



February 2026

Brazilian and Iranian oil industries

Past and Future

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Iranian Oil Industry: Geographical Overview

Iran – Key Figures (2024)

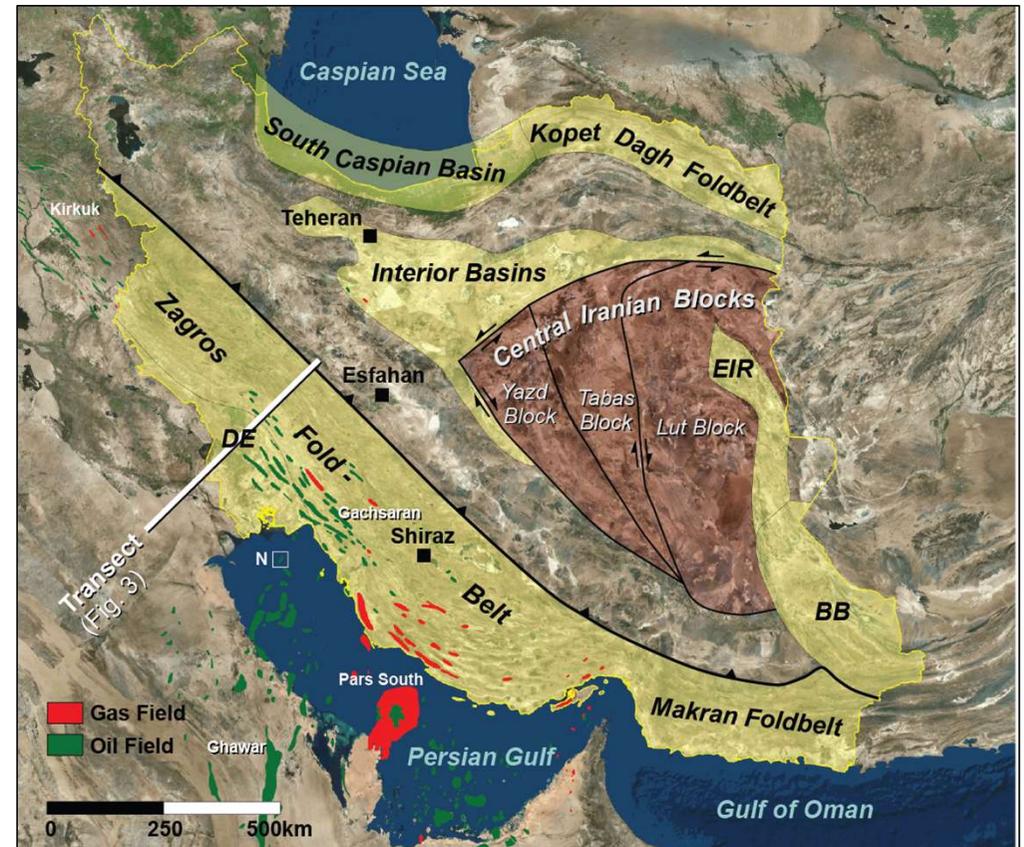
- 3.3–4 mb/d oil production
- 1.95 mb/d domestic consumption
- 2.4 mb/d refining capacity
- 276 bcm gas output (94% used domestically)
- Severe water stress
- Political stability index: –1.69 (159/193)



Iranian Oil Industry: Geographical Overview

Major Sedimentary basins

- Zagros Fold Belt: 350,000–540,000 km²
- Interior Basins: ~200,000 km²
- South Caspian Sea: 100,000–150,000 km²





Iranian Oil Industry: The First Gusher

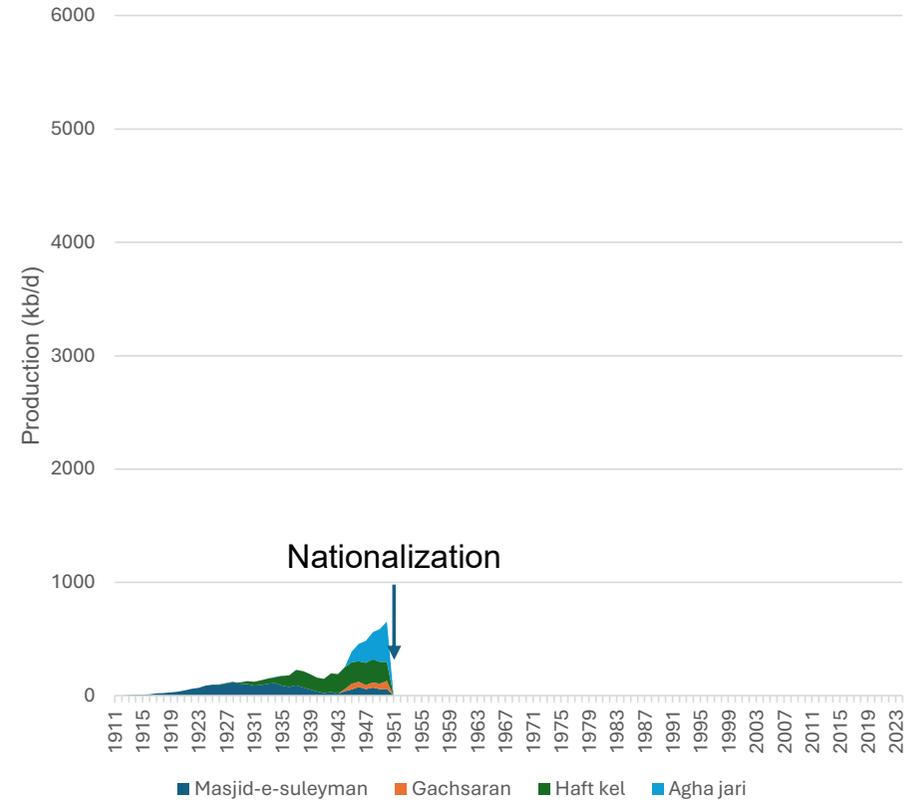




Iranian Oil Industry: The First Supergiants

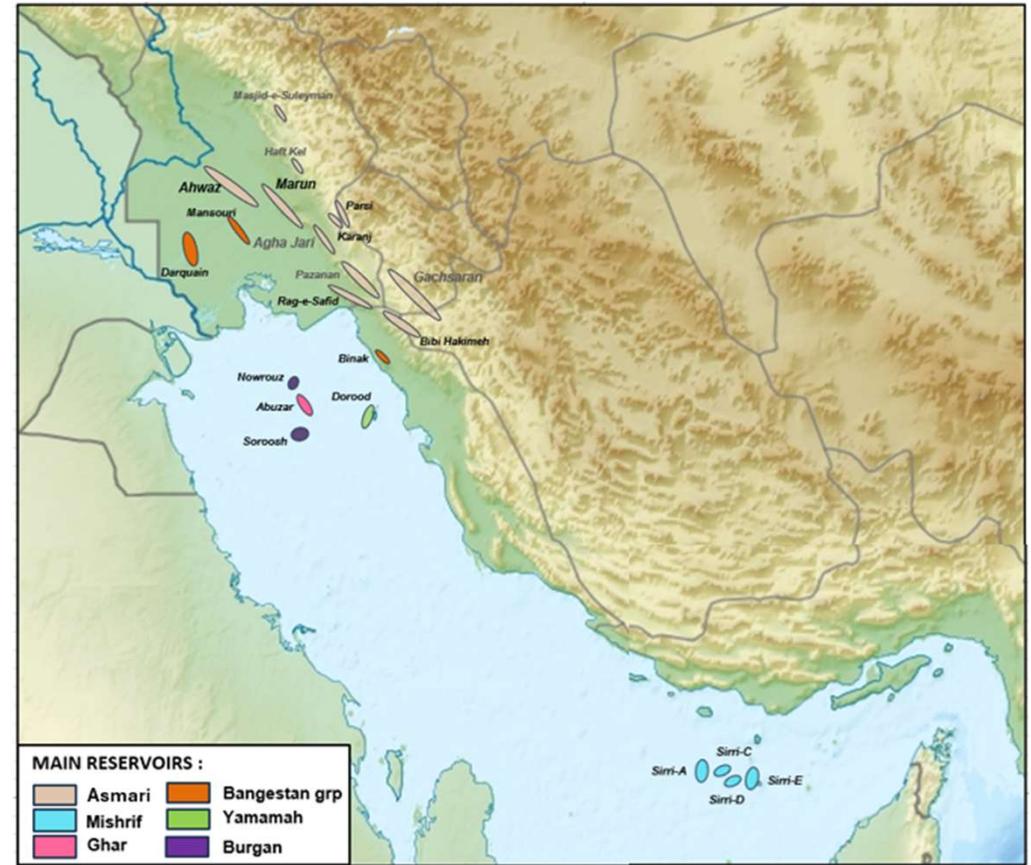
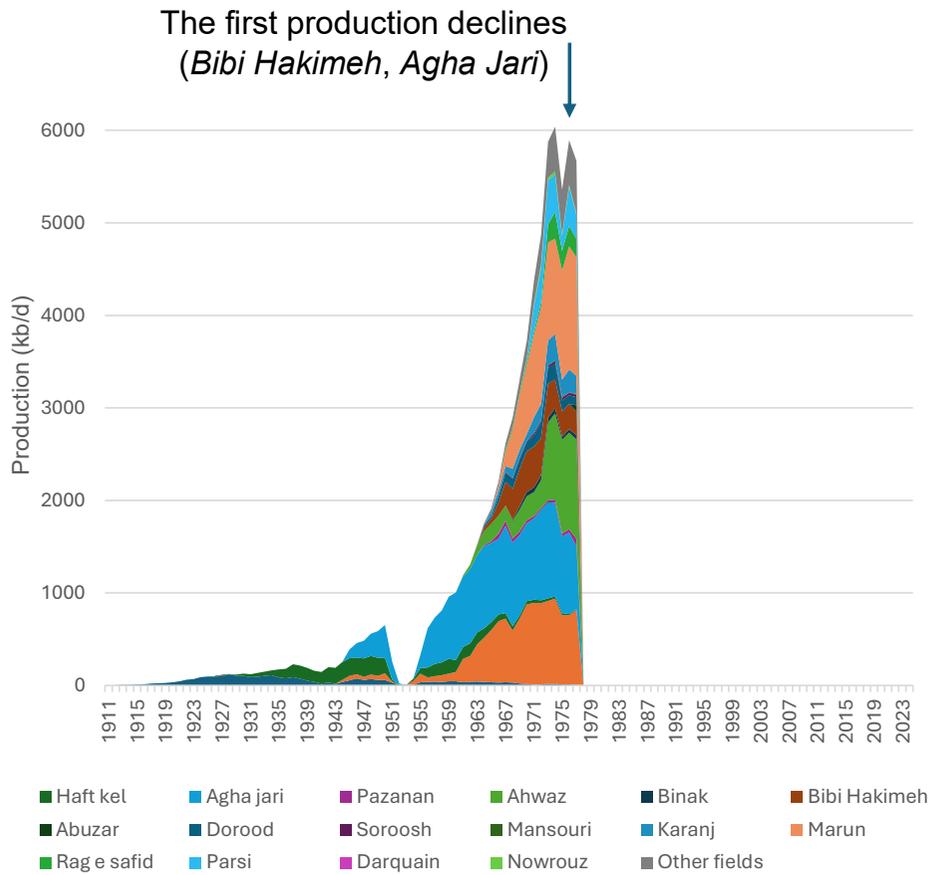


Gachsaran (1928), Agha Jari (1936)





