



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

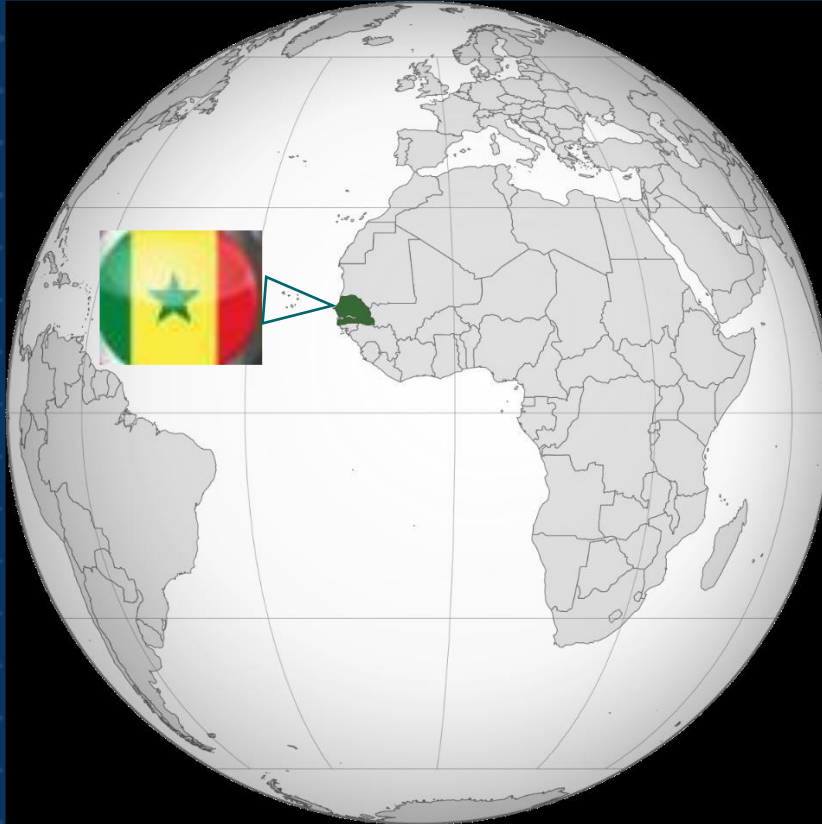
Dakar

Currency

1 Euro = 655.96

FCFA

1 USD ~ 550 FCFA



Official language

French

Area

196,722 km²

Population

~ 17 millions



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

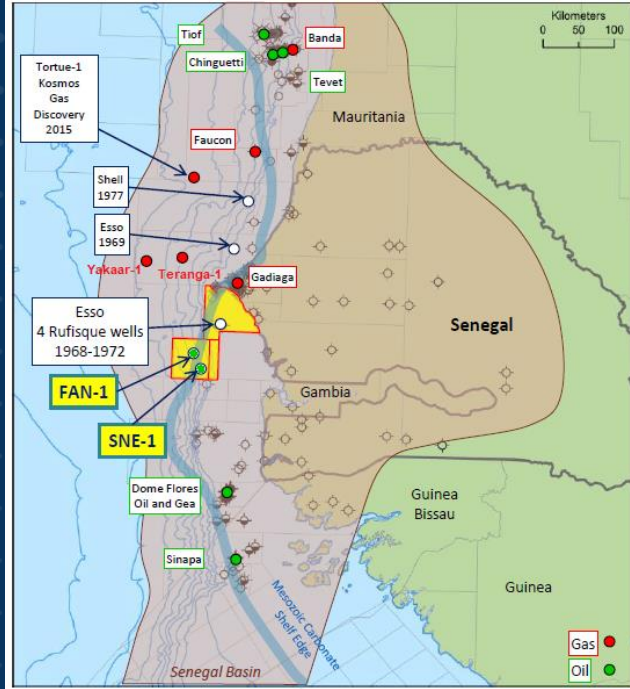
PETROSEN PRESENTATION



EXPLORATION HISTORY

Seismic Data & Wells

- 60 900 km of 2D seismic
- 27150 km² of 3D seismic
- Excellent offshore coverage
- +180 exploration wells (1 well/ 1337 km²).
- 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

