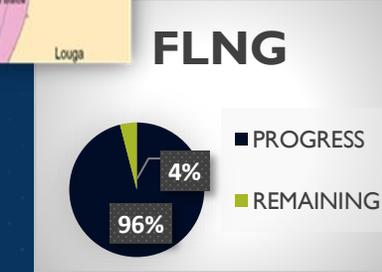
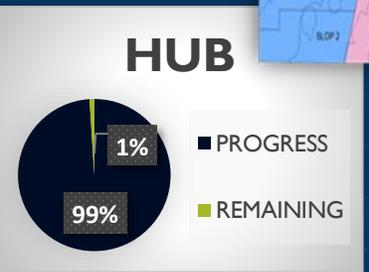


Hub-terminal : On finalization

- FID : December 2018
- Execution Rate: **90%**
- First Gas : **Q1-2024**



Subsea operations on progress



FLNG : On site: **Q1- 2024**

- **+15TCF of Gas**
- BP, Kosmos, PETROSEN, SMH



FPSO : Moving to site

Phase I : **4,8 Billion** dollars of investment

- **2.5 mtpa** of GNL
- **70 mmscfd** of domestic gas (MAU&SEN)

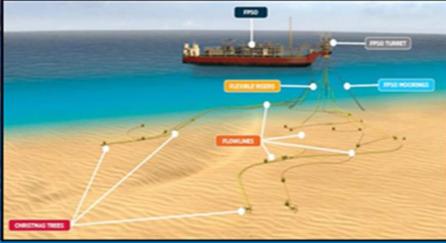
**10 mtpa of GNL** : global objectif(All phases)

Phases Futures: Start from 2026-2027

- Local Content:
- **+137.800** Beneficiaries of social program
  - **+1600** directs & indirects jobs.
  - **+277** companies & SME associated



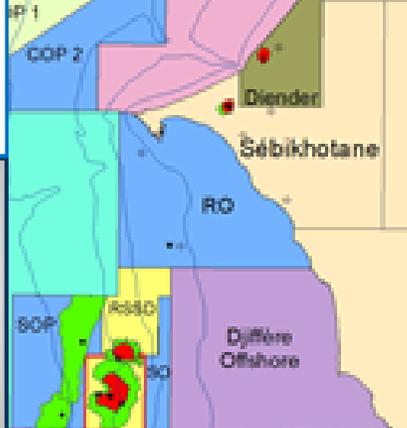
# SANGOMAR PROJECT



Development Concept (Drilling Rig + FPSO)

- 630MMbbl of oil
- 4TCF of gas
- Woodside 82%
- PETROSEN 18%

- Discovery : 2014.
- FID : january 2020
- Execution Rate: 88%
- First Oil : Q2-2024



Drilling Campaign ongoing with 02 rigs (24 wells forecasted)

- ❖ Phase I : 4,6 Billion USD Expected
  - Production Rate: 100 000bpd
  - Domestic Gas : 60 – 90 Mscf/d
  - GPL : 200 – 340 t/d
  - C5+ : 80 – 150 t/d
  - SNE North Discovery: 83 Mbd with 378 bcf of gas
- ❖ Phases Futures: Gas Production for gas to power



Subsea Activities: Operated by Seven Vega, Seven sisters & Stormes vessels

- ❖ Local Content : exemples
  - Forecasted Expenses: 420 Milliards USD, 173 Billion USD already expended in local projects.
  - Rate of local suppliers in the project: 33%
  - Rate of hires: 50%

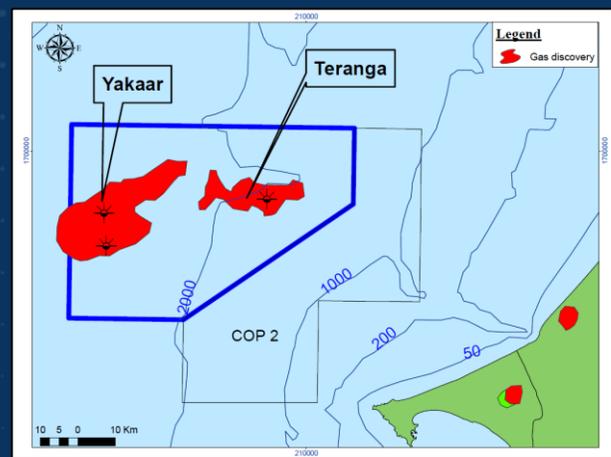


FPSO : At Singapore yard for de-ballasting works.

