



PETROSEN
EXPLORATION & PRODUCTION



SENEGAL SEDIMENTARY BASIN

Hydrocarbon Potential and Exploration Opportunities

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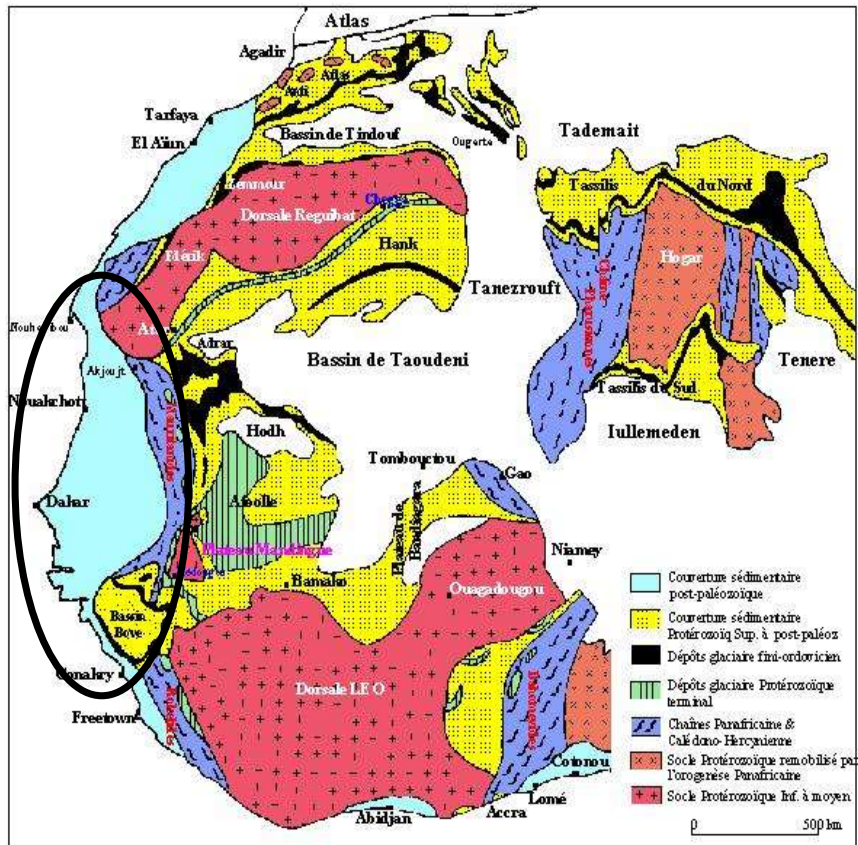
REGIONAL SETTING

□ The **Senegal Basin** occupies the central part of NW African coastal basin called the **MSGBC** (Mauritania-Senegal-Guinea-Bissau and Conakry Basin)

□ 230 000 km² (90.000 Km² are offshore)

□ **Mesozoic-Cenozoic Passive margin Basin**

- overlying a **Paleozoic basin**

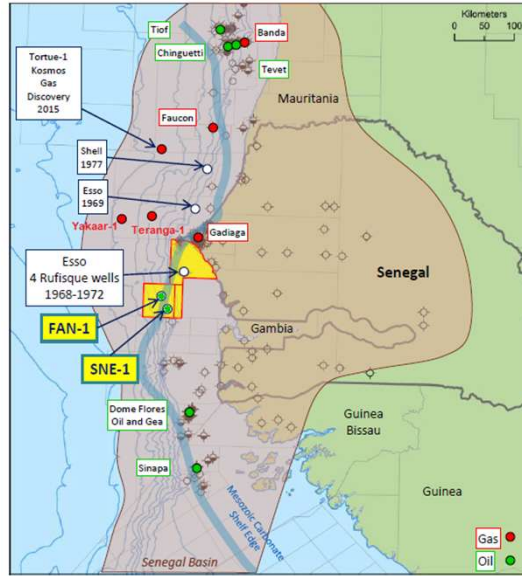


EXPLORATION & PRODUCTION HISTORY: 1952 - 2022

Seismic & well Data

- ❑ 60 900 km of **2D** seismic
- ❑ 27150 km² of **3D** seismic
- ❑ Good offshore coverage

- ❑ 180 Exploration Wells (1 well per 1337 km²).
- ❑ It is an **under explored basin**



Hydrocarbon discoveries, Prospects and Leads

❑ Diamniadio in 1961

Many small oil and gas fields in the Maastrichtian section

❑ Dome Flore & Gea in 1967

About 1 billion barrels of heavy oil in the Oligocene limestone

❑ Gadiaga in 1976 / 1997

gas reserves in Campanian and Senonian sandstones.