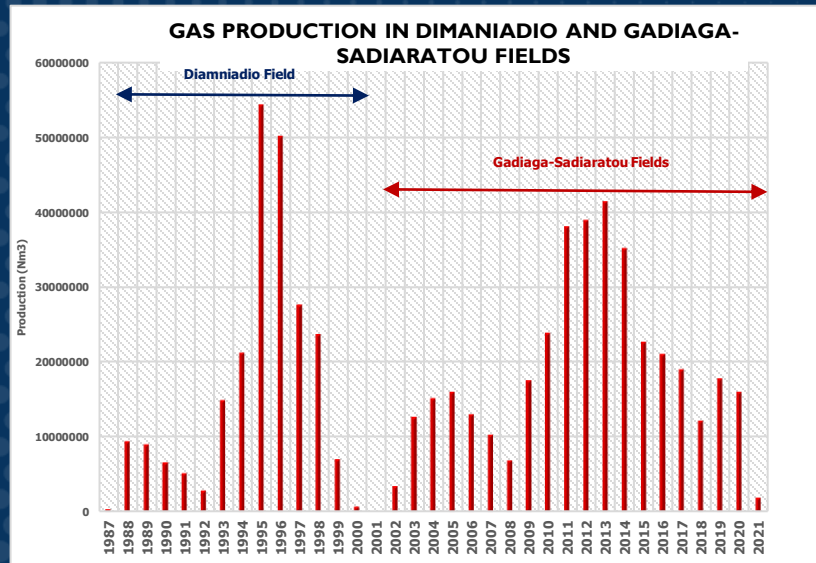
Gas reserves identified in Campanian & Lower Senonian sandstones.

Sangomar Offshore Deep 2014-2017

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

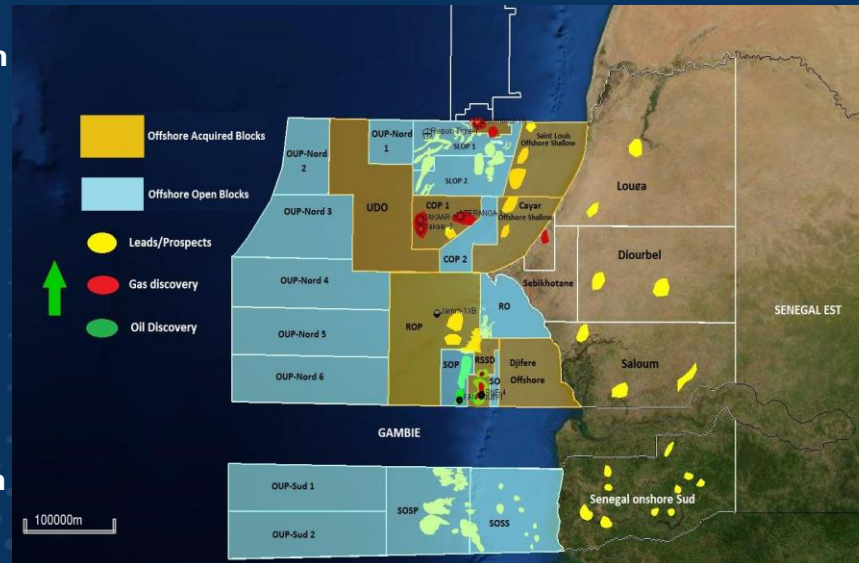
Saint Louis & Cayar offshore Deep in 2015, 2016, 2017