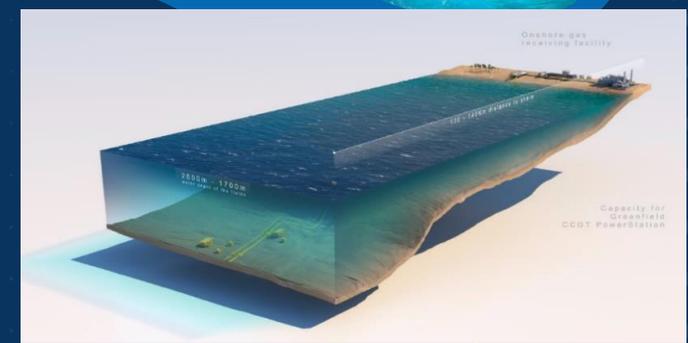
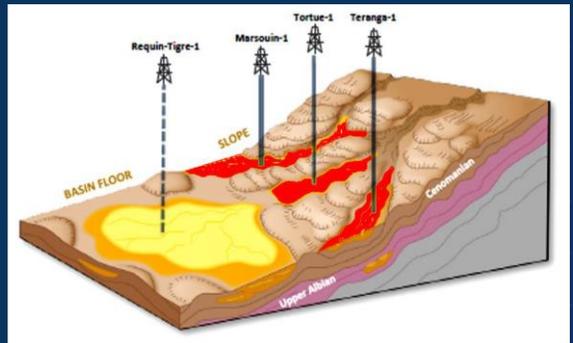
# YAKAAR-TERANGA PROJECT

## CAYAR OFFSHORE PROFOND

- ❑ Teranga-1 well: 2016
- ❑ Gas Ressources: 5 Tcf
- ❑ Yakaar-1 Gas well: 2017
- ❑ Yakaar-2 Gas well: 2019
- ❑ Ressources in place : 15 Tcf BP
- ❑ Developpement wells forecasted for 2024



<b>Development Phase I</b>	<ul style="list-style-type: none"> <li>▪ <b>FID forecasted for 2024</b> (150 mmscf/d of gas supply equivalent to 1 TCF for 20 ans)</li> <li>▪ Total Investment : 2-3 Billion USD</li> </ul>
<b>PERSPECTIVES</b>	<ul style="list-style-type: none"> <li>▪ Power availability at low cost</li> <li>▪ Local content development with unit plant on land</li> <li>▪ Local industry development (fertilizers &amp; methanol unit plant)</li> </ul>



