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Two decades of conventional O&G discoveries

The main discoveries in 2022

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2000-2022

First steps in a new century
Conventional O&G Exploration Results

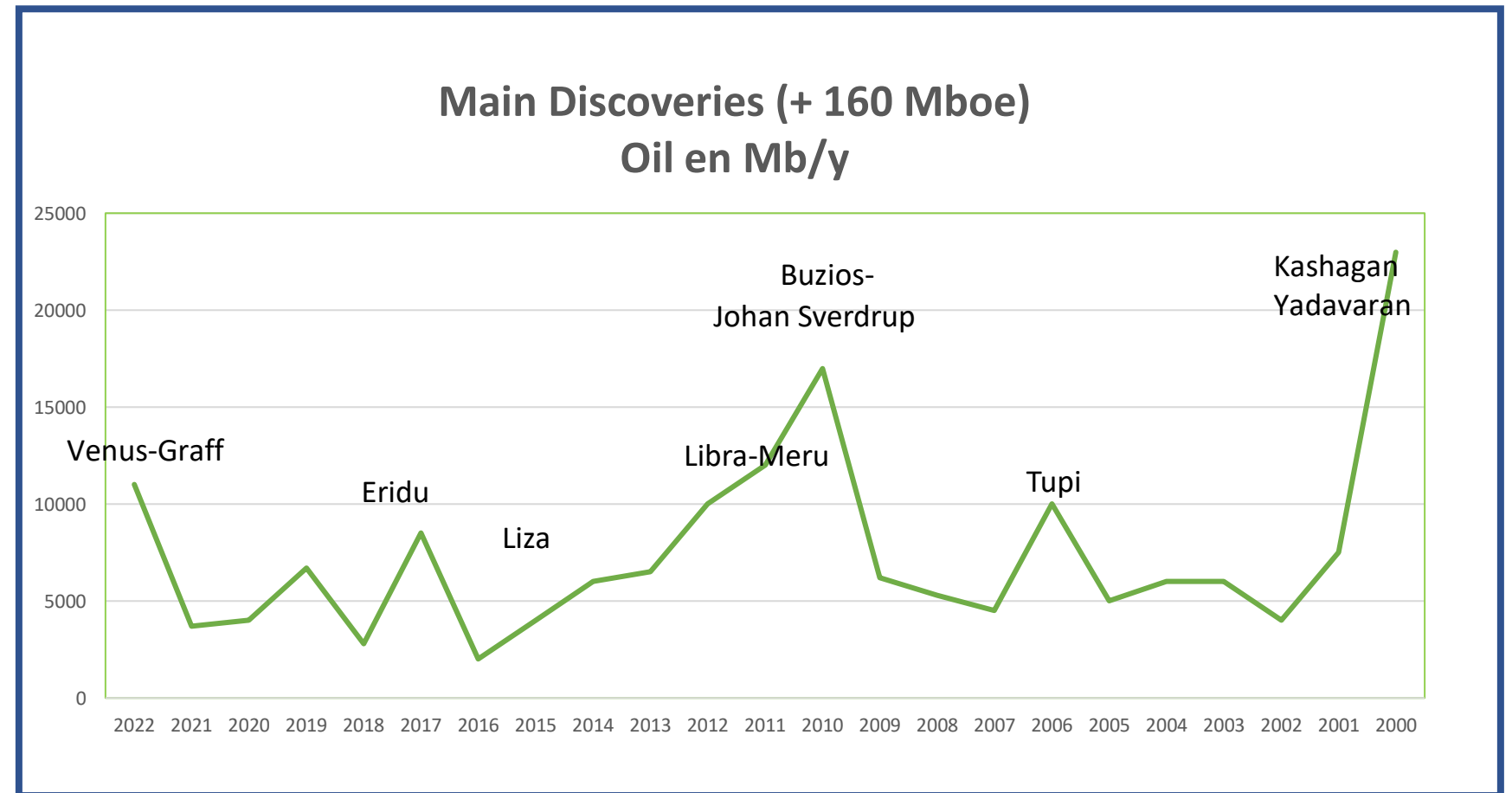
Two decades of Conventional Oil discoveries



Yearly GLOBAL mean discovery is close to 7.5 Gbo/y whereas Consumption is close to 30 Gbo/y , **4 times more !**
Not sustainable at all !

Main discoveries have been made mainly in frontier offshore
Brazil (subsalt Santos) / USA (GOM and Alaska);
Guyana Deep offshore

Oil is in the West !
Statement largely enhanced if we add the non conventional discoveries (US-Argentina)