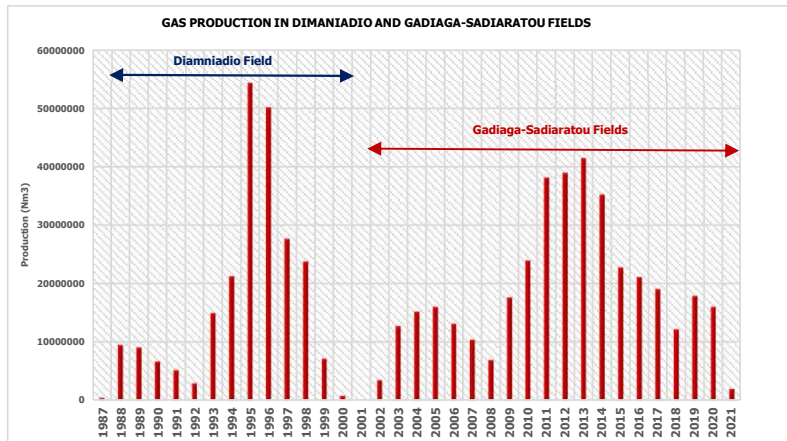
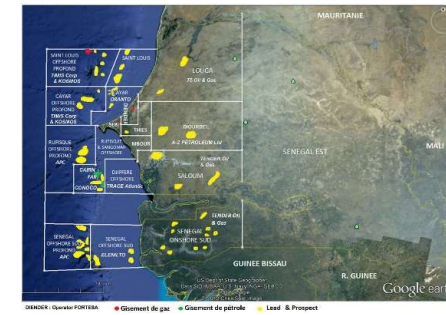
❑ Sangomar Offshore Profond in 2014, 2017

4 oil & gas discoveries in Cenomanian & Albian Reservoirs

❑ Saint Louis & Cayar offshore Profond in 2015, 2016, 2017

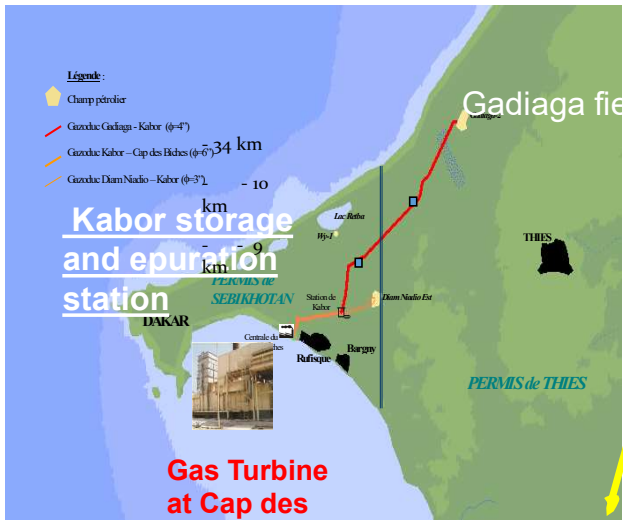
3 great gas discoveries in Cenomanian & Albian Reservoirs

❑ Many prospects and leads to be drilled in the basin

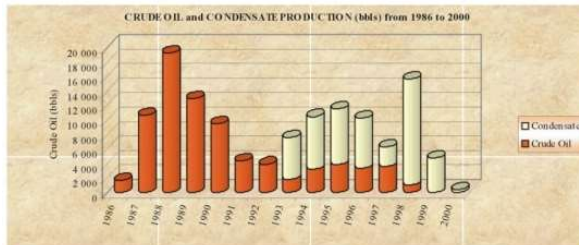
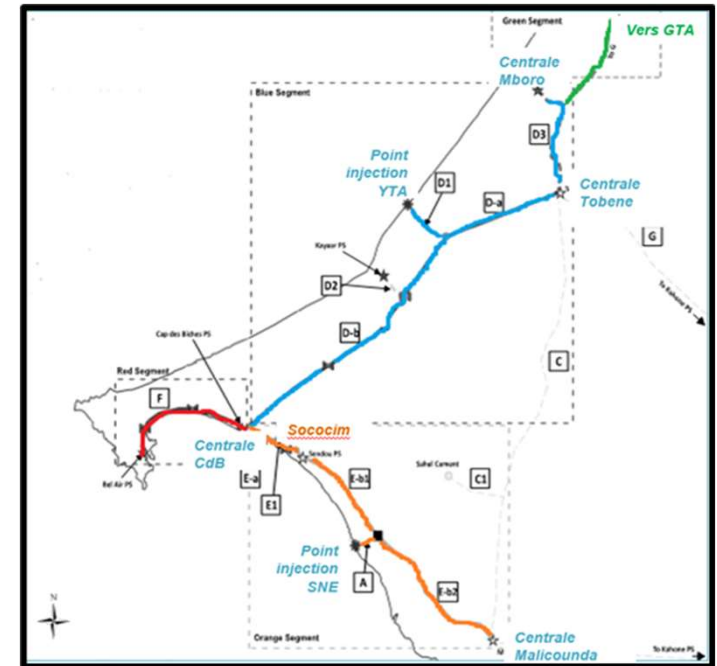