Drilling Rig



On land processing unit



SENELEC conversion Plant

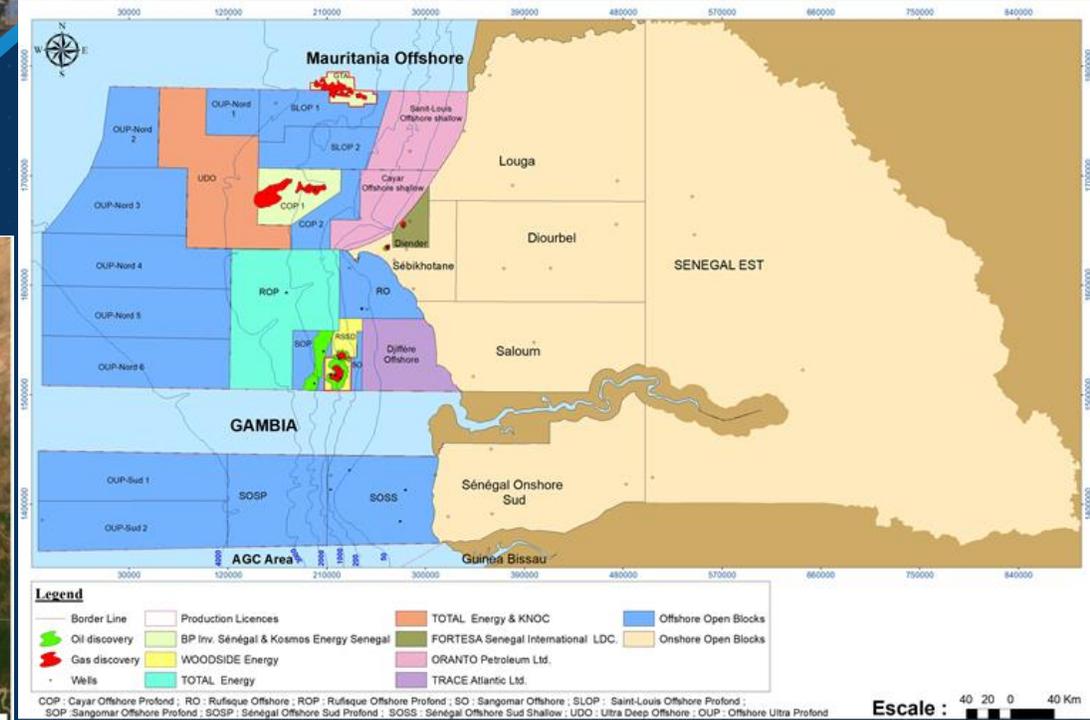
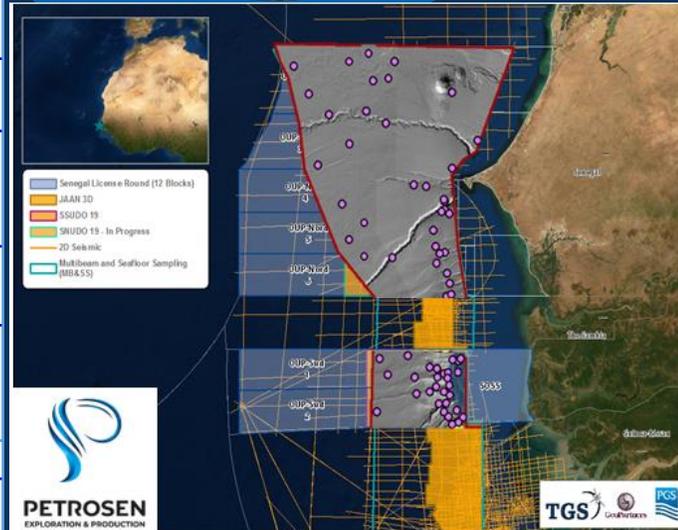