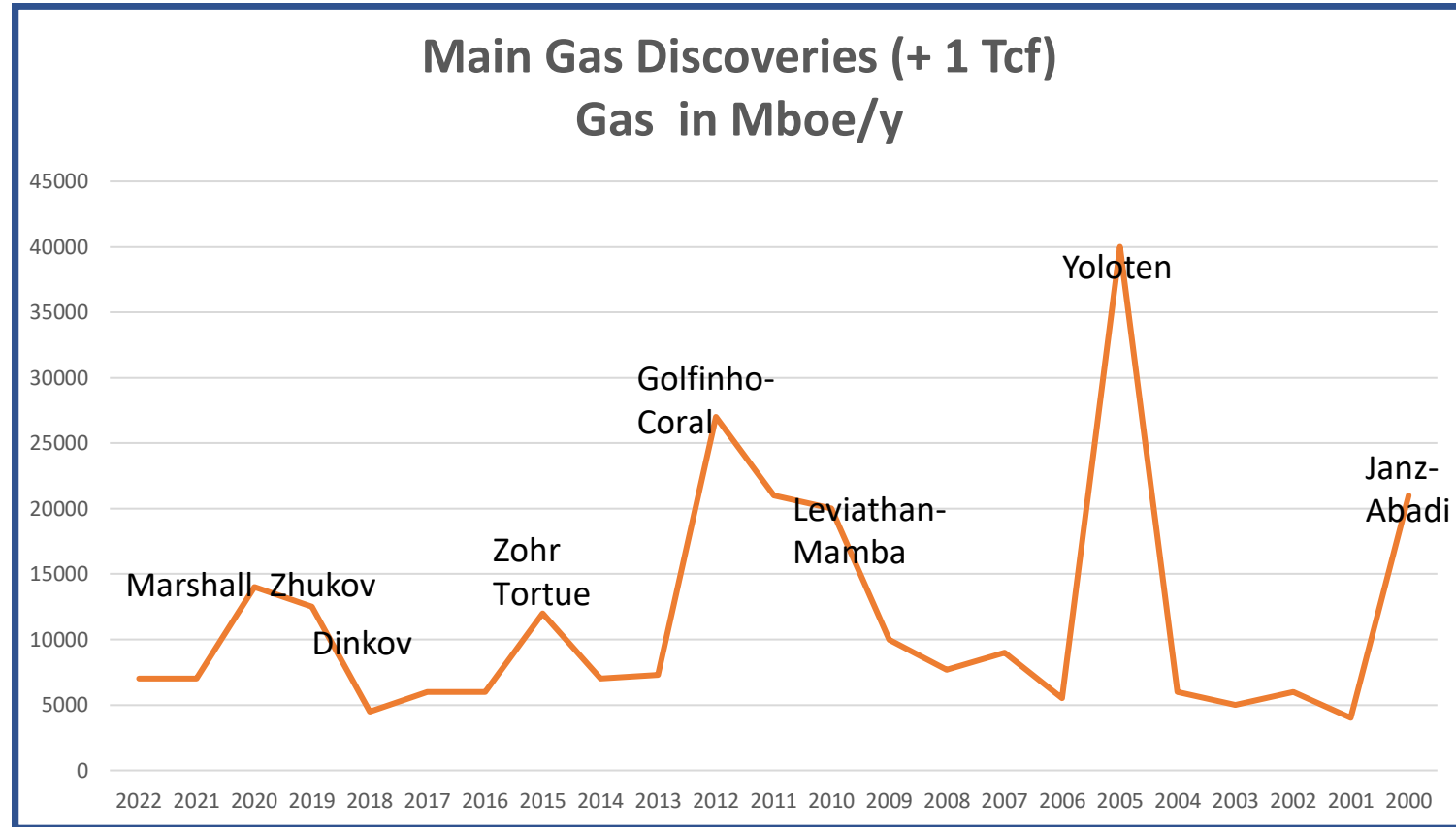


Two decades of Conventional Gas discoveries

Yearly GLOBAL mean discovery is close to 70 Tcf/y whereas Production is 110 Tcf/y; **even for gas the balance is in deficit !**

Main discoveries are in Russia/Turkmenistan/Mozambique/East Med (Egypt-Israel-Cyprus), Australia, Senegal-Mauritania

