



Brazil

OIL | GAS | ENERGY 2022

Areas in Open Acreage for Exploration and Production Production Sharing Regime

Geological and Economical Approach

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26th May, 2022

NOTICE

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Projections and estimated values are included without any guarantee as to their future realization.

Forward-looking data, information, projections and opinions expressed during the presentation are subject to change without prior notice.



OPEN ACREAGE

1st time offering blocks within the Pre-salt Polygon in the Open Acreage model

11 Blocks

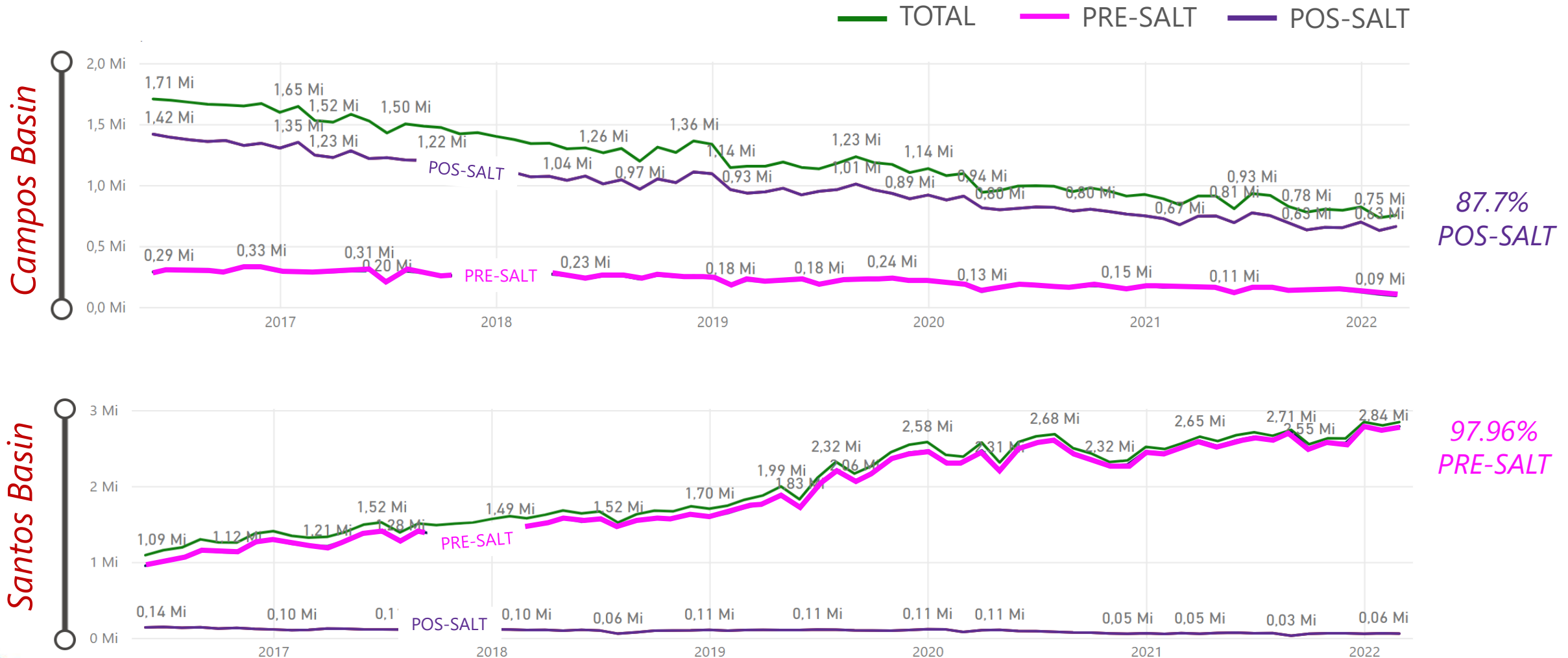
»» **CAMPOS** SEDIMENTARY BASIN

»» **SANTOS** SEDIMENTARY BASIN



Campos and Santos Basins – Production

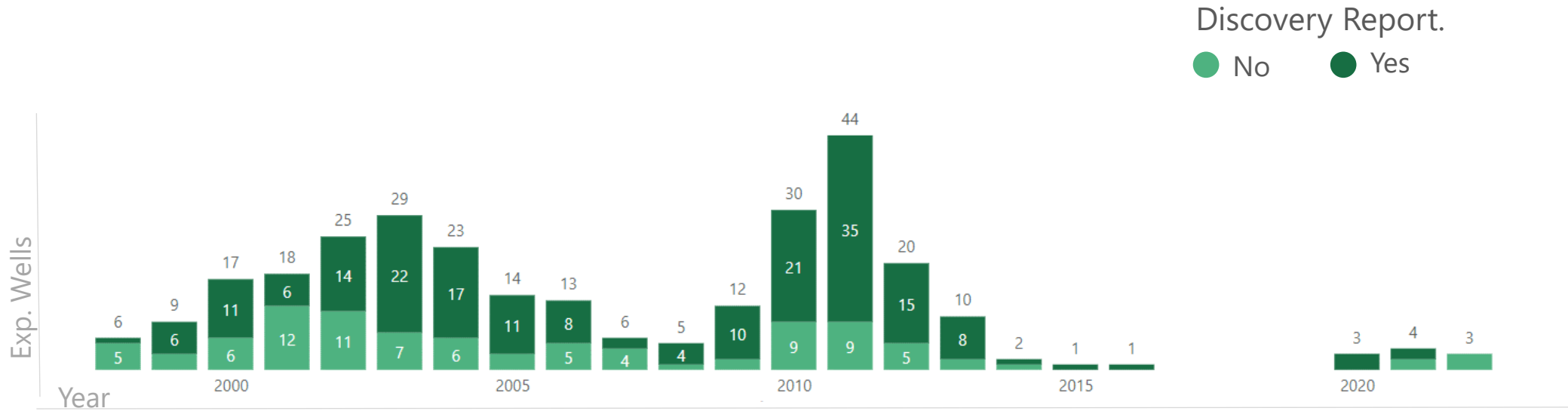
PRE-SALT vs POS-SALT (BOE/D)



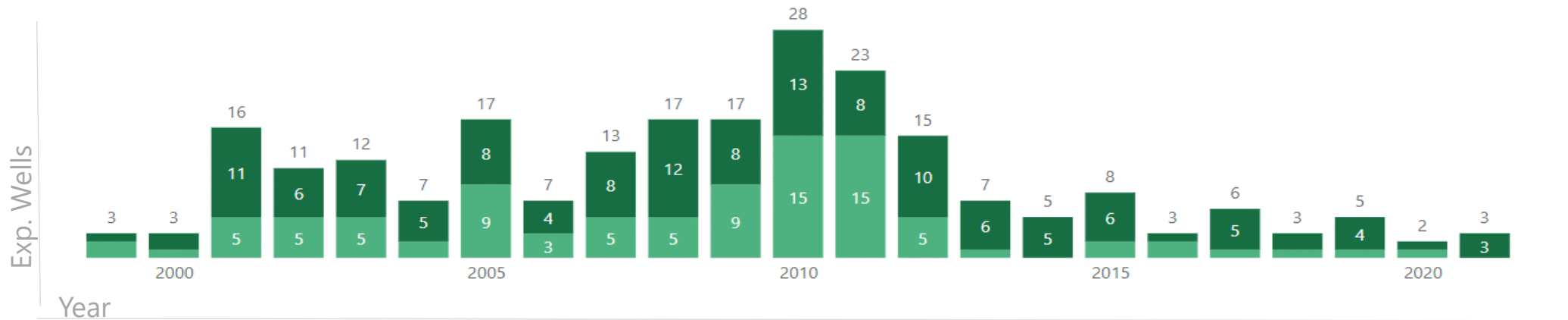
Campos and Santos Basins – Production

Exploratory Wells Drilled

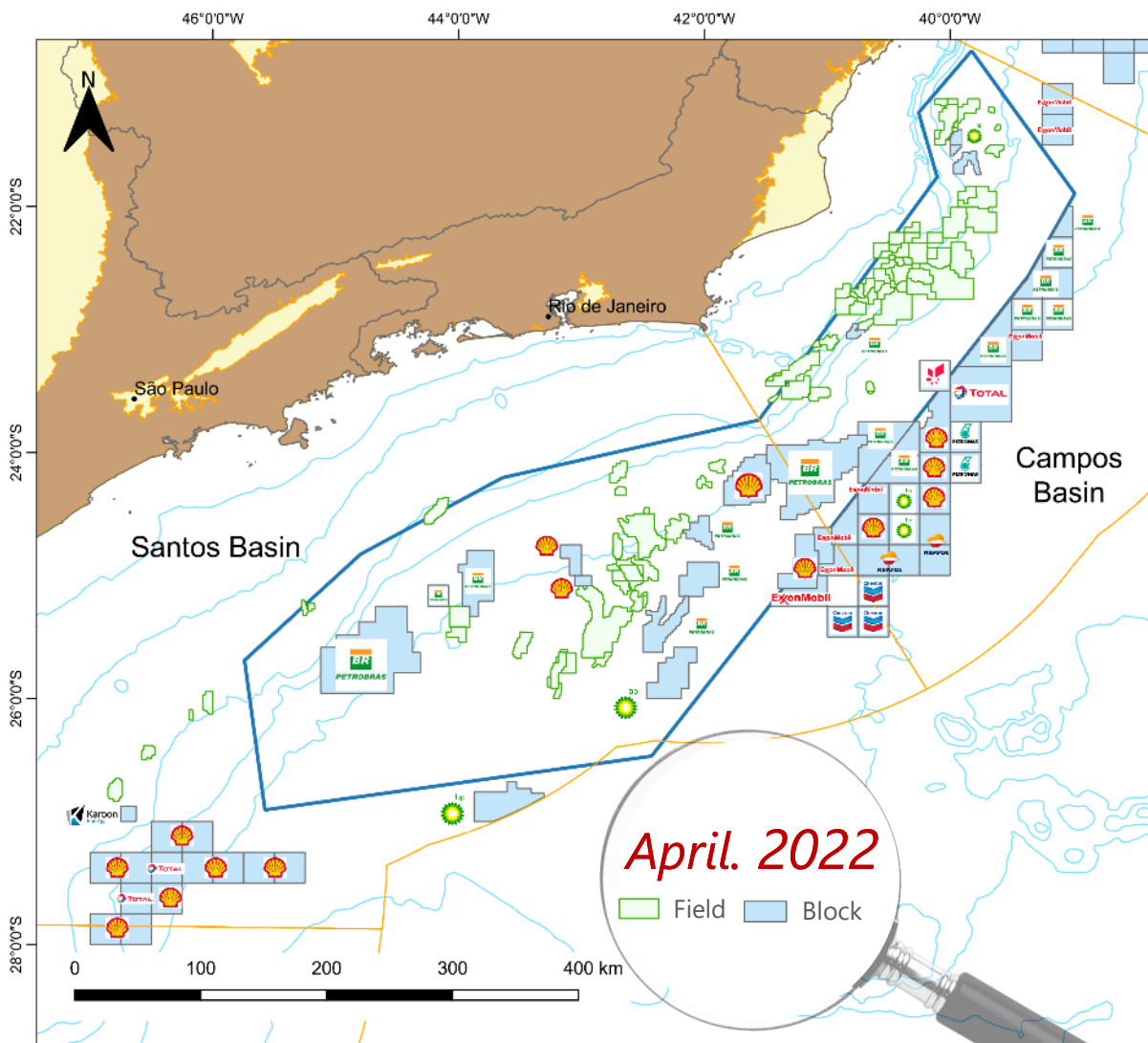
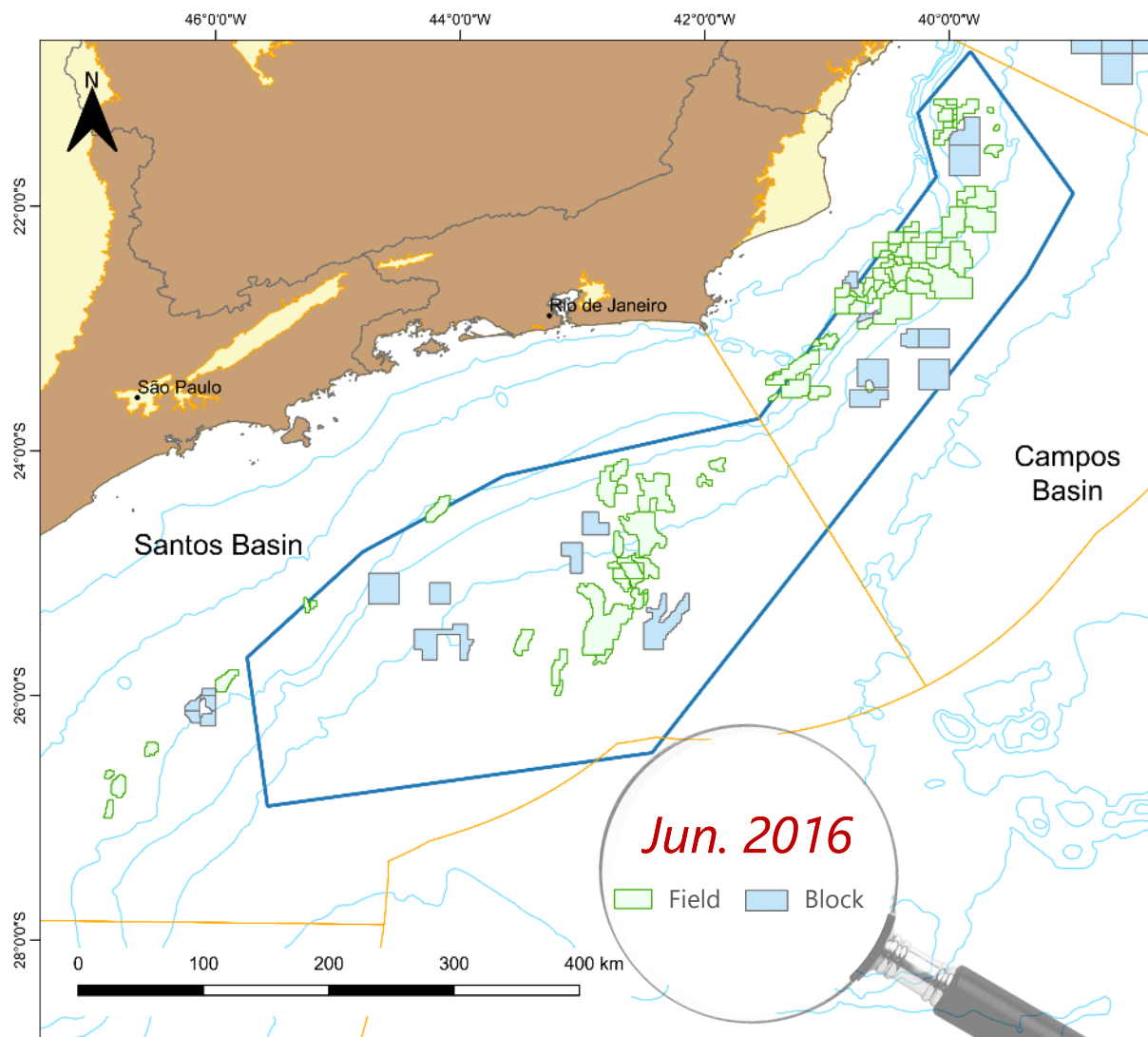
Campos Basin



Santos Basin



Campos and Santos Basins – Contracted Areas



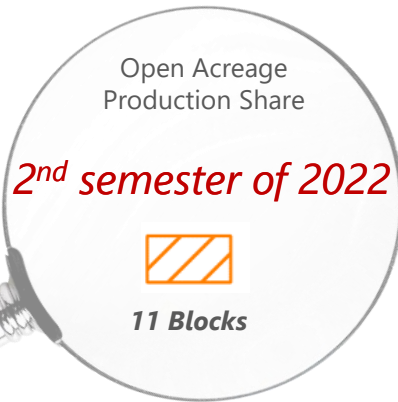
Campos and Santos basins - Opportunities on Open Acreage

[Res. CNPE nº 27/2021](#)

[Res. CNPE nº 26/2021](#)

[Res. CNPE nº 01/2022](#)

- ✓ Studies
- ✓ Public Hearing
- ⌚ TCU Assessment
- ... > ...



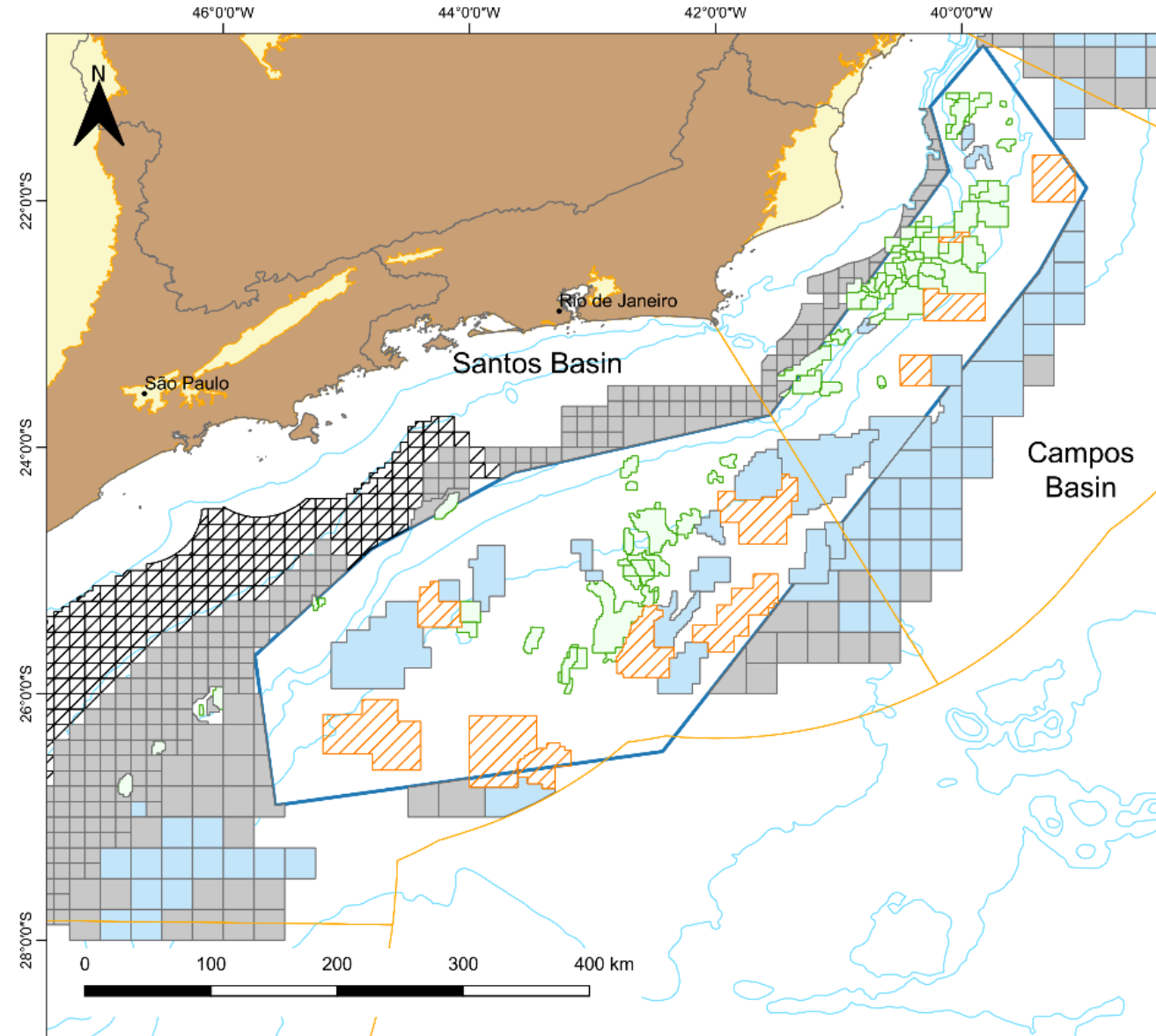
Contract Ongoing

Field Block

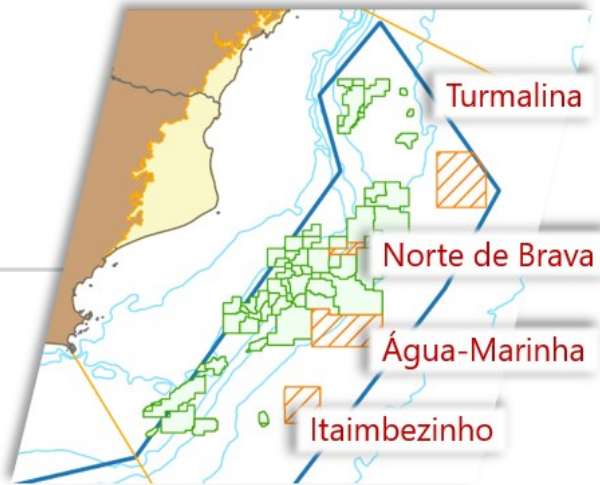
Open Acreage Concession

On Study

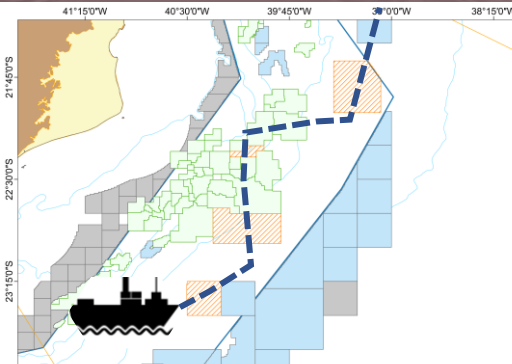
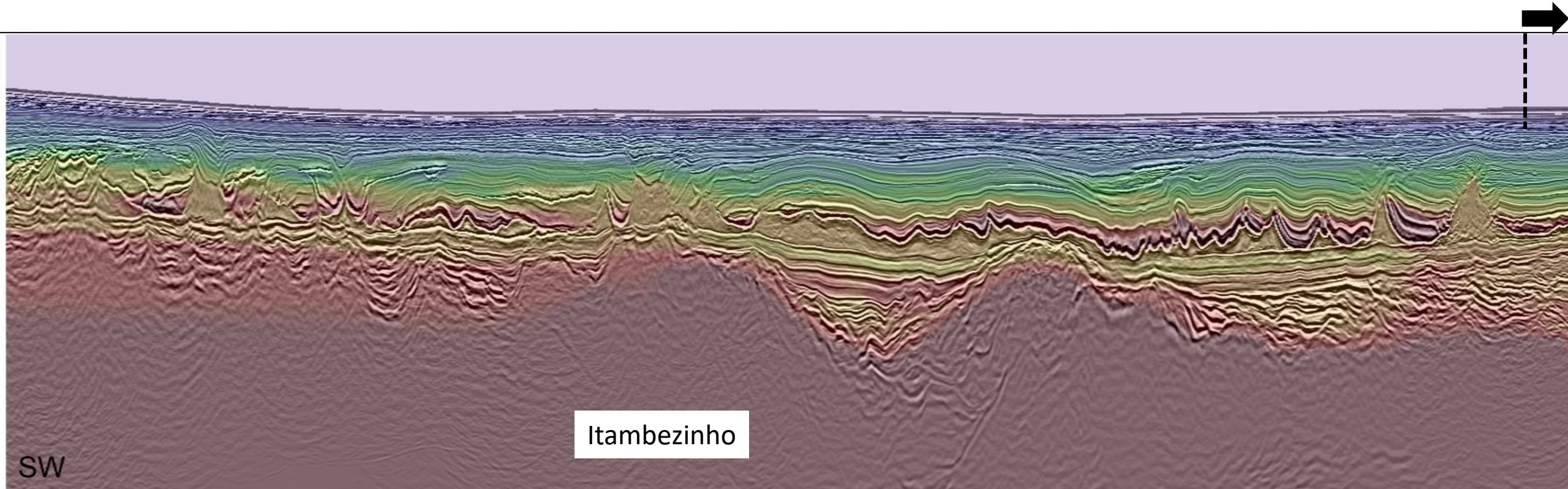
On Offer