PRODUCING FIELDS & GAS NETWORK

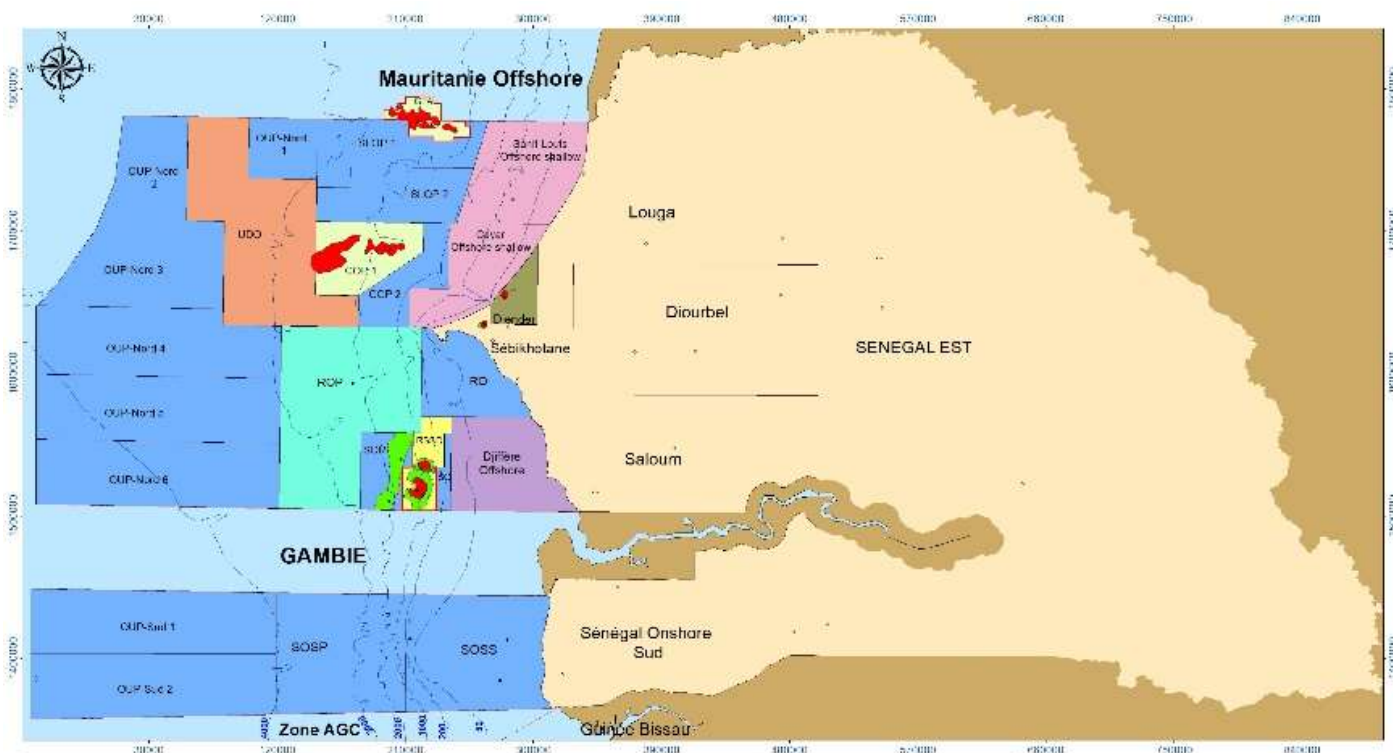
CURRENT GAS TRANSPORT NETWORK



GAS TRANSPORT NETWORK PROJECT



CURRENT EXPLORATION ACTIVITIES



- 8 offshore PSCs
- 1 onshore PSC

Presently available

- 5 onshore open blocks
- 16 offshore blocks

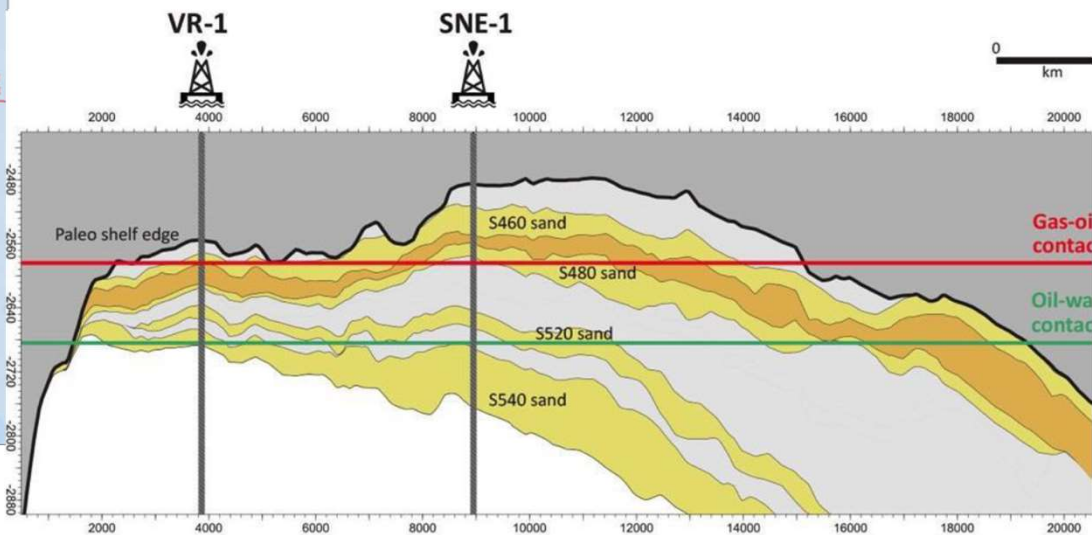