Gas is geographically better diversified but **Gas is mainly in East !**





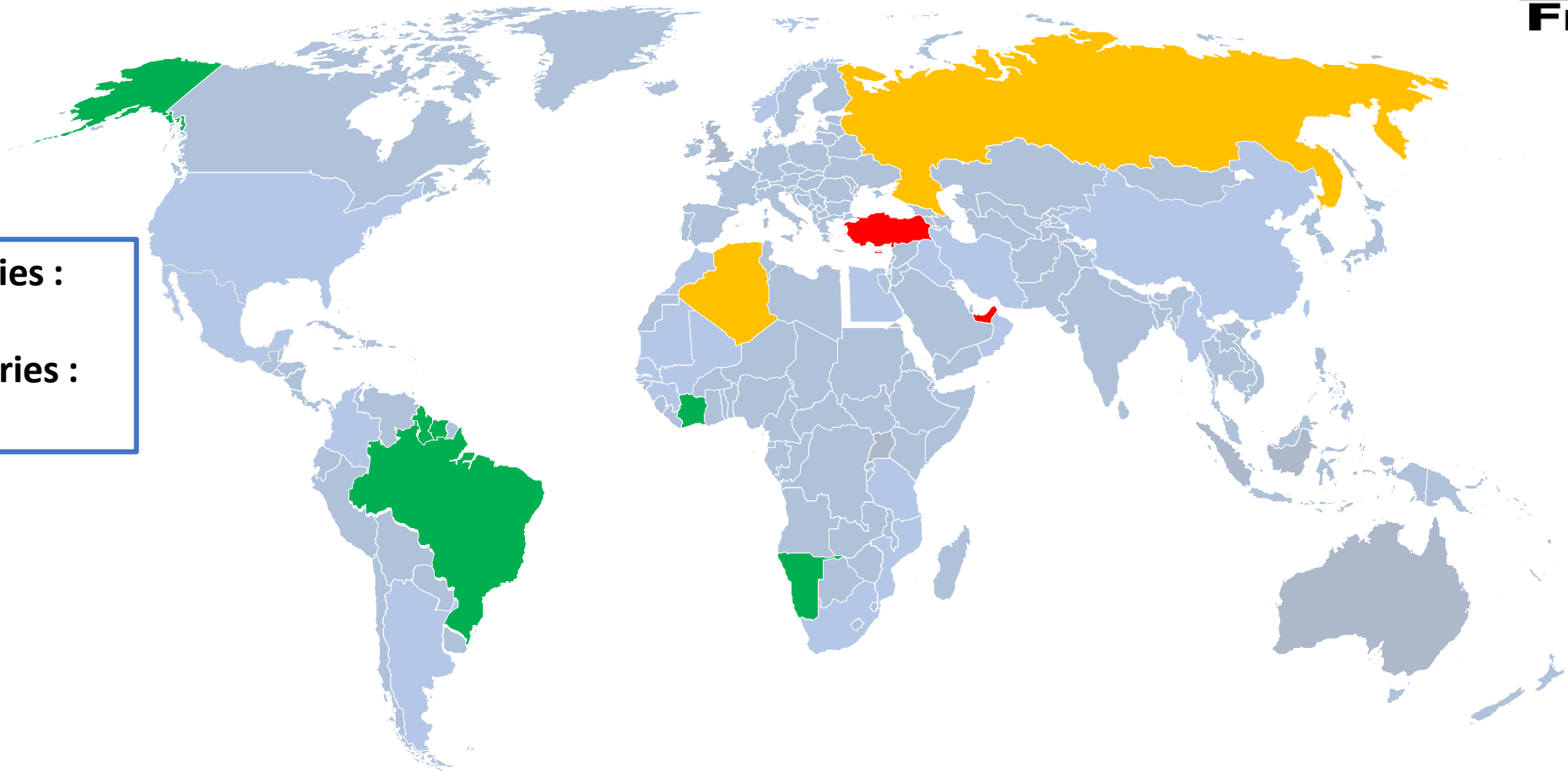
2022 O&G Exploration Results

2022 EXPLORATION SYNTHESIS
New major conventional discoveries



■ OIL
■ GAS

Oil discoveries :
11 Gbo
Gas discoveries :
8 Gboe

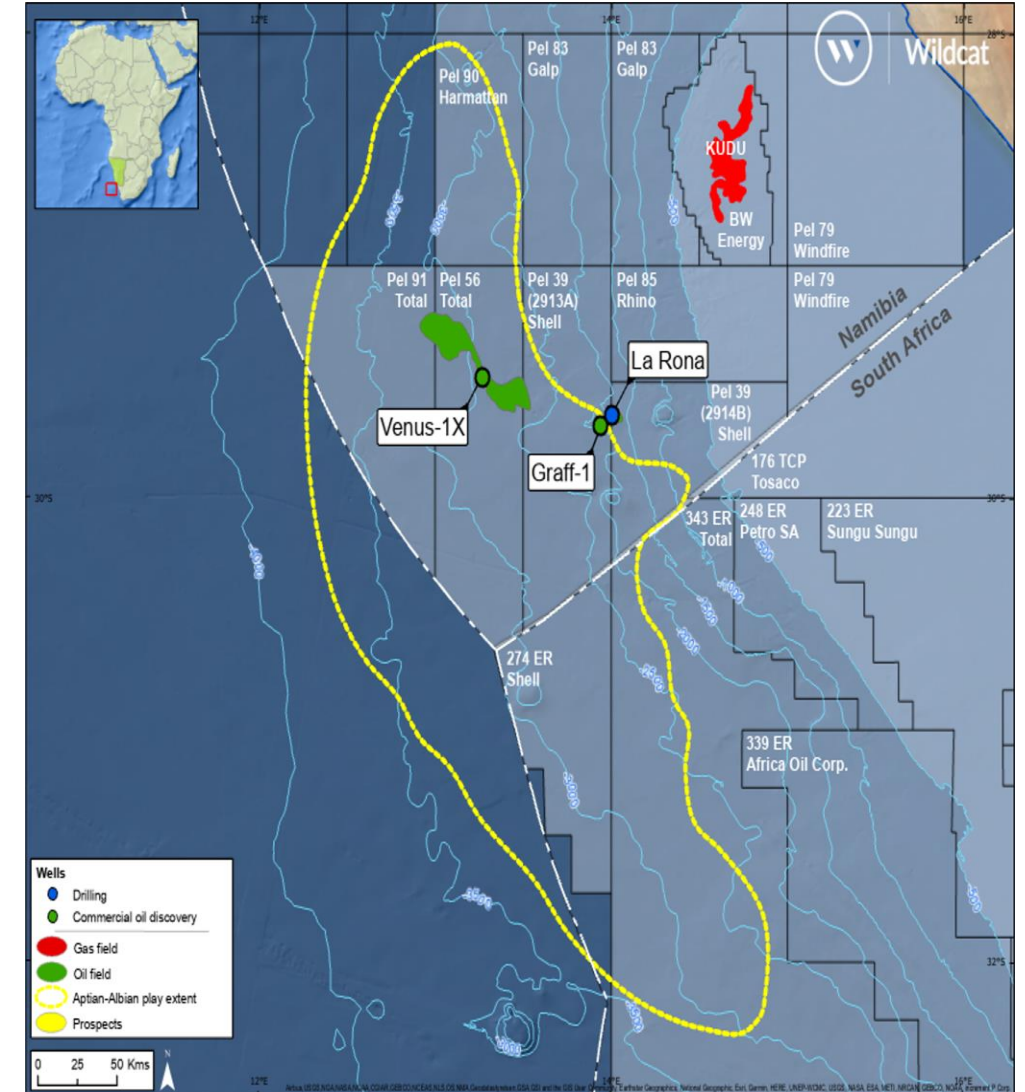


Oil : Guyana-Suriname/Alaska/Brazil (Santos)/Namibia-Ivory Coast
Gas: Turkey/East Med (Cyprus)/UAE
Gas and Oil : Algeria-Russia

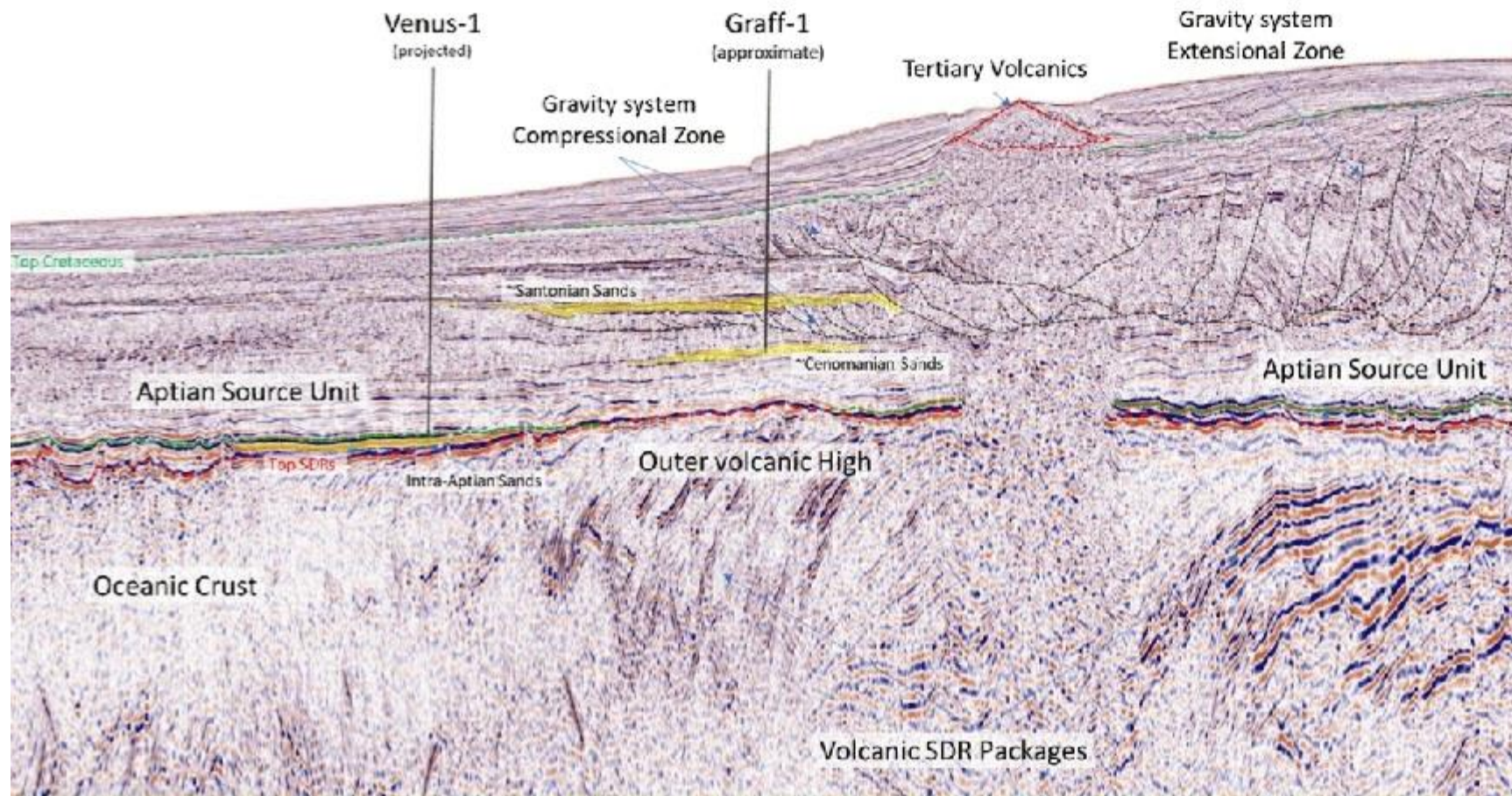
Namibia : Orange Basin : a new oil province in deep offshore Africa