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

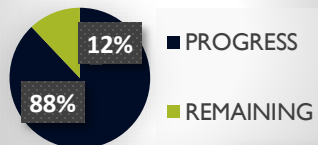


Subsea operations on progress

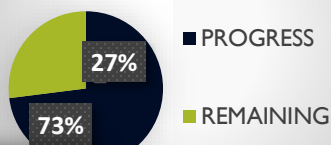


FPSO : Moving to site

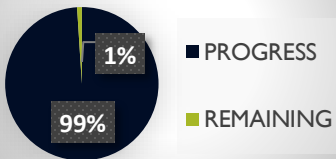
FPSO



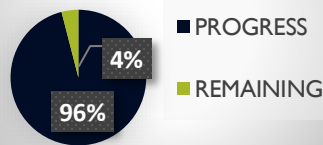
SUBSEA



HUB



FLNG



Hub-terminal : On finalization



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

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

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

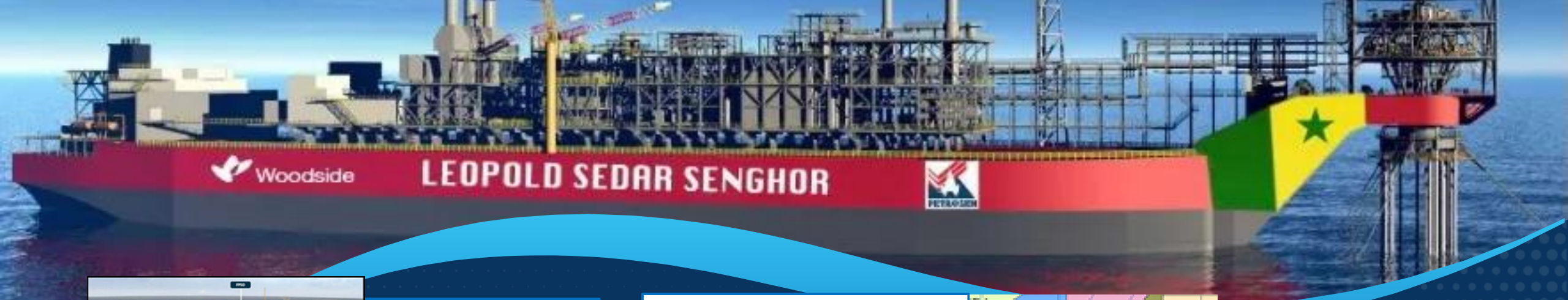
Phase I : **4,8 Billion** dollars of investment

- **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



Developpement Concept
(Drilling Rig + FPSO)



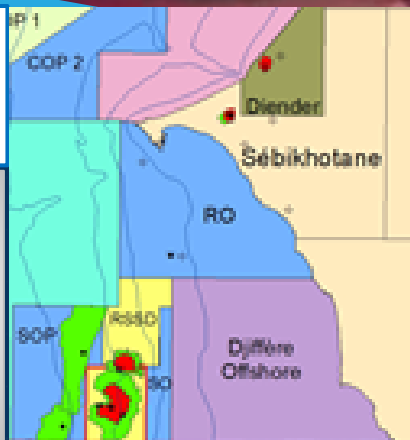
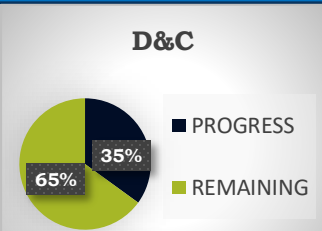
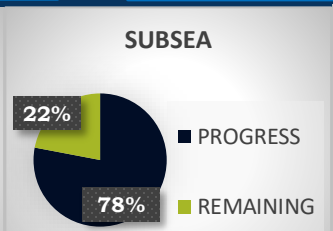
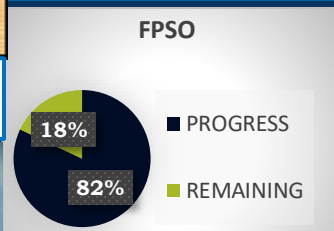
Drilling Campaign ongoing with
02 rigs (24 wells forecasted)



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

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

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



- ❖ 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

- ❖ **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%**

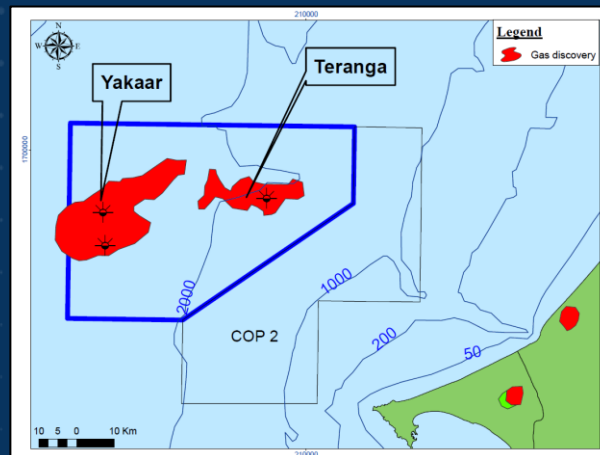


FPSO : At Singapore yard for
de-ballasting works.