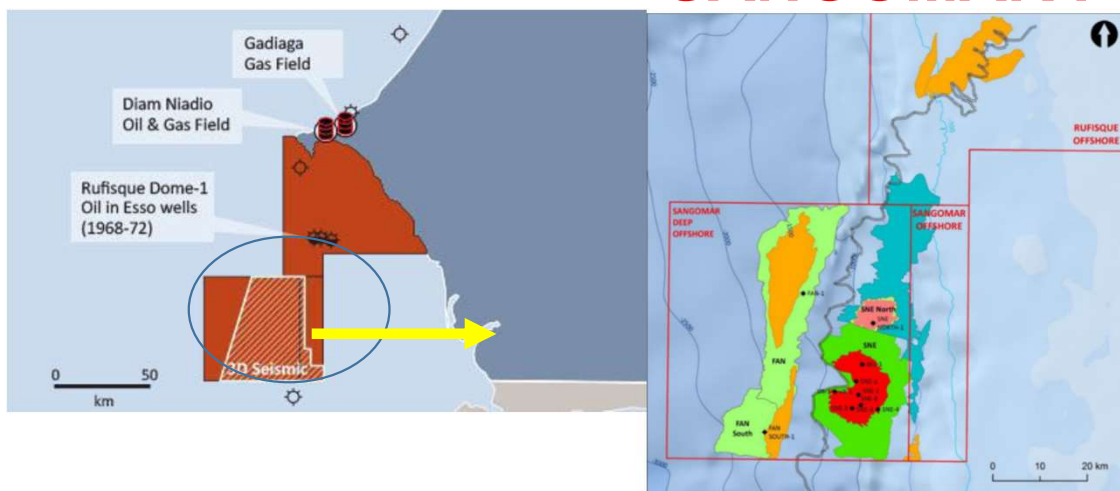
Légende

Ligne de frontière	BP Inv. Sénégal & Kosmos Energy Senegal	FORTESA Senegal International LDC.	Blocs libres Onshore
Découverte Pétrole	WOODSIDE Energy	ORANTO Petroleum Ltd.	
Découverte de Gaz	TOTAL Energy	TRACE Atlantic Ltd.	
Permis d'exploitation	TOTAL Energy & KNOC	Blocs libres Offshore	