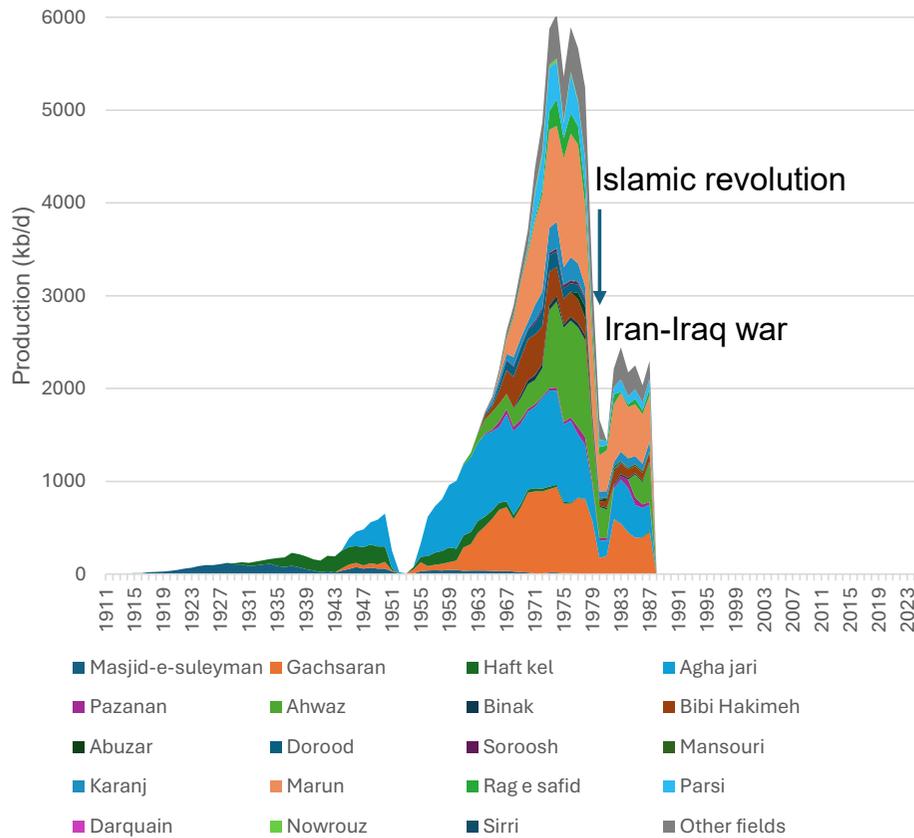
Iranian Oil Industry: The Boom



Ahwaz (1953), Marun (1964)



Iranian Oil Industry: The Boom...and Bust



First pressure maintenance programs

- Gachsaran (gas, 1975)
- Haft Kel (gas, 1976)
- Sirri (water, 1983)



Operation Nimble Archer, *Reshadat* field (ex-Rostam)

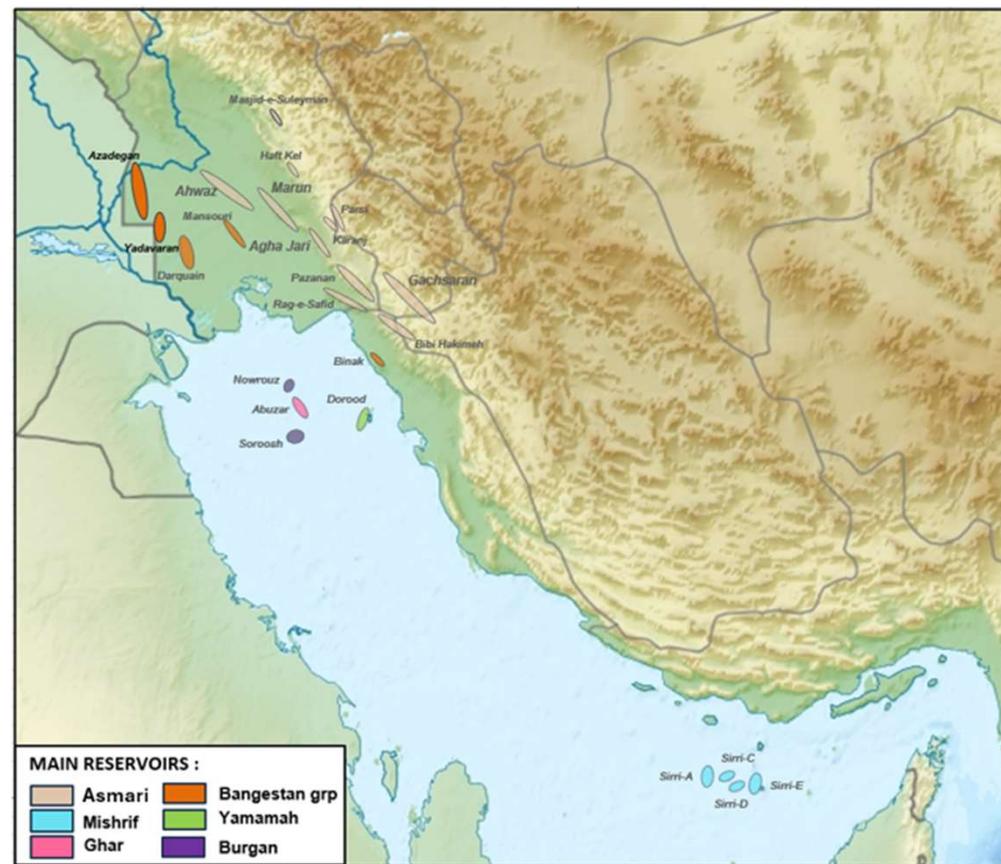
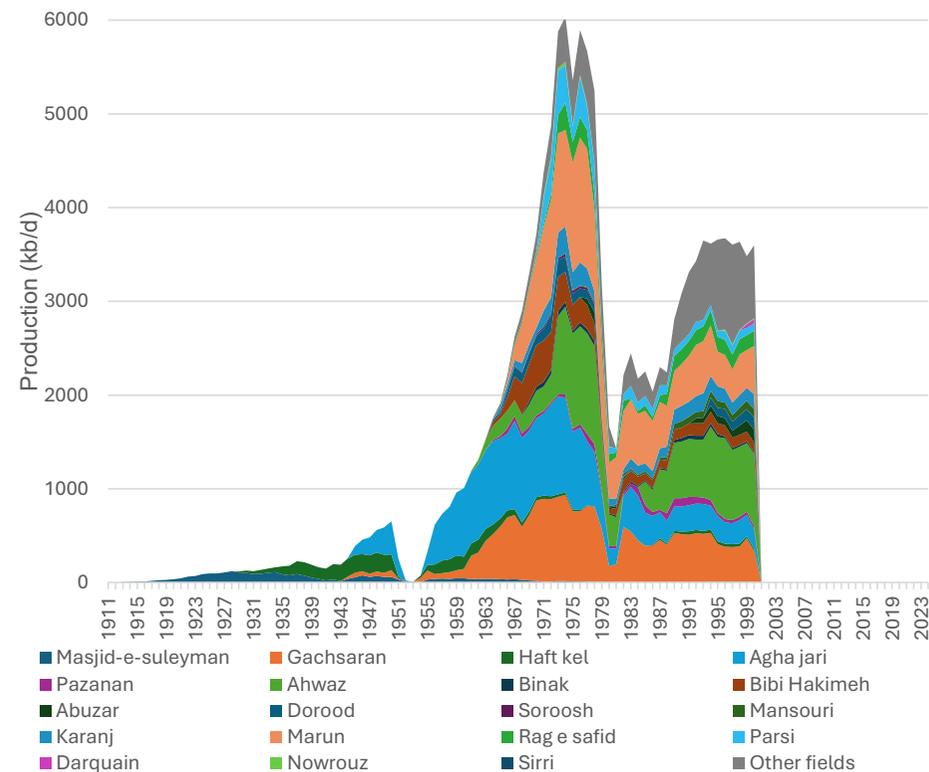


Iranian Oil Industry: The Production Recovery

Limited BBC projects (U.S. opposition, costs, constraints).

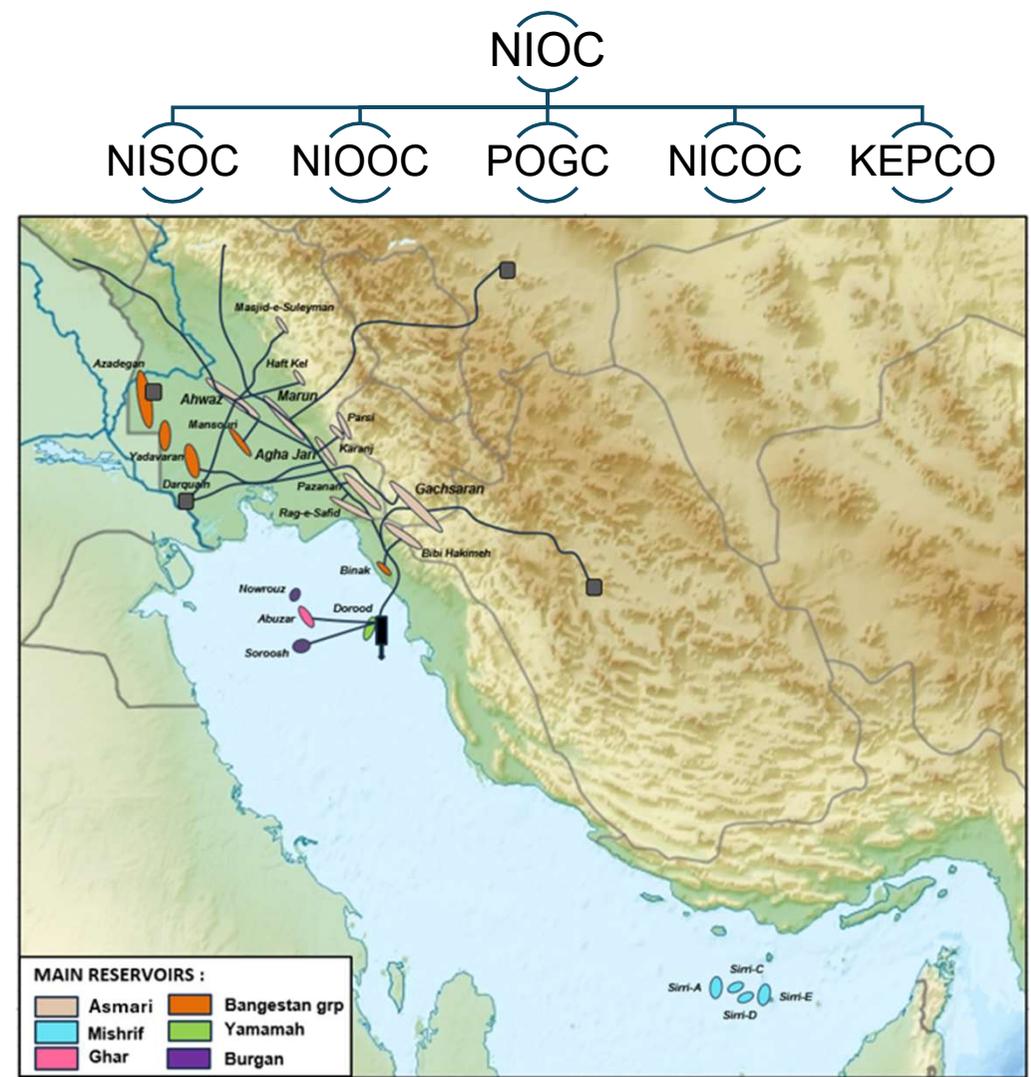
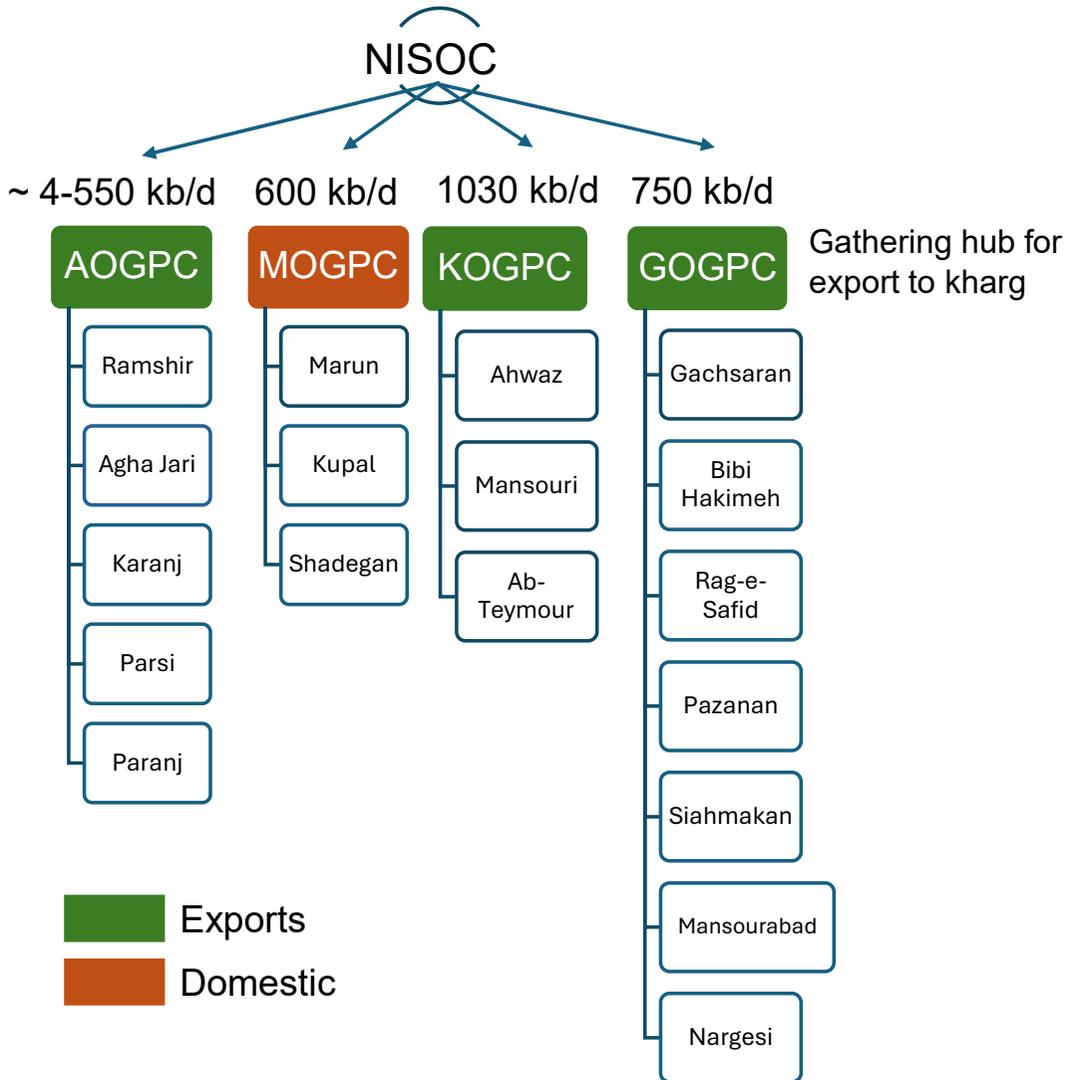
Gas injection resumed.