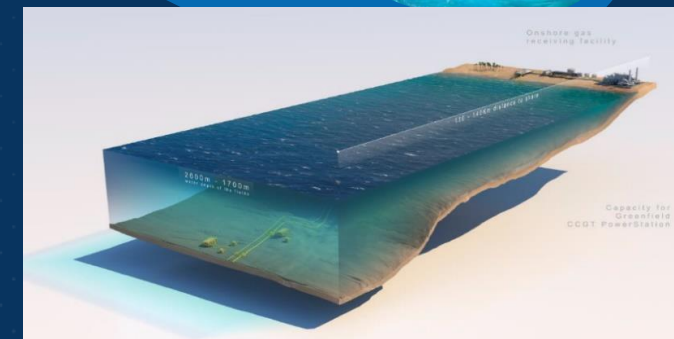
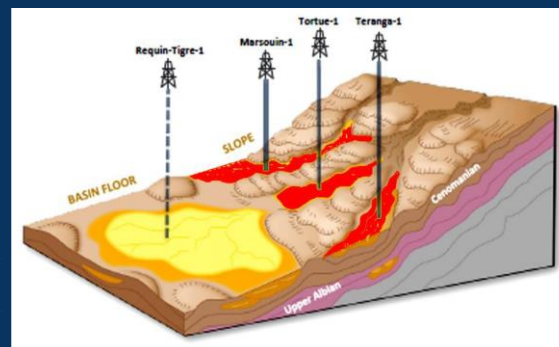
YAKAAR-TERANGA PROJECT

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



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



Drilling Rig



On land
processing
unit



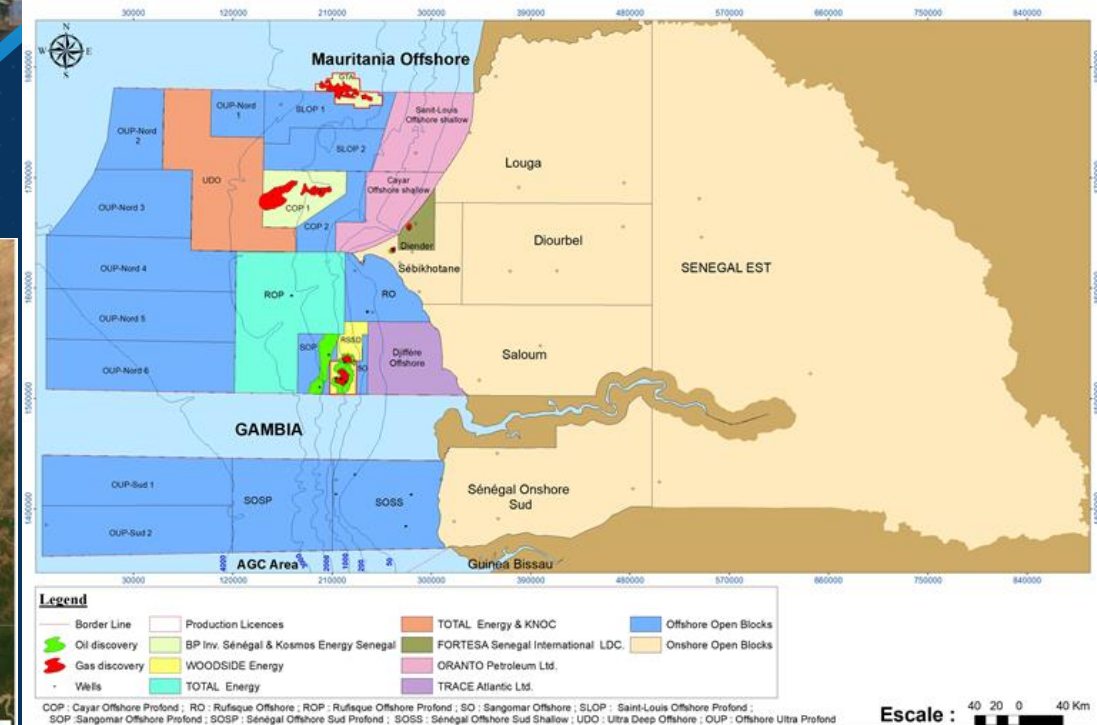
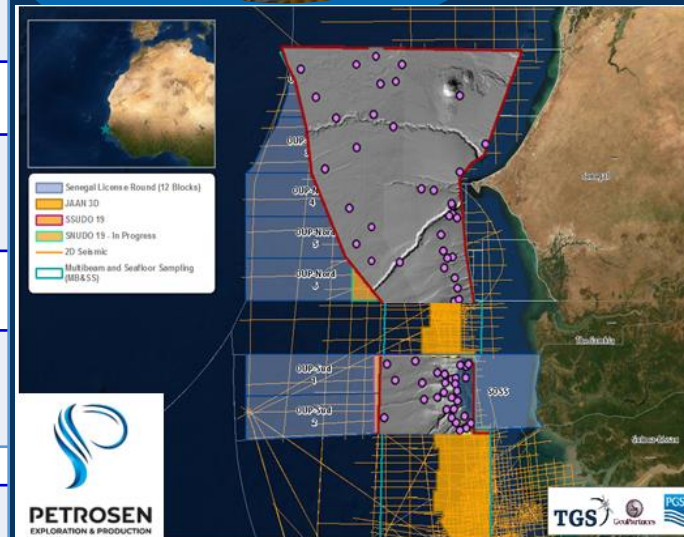
SENELEC
conversion
Plant