Production Sharing Regime

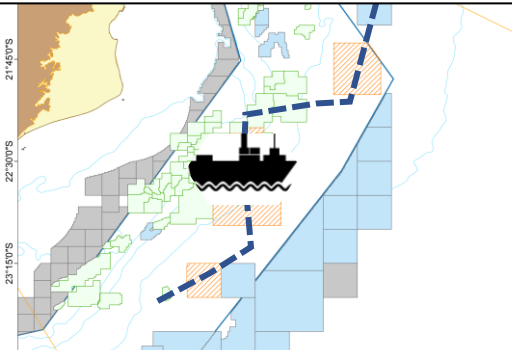
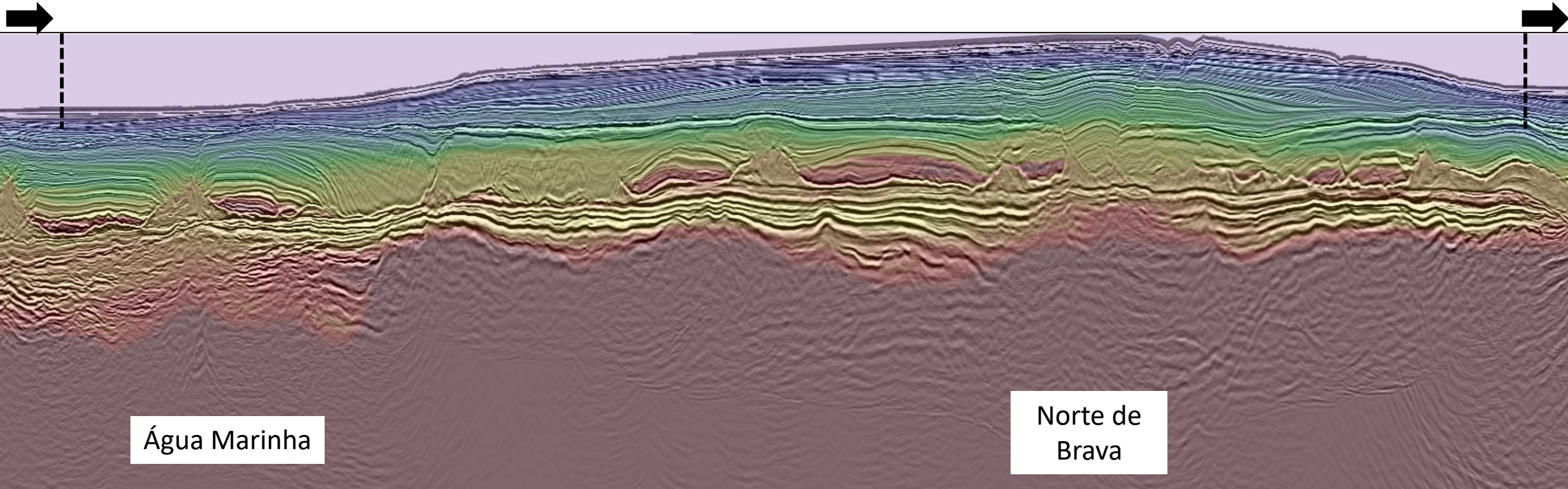


Campos Basin (Itaimbezinho, Água Marinha, Norte de Brava e Turmalina)



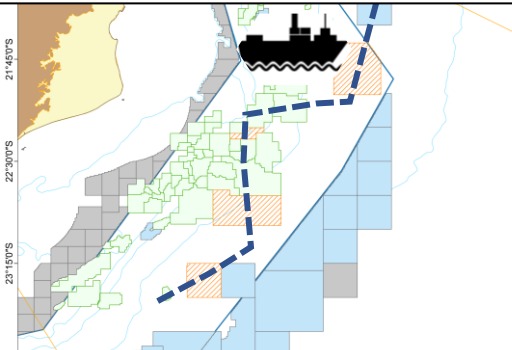
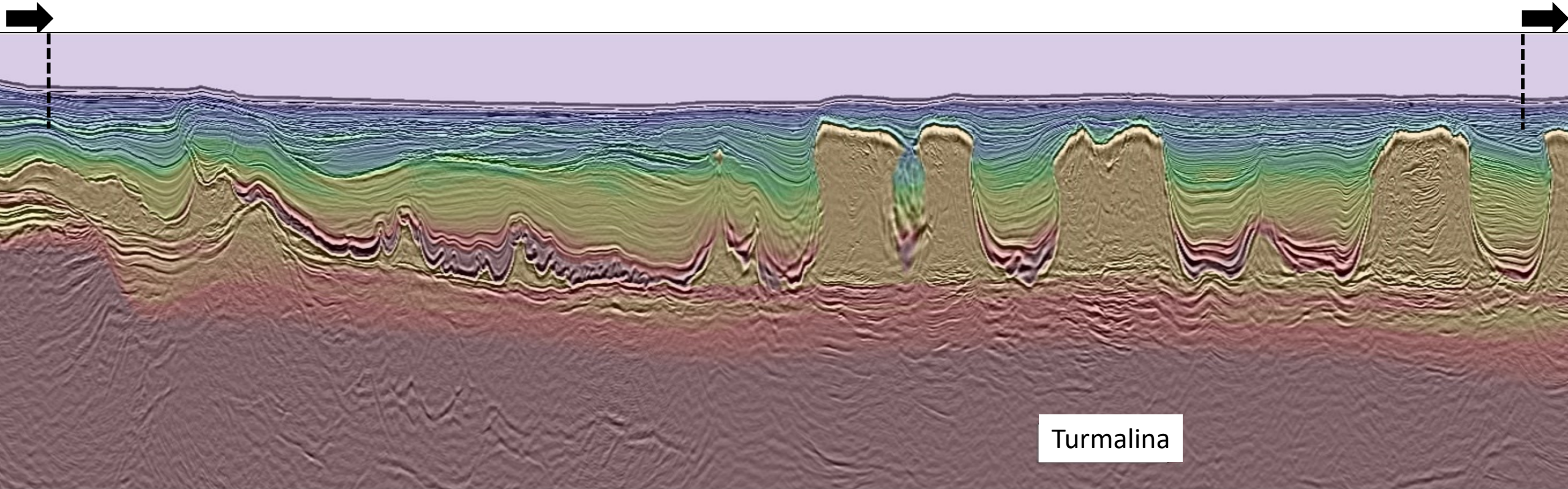
Courtesy ION Geophysical: Picanha 3D RTM + Velocity Model

Campos Basin (Itaimbezinho, Água Marinha, Norte de Brava e Turmalina)



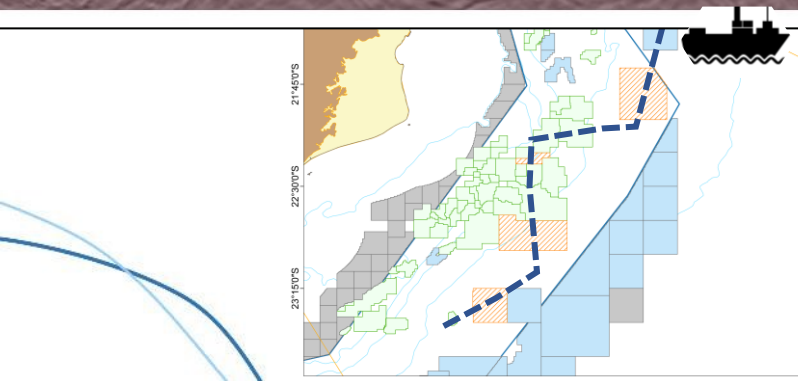
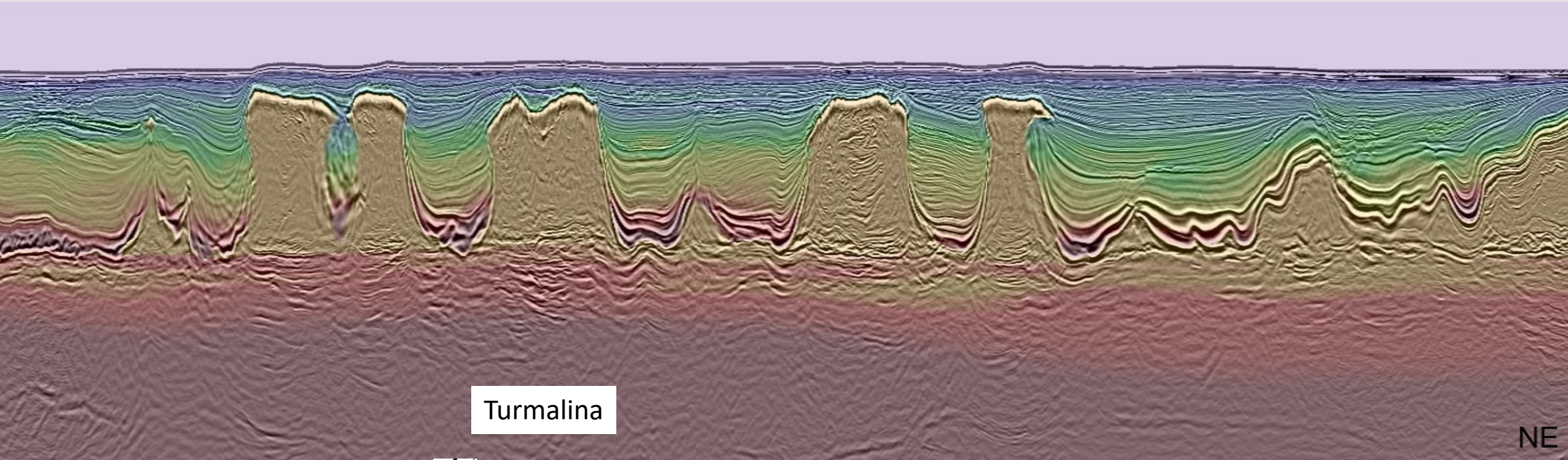
Courtesy ION Geophysical: Picanha 3D RTM + Velocity Model

Campos Basin (Itaimbezinho, Água Marinha, Norte de Brava e Turmalina)

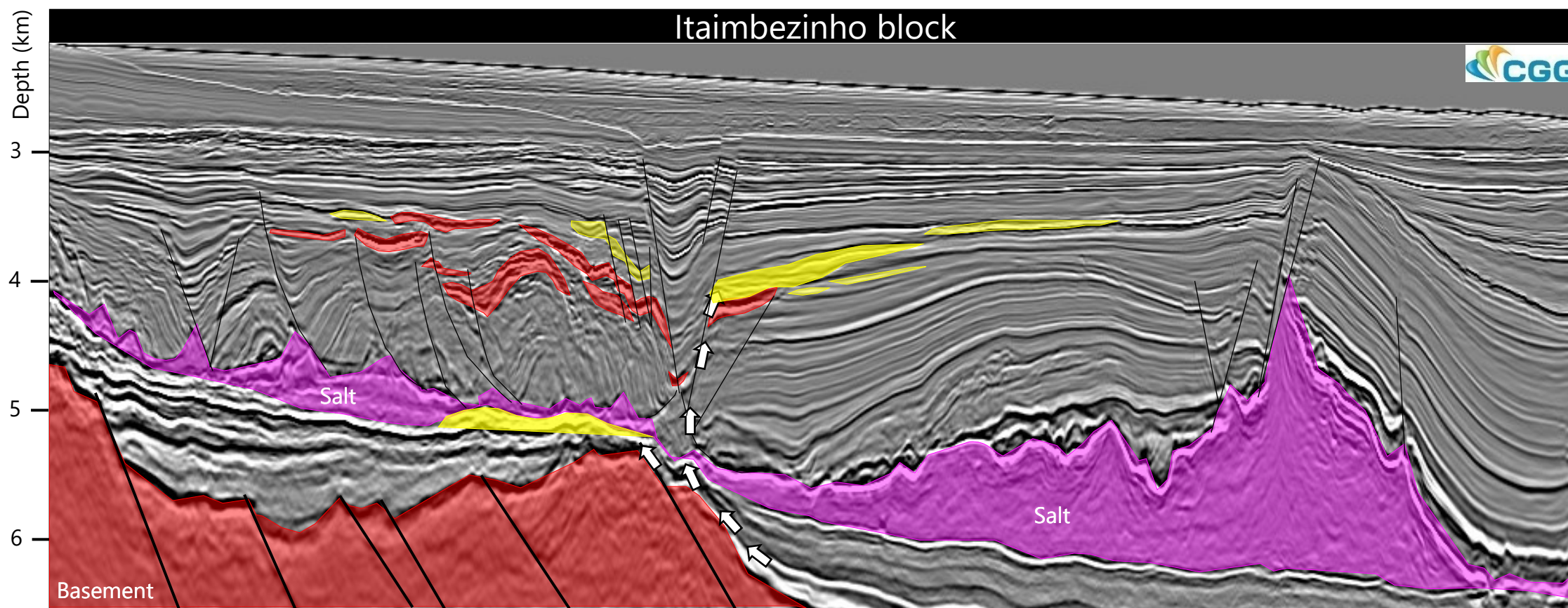


Courtesy ION Geophysical: Picanha 3D RTM + Velocity Model

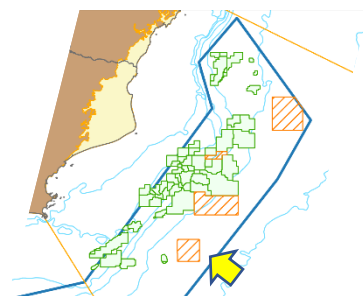
Campos Basin (Itaimbezinho, Água Marinha, Norte de Brava e Turmalina)



Courtesy ION Geophysical: Picanha 3D RTM + Velocity Model



0 2
km

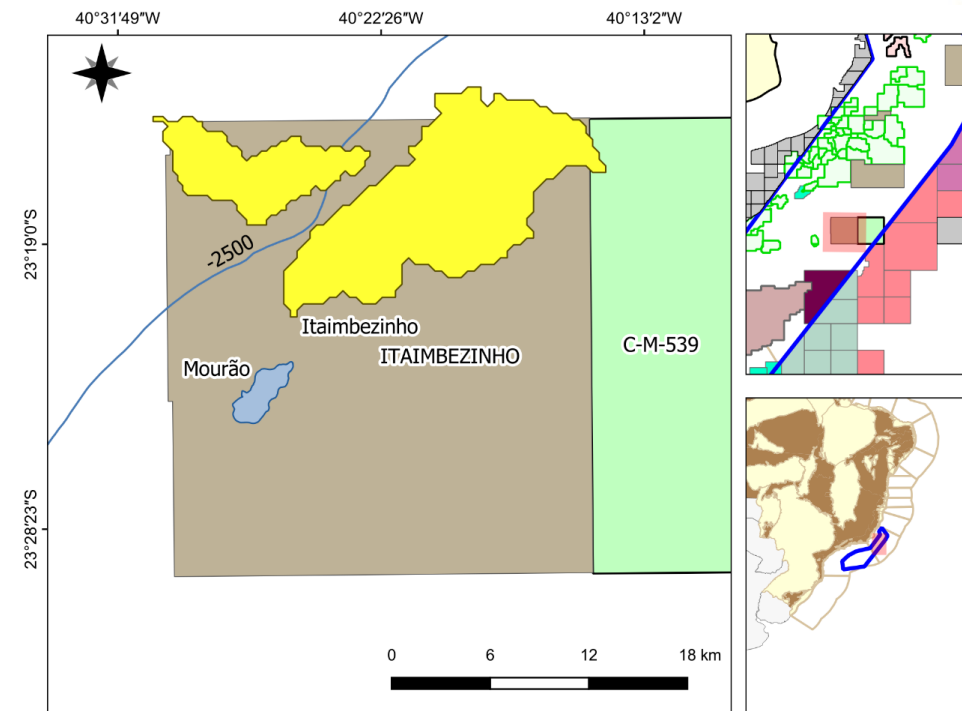
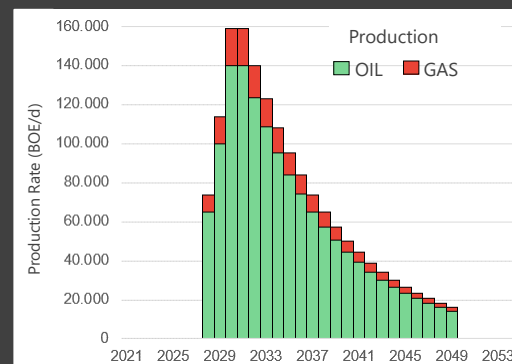


Courtesy CGG - R0264_POLARIS

Campos Basin – Itaimbezinho Block

Project (Hypothetical)

- Itaimbezinho VOIP 1,540 MSTB
- Recovery Factor ~ 30%
- Gas - Pipeline (160 Km)
- 22 production wells
- 12 injection wells