New discoveries and ongoing projects.





Iranian Oil Industry: NIOC Restructuration





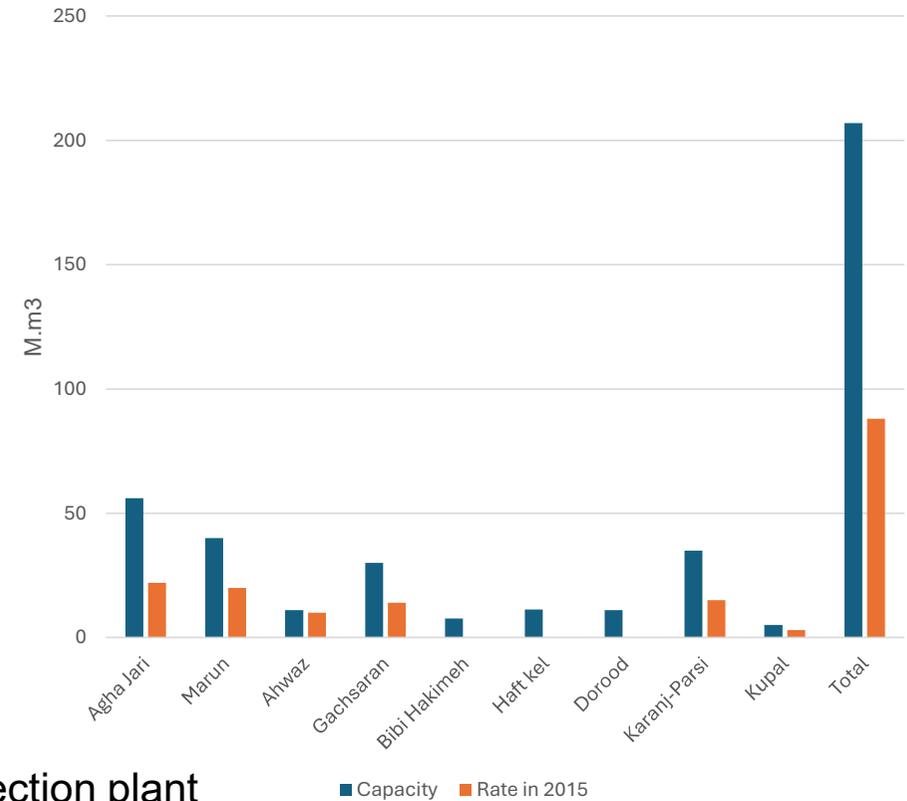
Iranian Oil Industry: A Gas Shortage

Gas prices heavily subsidized (40–50 cents/MMbtu)

High inefficiency across industry and households

Gas injection (M.m³/d):

- Official 5th Plan target (2010–16): 150
- Unofficial requirement: 290
- Average 2000–2015: 77
- Average 2020–2023: 30–37



Agha Jari injection plant

Inaugurated in 2008

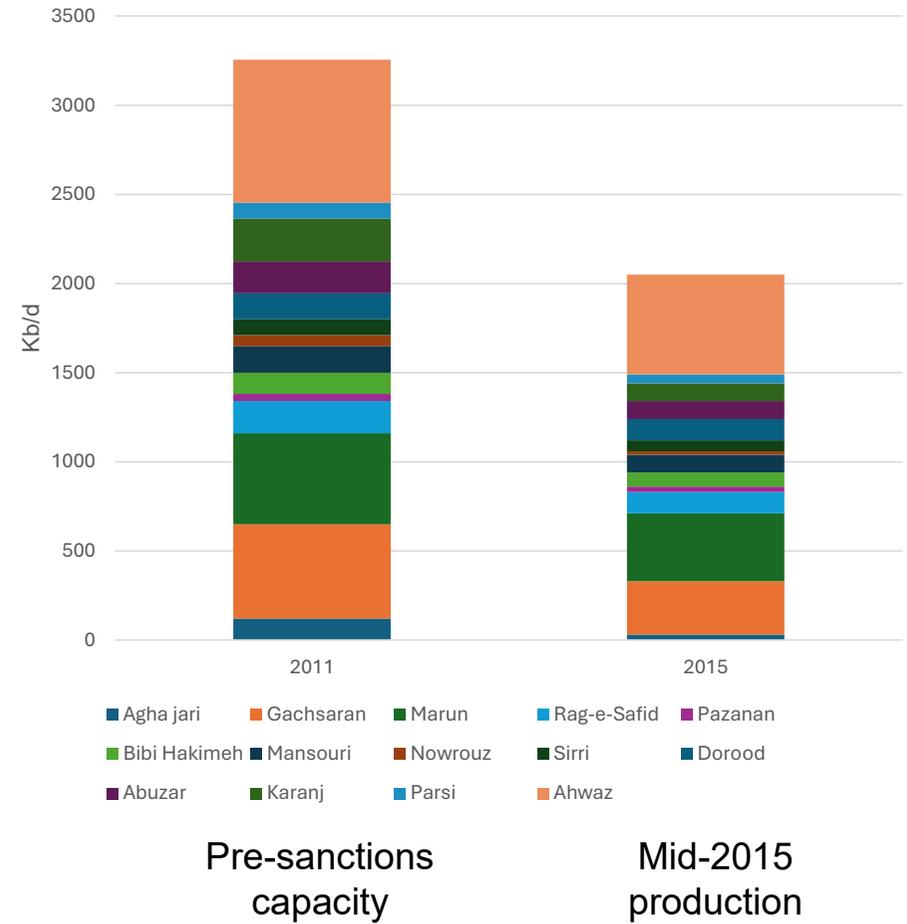
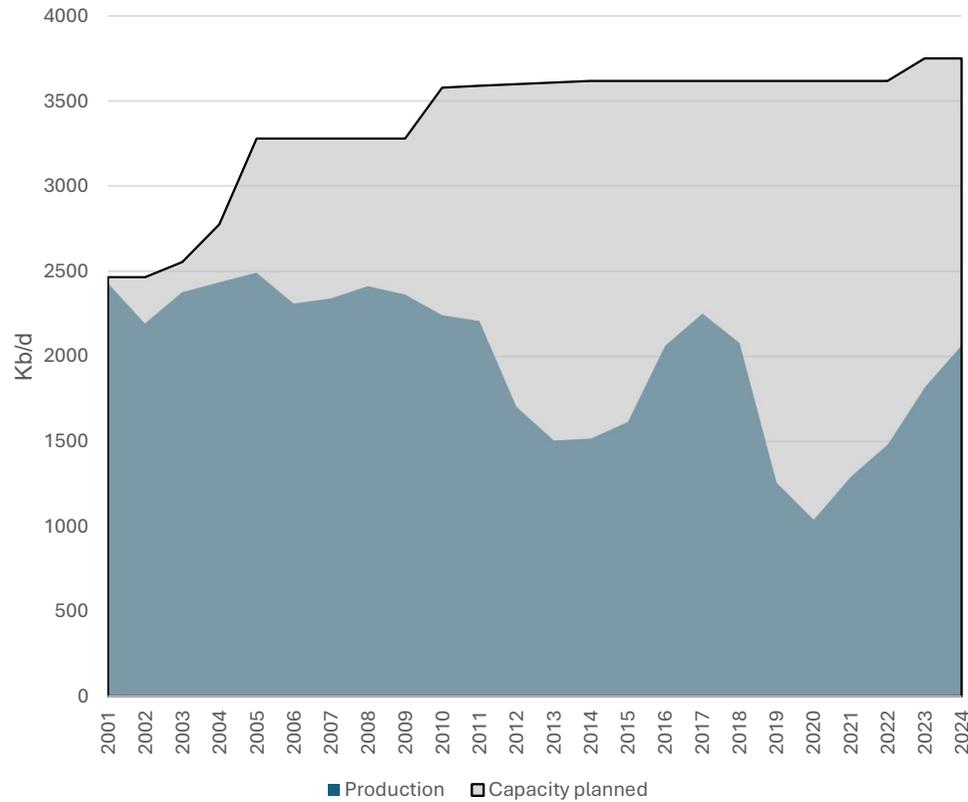
Injection started in 2014