Market
Power
Distribution

SENEGAL OPEN BLOCKS

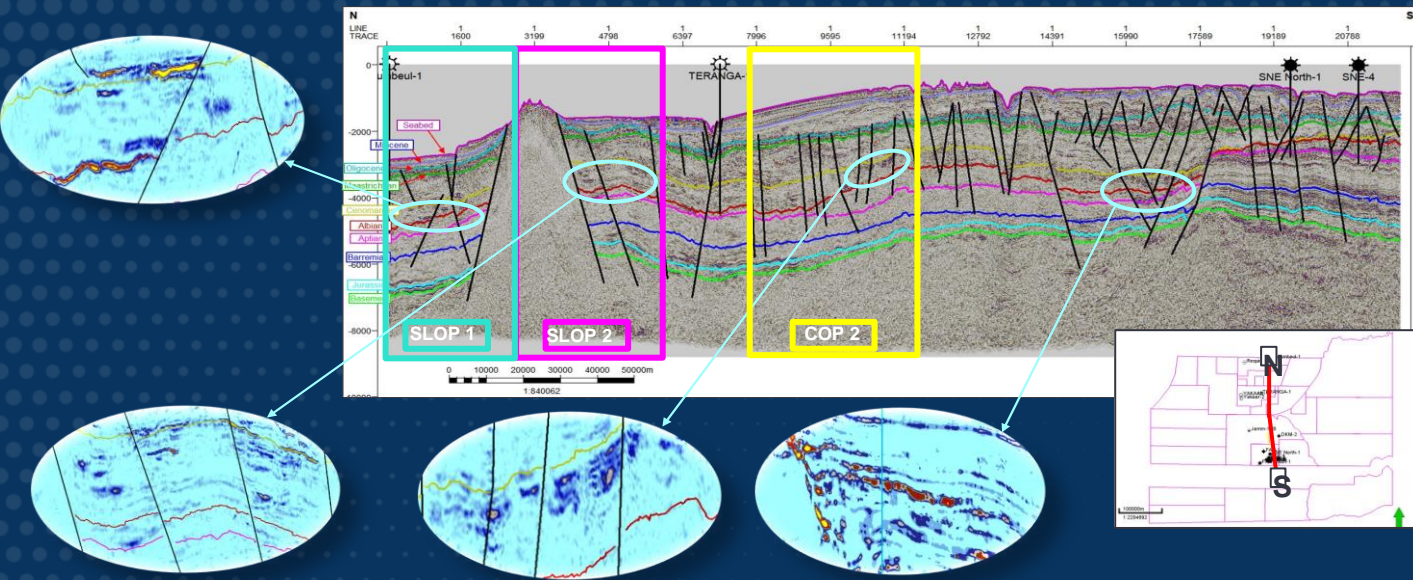
| DATA | CAMPAIN | AREA | SIZE |
|-------------------------------|-----------------|----------------------------------|-------|
| 2D seismic (km) | NWAAM 2011/2012 | MSGBC | 4073 |
| | NWAAM 2017 | MSGBC | 10306 |
| 3D seismic (km ²) | JAAN 2019 | SOSS & SOSP | 4250 |
| | | OUP-Sud1 & OUP-Sud2 | 4614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