Prospects Open Acreage Exploration Blocks

Post-salt PSA R7

Pre-salt Pre-salt Polygon

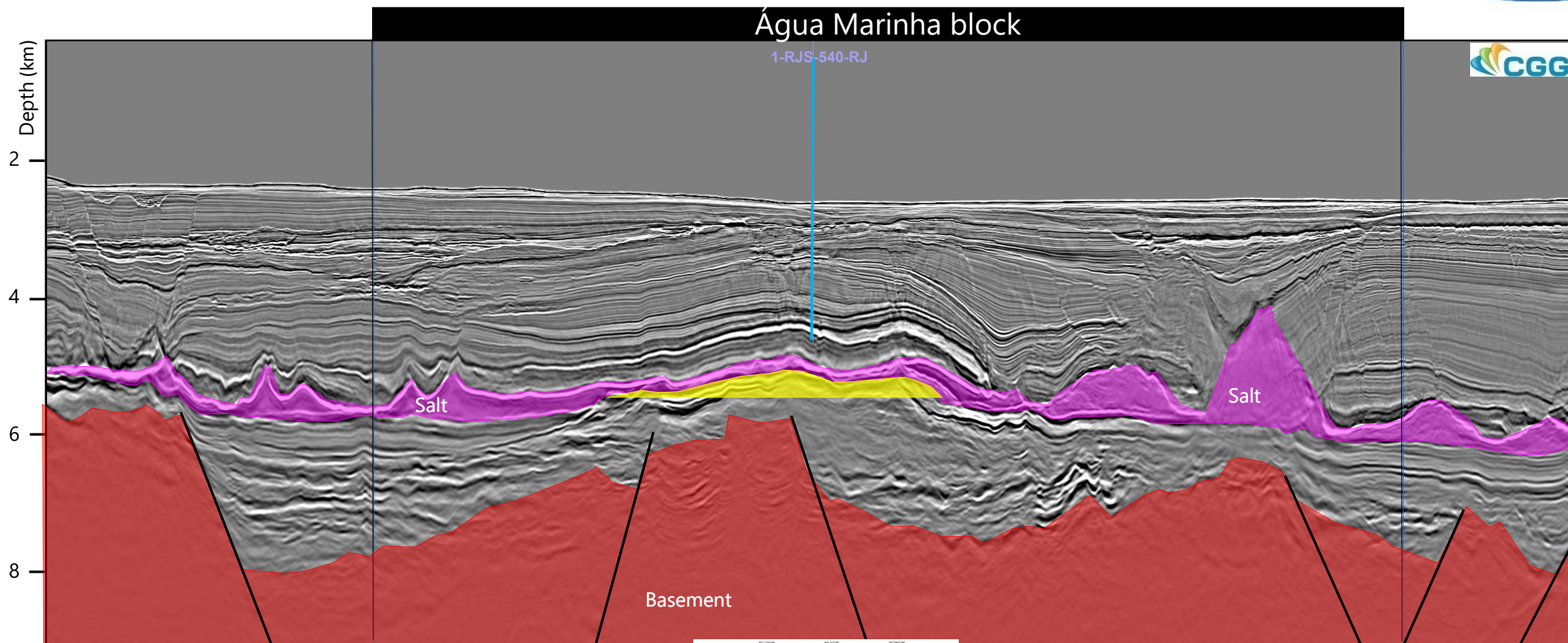
Block Area 1,000 Km²

Block VOIP 1,712 MSTB

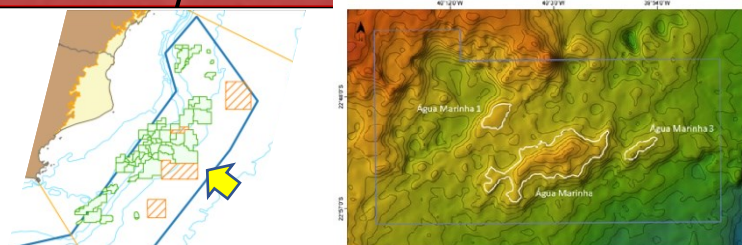
Water Depth 2,650 m / Coastline distance 160 Km

Prospect	Source	Migration	Reservoir	Seal	Trap	Synchronism	CSG
Itaimbezinho Pos-Salt	100%	70%	50%	60%	80%	100%	17%
Upside Mourão Pre-Salt	100%	70%	50%	10%	100%	100%	4%

Campos Basin – Água-Marinha Block



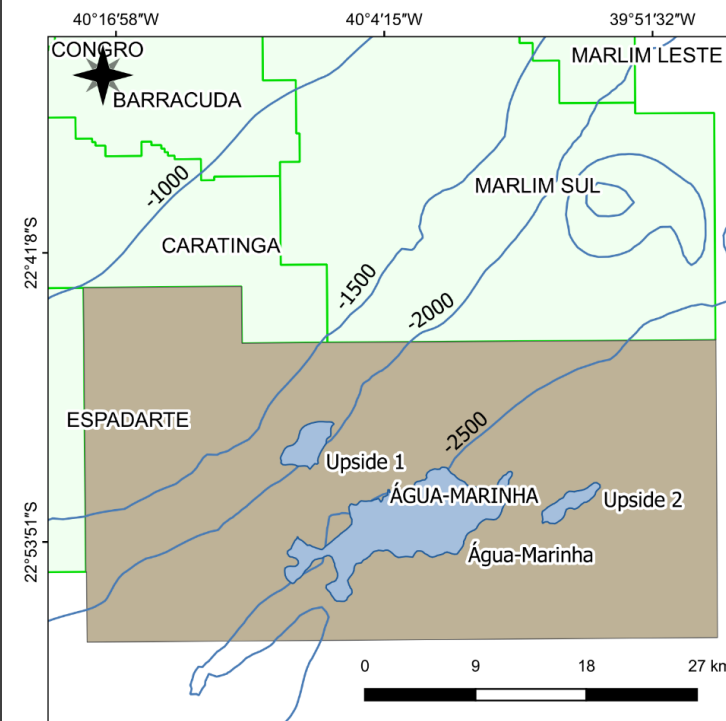
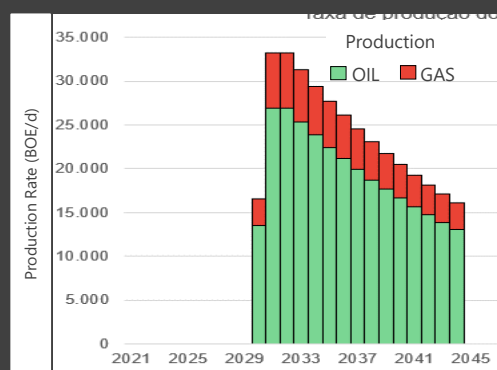
Courtesy CGG - 0264_BMC_CAMPOS_FASE_II_RTM



Campos Basin – Água Marinha Block

Project (Hypothetical)

- Água Marinha VOIP 530 MSTB
- Recovery Factor ~ 20%
- Oil - 1 FPSO
- 2 production wells
- 2 injection wells



Prospects

Pre-salt Pre-salt Polygon

O&G Fields

Open Acreage

PSA

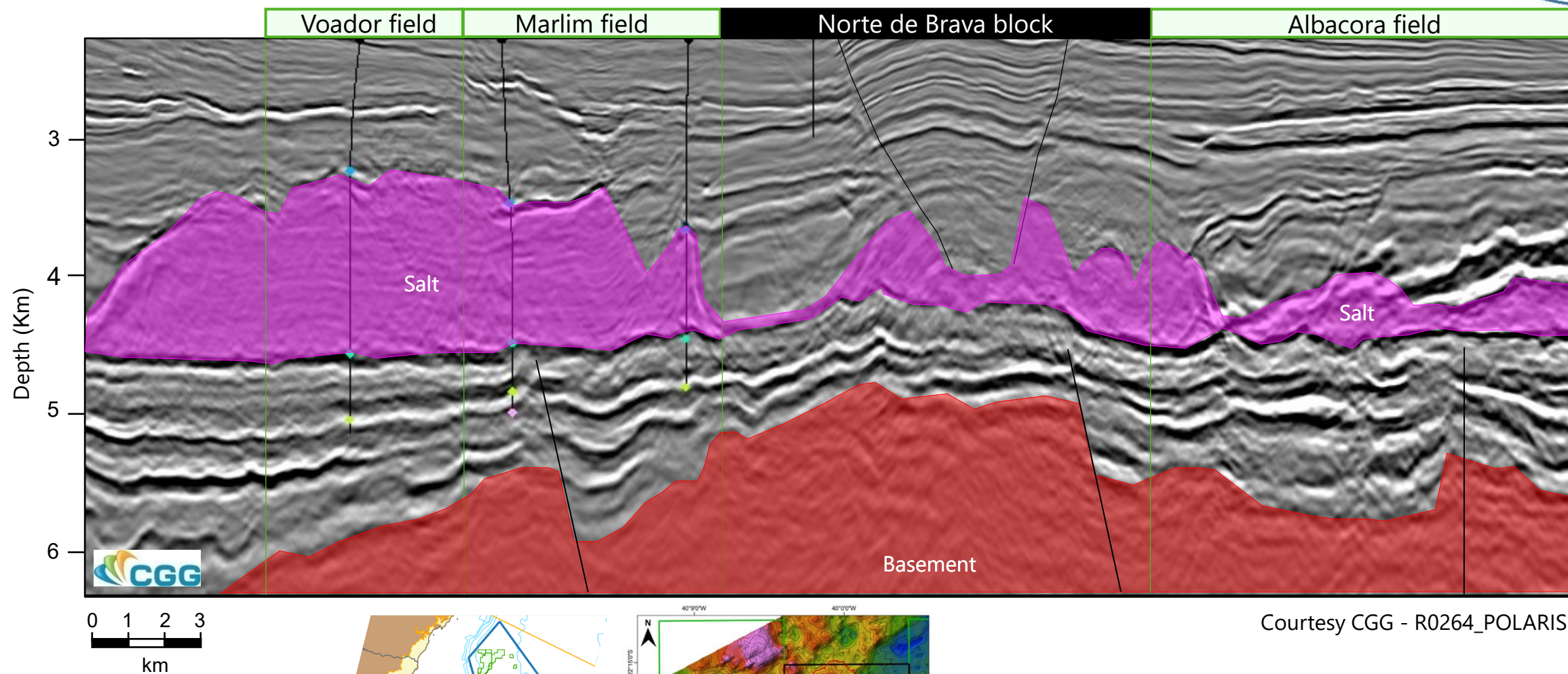
Block Area 12,300 Km²

Block VOIP 530 MSTB

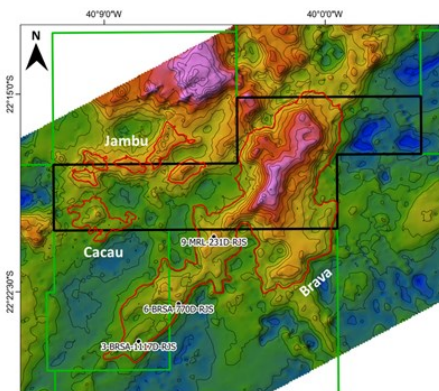
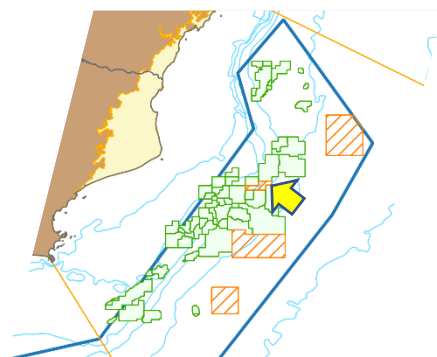
Water Depth 2000 m / Coastline distance 180 Km

Prospect	Source	Migration	Reservoir	Seal	Trap	Synchronism	CSG
Água Marinha	90%	90%	90%	80%	80%	100%	47%

Campos Basin – Norte de Brava Block



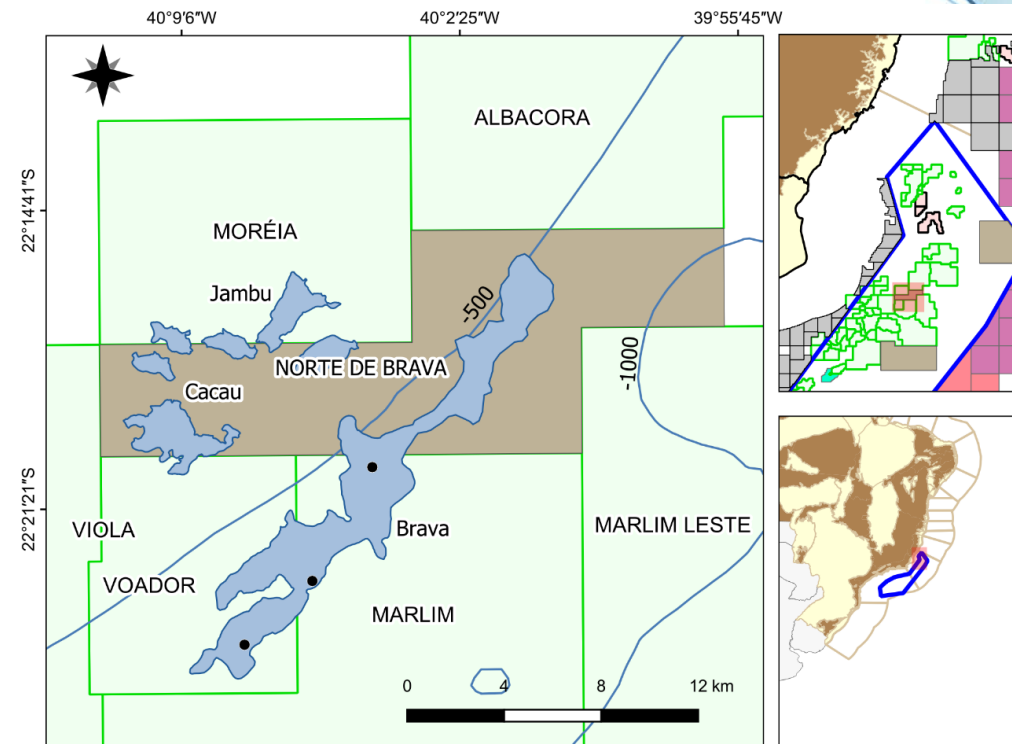
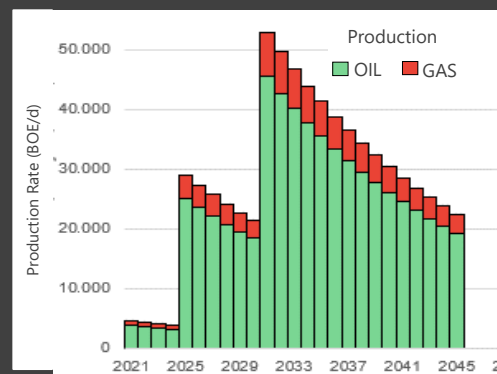
Courtesy CGG - R0264_POLARIS



Campos Basin – Norte de Brava Block

Project (Hypothetical)

- Norte de Brava VOIP 1,575 MSTB
- Recover Factor ~ 15%
- Oil - 1 FPSO on Pre-Salt
- 10 production wells
- 12 injection wells



Prospects Open Acreage O&G Fields

Pre-salt PSA

Pre-salt Polygon

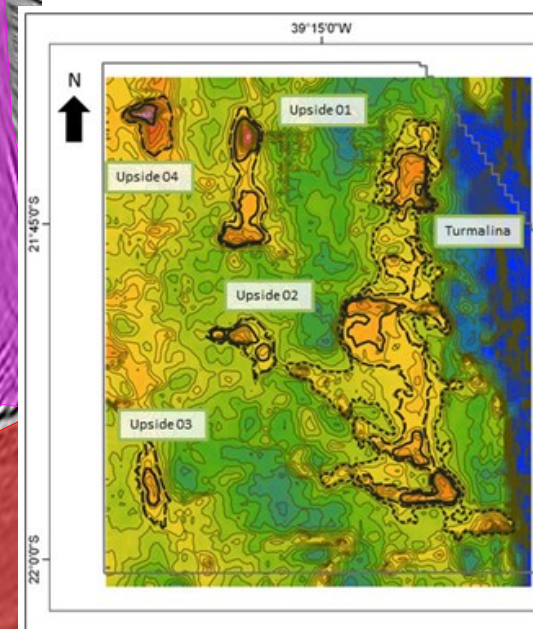
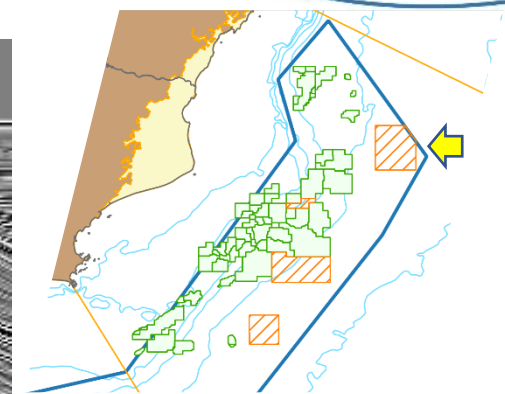
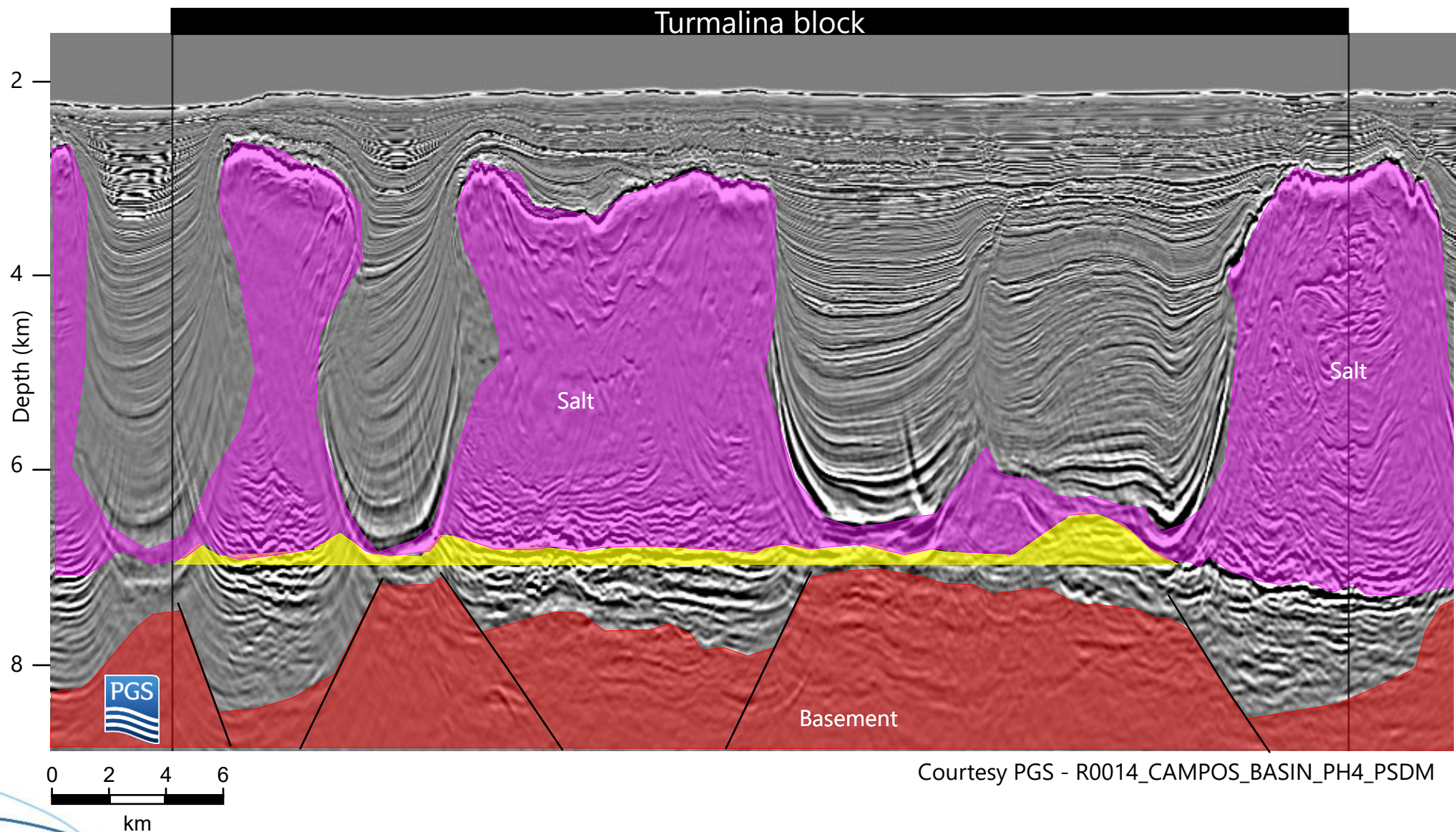
Block Area 147.64 Km²

Block VOIP 1,575 MSTB
(Inside 64.42% => 1,015 MSTB)

Water Depth 700 m / Coastline distance 100 Km

Prospect	Source	Migration	Reservoir	Seal	Trap	Synchronism	CSG
Norte de Brava	100%	100%	100%	100%	100%	100%	100%
Upside Cacau	100%	90%	60%	40%	70%	100%	15,1%
Upside Jambu	100%	90%	70%	40%	60%	100%	15,1%