Capacity: 56 M.m³/d

Volume injected in 2015: ~20–25 M.m³/d

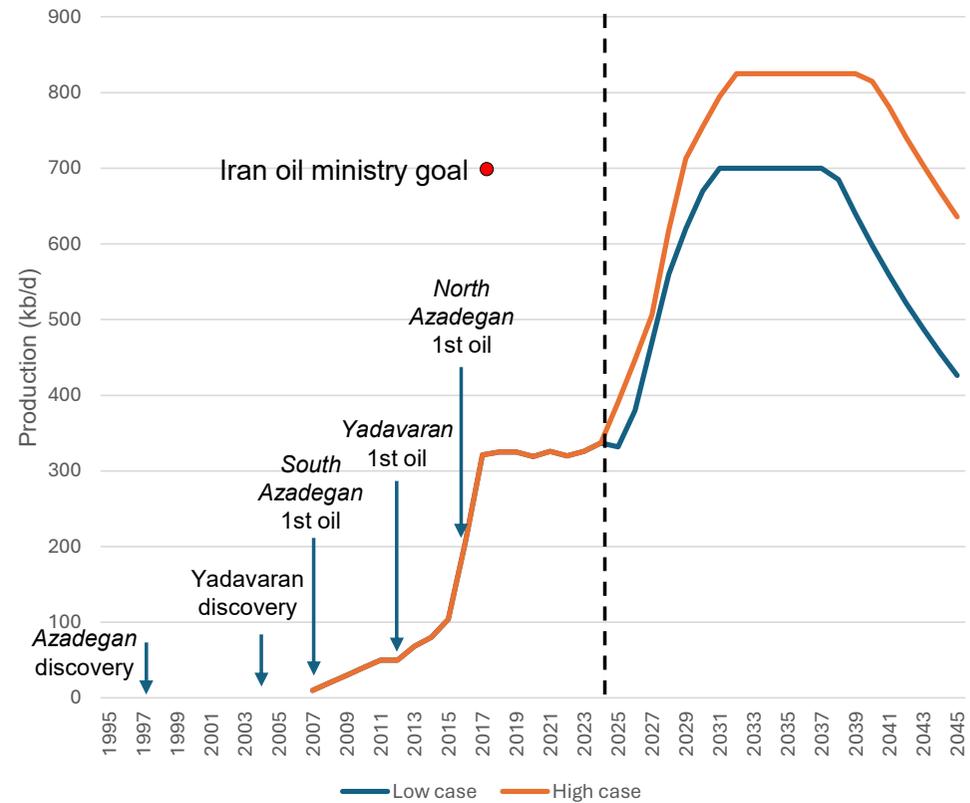
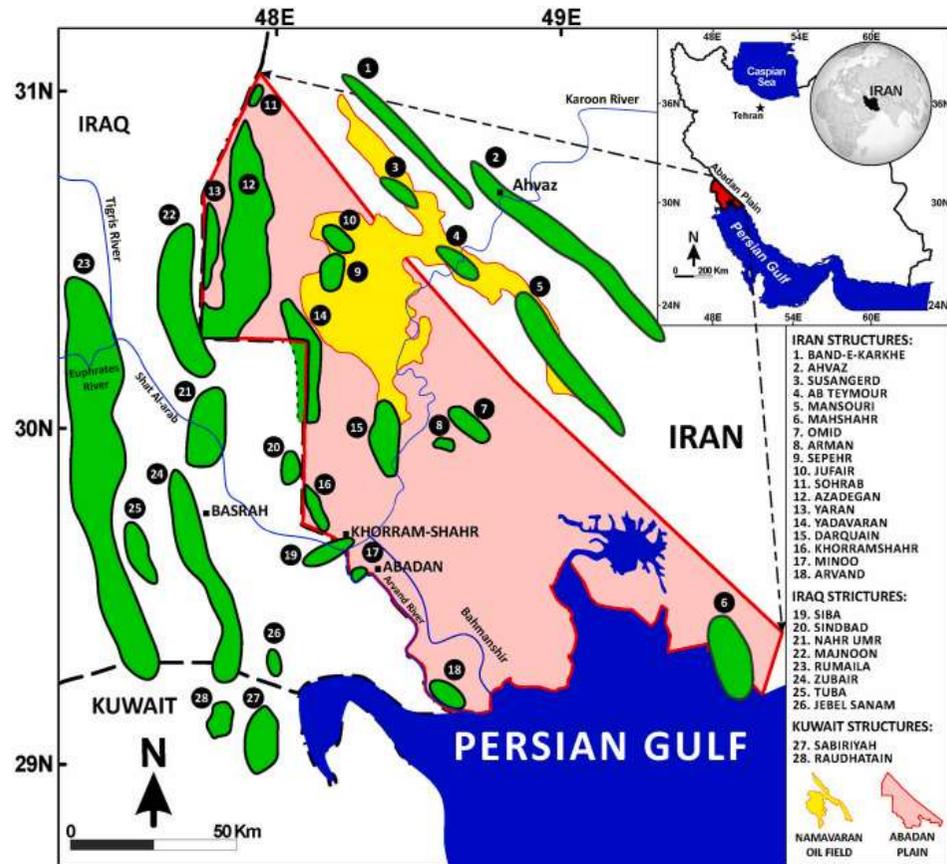


Iranian Oil Industry: Sanctions & Delayed Projects





Iranian Oil Industry: West Karoun Fields, The Last Developments ?

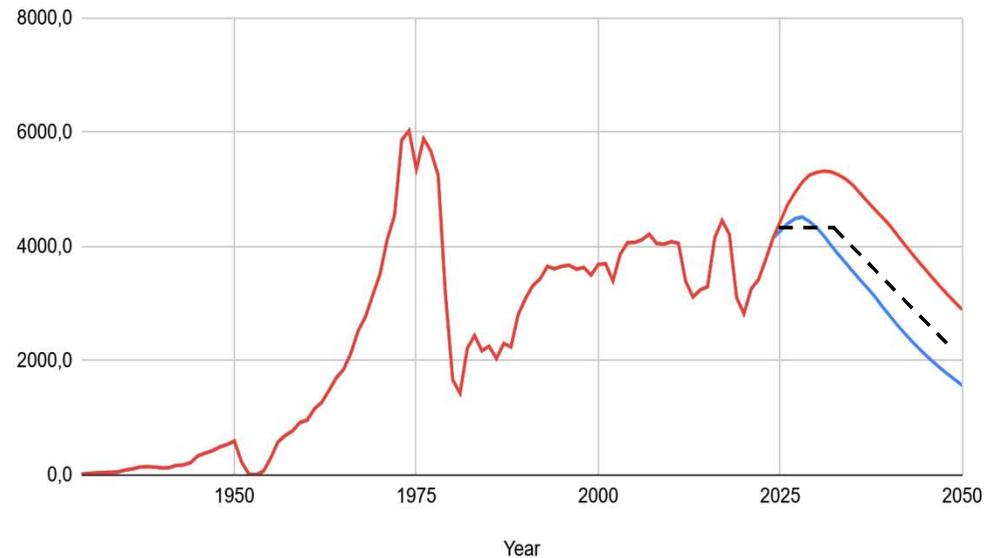


Azadegan OOIP : 30-40 Gb / Reserves : 4-6 Gb / 750 kb/d in 2*2 phases
 Yadavaran OOIP : 12-31 Gb / Reserves : 3-4 Gb / 300 kb/d in 3 phases

Iranian Oil Industry: What's Next ?

Future challenges include:

- Mature oil and gas fields
- Aging infrastructure
- Insufficient pressure maintenance
- Internal uncertainties: cost of living, water scarcity, reduced subsidies



Brazil: More Than an Energy Power

Brazil – Key Figures (2024)

- 3.36 mb/d oil production
- 2.575 mb/d domestic consumption
- 2.3 mb/d refining capacity
- Arable land: 556,000 km²
- Rich in gold, iron, tin, bauxite, etc
- Stability index: -0.52 (developing nations average: -0.8, World Bank)



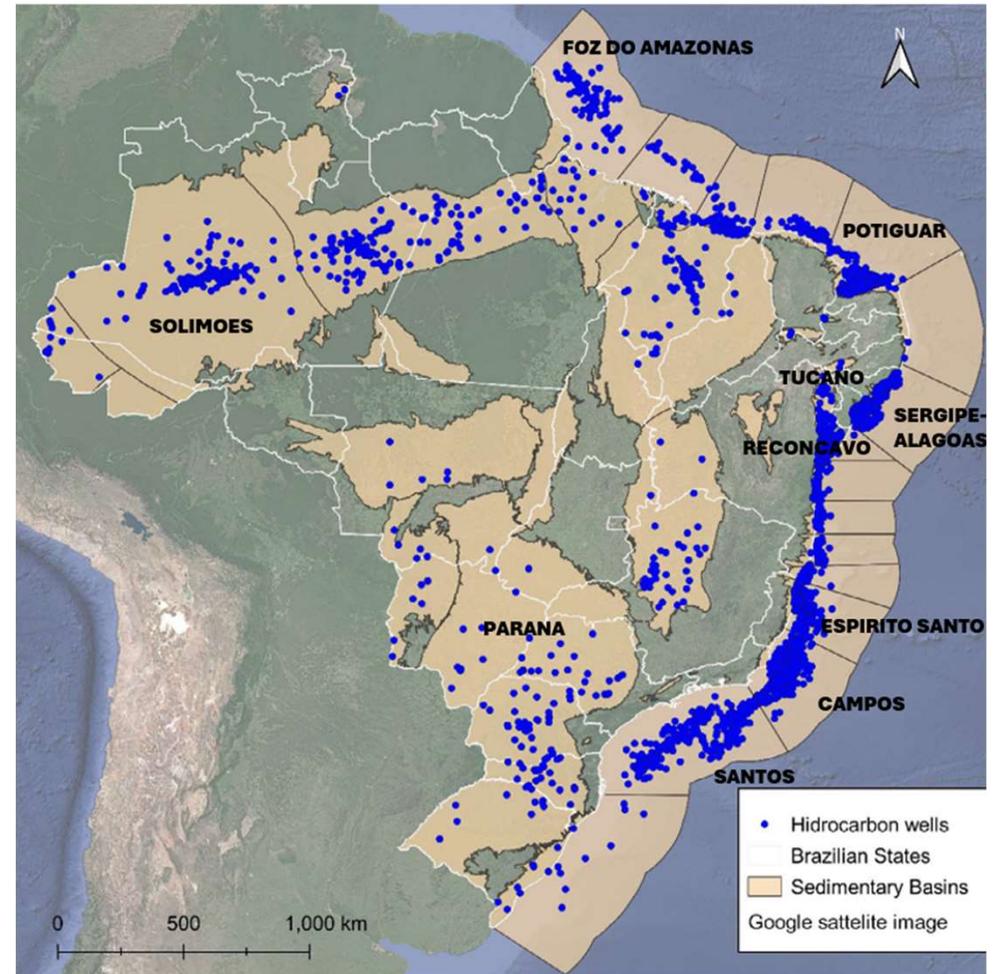
Brazilian Oil Industry: Geographical Overview

Onshore area: 4,880,000 km²

Offshore area:

- 0–400 m depth: 770,000 km²
- 400–3000 m depth: 780,000 km²

6,430,000 km²



Brazilian Oil Industry: Main Offshore Petroleum Systems

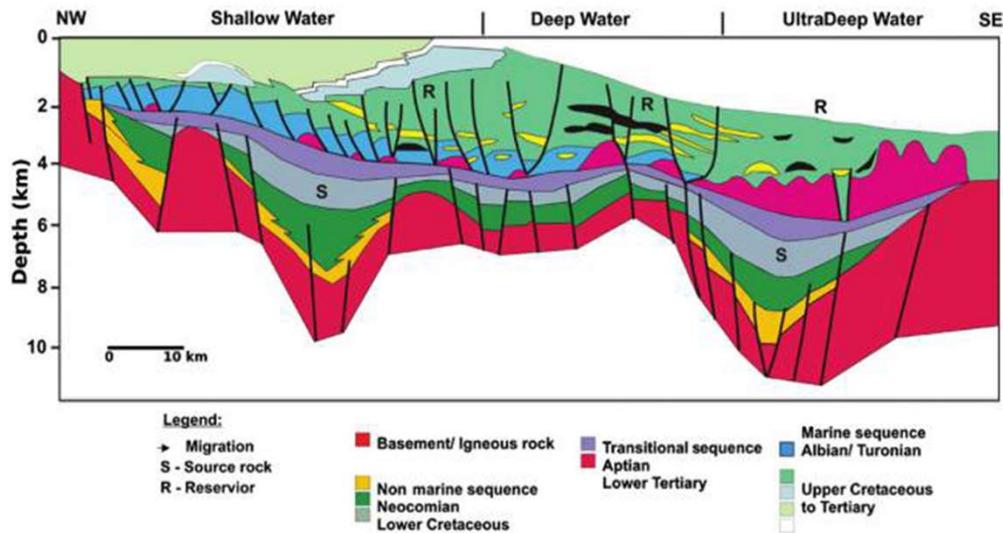
Campos basin

SR : Lago Feia (lacustrine)