Two discoveries annouced 1st Quarter 2022

- **Graff 1 by Shell** : WD 2000 m ; TD : 5375 m
Mixed Cenomano-Turonian Cretaceous
Turbidites plays –
- 300 Mbo to 1 Gbo Reserves ? Appraisal called
La Rona has been drilled :
- Junker 1 drilled in March 2023 positive too
- **Venus 1 by TotalEnergies 40 % (QP 30
%/Impact 20 %, Namcor 10 %)** : Wd : 3000 m ;
TD ; 6300 m Albian basin floor fan with 84 m of
oil net pay
- Huge reservoir extension with AVO and DDC :
600 Km2 !
- **Reserves 800 Mb to 3 Gbo ?** But not tested :
Permeability ? GOR ?
- Appraisal well (with test) in March 2023



Namibia : Orange Basin : a new oil province in deep offshore Africa



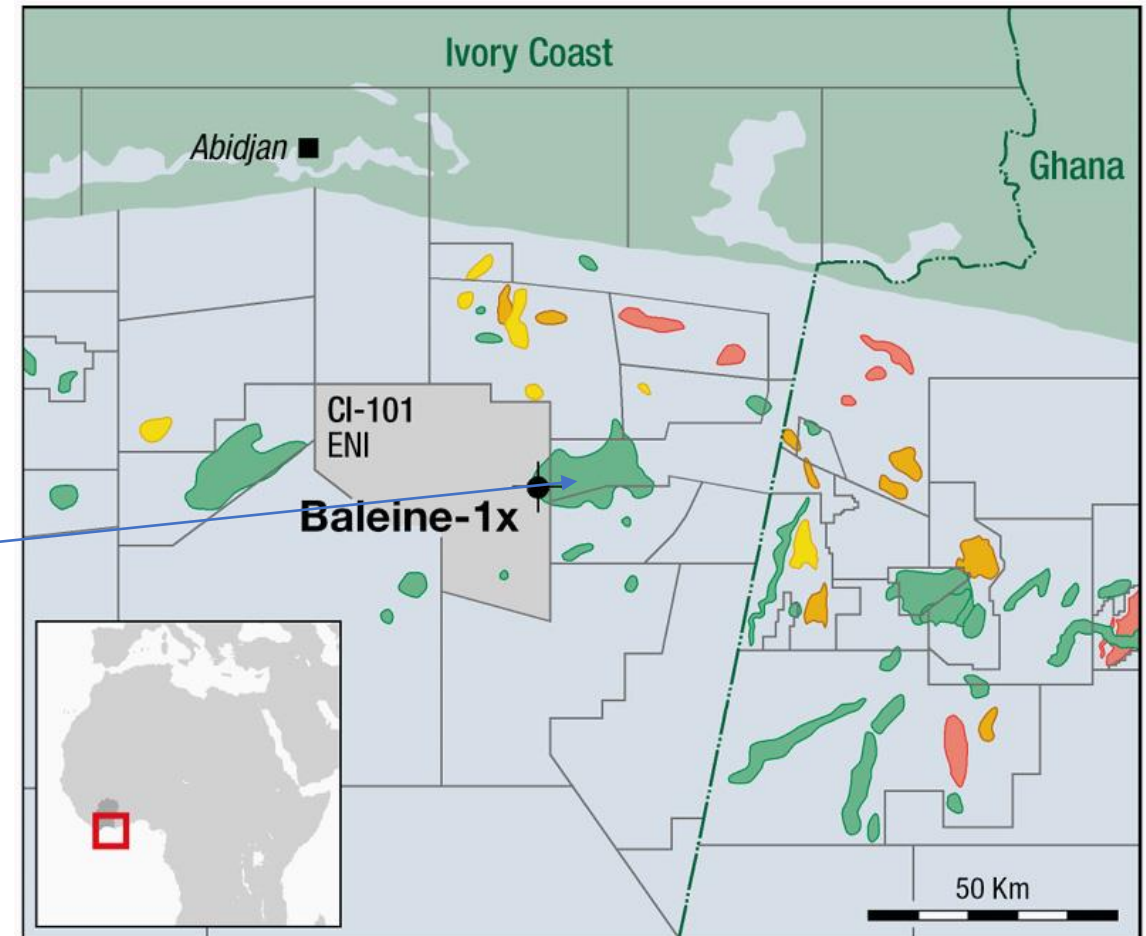
ION SPAN™ surveys include contiguous data across the South Atlantic margin



Ivory Coast-Baleine Field –Appraisal 2022

Appraisal-extension drilled mid 2022 at Baleine-East 1X by ENI ON block CI-802 , 5 km east of discovery well
Excellent results increasing the IOIP from 1.5 to 2.5 Gbo and IGIP from 2 to 2.5 Tcf
First oil fast track development expected end of 2023