COF : Cayar Offshore Profond ; RO : Rufisque Offshore ; ROP : Rufisque Offshore Profonde ; SO : Sangomar Offshore ; SLOP : Saint-Louis Offshore Profond ; SOP : Sargomar Offshore Profond ; SOSP : Sénégal Offshore Sud Profond ; SOSS : Sénégal Offshore Sud Shallow ; UDO : Ultra Deep Offshore ; OUP : Offshore Ultra Profond

Echelle : 0 20 40 40 Km

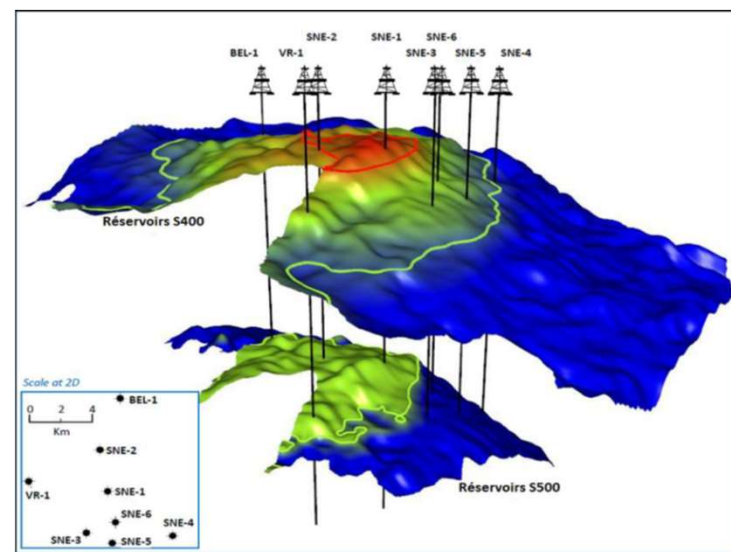
SANGOMAR PROJECT



- ❑ SNE-1 discovery
- ❑ 7 appraisal Wells: SNE-2, SNE-3, SNE-4, BEL-1, SNE-5, VR-1 and SNE-6
- ❑ **Reserves Estimate has raised (2C) to 630 MMSTB oil + 4 Tcf of gas associated and non associated**
- ❑ Oil 31°API
- ❑ SNE North discovery: ~83 millions barrels and 378 Bcf of gas

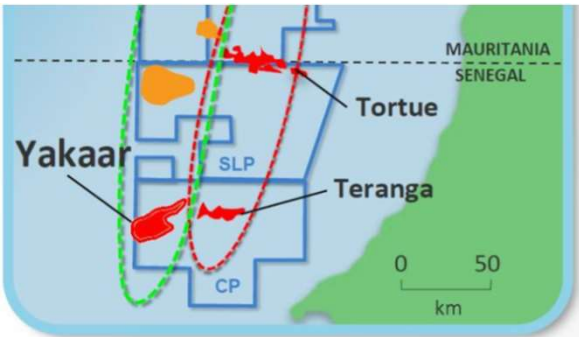
SNE DEVELOPMENT

- ❑ FPSO Development infrastructure construction & drilling have good progress
- ❑ Production start in 2023, Daily production : about 100 000 barrels/day
- ❑ About 23 production and injection wells –phase1
- ❑ Gas production for gas to power project