R : Carbonates, Turbidites

Cap and Trap : Marls, stratigraphic (mainly)

Oil : Heavy-Medium (16-25° API)



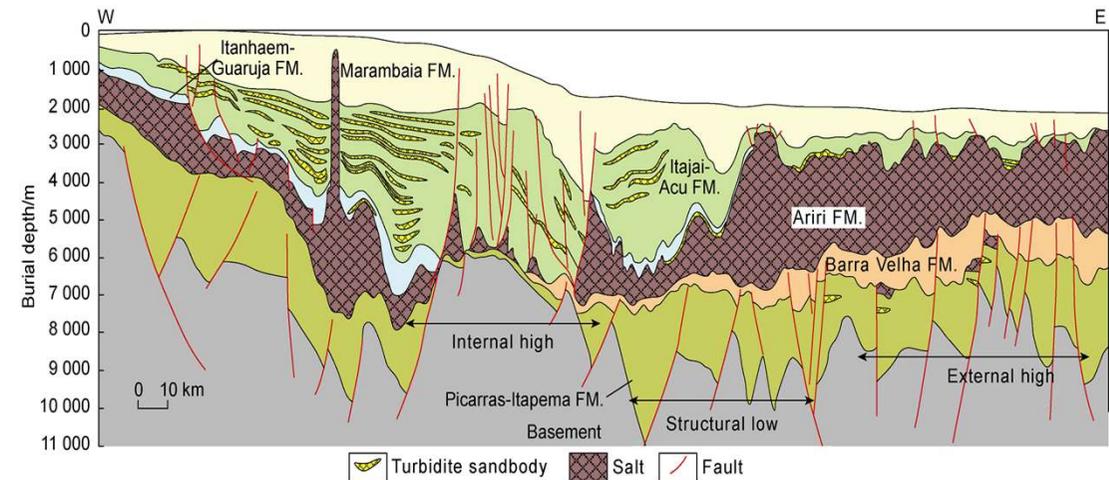
Santos basin

SR : Picarras, Itapema

R : Itapema, Barra Velha carbonates

Cap and Trap : Evaporites, structural

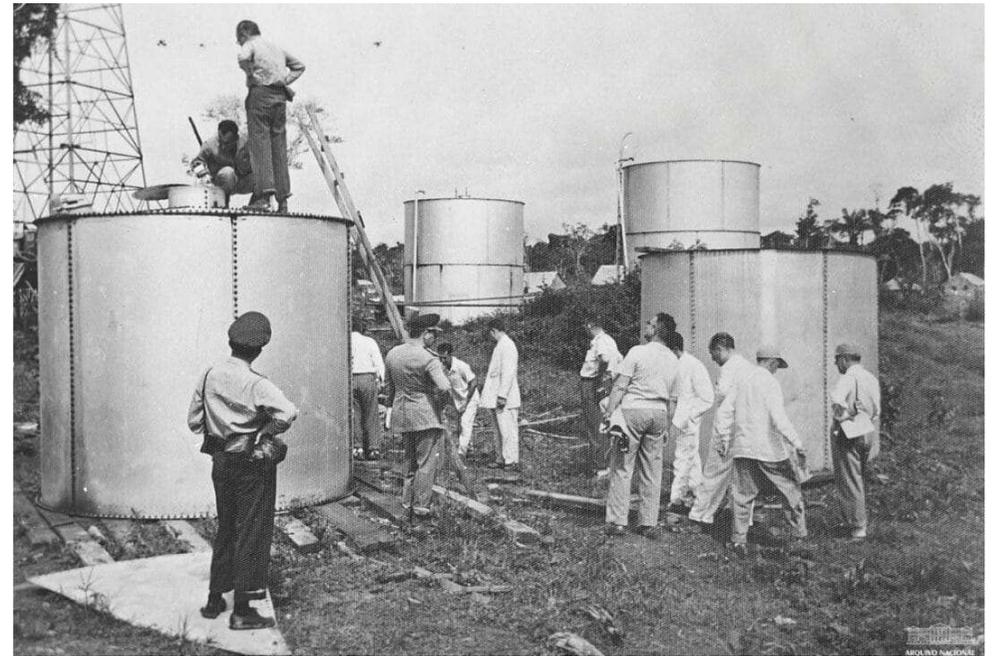
Oil : light (28-35°), CO₂ rich





Brazilian Oil Industry: Scratching The Surface

- 1892 : 1st wildcat drilled, 2 barrels produced, outcrop of Parana paleozoic basin
- 1941 : First commercial field, *Candeias*, Reconcavo basin (right)
- 1953 : Petróleo Brasileiro SA (Petrobras) is born
- 1963 : First giant (*Carmopolis*, Sergipe Alagoas basin)





Brazilian Oil Industry: To The Sea

Deceiving onshore results → shift to coastal & offshore basins

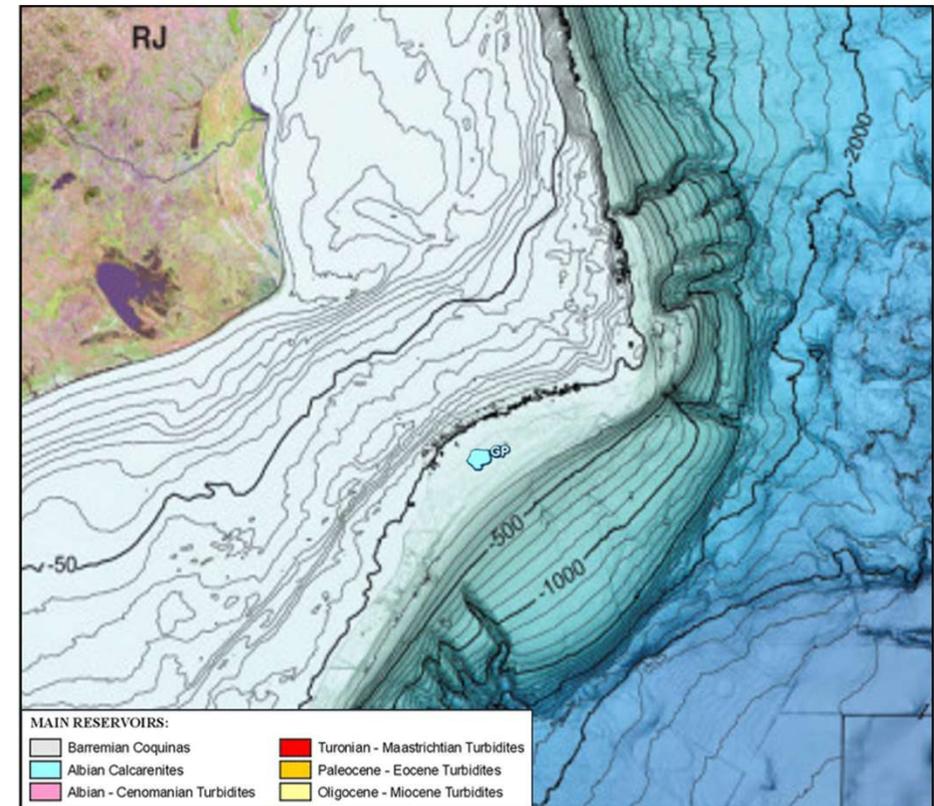
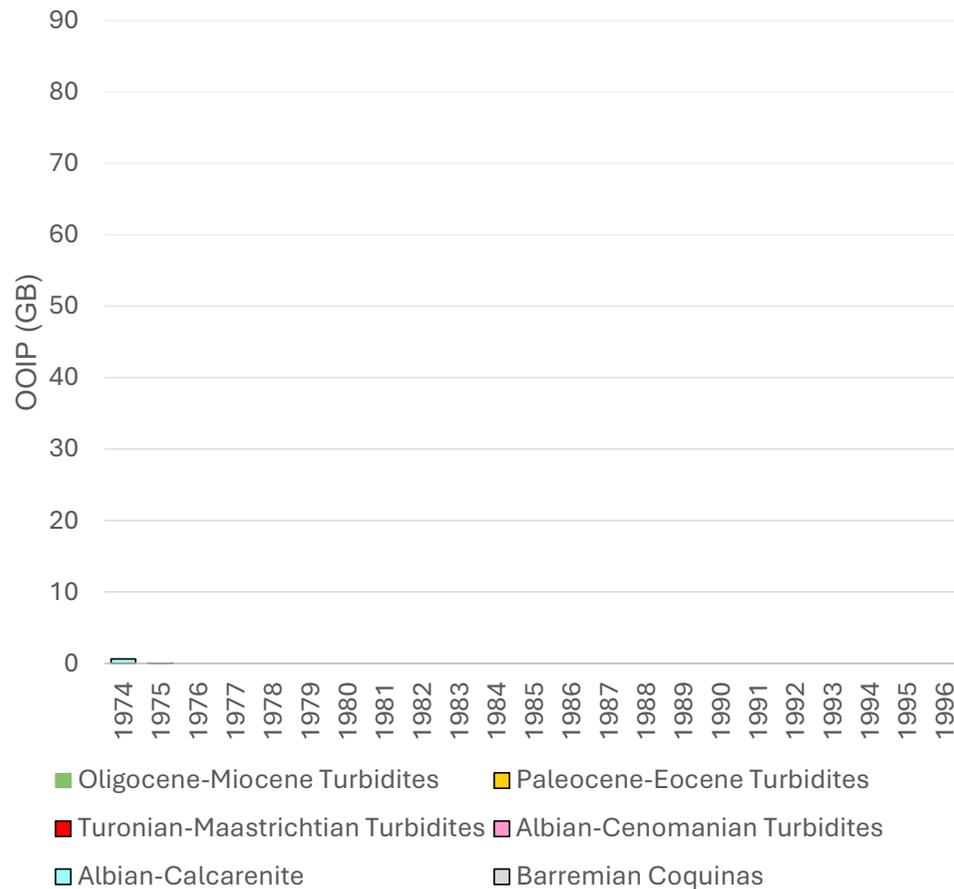
1968 : First offshore field, *Guaricema*, only 15 m WD !