Market Power Distribution

# SENEGAL OPEN BLOCKS



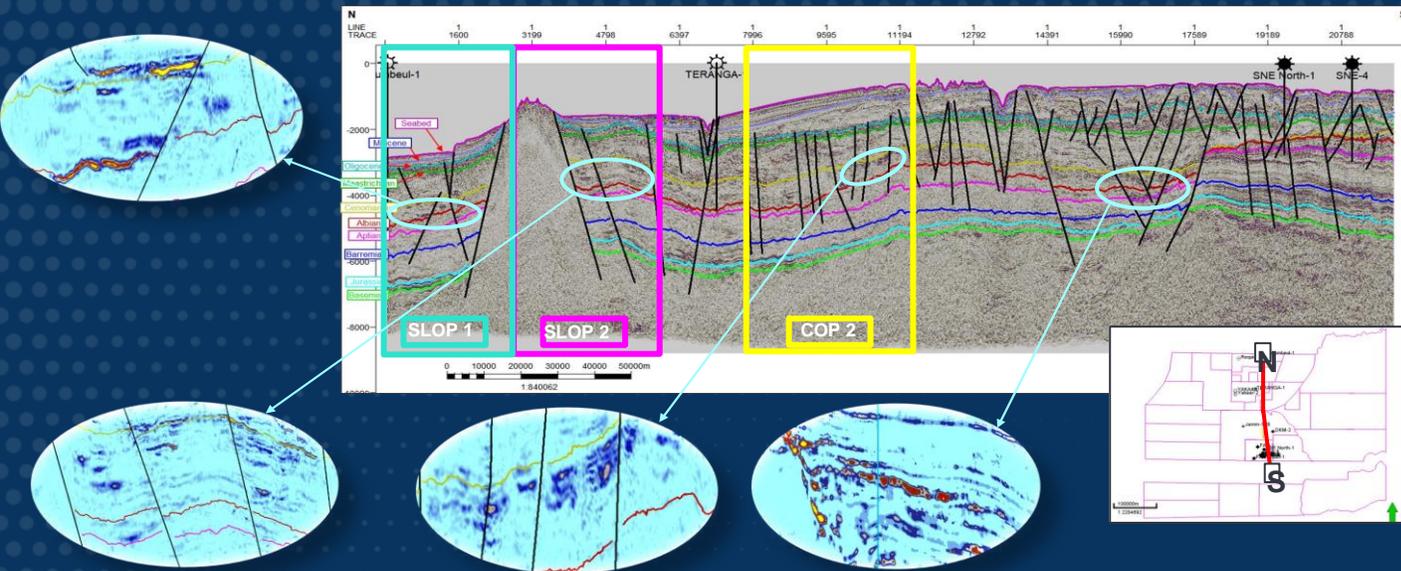
DATA	CAMPAIN	AREA	SIZE
2D seismic (km)	NWAAM 2011/2012	MSGBC	4073
	NWAAM 2017	MSGBC	10306
3D seismic (km <sup>2</sup> )	JAAN 2019	SOSS &SOSP	4250
		OUP-Sud1 & OUP-Sud2	4614
		OUP-Nord4, OUP-Nord5 & OUP-Nord6	5191
		OUP-Nord1	1859
MBSS (km <sup>2</sup> )	Offshore Basin	Offshore blocks	63000



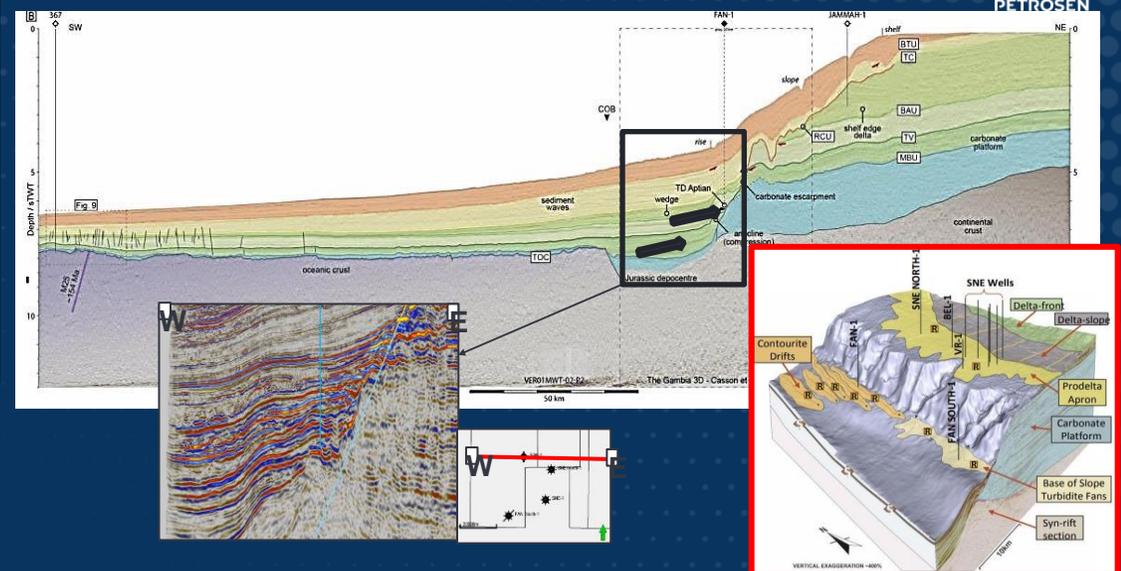
16 offshore opened blocks with available data