Baleine Est- 1
Appraisal on CI-802

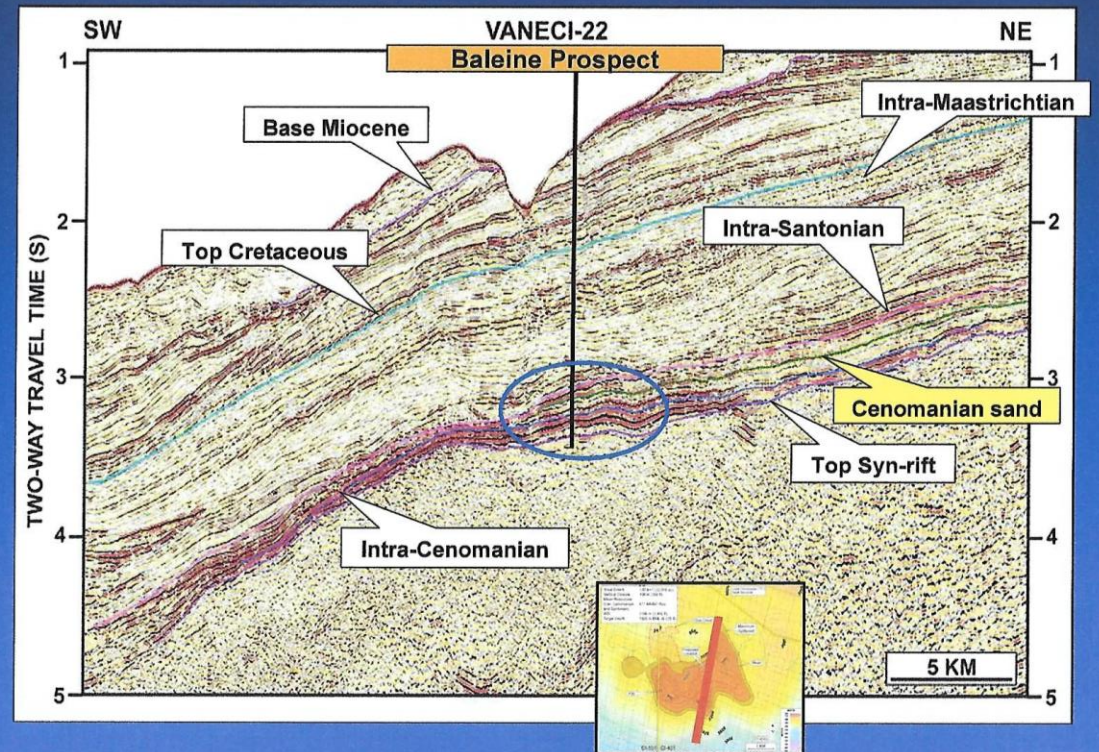


Ivory Coast- Major O&G discovery- CI 101 block by ENI in 2021

Baleine 1 well ENI 90 %; Petroci 10 %
TD : 3445 m
light oil-bearing intervals (40° API) of Santonian and Cenomanian-Albian age. Cenomanian-Albian level shows discrete to good reservoir and has been successfully tested to production. Very probable extension in block CI-802 (ENI op)

IOIP 1.5 to 2 Gbo
IGIP 1.8 to 2.5 Tcf

Baleine Prospect – 2005 2D Dip Line



Brazil : a new exploration step towards UDO

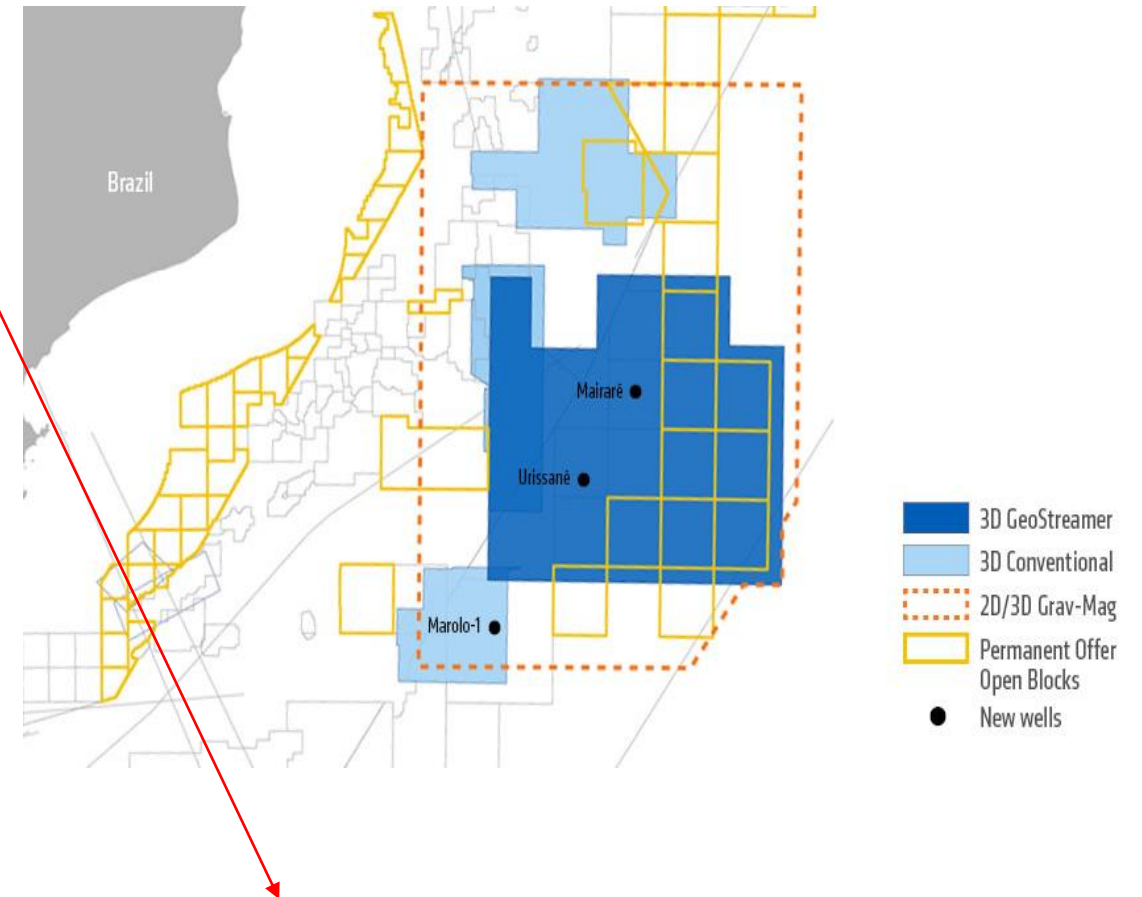
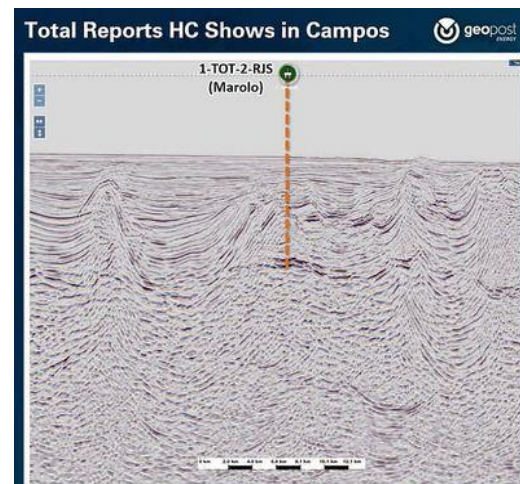
Campos with major risks : facies and sour gas