Campos Basin – Turmalina Block

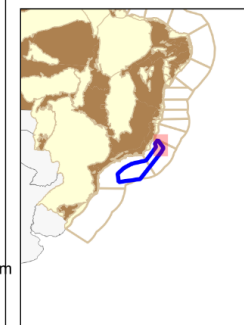
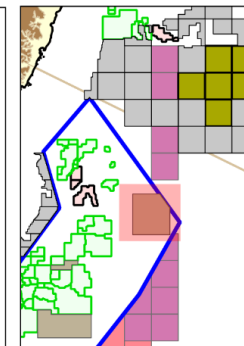
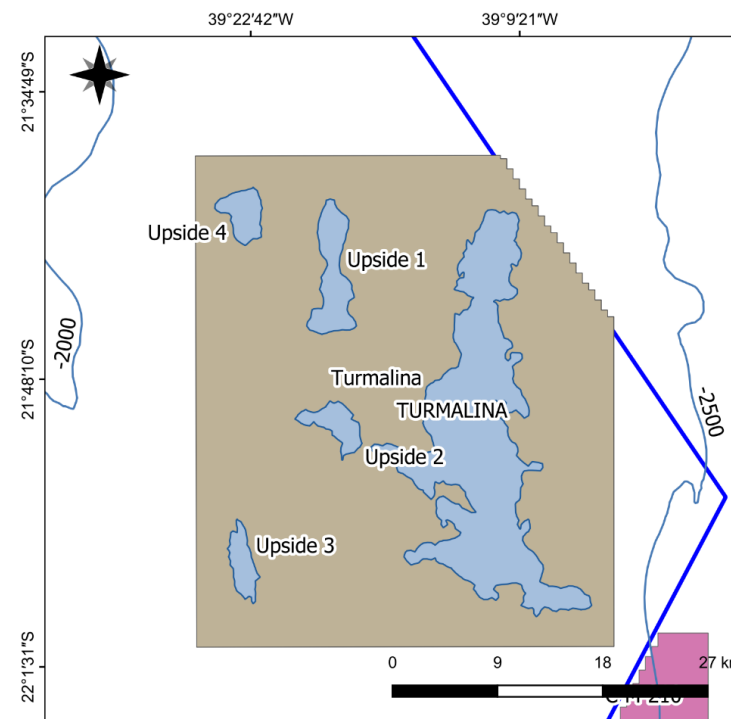
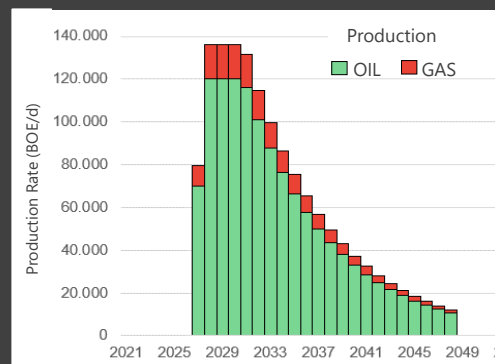


Courtesy PGS - R0014_CAMPOS_BASIN_PH4_PSDM

Campos Basin – Turmalina Block

Project (Hypothetical)

- Turmalina Prospect VOIP 2,266 MSTB
- Recover Factor ~ 20%
- Oil - 1 FPSO (120,000 bbl/d)
- Gas - Pipeline (196 Km)
- 6 production wells
- 6 injection wells



Prospects
Pre-salt

Open Acreage
PSA
Pre-salt Polygon

Exploration Blocks
R14

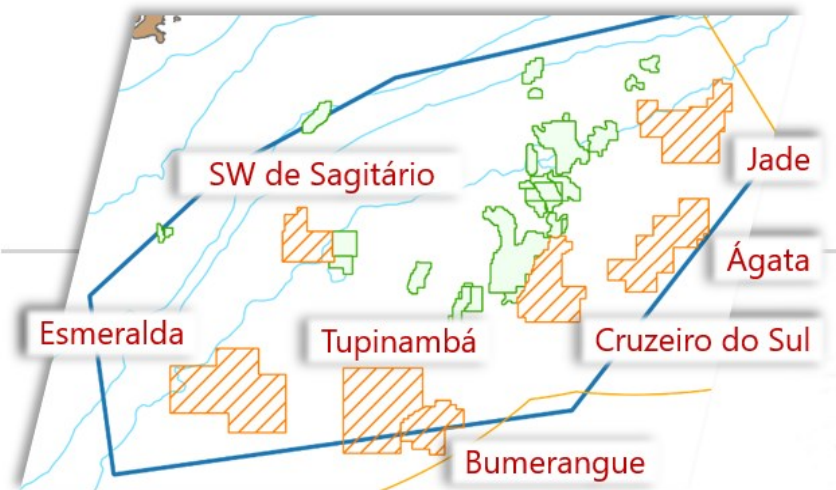
Block Area 1,437 Km²

Block VOIP 3,627 MSTB

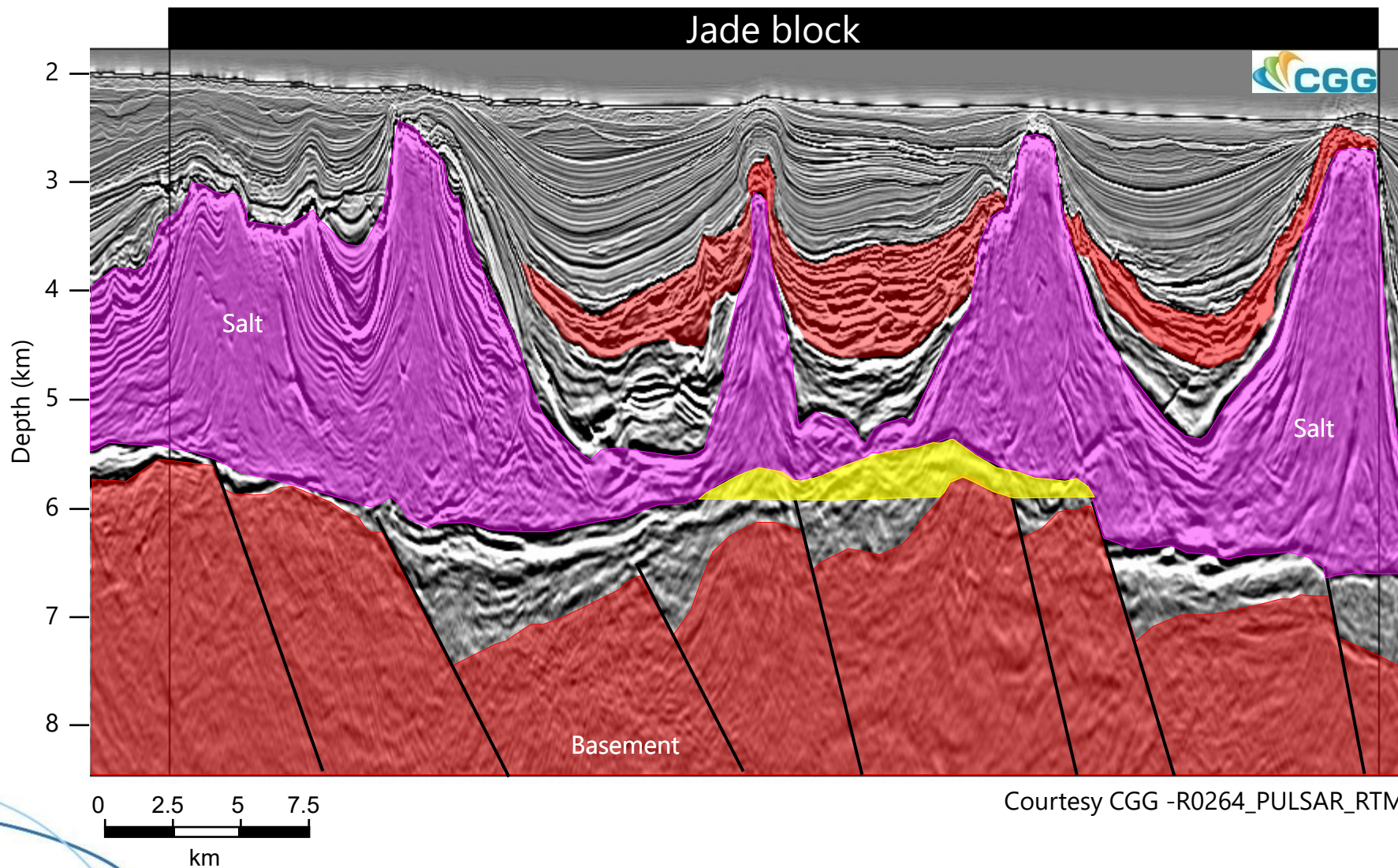
Water Depth 2,168 m / Coastline distance 190 Km

Prospect	Source	Migration	Reservoir	Seal	Trap	Synchronism	CSG
Turmalina	50%	80%	40%	80%	90%	100%	11%
Upside 01	50%	80%	40%	40%	90%	100%	6%
Upside 02	50%	80%	50%	100%	90%	100%	18%
Upside 03	50%	80%	60%	100%	90%	100%	21%
Upside 04	50%	80%	40%	30%	90%	100%	4%

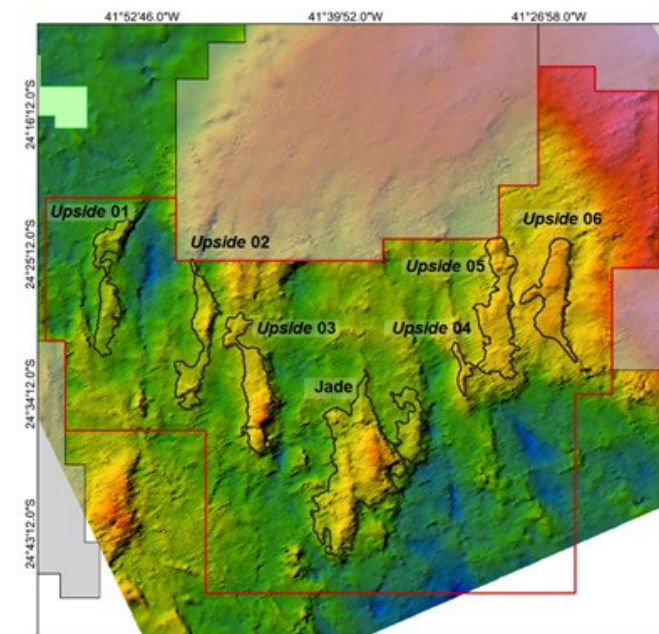
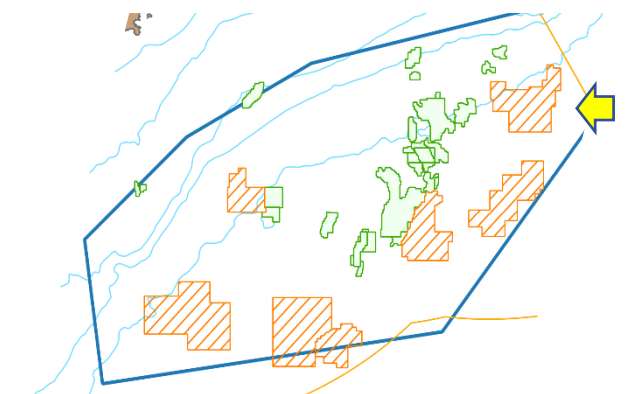
Production Sharing Regime



Santos Basin – Jade Block



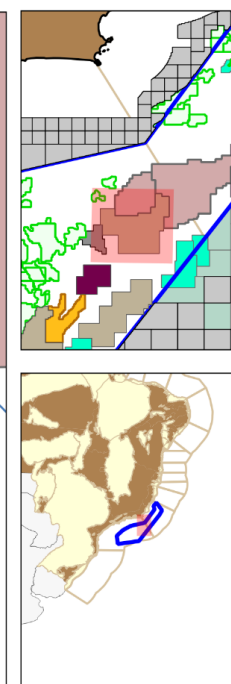
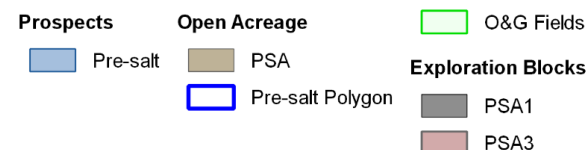
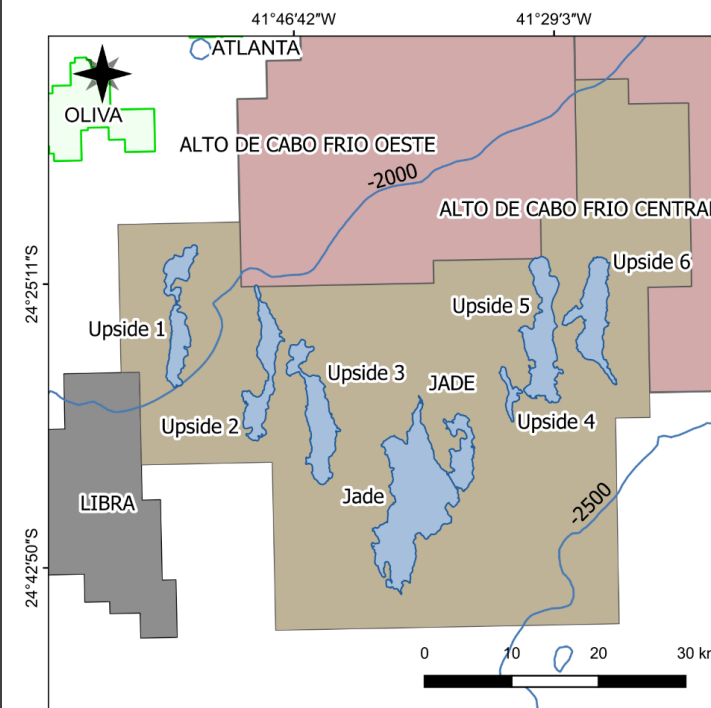
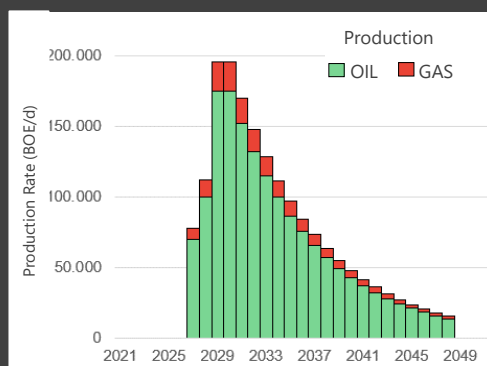
Courtesy CGG -R0264_PULSAR_RTM



Santos Basin – Jade Block

Project (Hypothetical)

- Jade Prospect 2,909 MSTB
- Recover Factor ~ 20%
- Oil - 1 FPSO (180,000 bbl/d)
- Gas - Pipeline (196 Km)
- 7 production wells
- 7 injection wells



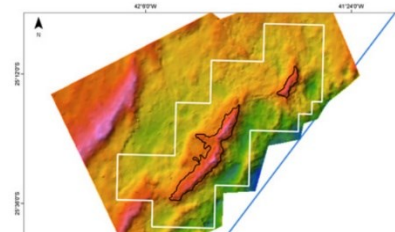
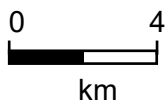
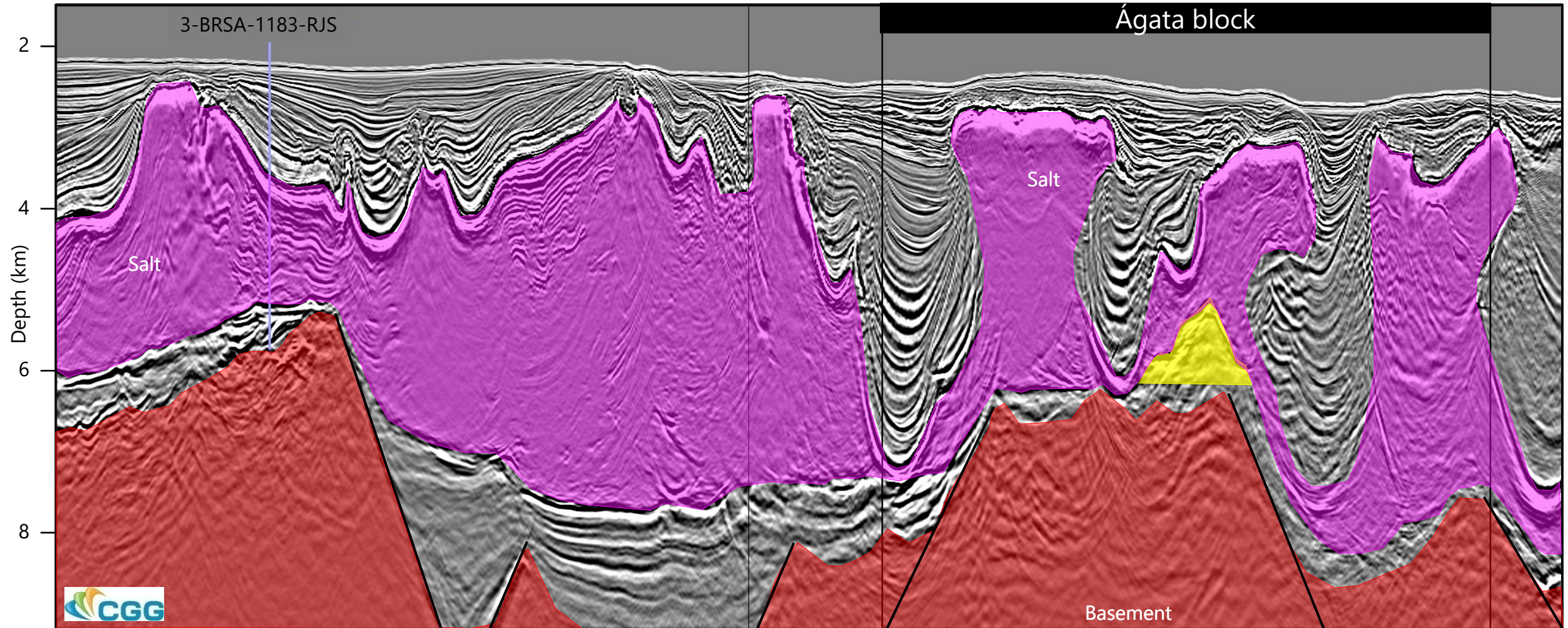
Block Area 2,397 Km²

Block VOIP 7,113 MSTB

Water Depth 2,300 m / Coastline distance 196 Km

Prospect	Source	Migration	Reservoir	Seal	Trap	Synchronism	CSG
Jade	90%	80%	70%	70%	90%	80%	25 %
Upside 01	90%	90%	80%	80%	80%	80%	33 %
Upside 02	90%	90%	70%	80%	80%	80%	29 %
Upside 03	90%	80%	70%	70%	90%	80%	25 %
Upside 04	90%	70%	70%	90%	70%	100%	27 %
Upside 05	90%	70%	70%	90%	70%	100%	27 %
Upside 06	90%	70%	70%	90%	80%	100%	31 %

Santos Basin – Ágata Block

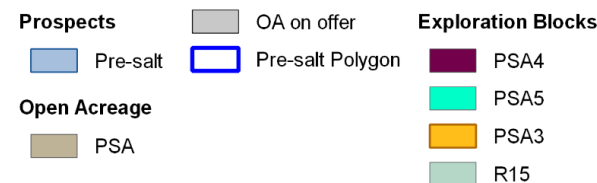
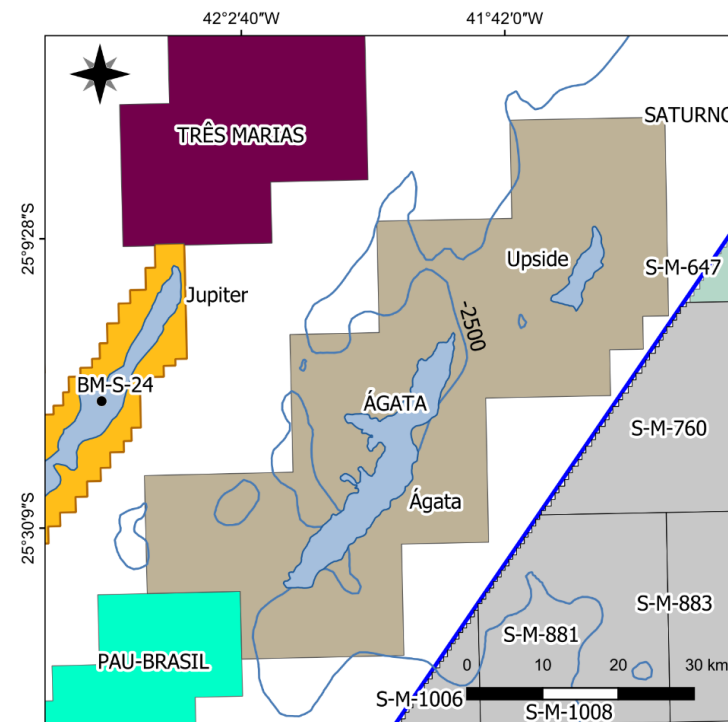
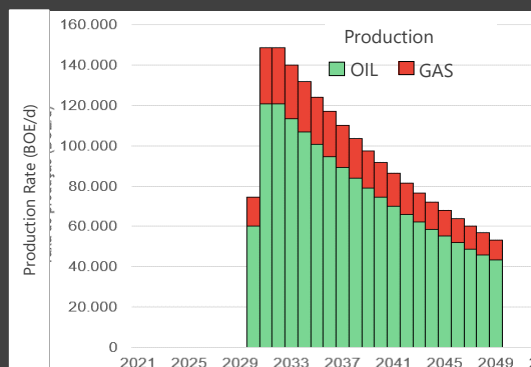


Courtesy CGG - 0264_BM_SANTOS_FASE_VIIB_RTM

Santos Basin – Ágata Block

Project (Hypothetical)

- Ágata Prospect VOIP 2,820 MSTB
- Recovery Factor ~ 20%
- Oil - 1 FPSO (120,000 bbl/d)
- Gas - Pipeline (300 Km)
- 6 production wells
- 6 injection wells