- ❑ The Senegalese onshore basin extends over nearly 60,000 km<sup>2</sup> and covers six (06) blocks : Louga, Diourbel, Sebikhotane, Saloum, Senegal Onshore Sud and Senegal Est
- ❑ Two sub-basins have been identified in the Senegal East block

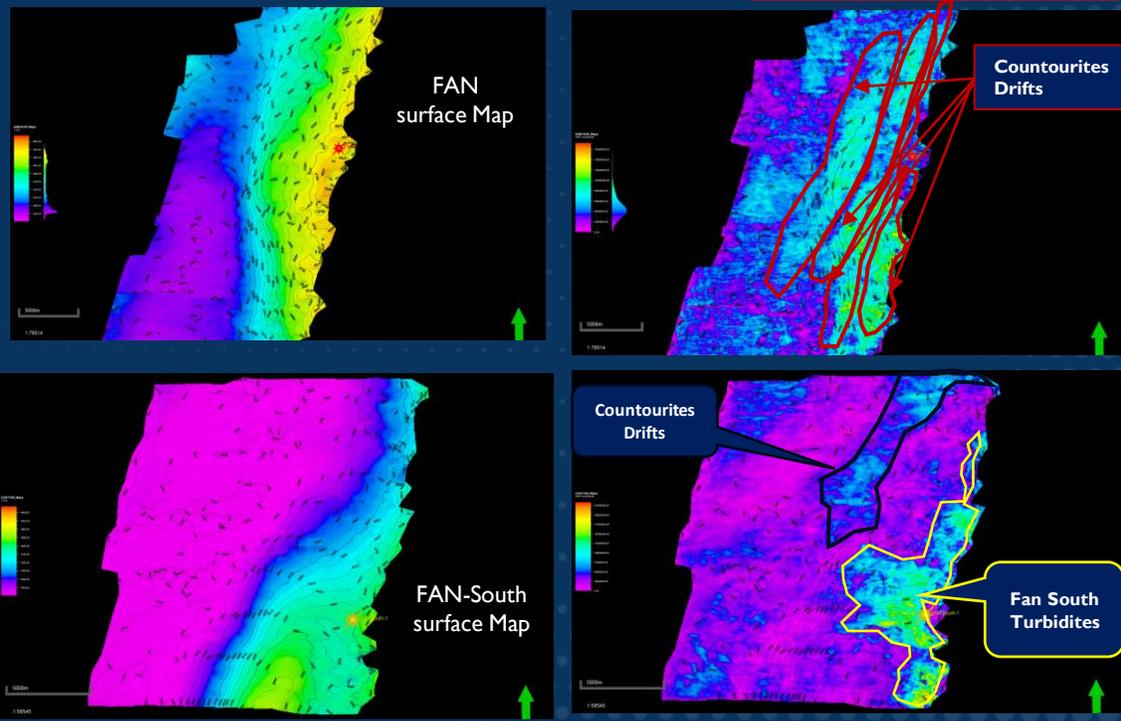
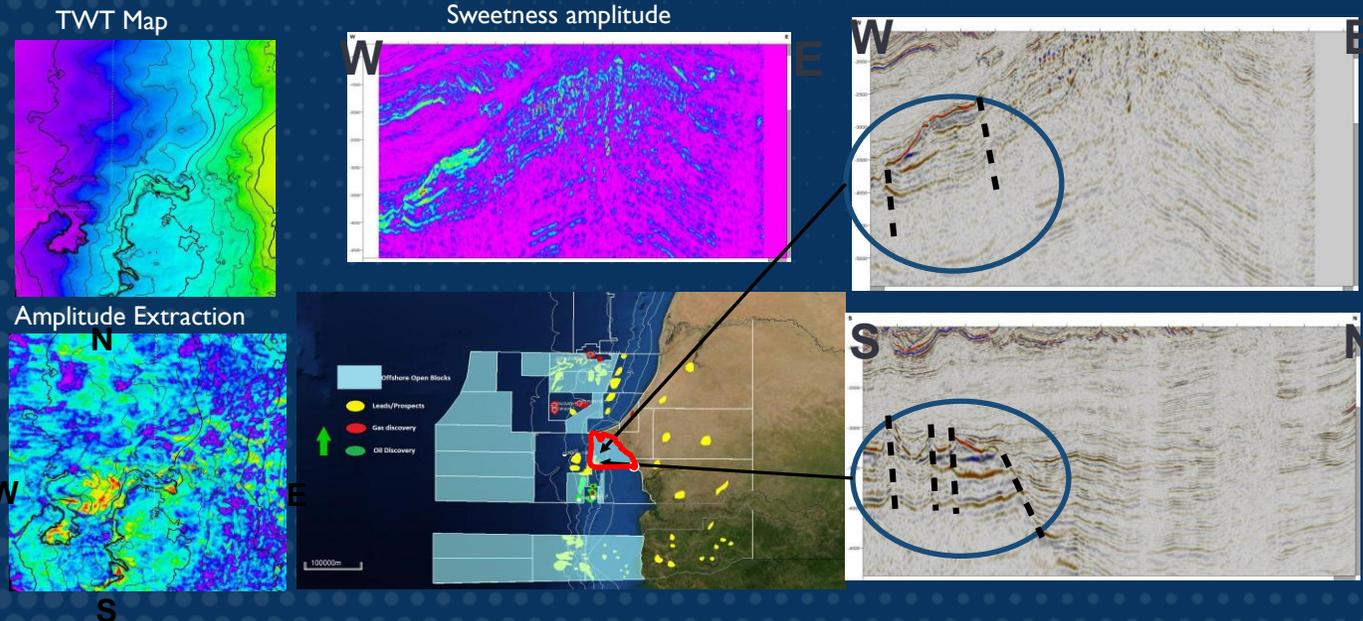
# Several Prospects identified along a Regional seismic Line