**Alto de Cabo Frio :WD 1850 m /Petrobras and BP
DST in presalt carbonate / 500 Mboe ?**

**Urissané 1 (2021) by Petrobras 50 % (Exxon 50%) WD :
2950 m, Oil shows ?**

Mairare 1 by Exxon ? Petrobras ? WD : 2850 m CM-346

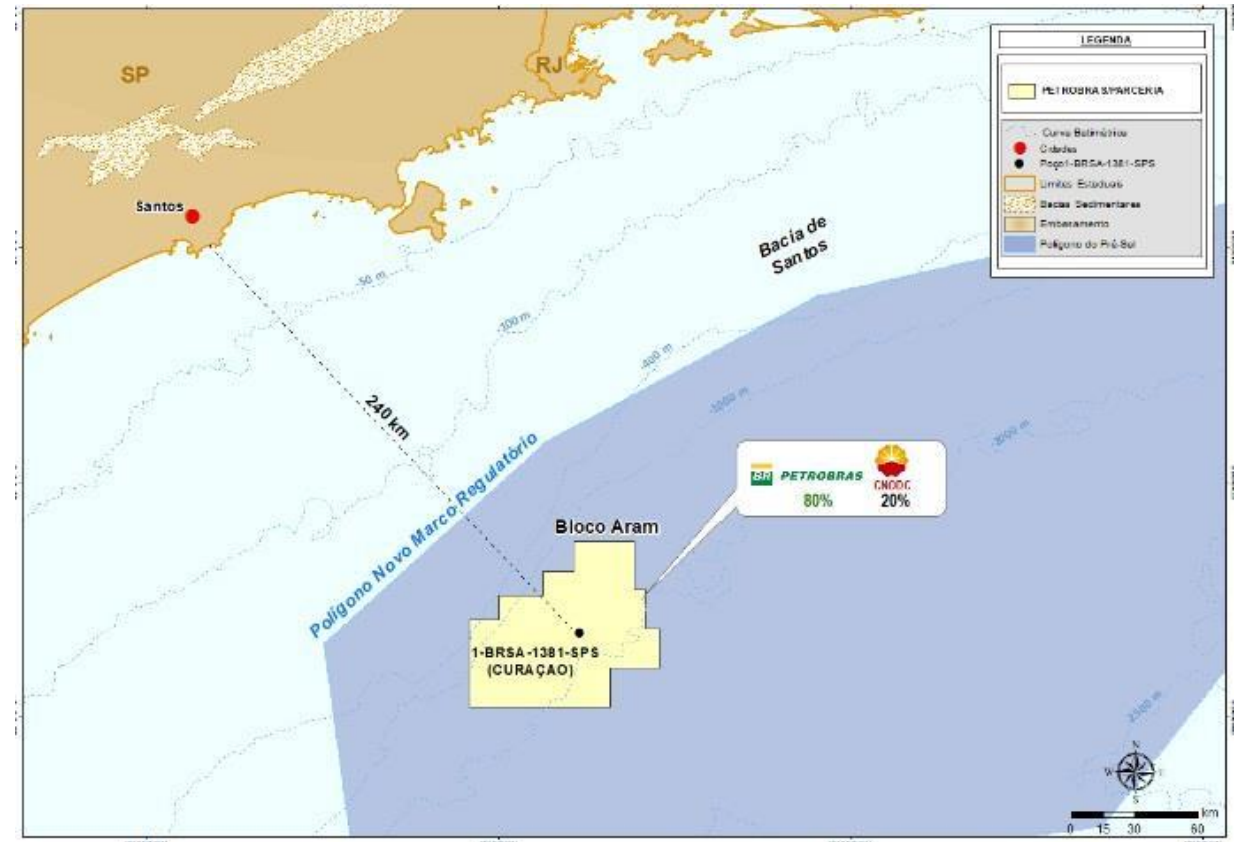
**Marolo 1 (2022) by TotalEnergies (next Ubaia 1 ?) : oil
shows ? WD : 2950 m**



Renewal extensive exploration in Santos Basin

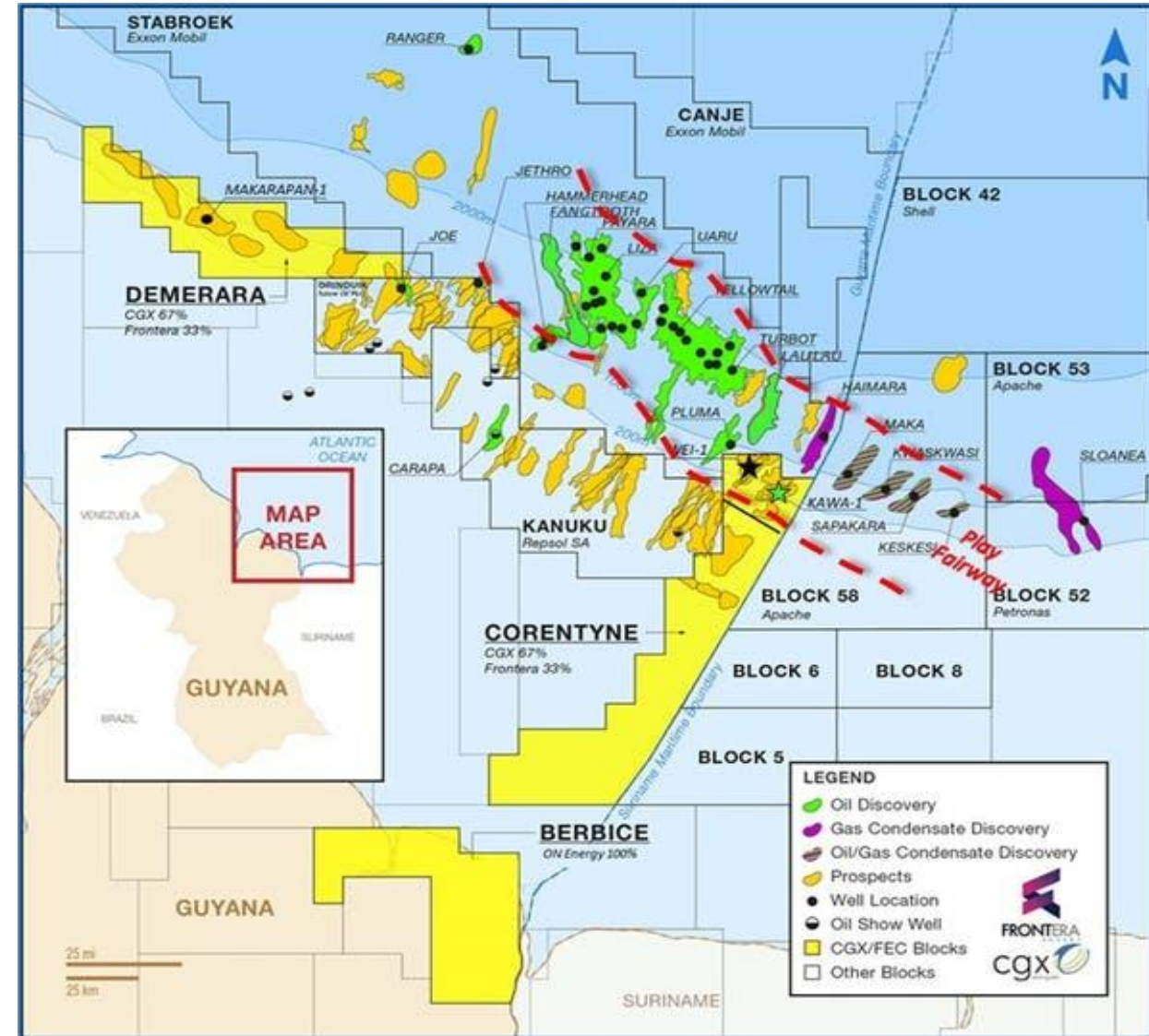
Petrobras (80 %) and CNPC (20 %) made a large discovery in Santos presalt carbonates, Well Curacao-1 (WD : 1900m) now Aram -1 encountered 300 m of gross oil pay in 2021, Discovery was tested mid 2022 showing strong productivity