GREATER TORTUE/AHMEYIM DEVELOPMENT PROJECT

GTA DEVELOPMENT PROGRAM

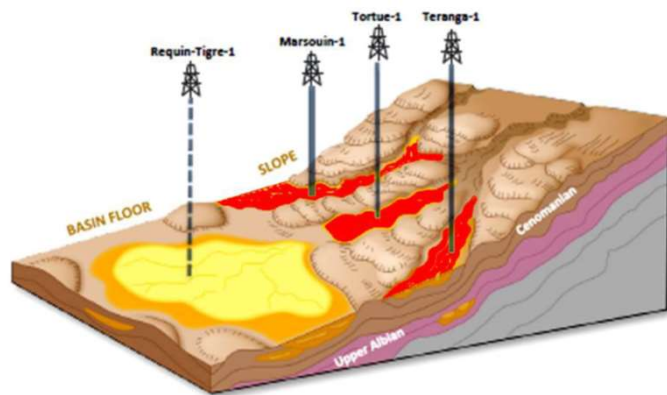


 Découverte de gaz

 Prospect

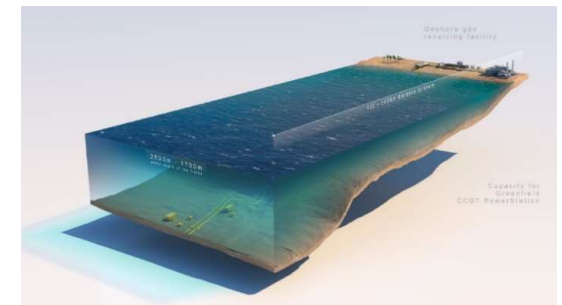
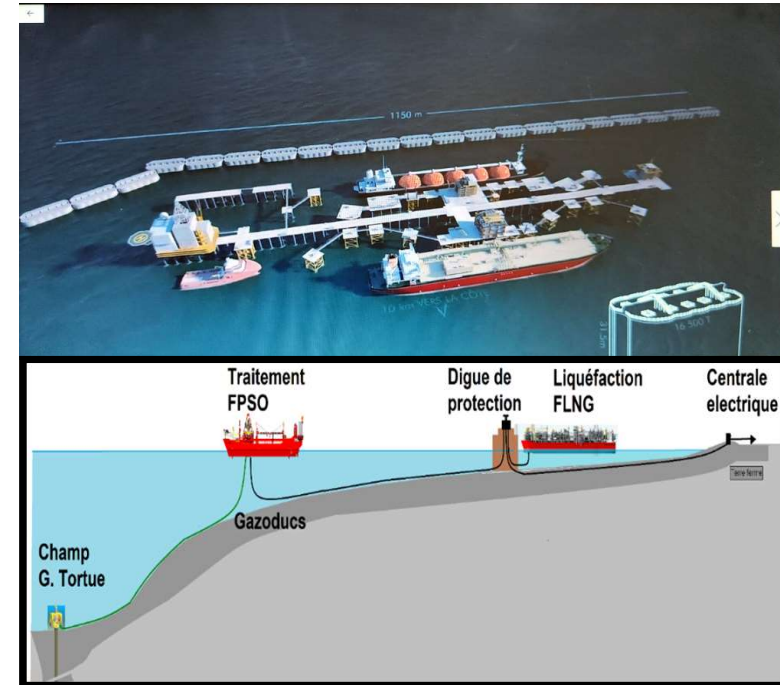
- Grand Tortue/Ahmeyim(GTA)**
- 3 wells discoveries **Tortue-1 (Aymeyin-1) et Aymeyin-2** in Mauritanie and Geumbeul-1 in Senegal
- Gas reserves: About 15 trillion cubic feet(TCF)**
- Development infrastructure construction & drilling in good progress
- Production start in 2023
- Phase 1 –2,5 MTPA of LNG
- 70 mmscf/day of natural gas for domestic gas
- First gas : 2022
- Up to 10 MTPA of LNG with the following phases

CAYAR OFFSHORE PROFOND PERMITS



CAYAR OFFSHORE PROFOND

- Teranga-1 well** March to May 2016 in Senegal
- Gas resources in place : 5 Tcf**
- Yakaar-1 well** May 2017 in Senegal
- Resources in place : 15 Tcf BP**