# FAN Discovery Deposit Model



# Rufisque Offshore (RO) Prospects & Leads



# TAX & FISCAL TERMS

## EXPLORATION PERIOD

Initial Period: 4 Years

1<sup>st</sup> Renewal Period: 3 Years

2<sup>nd</sup> Period Period: 3 Years

## EXPLOITATION PERIOD

Initial Period: 20 Years

Extension Period : 10 years

Contracting Model:  
**PRODUCTION SHARING CONTRACT  
(PSC)**

## PETROSEN PARTICIPATION

Exploration Phases: Carried Interest of  
10%

After Commercial Discoverey: Working  
Intesrest Up to 20%

## FISCAL REGIME

Thirty per cent (30%) Income Tax applied  
on Net Profit

# TAX & FISCAL TERMS

## SURFACE RENTAL

- Initial period: an annual fee of US\$30 per square Kilometre per year
- 1<sup>st</sup> Renewal: an annual fee of US\$50 per square Kilometre per year
- 2<sup>nd</sup> Renewal: an annual fee of US\$75 per square Kilometre per year

## COST RECOVERY

- Shallow offshore: 60%
- Deep offshore: 65%
- Ultra-deep offshore: 70%
- Onshore: 55%

**Contracting Model:  
PRODUCTION SHARING CONTRACT  
(PSC)**

## ROYALTIES

Hydrocarbons	Location	Royalties
Oil	Onshore	10%
	Shallow offshore	9%
	Deep offshore	8%
	Ultra-deep offshore	7%
Gas		6%

## PROFIT SHARING

$$R \text{ Factor} = \frac{\text{Cumulative Revenues}}{\text{Cumulative Investments}}$$

R Factor	Share State	Contractor Share
$R \leq 1$	40%	60%
$1 \leq R \leq 2$	45%	55%
$2 \leq R \leq 3$	55%	45%
$R \geq 3$	60%	40%

# WHY INVEST IN SENEGAL

**Good infrastructures & available facilities**



**Business friendly**



**World class project successfully executed in a short term**



**Functional Petroleum system**



**High quality source rocks**



**Presence of an Under-Explored Paleozoic Basin**



**Investors can credit full commitment**



**Democratic and political stability**



# THANK YOU !

For more informations see:  
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