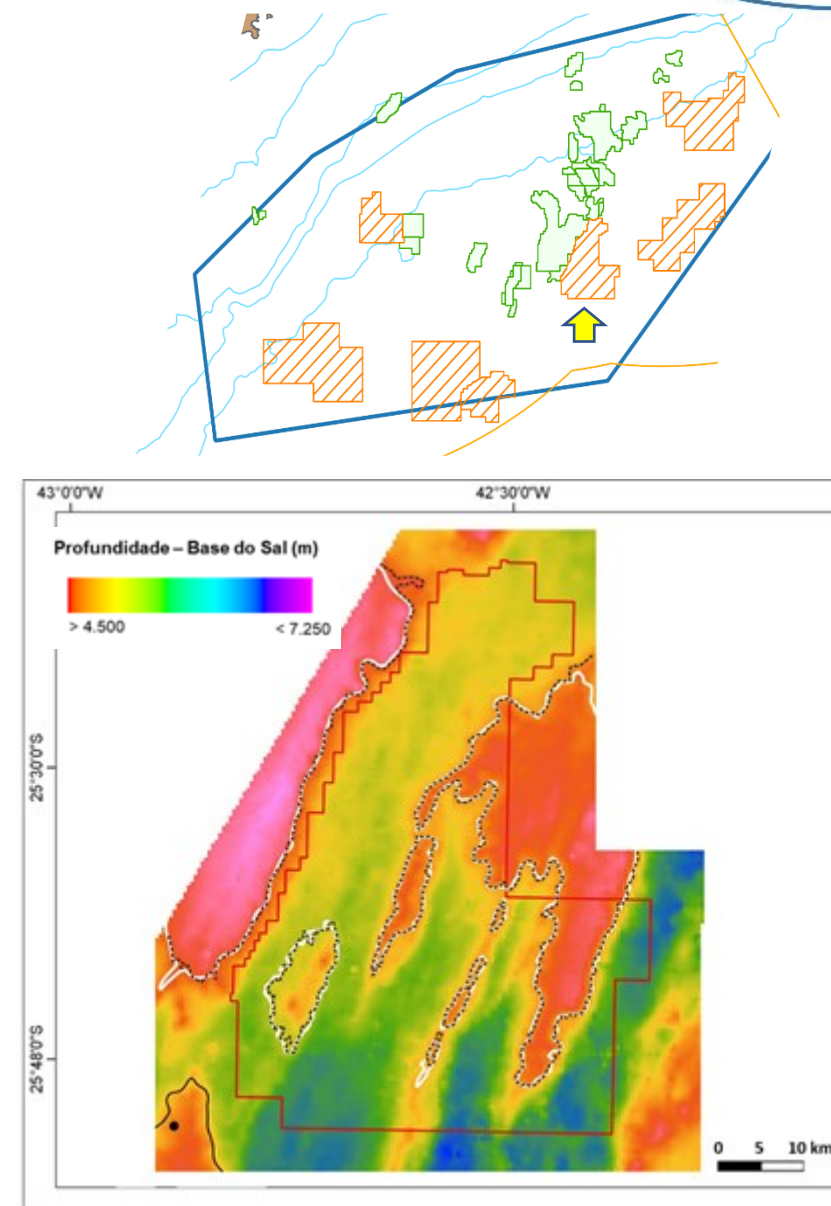
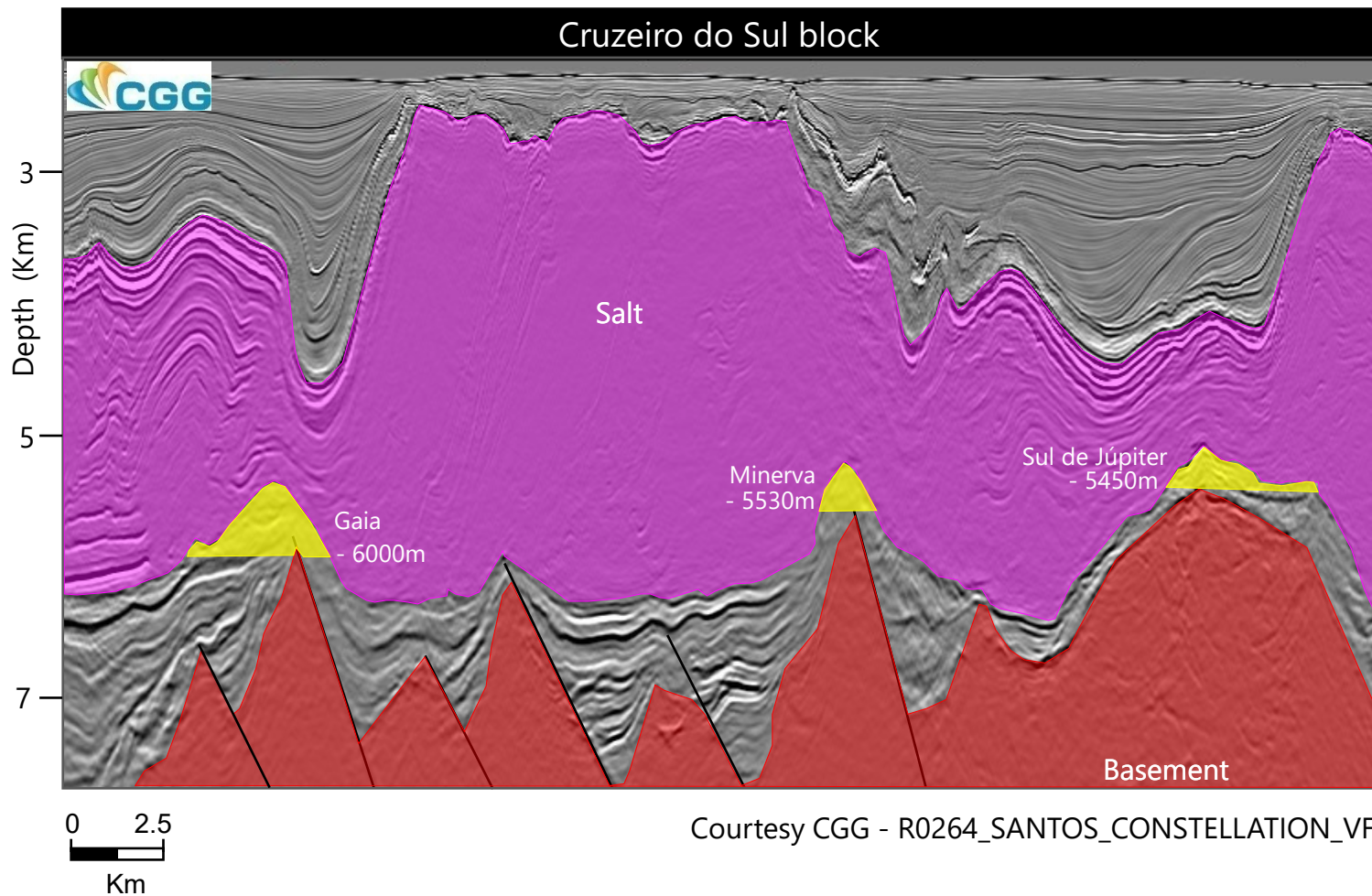
Block Area 2,283.276 Km²

Block VOIP 3,190 MSTB

Water Depth 2,000 m / Coastline distance 300 Km

Prospect	Source	Migration	Reservoir	Seal	Trap	Synchronism	CSG
Ágata	60%	80%	60%	80%	90%	100%	21%
Ágata C	60%	80%	60%	80%	90%	100%	21%

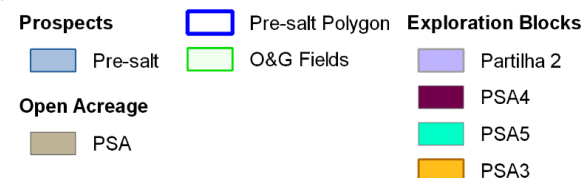
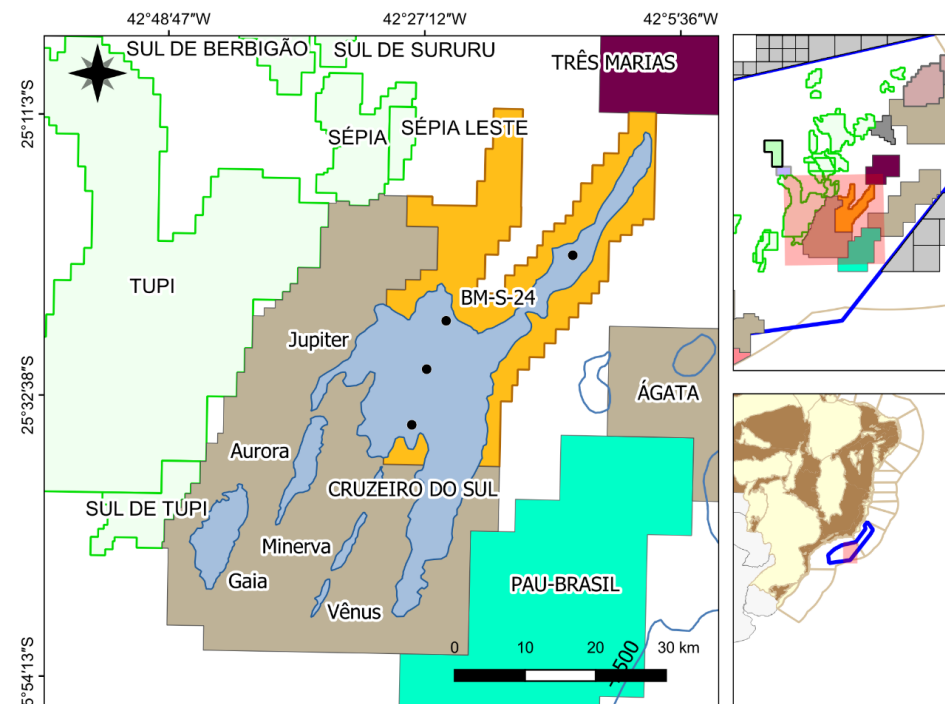
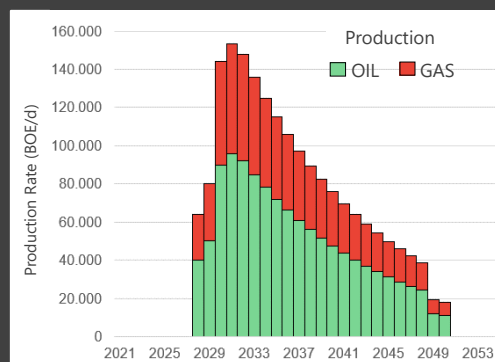
Santos Basin – Cruzeiro do Sul Block



Santos Basin – Cruzeiro do Sul Block

Project (Hypothetical)

- Prospects 1,819 MSTB
- Condensed 1,169 MSTB
- Gas 116 Billion m³
- Recovery Factor ~ 27%
- Oil - 2 FPSO (50,000 bbl/d)
- 8 production wells
- 6 injection wells

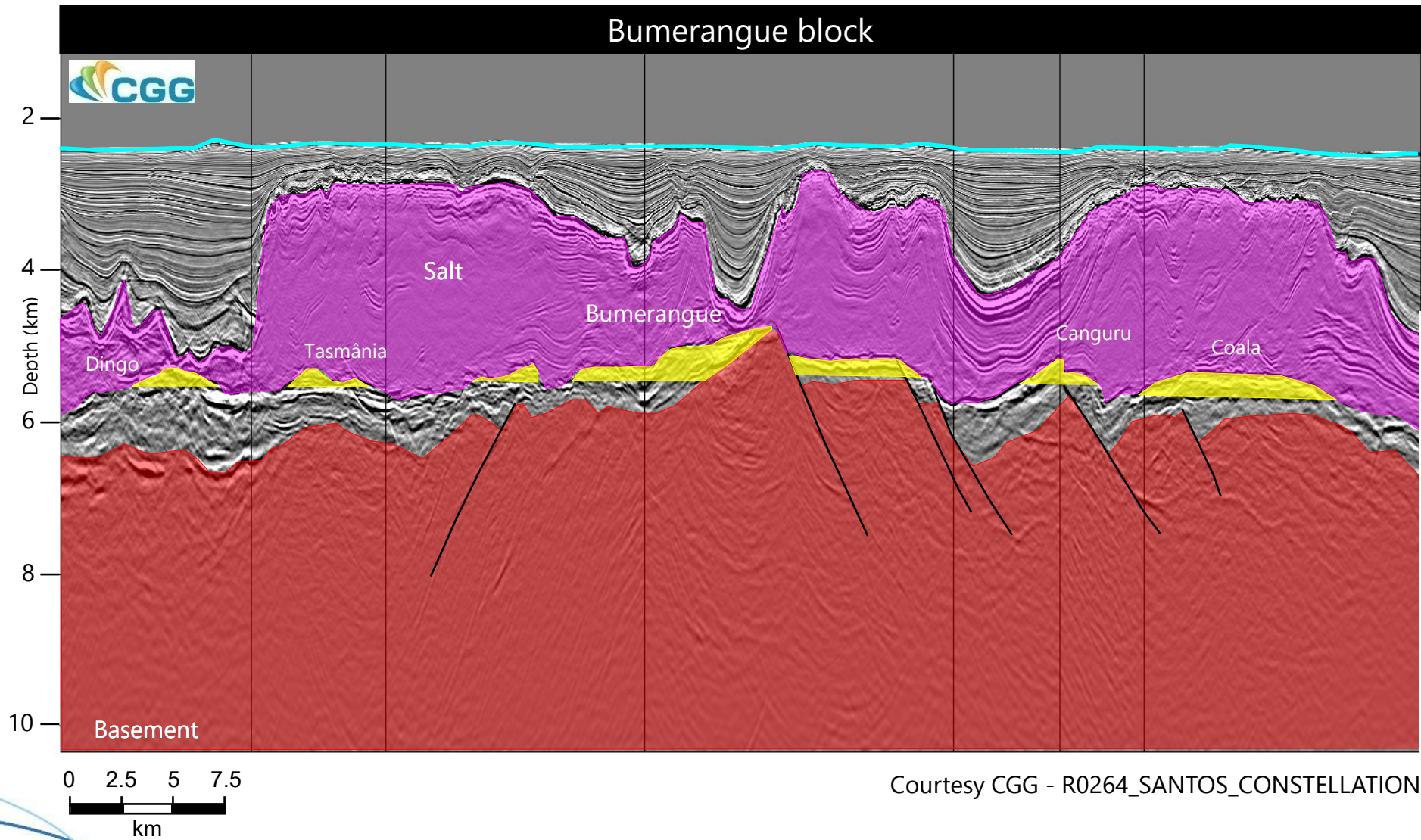


Block Area 1,860 Km²

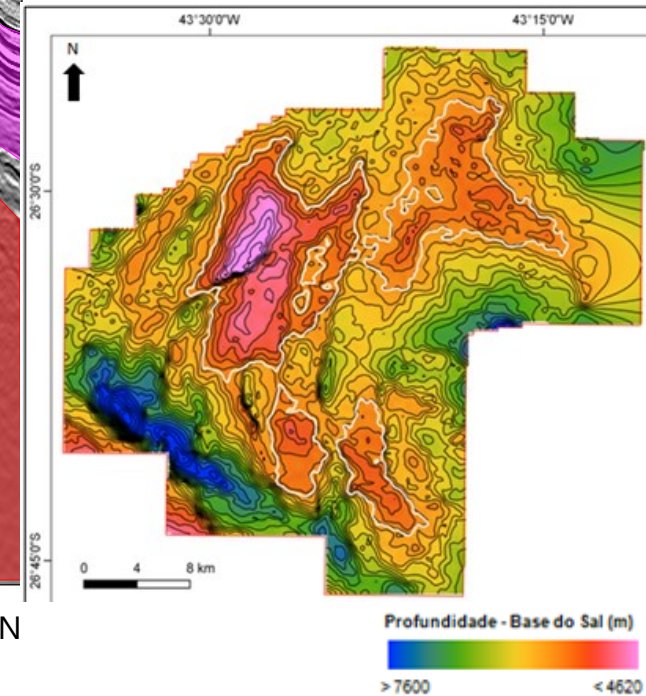
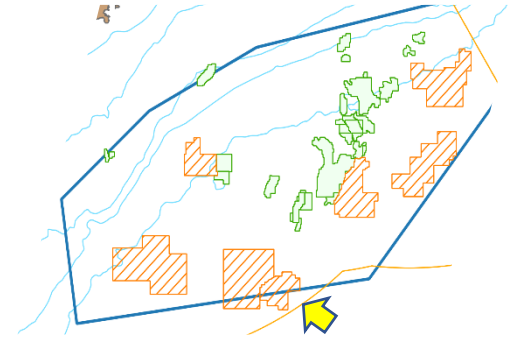
Water Depth 2,200 m / Coastline distance 200 Km

Prospect	Source	Migration	Reservoir	Seal	Trap	Synchronism	CSG
Aurora	50%	80%	60%	100%	100%	80%	19%
Gaia	40%	90%	70%	100%	100%	80%	20%
Marte	50%	80%	70%	100%	80%	80%	18%
Minerva	50%	80%	70%	100%	80%	80%	18%
Vênus	50%	80%	70%	100%	80%	80%	18%

Santos Basin – Bumerangue Block



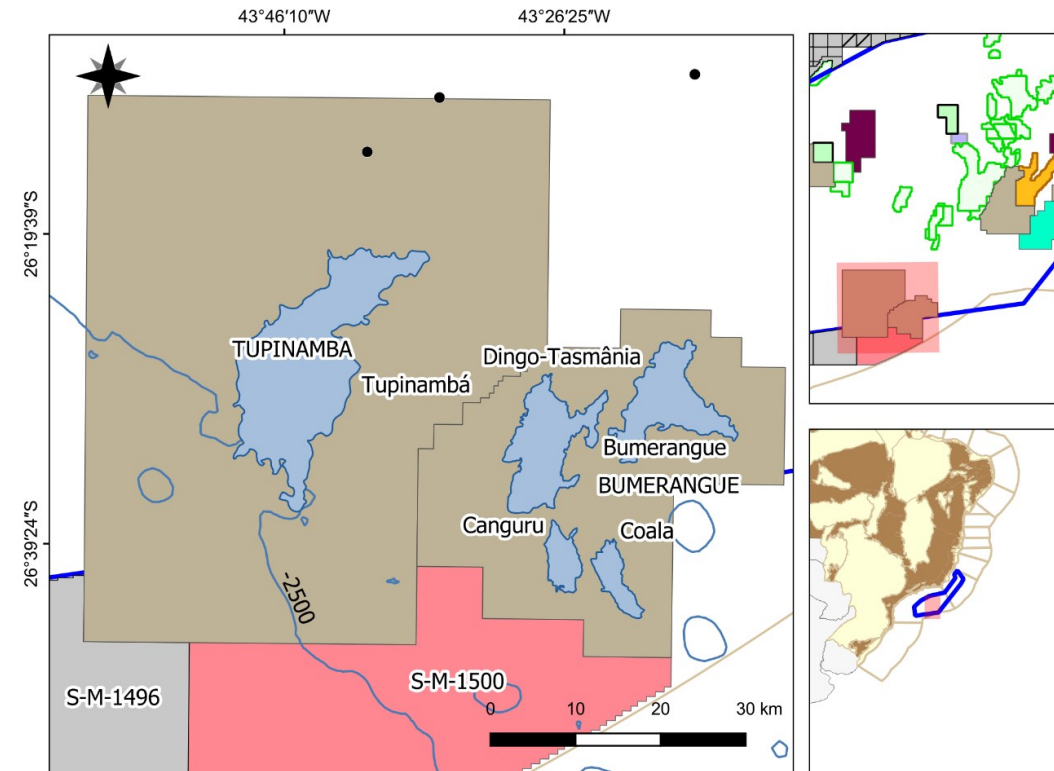
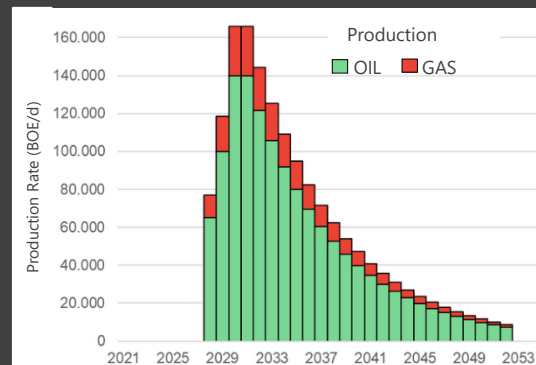
Courtesy CGG - R0264_SANTOS_CONSTELLATION



Santos Basin – Bumerangue Block

Project (Hypothetical)

- Bumerangue Prospect 2,453 MSTB
- Recovery Factor ~ 20%
- Oil - 1 FPSO (150,000 bbl/d)
- Gas - Pipeline (380 Km)
- 6 production wells
- 6 injection wells