OFFSHORE OPEN BLOCKS & NEW SEISMIC DATA

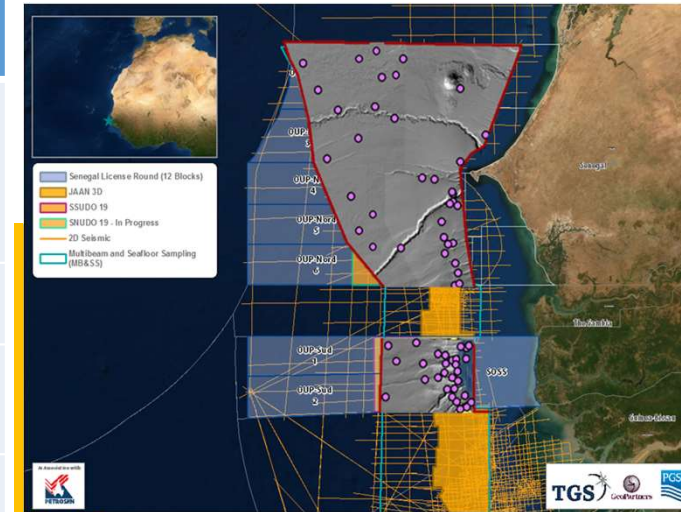
NEW OFFSHORE OPEN BLOCKS

Open offshore block names	Acreage (Km ²)
Senegal Offshore Sud Profond	7653
Senegal Offshore Sud Shallow	7921
Rufisque Offshore	3453
Sangomar Offshore Profond	1756
Sangomar Offshore	423
Saint-Louis Offshore Profond 1	3628
Saint-Louis Offshore Profond 2	3693
Cayar Offshore Profond 2	1627
Offshore Ultra Profond Nord 1	2050
Offshore Ultra Profond Nord 2	3751
Offshore Ultra Profond Sud 1	7623
Offshore Ultra Profond Sud 2	7647
Offshore Ultra Profond Nord 3	6565
Offshore Ultra Profond Nord 4	7827
Offshore Ultra Profond Nord 5	7836
Offshore Ultra Profond Nord 6	7808

RECENT MULTICLIENT SEISMIC SURVEY

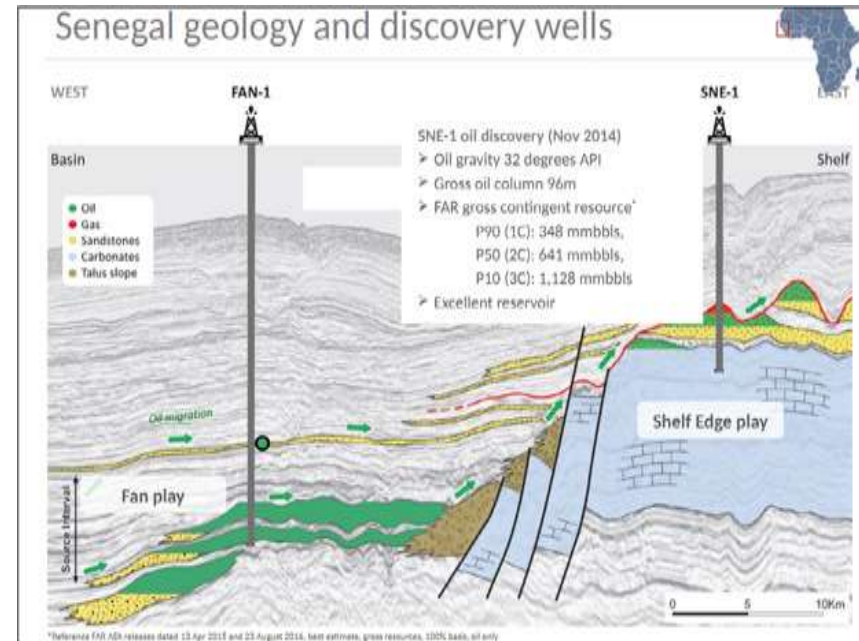
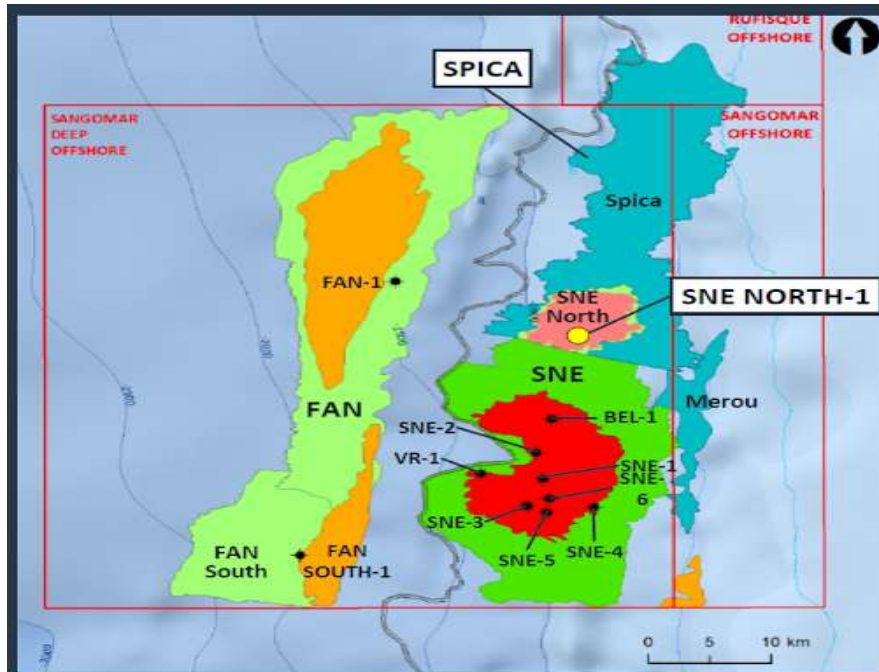
DATA	SURVEY	AREA	SIZE
2D seismic (km)	Regional	Regional NWAAM 2011/2012	
	Regional		10306
3D seismic (km ²)	Jann	SOSS &SOSP	6238
		OUP-Sud1 & OUP-Sud2	4614
		OUP-Nord4, OUP-Nord5 & OUP-Nord6	5191
		OUP-Nord1	2040
MBSS (km ²)	Offshore basin	Offshore blocks	63000