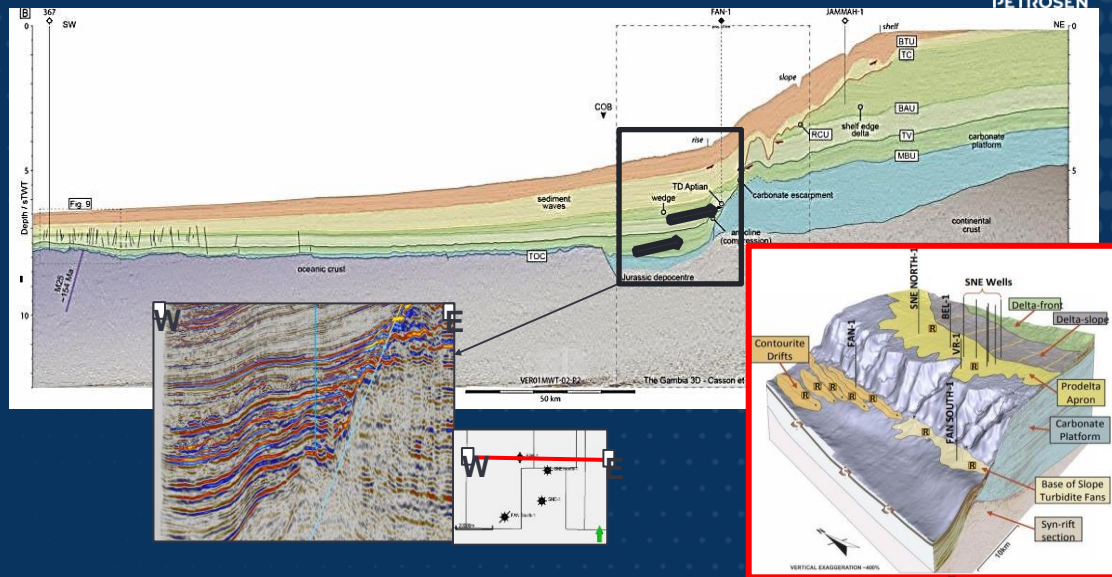
16 offshore opened blocks with available data

- ❑ The Senegalese onshore basin extends over nearly 60,000 km² 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