Prospects
Pre-salt

Open Acreage
PSA
OA on offer

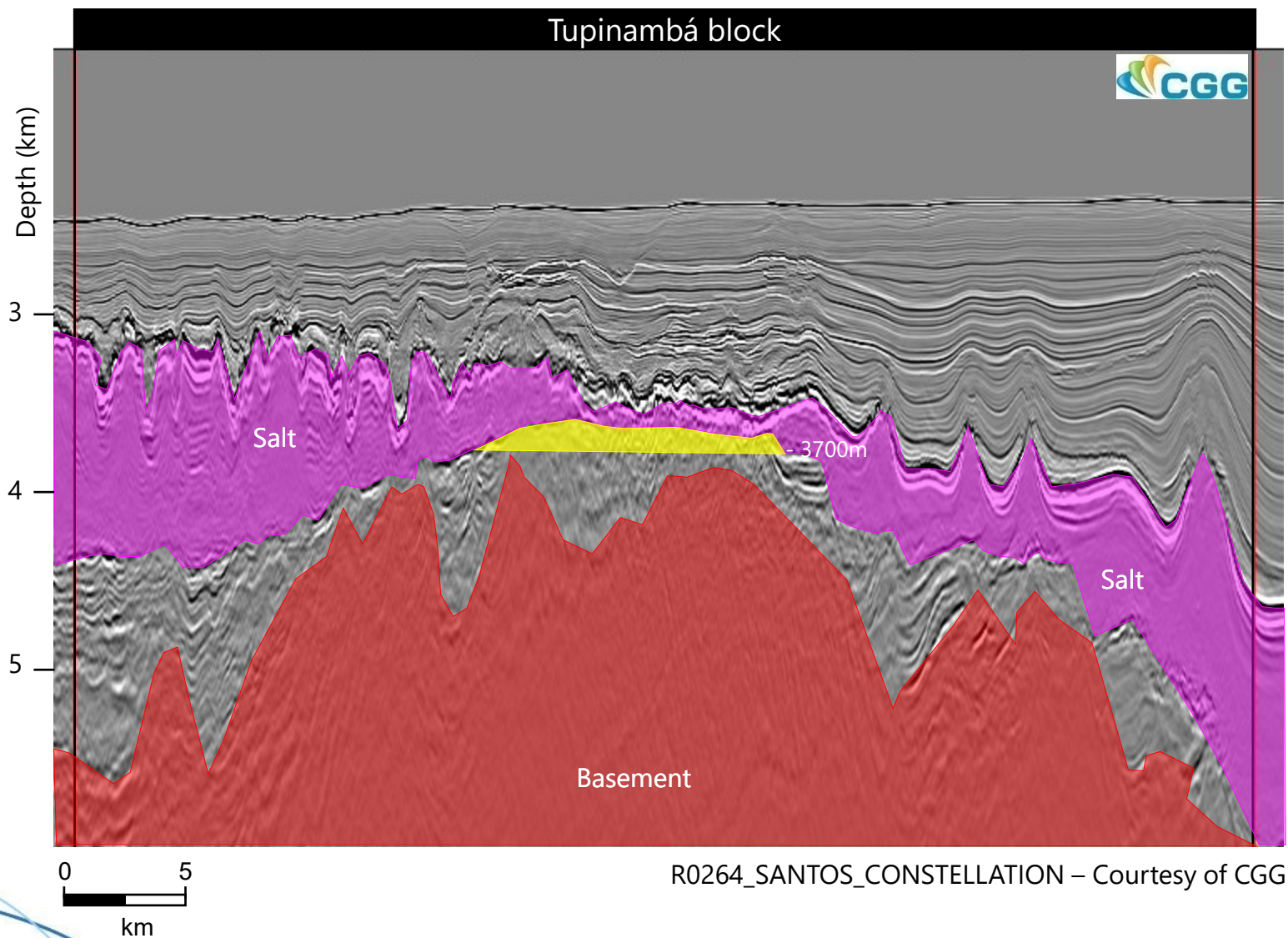
Pre-salt Polygon
Exploration Blocks
R16

Block Area 1,118 Km²
Block VOIP 4,435 MSTB

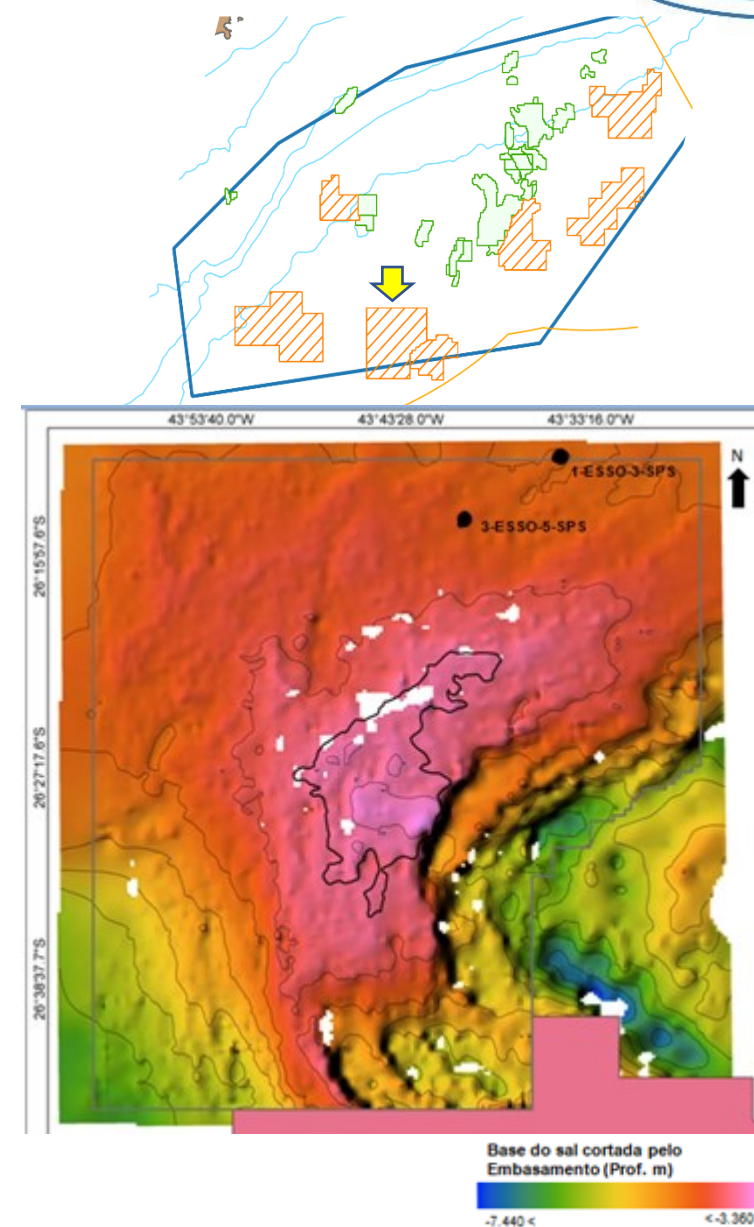
Water Depth 2,300 m / Coastline distance 380 Km

Prospect	Source	Migration	Reservoir	Seal	Trap	Synchronism	CSG
Bumerangue	50%	60%	60%	100%	90%	80%	13%
Up. Dingo-Tasm.	50%	60%	60%	30%	70%	80%	03%
Up. Coala	50%	60%	60%	100%	90%	80%	13%
Up. Canguru	50%	60%	60%	100%	90%	80%	13%

Santos Basin – Tupinambá Block



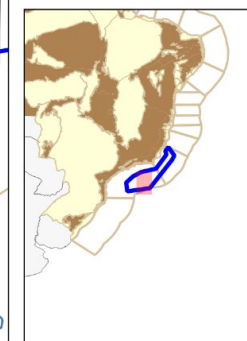
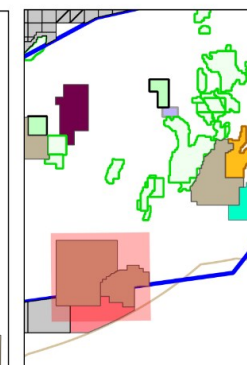
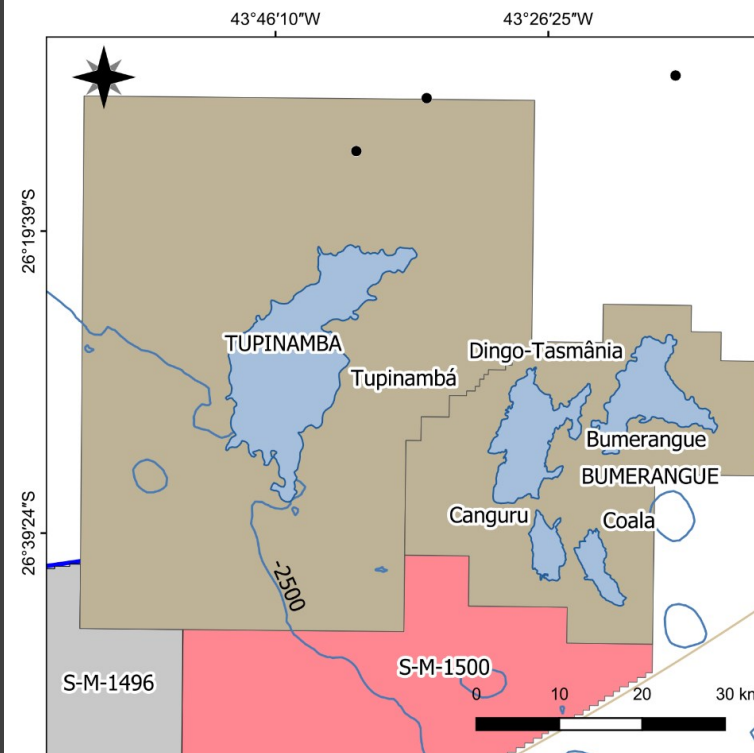
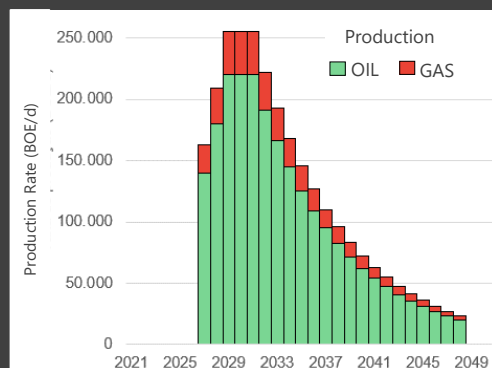
R0264_SANTOS_CONSTELLATION – Courtesy of CGG



Santos Basin – Tupinambá Block

Project (Hypothetical)

- Tupinambá Prospect VOIP 4,222 MSTB
- Recovery Factor ~ 20%
- Oil - 1 FPSO (220,000 bbl/d)
- Gas - Pipeline (370 Km)
- 10 production wells
- 10 injection wells



Prospects
Pre-salt

Open Acreage
PSA
OA on offer

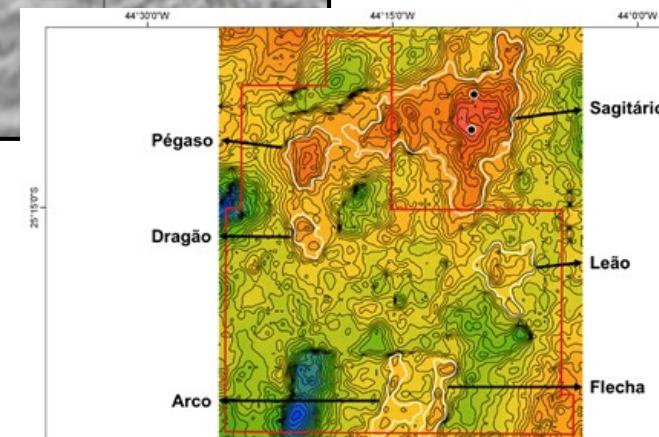
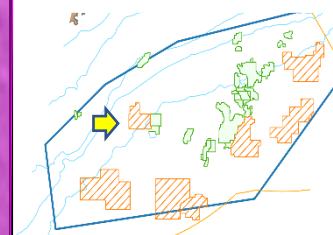
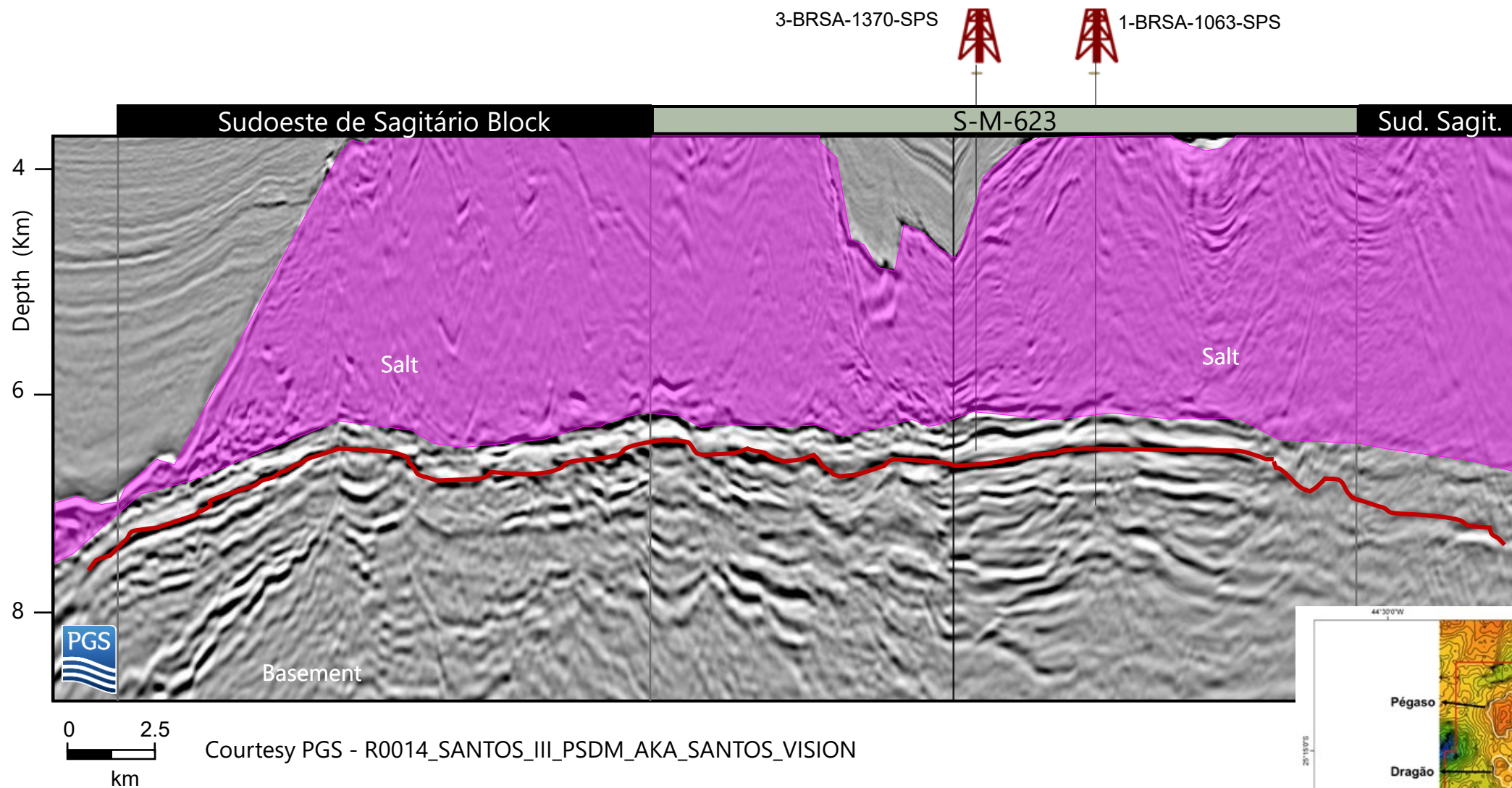
Pre-salt Polygon
Exploration Blocks
R16

Block Area 3,054.24 Km²
Block Volume 4,222 MSTB

Water Depth 2,350 m / Coastline distance 370 Km

Prospect	Source	Migration	Reservoir	Seal	Trap	Synchronism	CSG
Tupinambá	70%	90%	70%	30%	100%	70%	9%

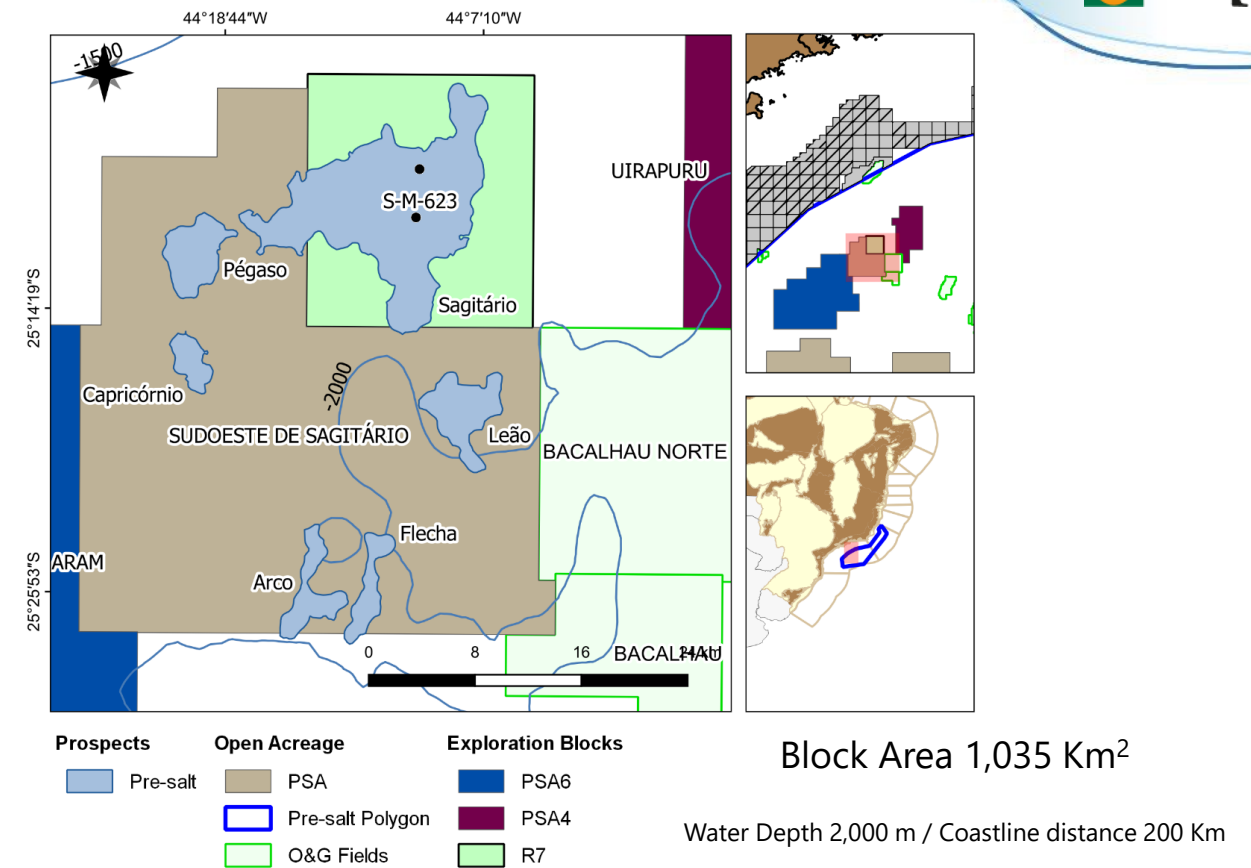
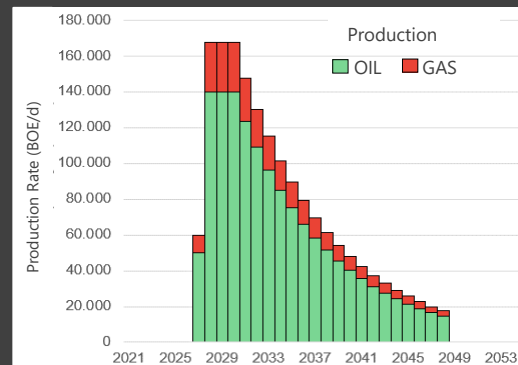
Santos Basin – Sudoeste de Sagitário Block