MULTI BEAM SEA SAMPLE



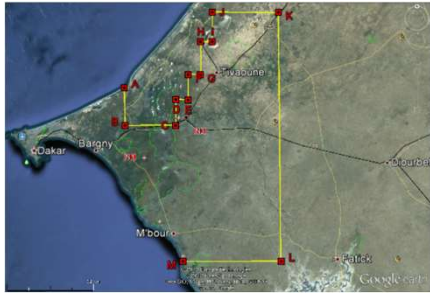
SANGOMAR OFFSHORE DEEP new open block

- This new blocks is a relinquishment
- 2014 Exploration Well Oil discovery:
FAN-1 978 mmbbls
- FAN South Oil discovery:



- ## PROSPECTS
- South Fan
 - Central Fan
 - Bravas
 - Fritas

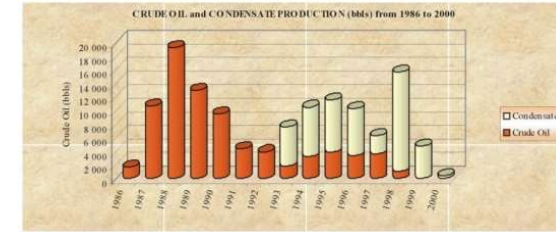
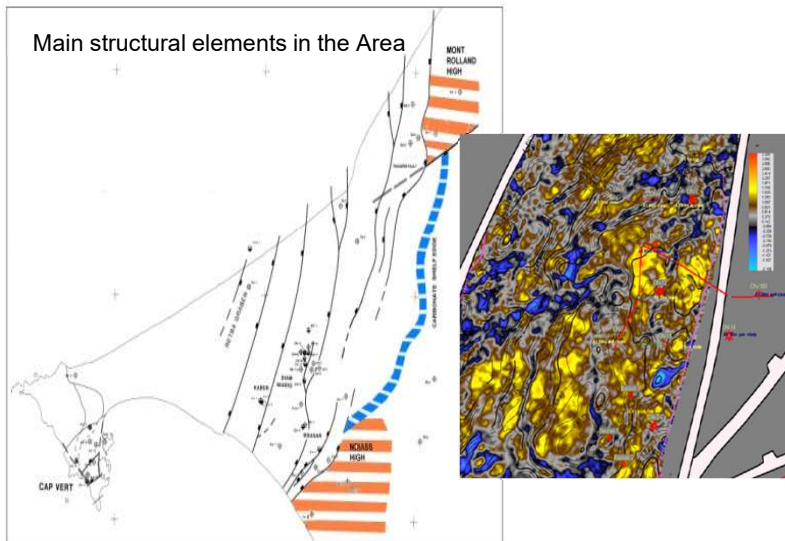
ONSHORE OPEN BLOCKS SEBIKHOTANE BLOCK



Acreage : 3788,205 Km²

Traps:

- large anticlines;
- fault closures;
- pinch-outs on the local erosional surfaces;
- bar sands and deltaic lobes.



Oil, Condensate and Gas Production

- 1 oil well (DN-4) with a total production of 62,642 bbl;
- 2 wells (DN-14, WB-1) produced condensate with total production of 35,692 bbls;
- and 7 gas wells (KA-1, Da-2, DN-2, DN-12, DN14, ND-1, WB-1) with a total production of 217,393,033 normal cubic meters;
- Probable onshore extension of Sangomar offshore Deep oil and gas fields;
- Many leads and prospects;
- Presence of a gas network transport system,