Oil reserves could be as far as 1500 Mbo



Guyana-Surinam basin : multi-sources Cretaceous sandy turbidites

- 2022 : 9 Exxon discoveries in Guyana (1,5 Gbo) and 2 TE in Suriname (500 Mbo)
- Guyana and Surinam reservoirs could be different from the few published maps
- Younger and shallower in Guyana
- Large deep sea fans in Guyana like Lizza
- Restricted feeders in Surinam
- Multi source points : large ranges of poro-perm values ?
- Higher GOR in Surinam
- **TOTAL : 12 Gbo in Guyana ; 2 Gboe in Surinam ?**

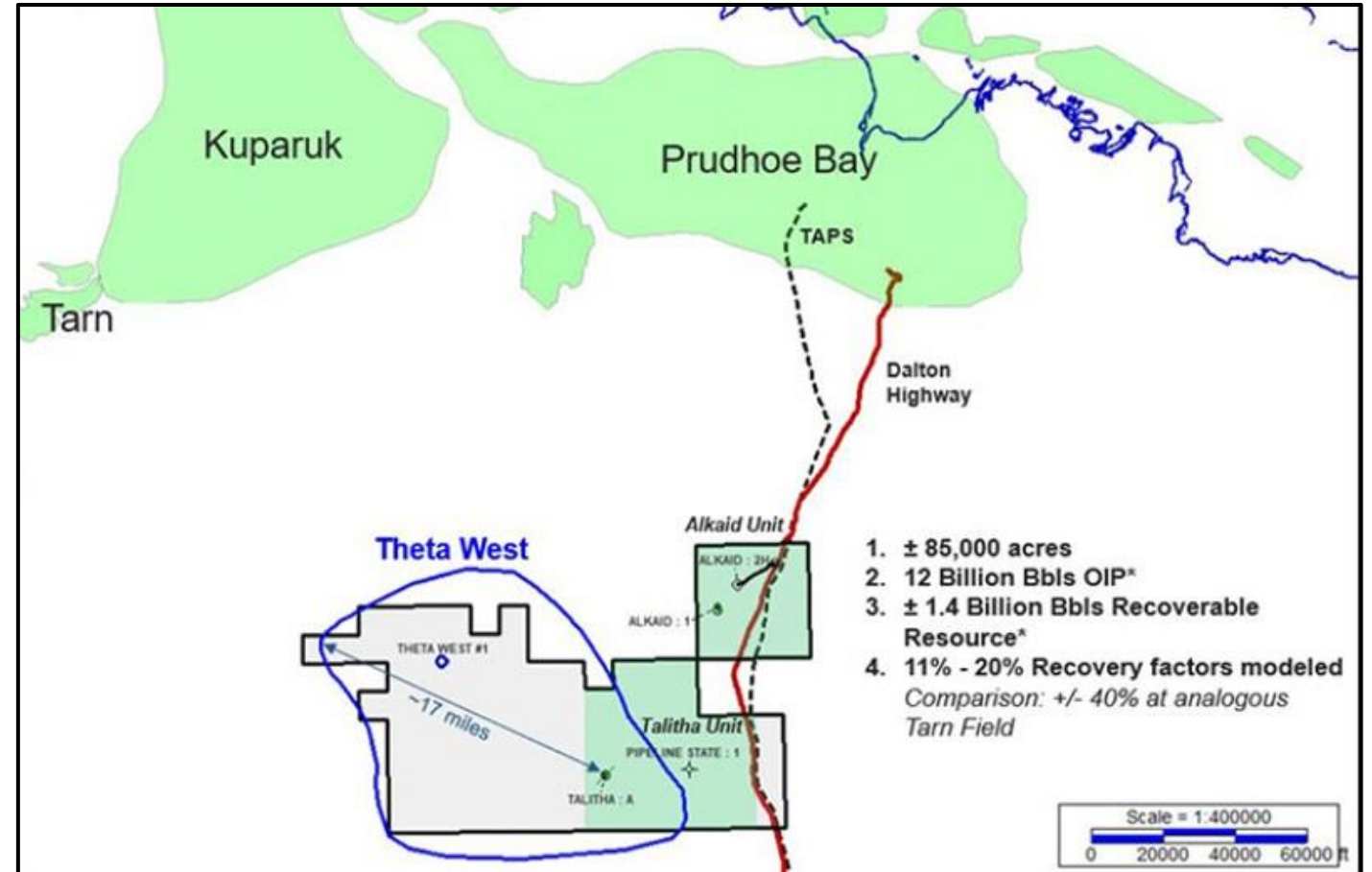


Major discovery in onshore Alaska ?