Santos Basin – Sudoeste de Sagitário Block

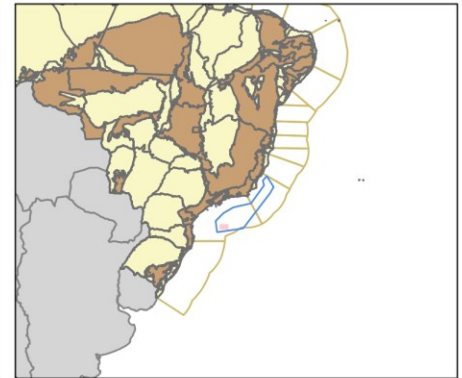
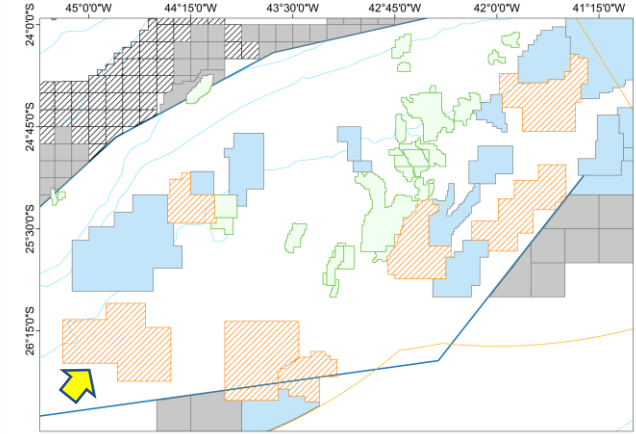
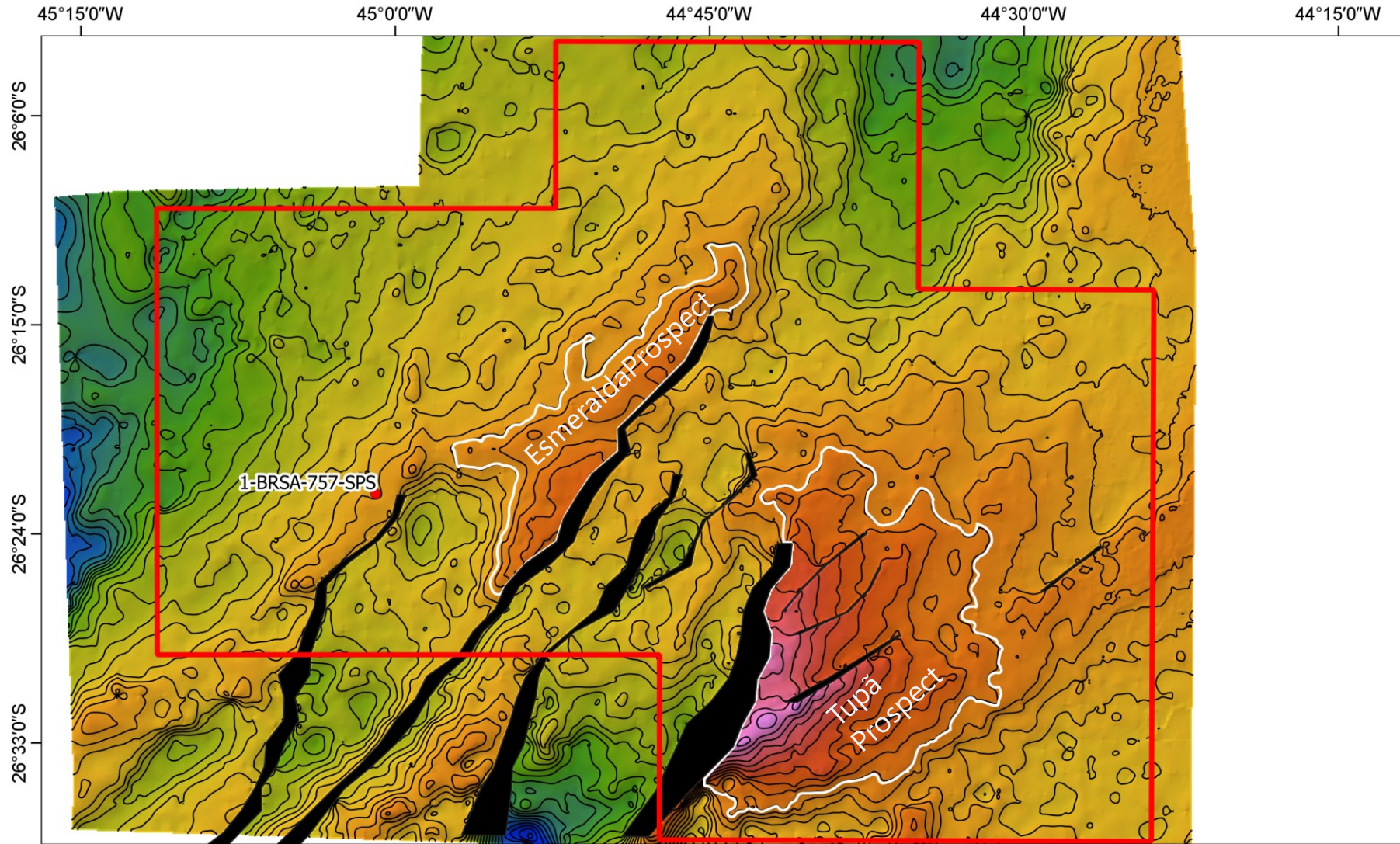
Project (Hypothetical)

- Prosp. Pegasus & Sagitário 2,506 MSTB
- Recover Factor ~ 20%
- Oil - 1 FPSO (150,000 bbl/d)
- Gas - Pipeline (200 Km)
- 8 production wells
- 7 injection wells

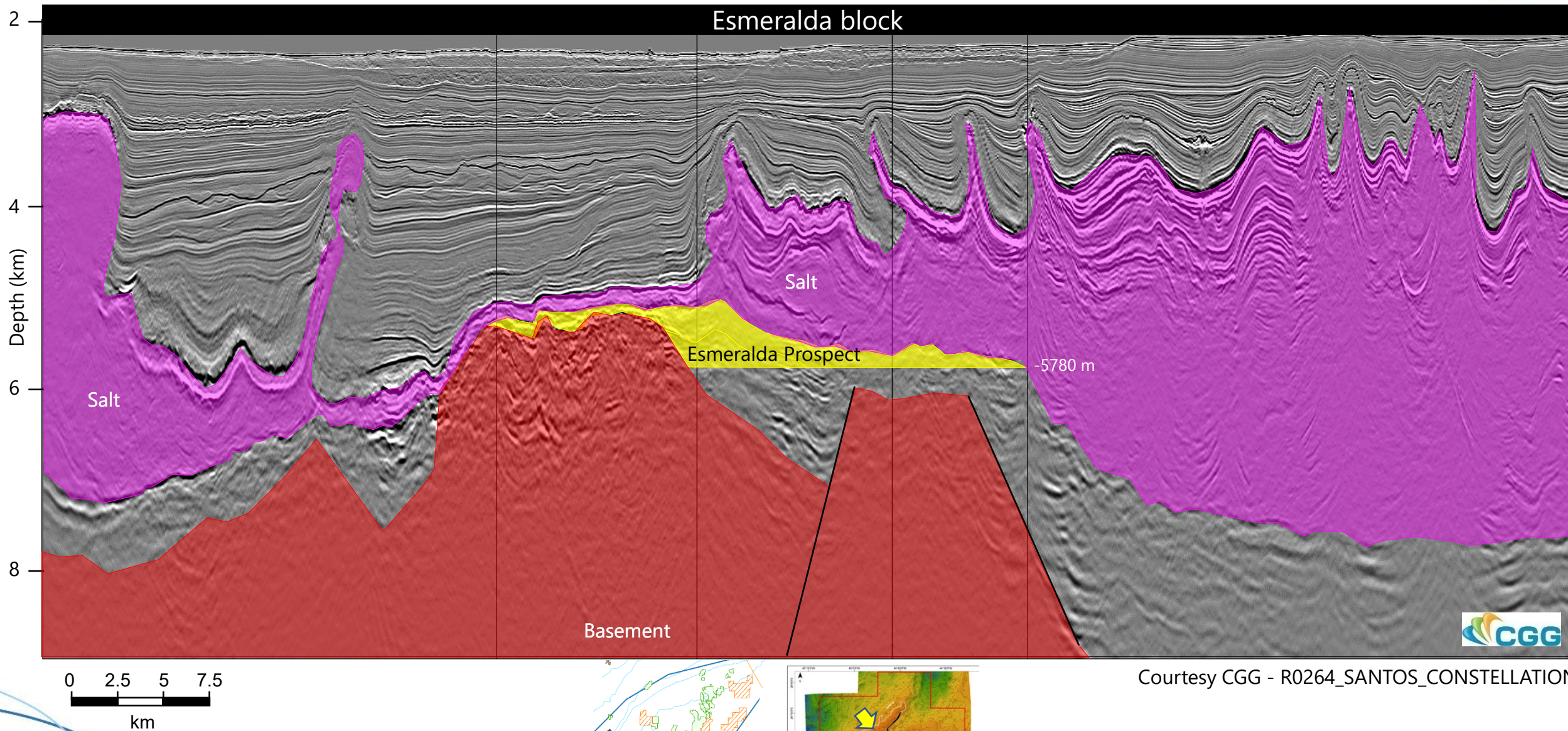


Prospect	Source	Migration	Reservoir	Seal	Trap	Synchronism	CSG
Sagitário	100%	100%	100%	100%	100%	100%	100%
Pégaso	80%	80%	60%	100%	90%	100%	35 %
Capricórnio	80%	80%	60%	100%	70%	100%	27 %
Leão	70%	70%	60%	100%	50%	100%	14 %
Arco	80%	80%	60%	100%	80%	100%	30 %
Flecha	80%	80%	60%	100%	80%	100%	30 %

Santos Basin – Esmeralda Block



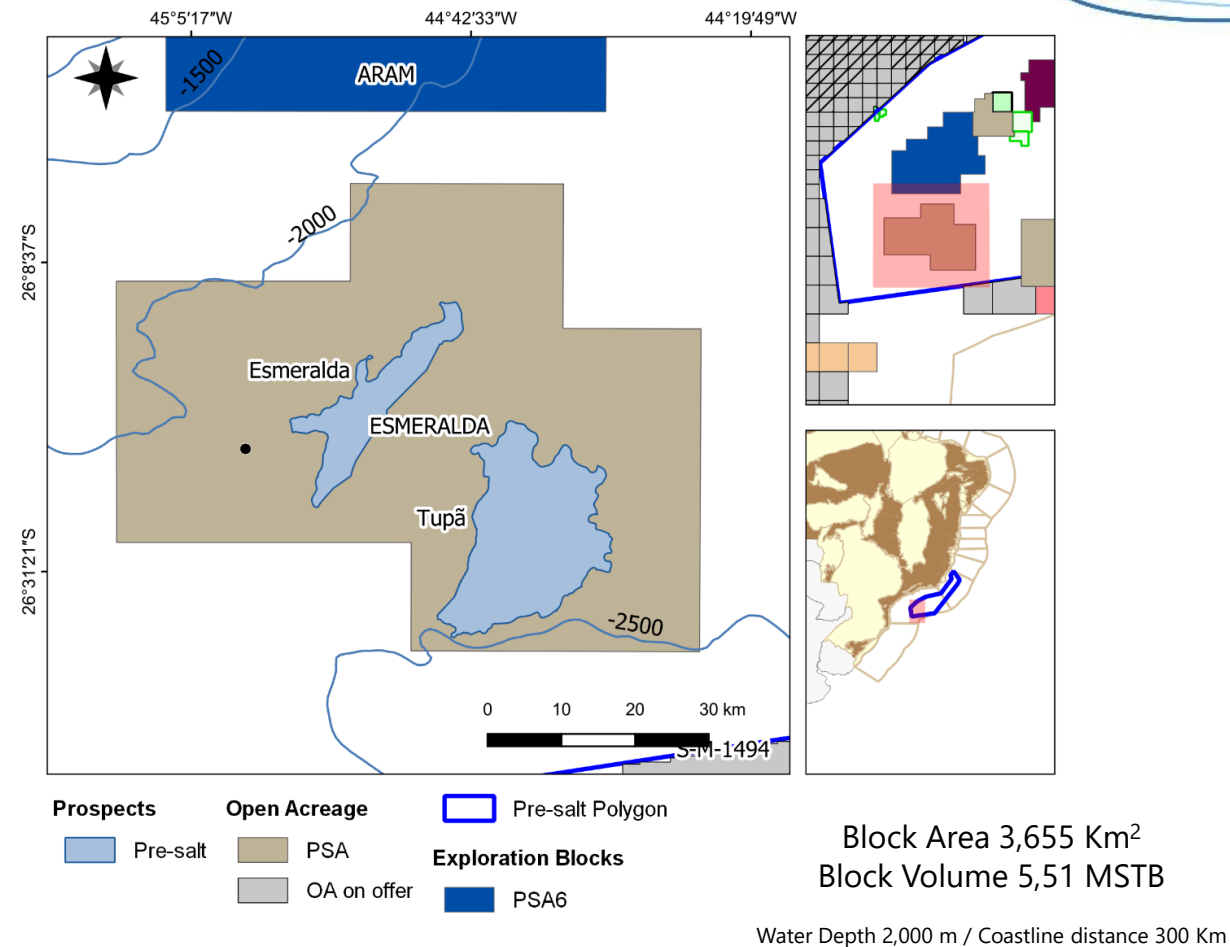
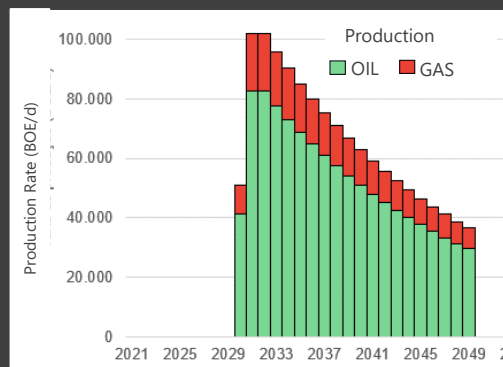
Santos Basin – Esmeralda Block



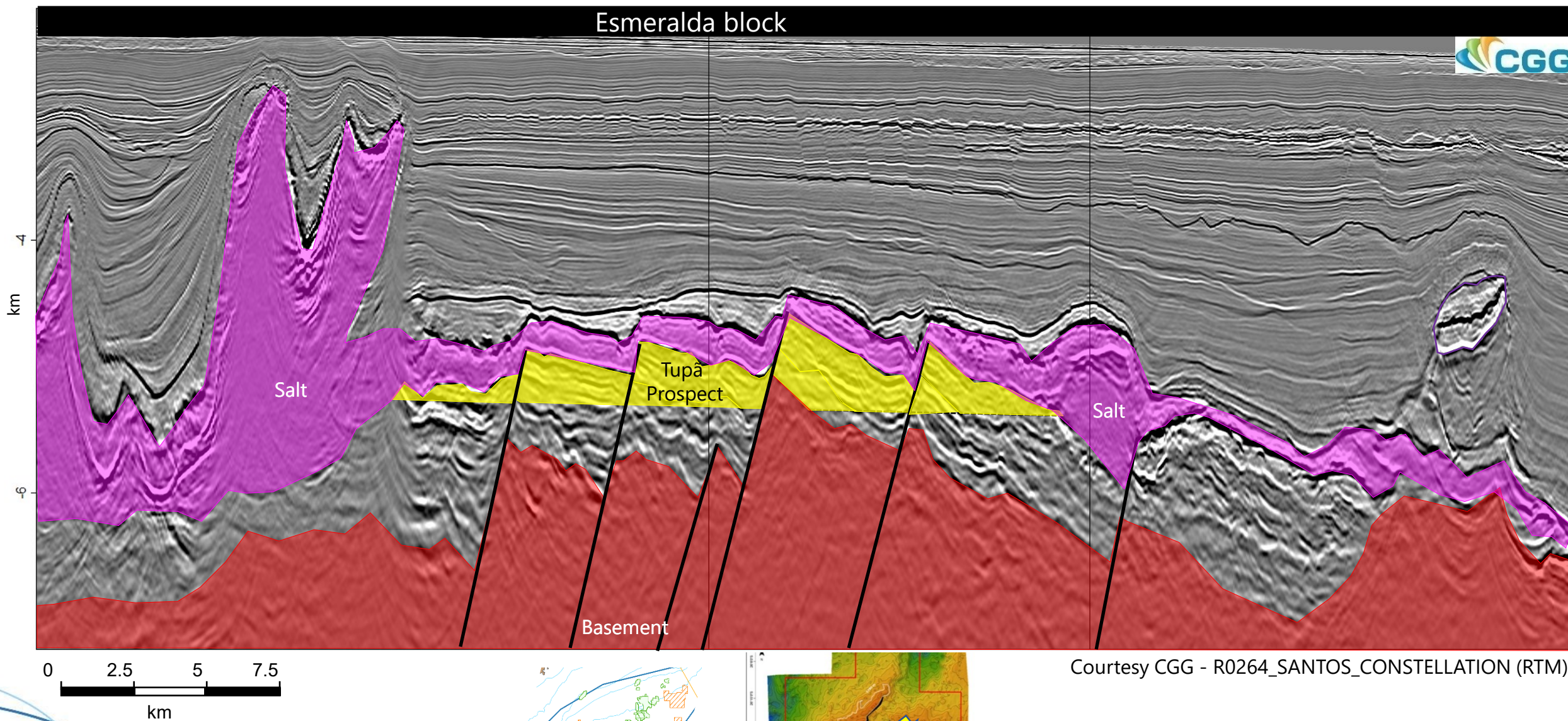
Santos Basin – Esmeralda Block

Project (Hypothetical)

- **Esmeralda** Prospect VOIP 1,930 MSTB
- Recover Factor ~ 20%
- Oil - 1 FPSO (100,000 bbl/d)
- Gas - Pipeline (Tupã Project)
- 4 production wells
- 4 injection wells



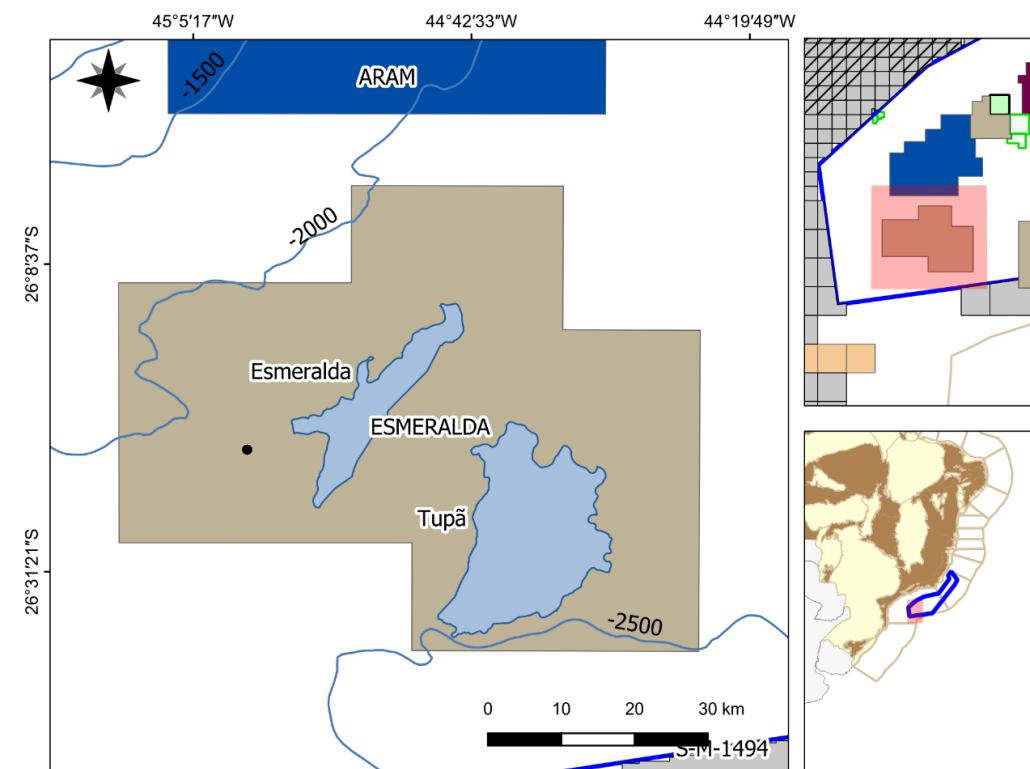
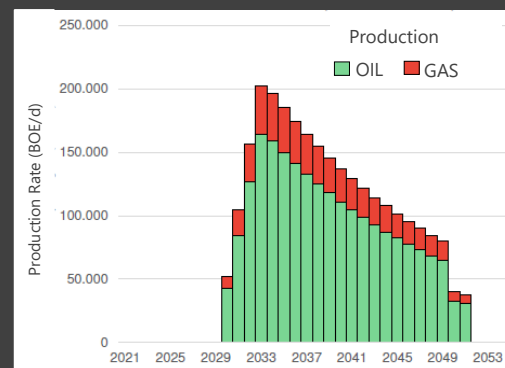
Prospect	Source	Migration	Reservoir	Seal	Trap	Synchronism	CSG
Esmeralda	90%	100%	50%	60%	90%	100%	24 %
Tupã	90%	100%	60%	50%	60%	100%	16 %



Santos Basin – Esmeralda Block

Project (Hypothetical)

- **Tupã** Prospect VOIP 3,950 MSTB
- Recover Factor ~ 20%
- Oil - 2 FPSO (100,000 bbl/d)
- Gas - Pipeline (300 Km)
- 4 production wells
- 4 injection wells



Prospects
Pre-salt

Open Acreage
PSA
OA on offer

Exploration Blocks
Pre-salt Polygon
PSA6

Block Area 3,655 Km²
Block Volume 5,51 MSTB

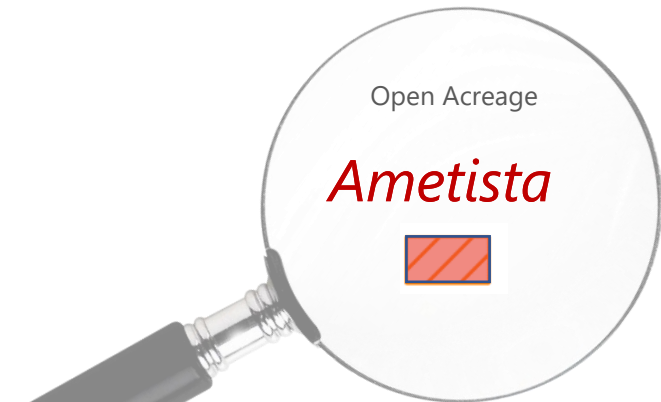
Water Depth 2,000 m / Coastline distance 300 Km

Prospect	Source	Migration	Reservoir	Seal	Trap	Synchronism	CSG
Esmeralda	90%	100%	50%	60%	70%	100%	24 %
Tupã	90%	100%	60%	50%	60%	100%	16 %

Campos and Santos basins - Opportunities on Permanent Offer

MME => CNPE (resolution is needed)

The possibility of inclusion of Ametista was announced (3/5) by the Secretary of Petroleum, Natural Gas and Biofuels (MME) at the Offshore Technology Conference (OTC).