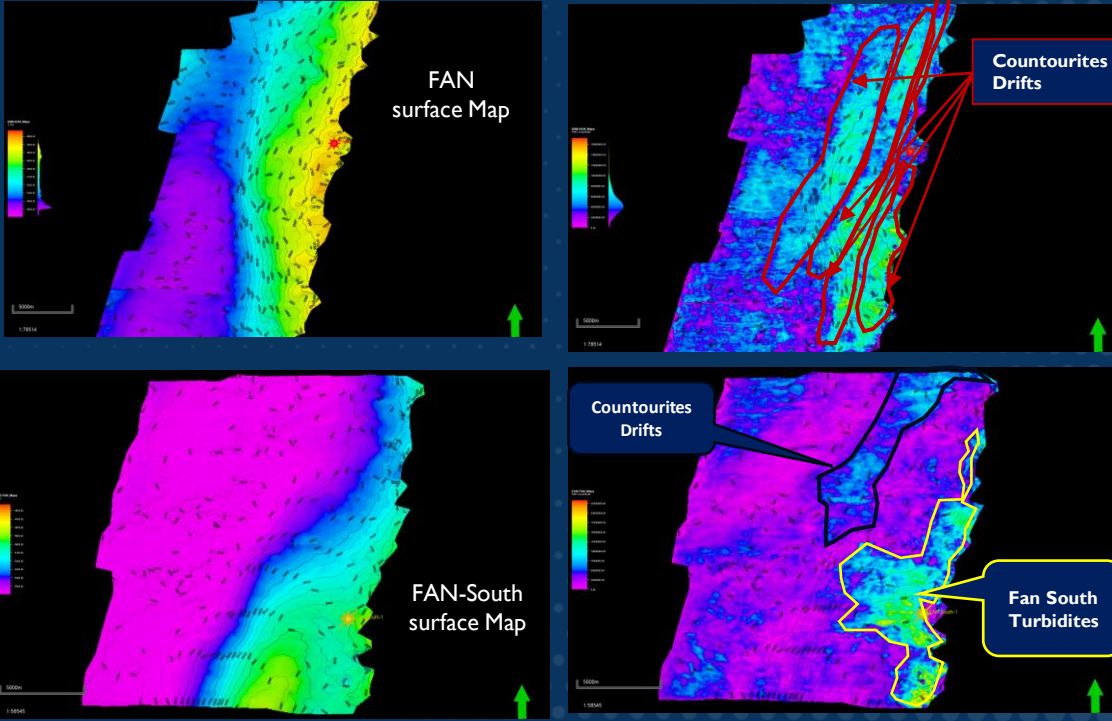
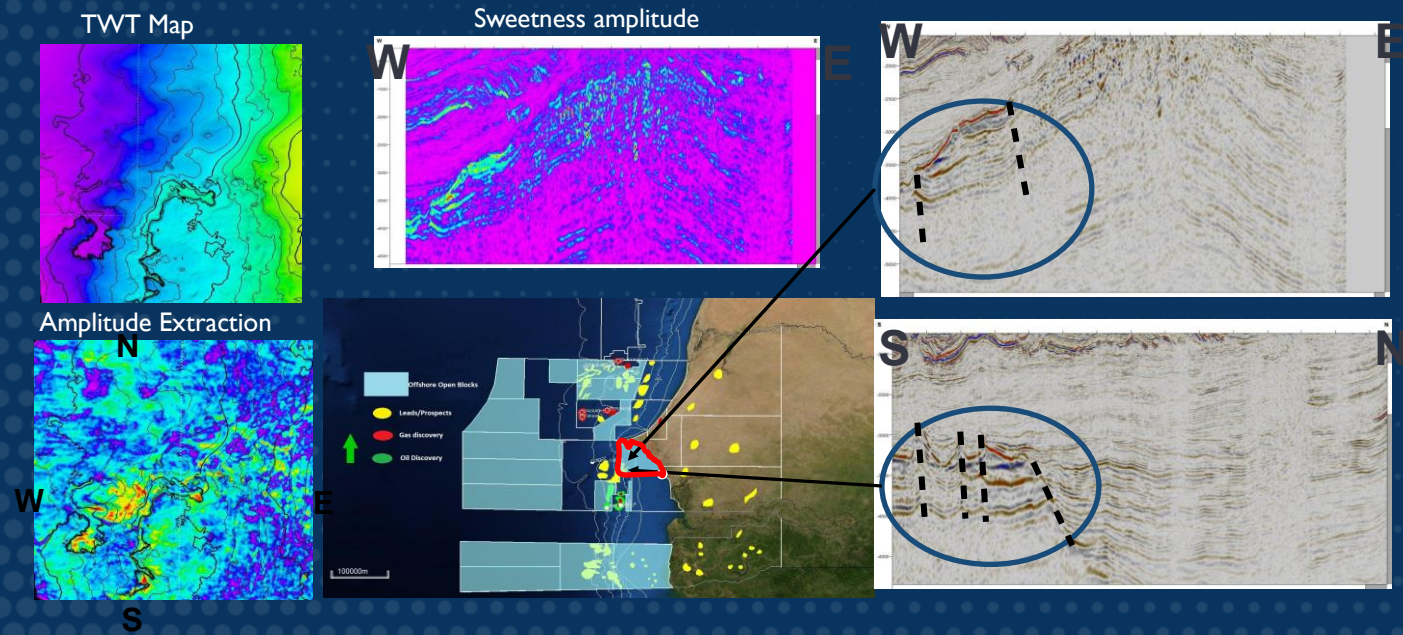
Several Prospects identified along a Regional seismic Line



FAN Discovery Deposit Model



Rufisque Offshore (RO) Prospects & Leads



TAX & FISCAL TERMS

EXPLORATION PERIOD

Initial Period: 4 Years

1st Renewal Period: 3 Years

2nd 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
- 1st Renewal: an annual fee of US\$50 per square Kilometre per year
- 2nd 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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