Pantheon Ressources announced a 1,7 Gbo reserves discovery **at Theta West well** at 2160 m depth, with a 410 m oil column in rather good réservoirs

Updip of Talitha discovery oil bearing also

Separated from Alkaid 1 and 2 tested at,,, 120 bopd 80 Mbo

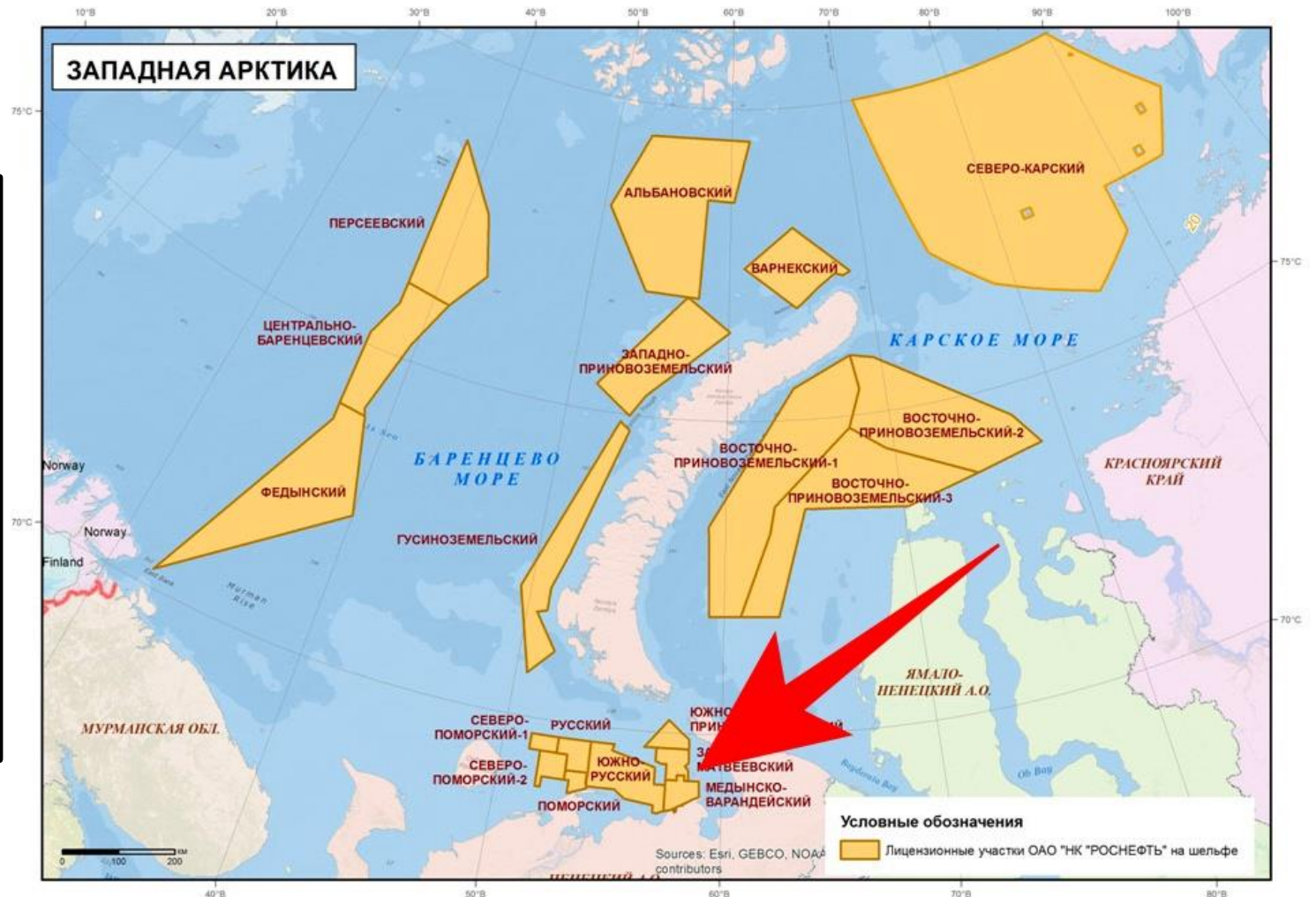


Russia – Pechora Sea – Rosneft oil discovery

Madachagskoye 2 well drilled from the coast in 2021/2022, TD at 4435 m test 130 to 250 m³/d of light oil

Field could have 575 Mbo reserves
Reservoir parameters not disclosed,

South of Prirazlomnoye (Gasprom) field : arctic development with artificial island, horizontal drilling and multiple fracks stages.



Twin discoveries in block 6 Cyprus

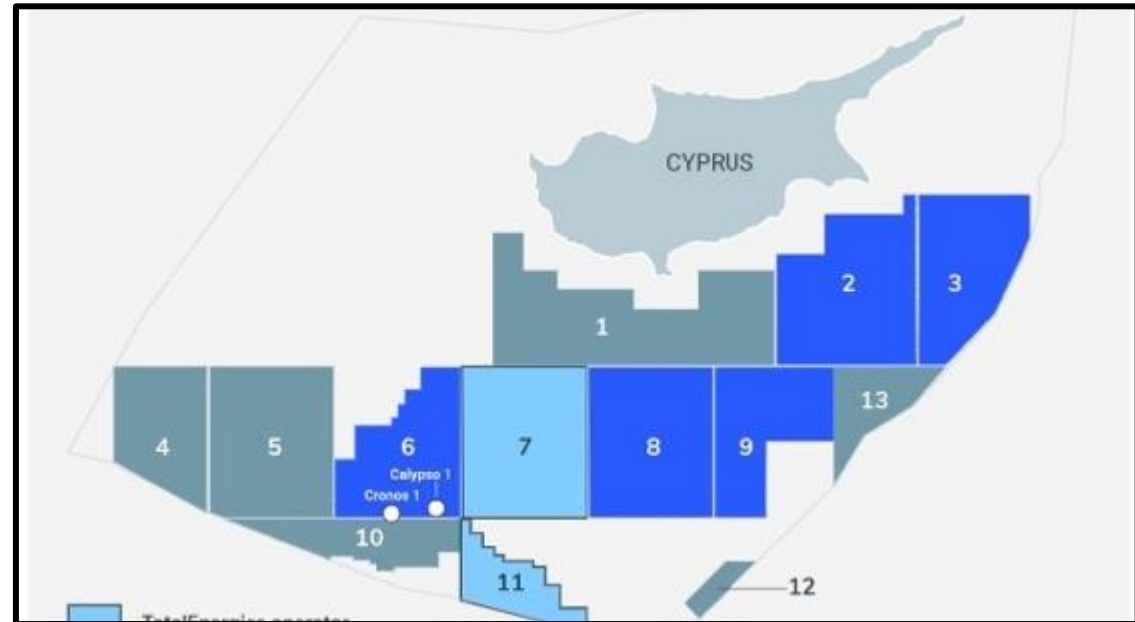
ENI operator (50 %) and TE (50%) partner
announced two discoveries in
Miocene to Cretaceous
carbonates in bloc 6 :

**Chronos 1 (260 m net pay) and
Zeus(110 m net pay)**

around 3 Tcf each

GIP discoveries

After Calypso (bloc 6) and
Glaucus (Exxon block 10) a
development associated with
Aphrodite (Chevron block 12)
seems probable : FLNG or LNG ?



Oil and gas discoveries in UAE

- Onshore block 3 by Occidental : 100 Mbo
- Onshore block 4 by INPEX : 1 Gboe
- Offshore block 2 by ENI : 2 Tcf in shallow Fm and 1-2 Tcf in deep Jurassic Fm