Camorim, Dourado, and others soon to follow → still small discoveries





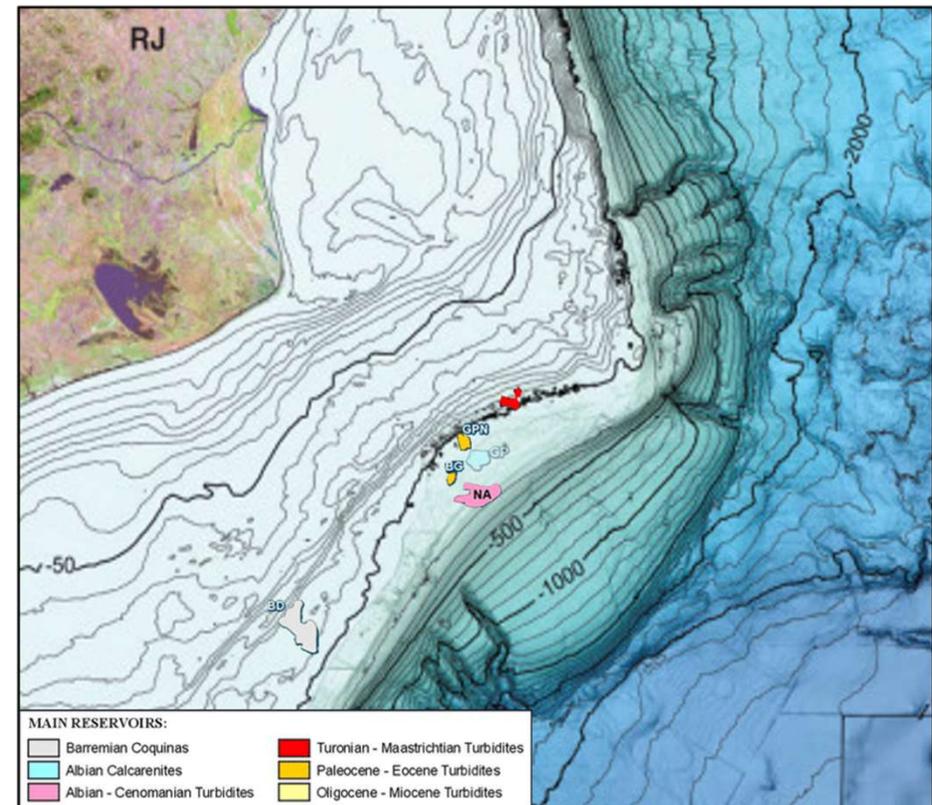
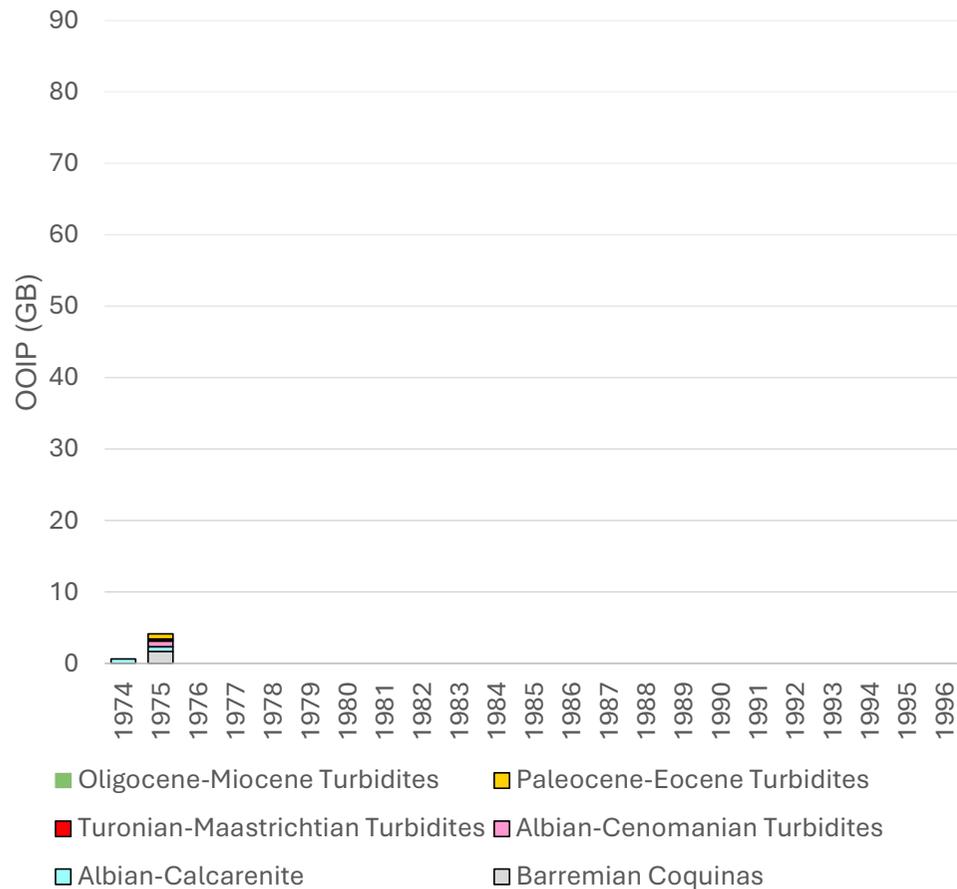
Brazilian Oil Industry: To The Sea



No of fields : 1
Volume of oil : 0,6 Gb



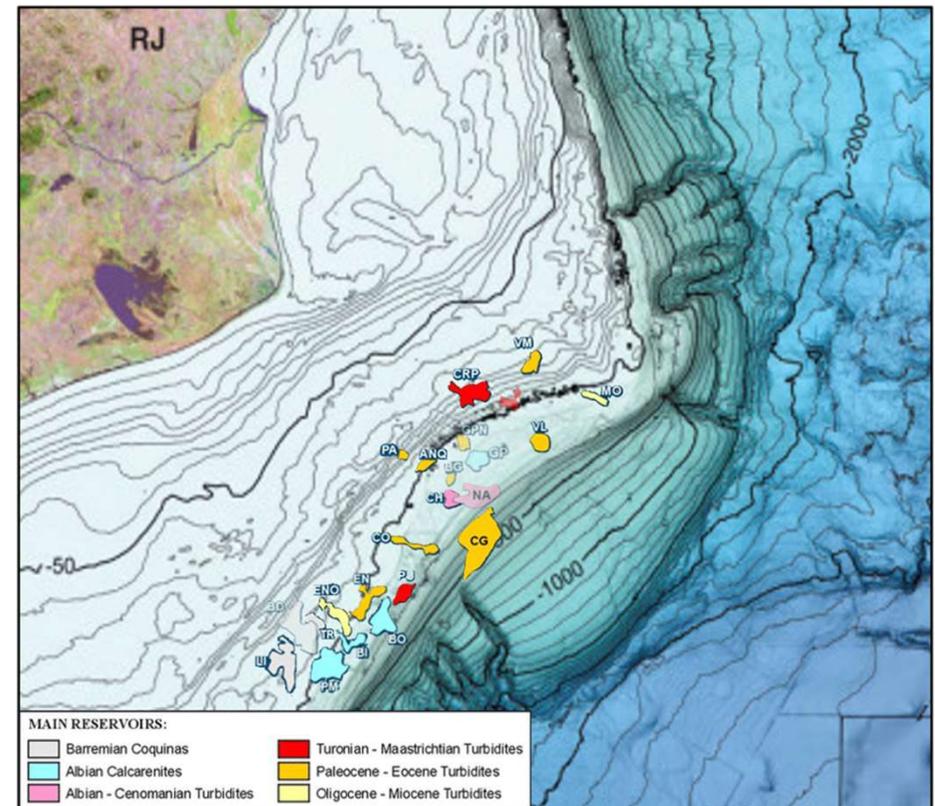
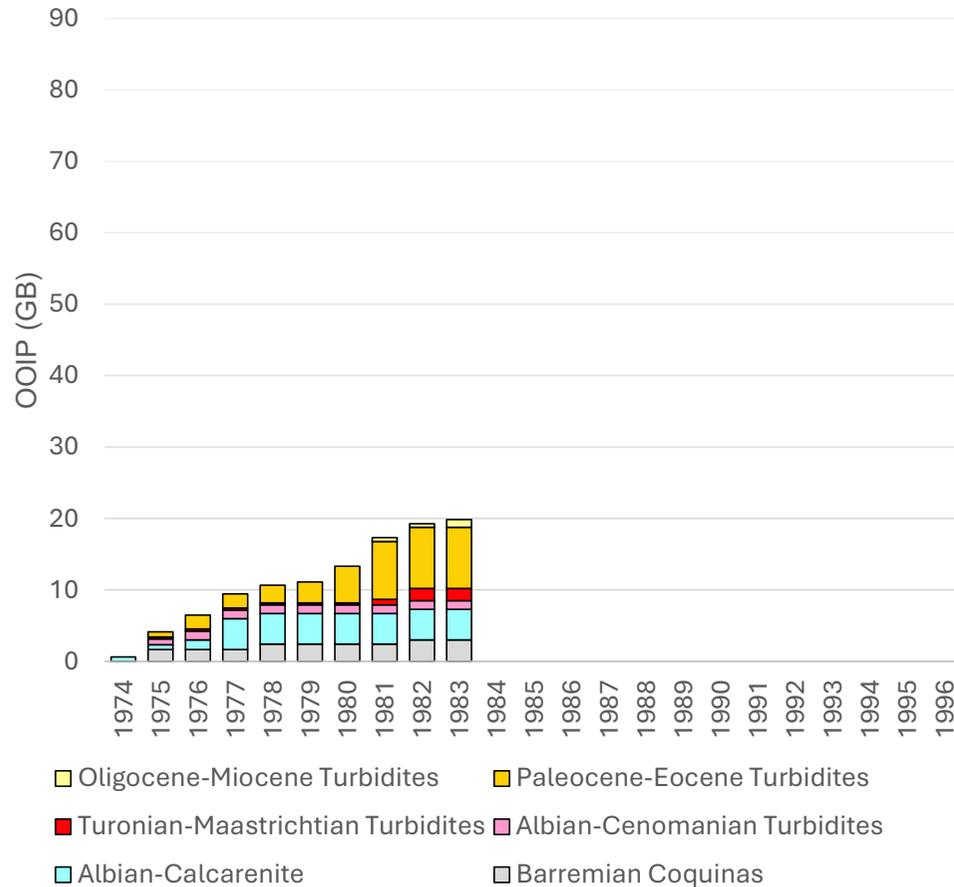
Brazilian Oil Industry: The Offshore Expansion



No of fields : 5
Volume of oil : 3,5 Gb



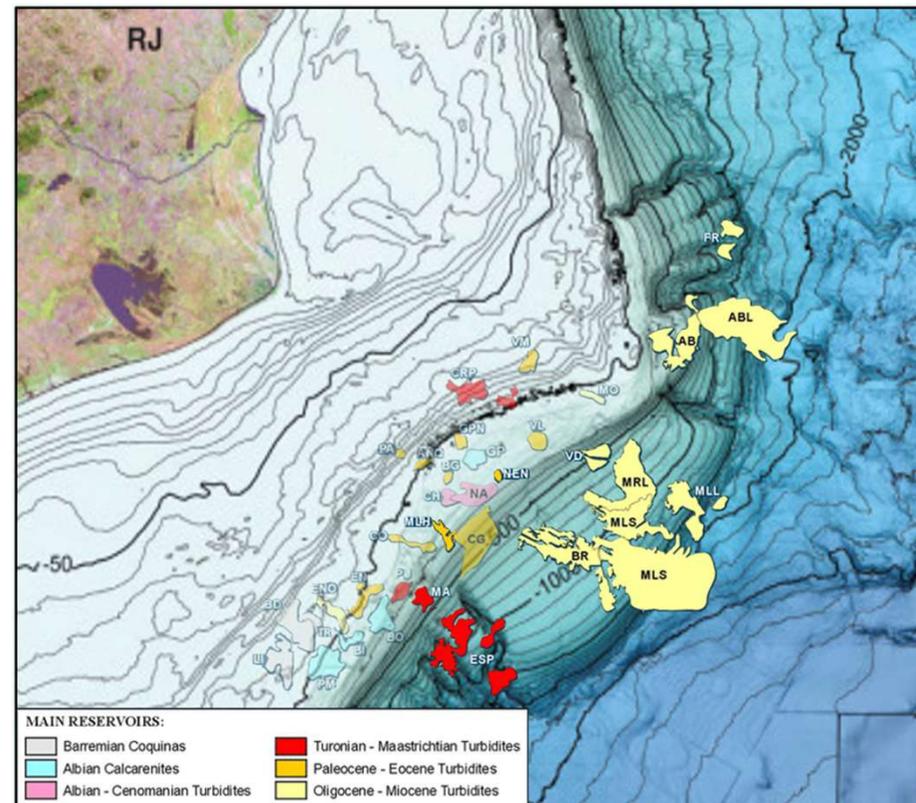
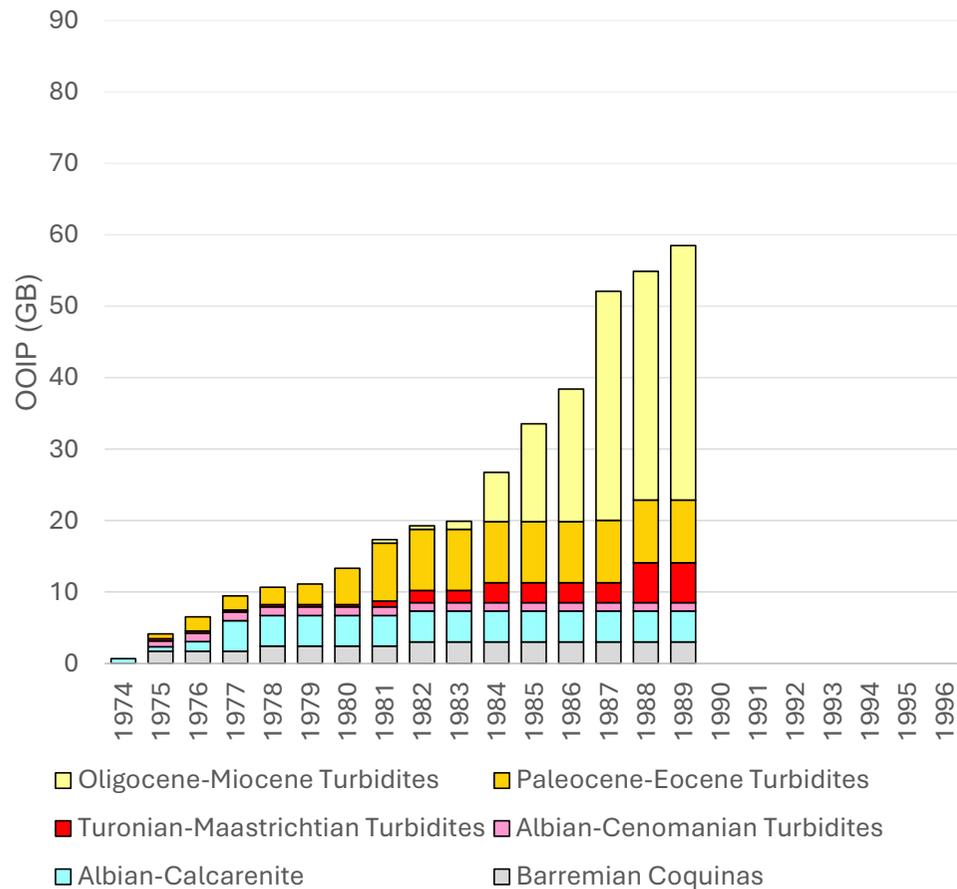
Brazilian Oil Industry: The Offshore Expansion