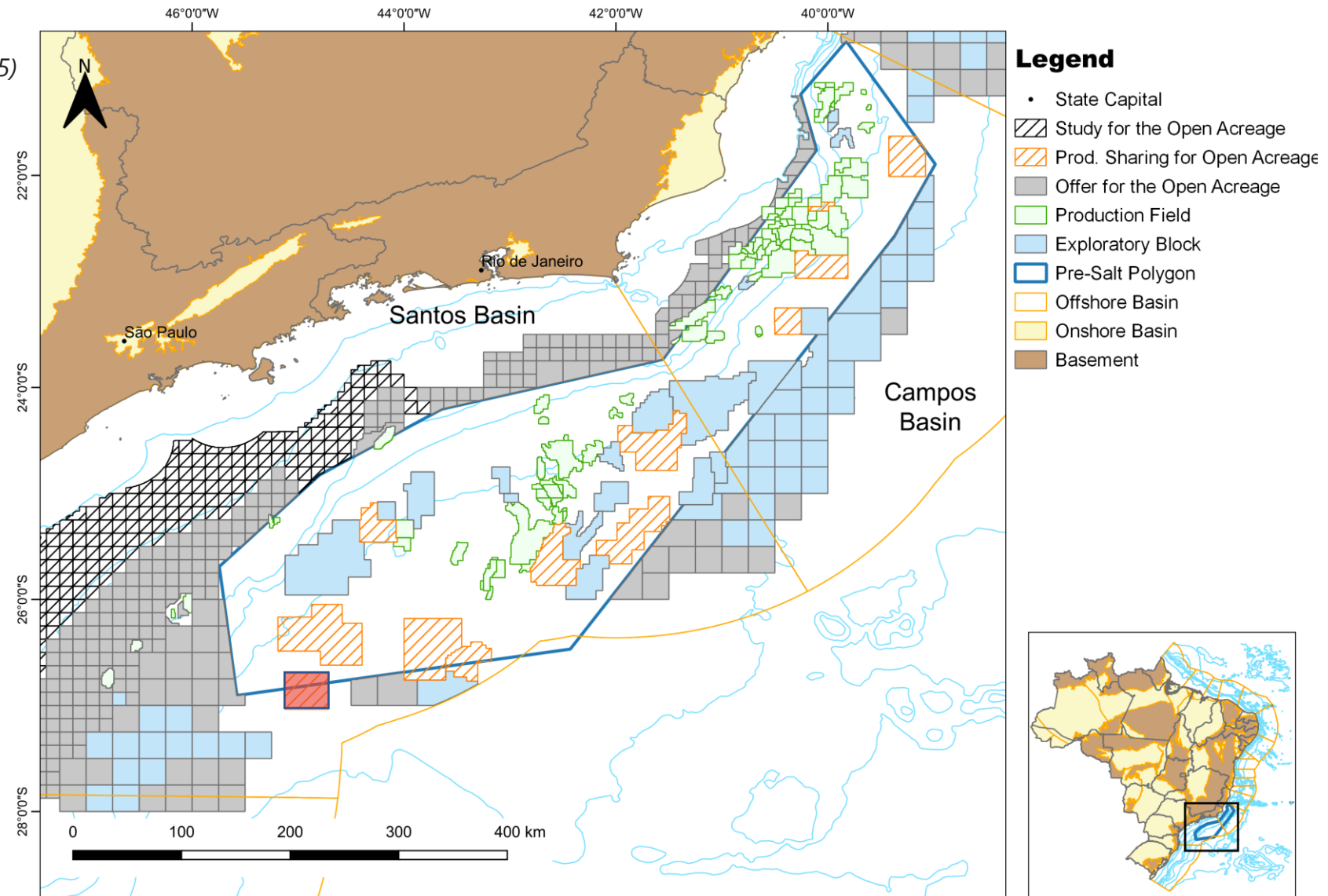
Contract Ongoing

Field Block

Open Acreage Concession

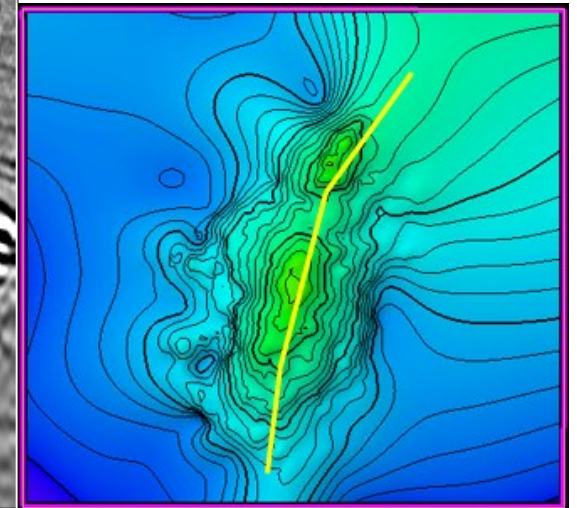
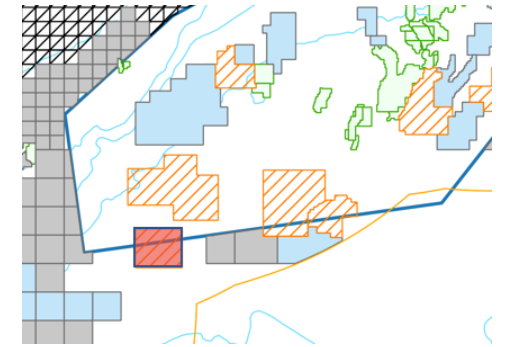
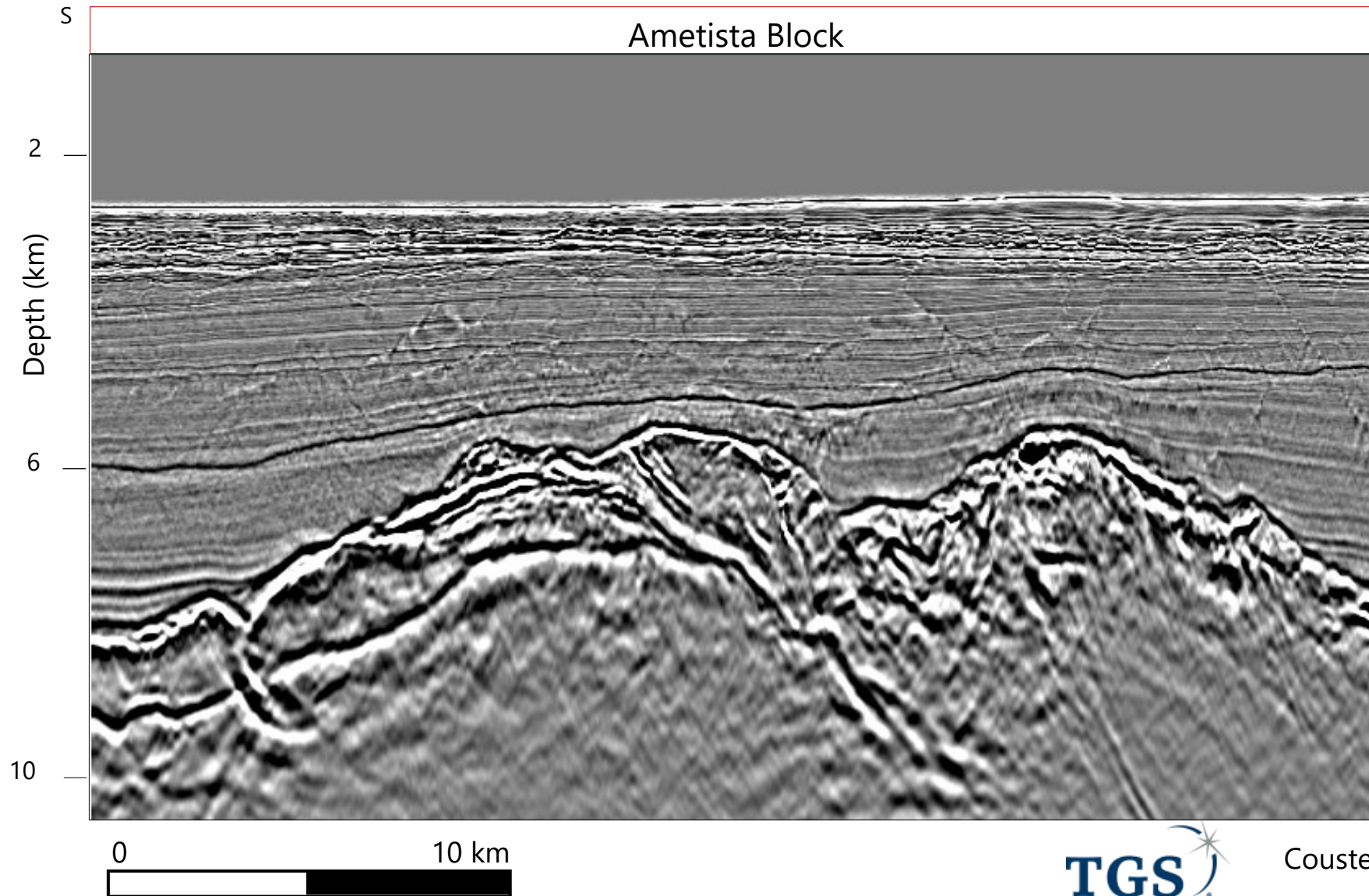
On Study

On Offer



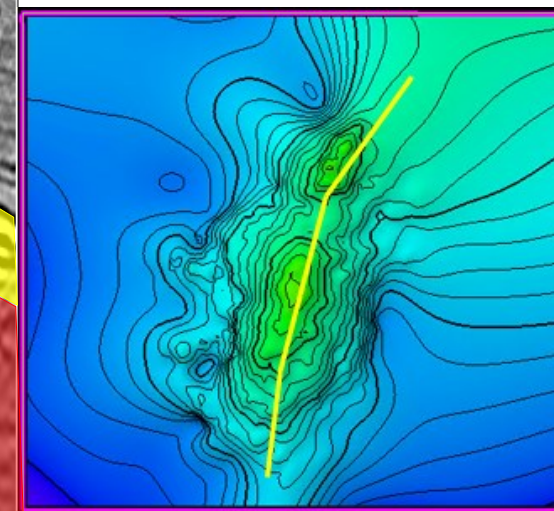
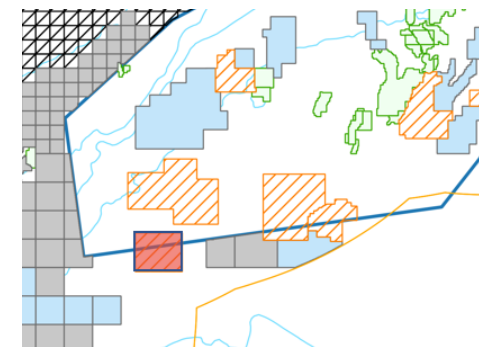
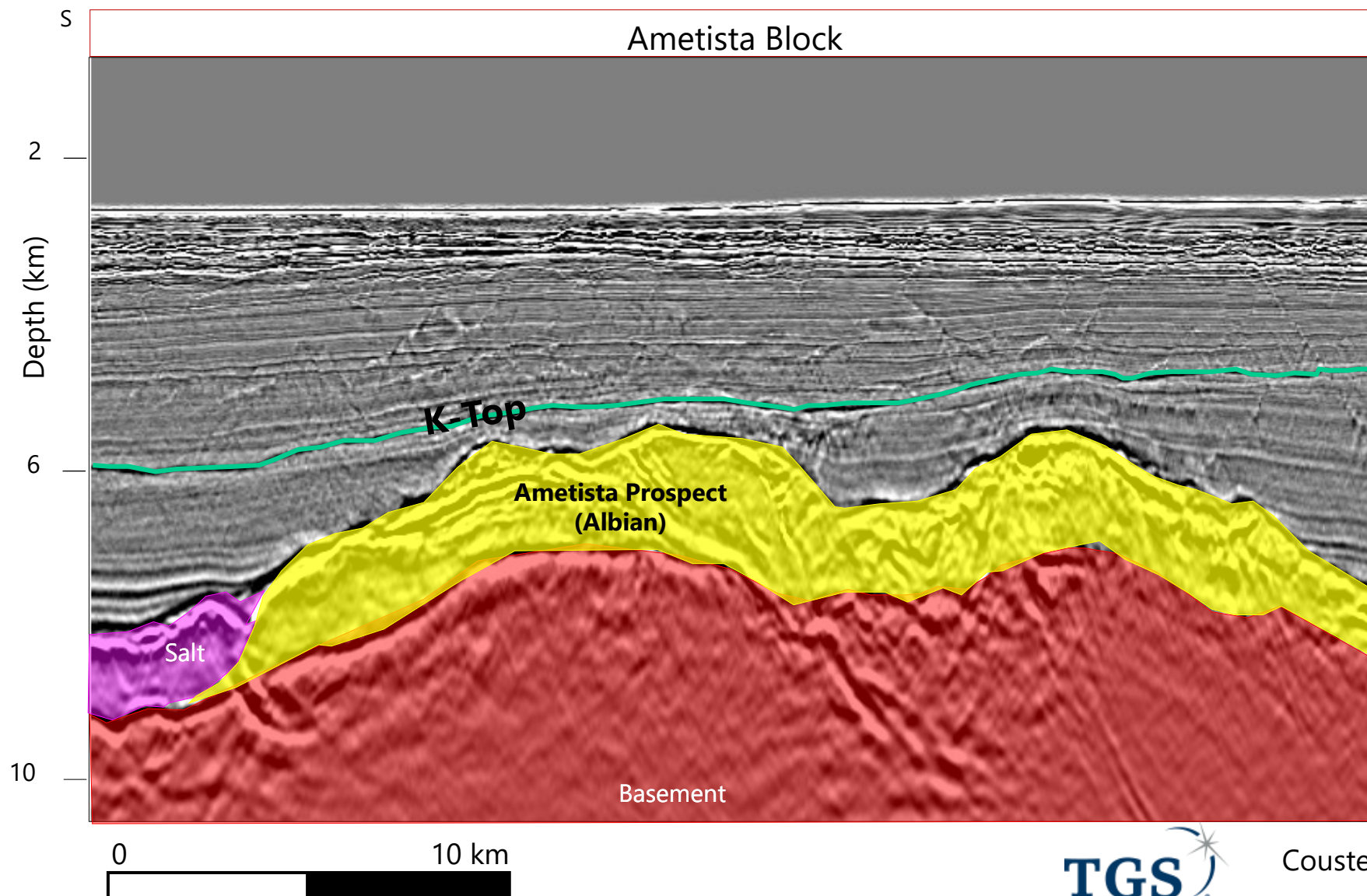
Santos Basin – Ametista Block

MME => CNPE (resolution is needed)

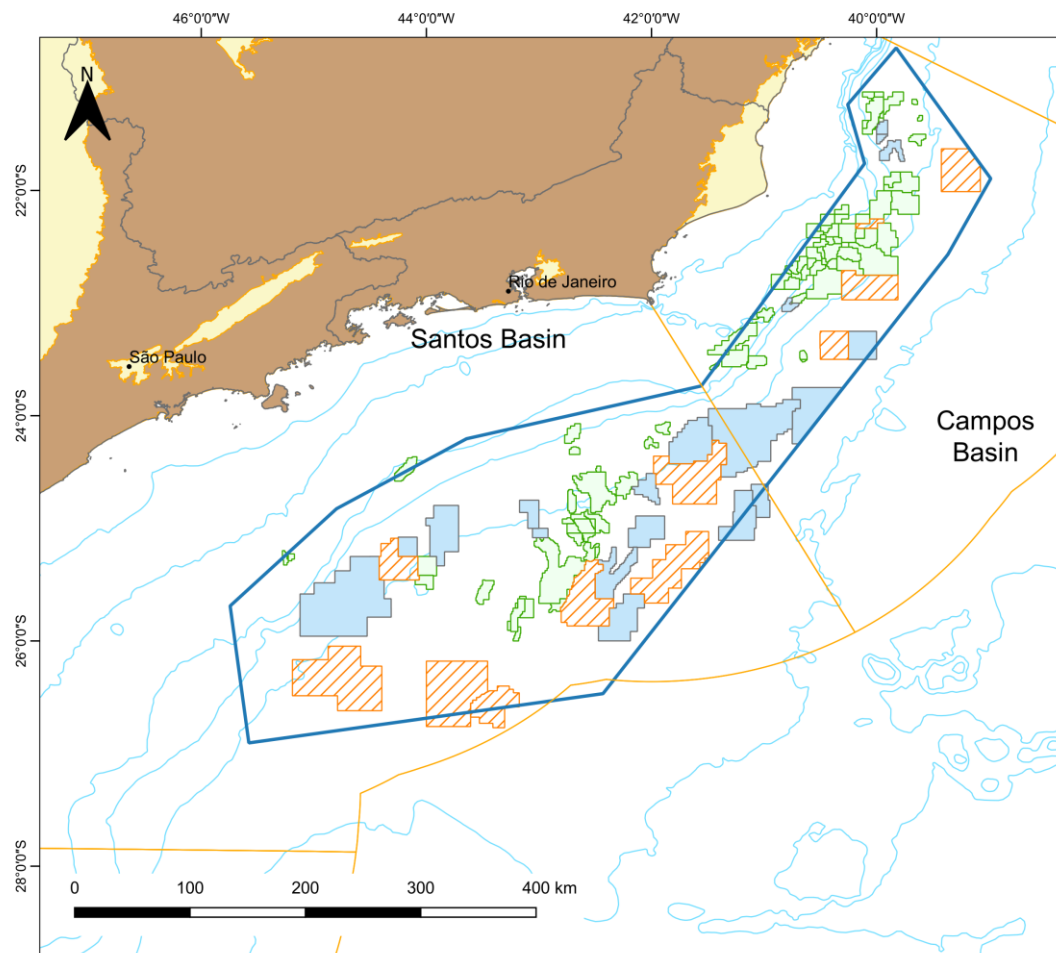


Santos Basin – Ametista Block

MME => CNPE (resolution is needed)

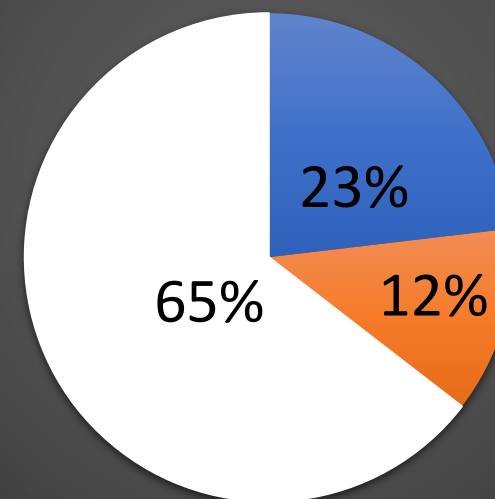


Campos and Santos basins (Prod. Share) – Open Acreage. What is the Next?



Area Inside Pre-salt Polygon (Total 147.216 Km²)

■ Contracted ■ On Offer ■ No contract or forecast



Res. CNPE nº 27/2021 Art. 4º § II

https://www.gov.br/mme/pt-br/assuntos/conselhos-e-comites/cnpe/resolucoes-do-cnpe/resolucoes-2021/Res_CNPE272021.pdf

Res. ANP nº 837/2021 – Nomination

<https://www.in.gov.br/en/web/dou/-/resolucao-anp-n-837-de-18-de-janeiro-de-2021-299559764>

Final Remarks

[Res. CNPE nº 27/2021,](#)

Authorizes the ANP to define and bid for blocks in concession in any onshore/offshore basins, and fields returned or in the process of being returned. Except for strategic and pre-salt areas

Art.2º. Set the Permanent Offer (PO) as preferred.

Art.4º. § II, Inside Pre-Salt or Strategic Areas ...needs specific determination from CNPE with parameters defined for each case.

[Res. CNPE nº 26/2021,](#)

Authorizes the ANP bid 11 blocks on Permanent Offer (Production Share) and approved the technical-economic parameters.

[Res. CNPE nº 01/2022,](#)

Establishes the participation of Petróleo Brasileiro S.A. - Petrobras in the Água Marinha and Norte de Brava block.

Final Remarks

- *There are 11 blocks on Offer inside Pre-Salt Polygon (Production Share Regime). It is possible includes the 12th Block (Ametista), but it depends on MME submission for CNPE.*
- *A new cycle of the permanent offer depends on the investor's action. The INDICATION of an area with presentation of a financial guarantee initiates the process.*
- *There is also a relevant area within the pre-salt polygon without a contract or bidding forecast, the NOMINATION is the tool for investors to access the ANP, so that areas can be prioritized.*



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<https://www.gov.br/anp/pt-br>