No of fields : 17
Volume of oil : 15,7 Gb



Brazilian Oil Industry: The Offshore Expansion



No of fields : 12
Volume of oil : 39 Gb

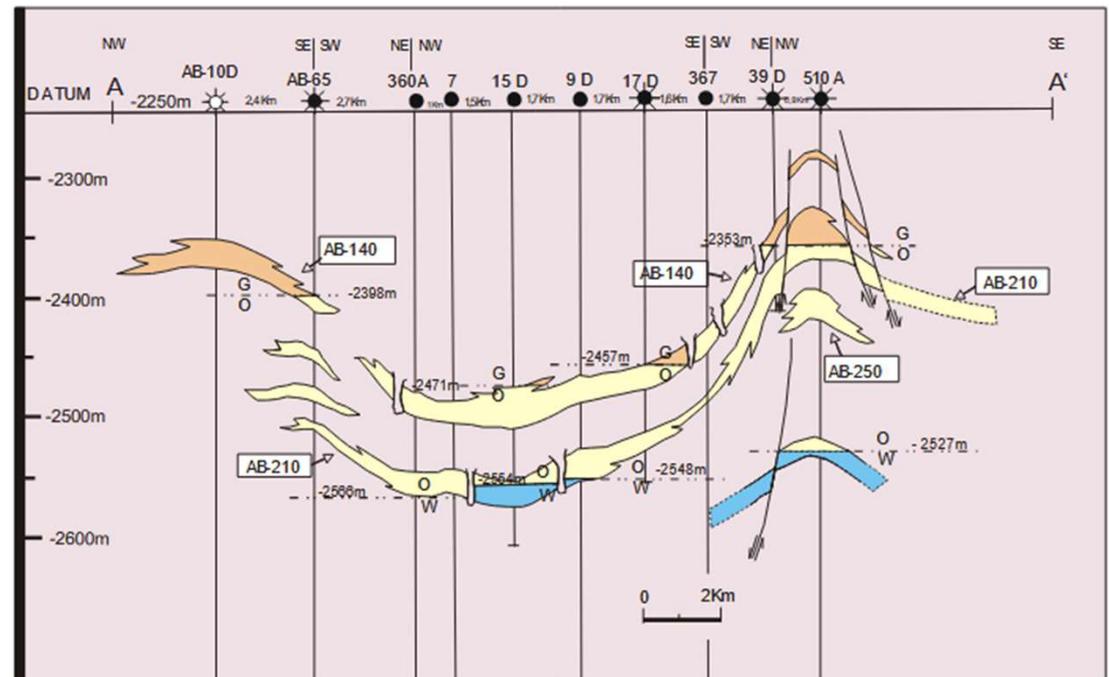


Brazilian Oil Industry: Consolidation and New Projects

PRAVAP (1993) : Heavy oil and IOR

PROCAP : 1000, 2000, 3000

- Ultra deep water (800-2000m)
- Unconsolidated sandstones
- Thin reservoirs (Net : 5-35 m)
- Multiple gas caps
- Compartmentalized
- Absent aquifer support
- Heavy (16-21° API) oil
- High CO₂ (>5%)

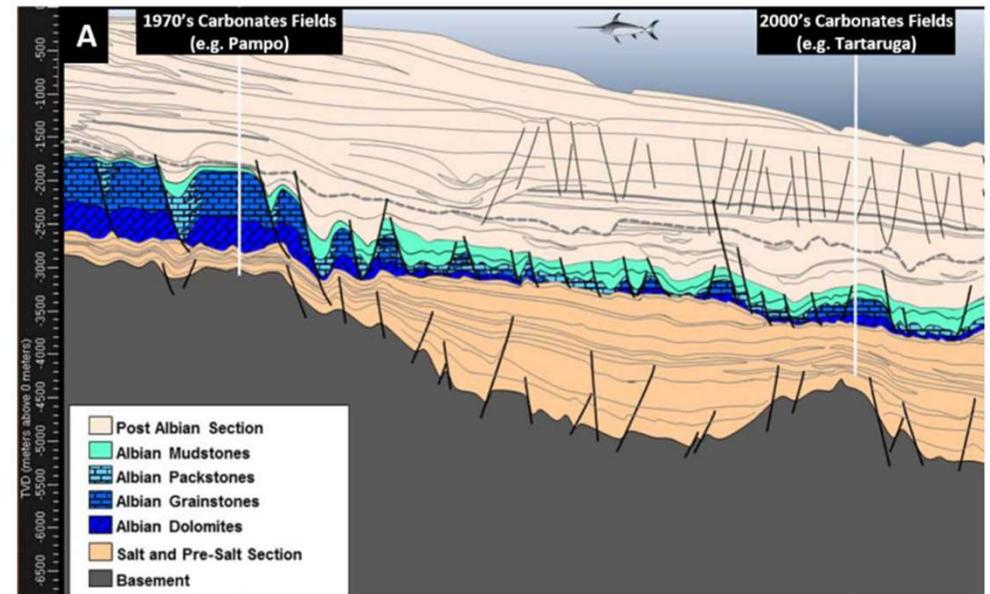
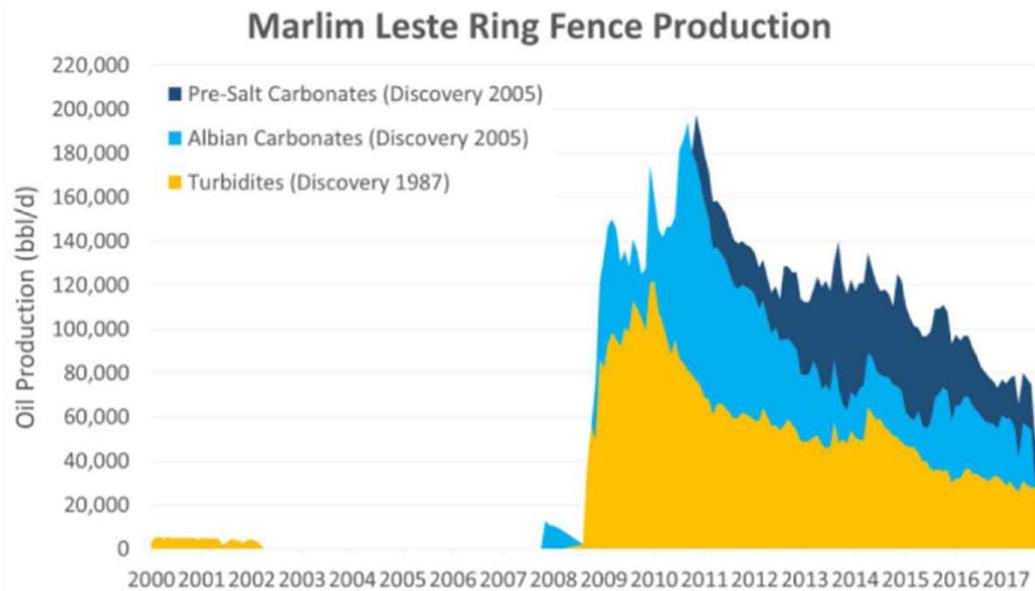


Albacora Leste (ABL) reservoirs ; simplified cross section



Brazilian Oil Industry: Exploration Targets Shifting

Moving toward deeper reservoirs below post-salt turbidites (Marlim Leste, Jubarte, and Baleia Azul...)





Brazilian Oil Industry: Toward Pre-salt Fields...

From long-distance, post-salt reservoirs:

1970–2005: 102 dry or subcommercial exploration wells

1999–2004: 65 exploration wells, success rate < 5%

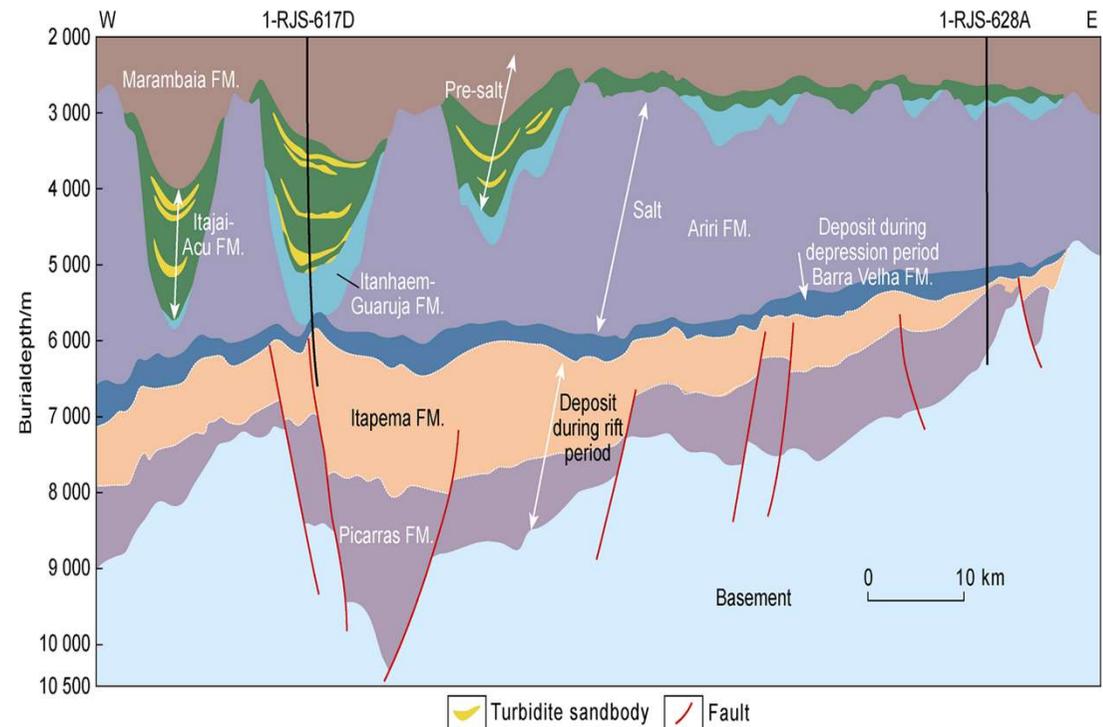
Shift to short-distance secondary migration and pre-salt reservoirs:

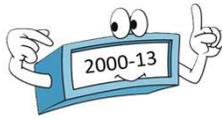
July 2006: Well 1-RJS-617D (Parati lead) tested 44° API condensate

September 2006: Well 1-RJS-628A (Tupi lead) tested 28° API oil; substantial 400 m net pay carbonate reservoir (Barra Velha fm)

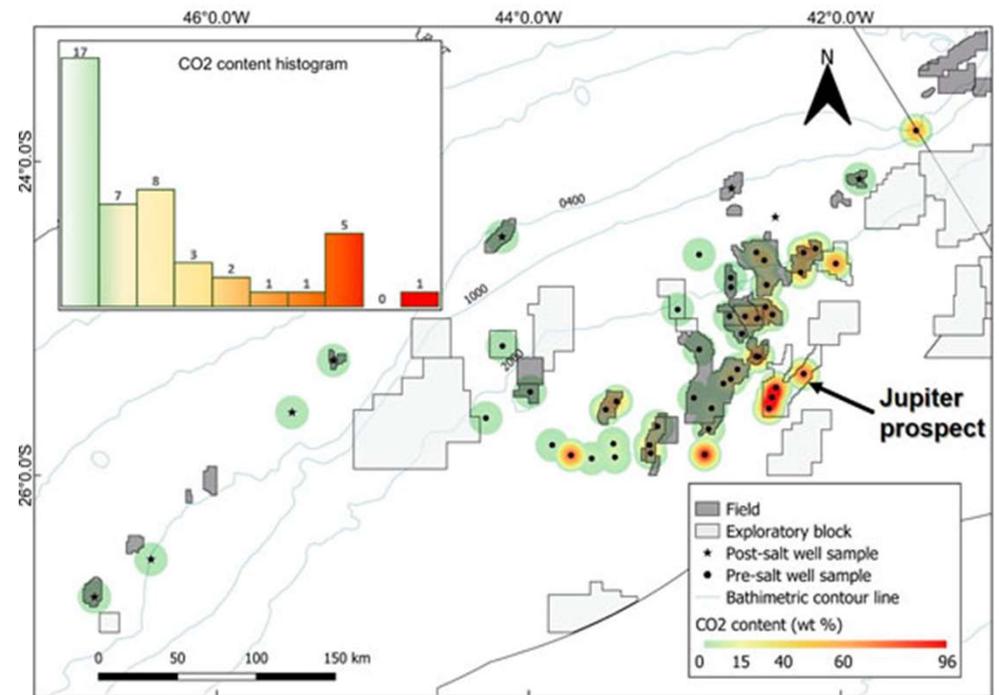
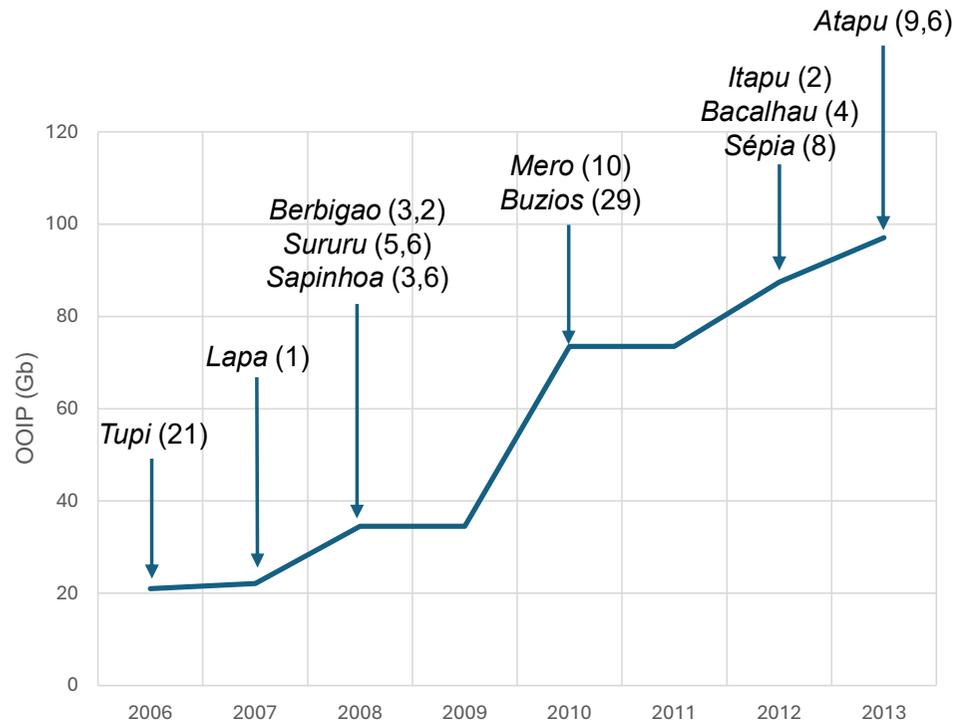
July 2007: Extension well RJS-646 (Tupi Sul lead) confirmed reservoir extension; second carbonate reservoir discovered (Itapema fm)

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Brazilian Oil Industry: The Pre-salt Boom



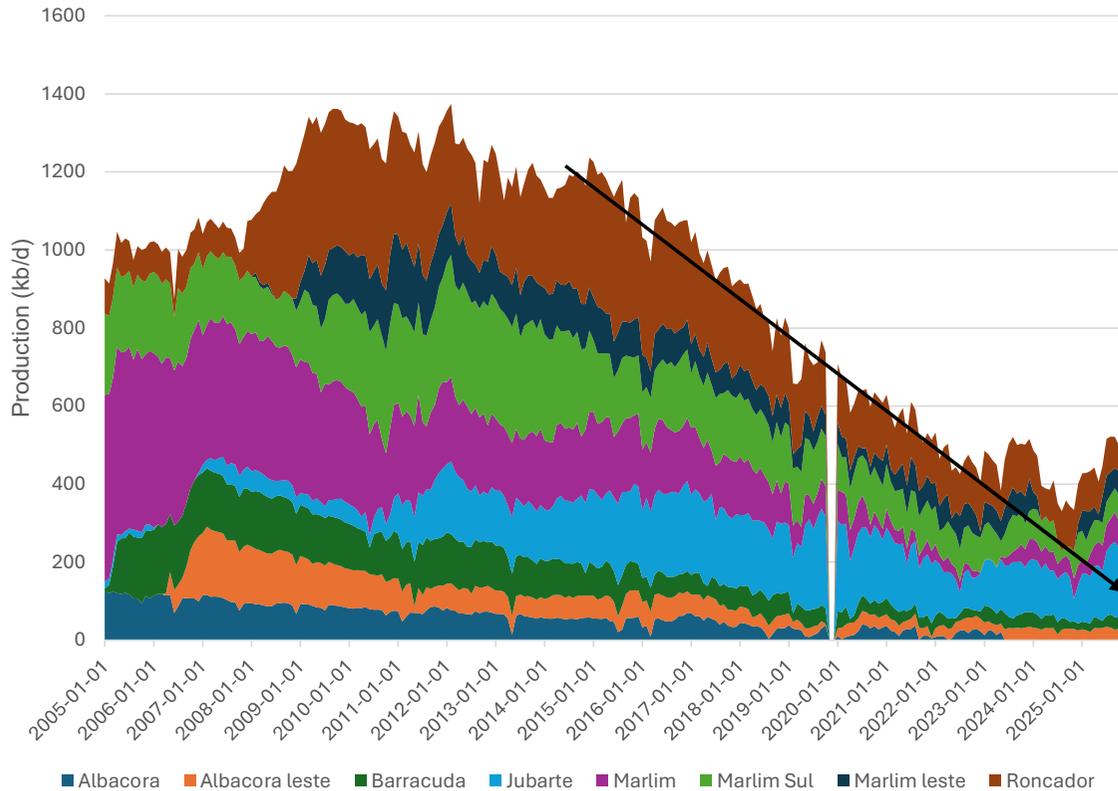


Brazilian Oil Industry: And Now ?

Brown fields revitalization

Green fields expansion

Exploration



Field	Installation	Capacity (kb/d)	Date
<i>Marlim</i>	Anna Nery	70	2023
<i>Marlim</i>	Anita Garibaldi	80	2023
<i>Jubarte</i>	Maria Quitéria	100	2024
<i>Albacora</i>	P-88	120	2030
<i>Barracuda-Caratinga</i>	-	100	-
<i>Marlim Sul Marlim Leste</i>	-	-	-



Brazilian Oil Industry: And Now ?

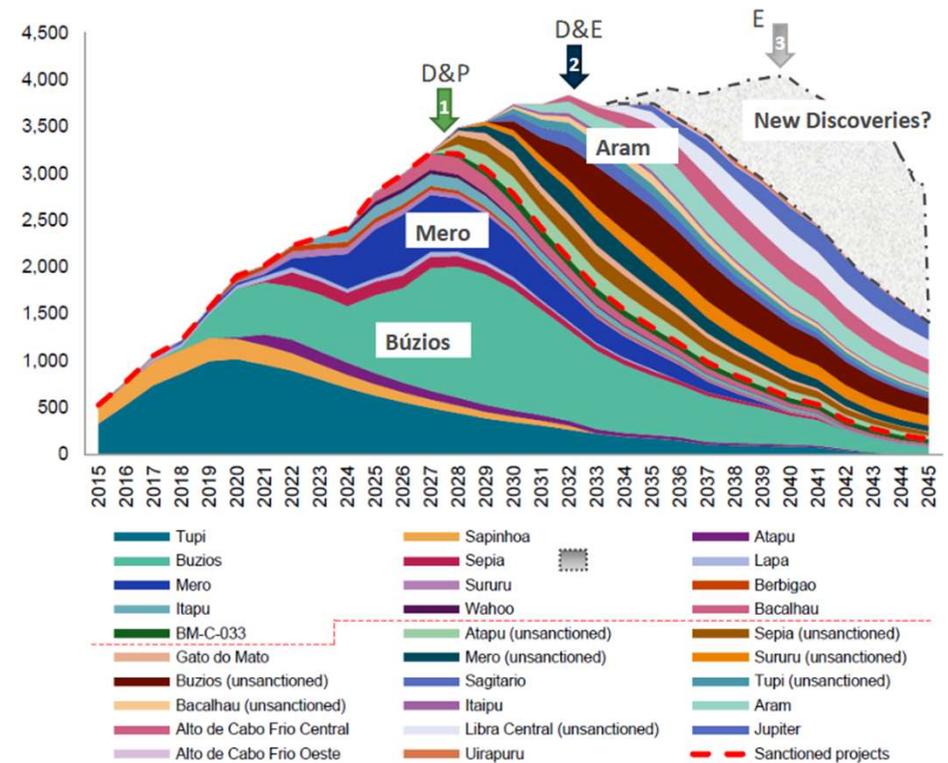
Brown fields revitalization

Green fields expansion

Exploration

Field	Installation	Capacity (kb/d)	Date
Buzios	P-79	180	2026
Buzios	P-80	225	2026
Buzios	P-82	225	2026
Raia manta Raia Pintada	RAIA	125	2027
Buzios	P-83	225	2027
Atapu	P-84	225	2029
Sépia	P-85	225	2029
BM-SEAL-4 BM-SEAL-4A BM-SEAL-10	SEAP-2	120	2030
BM-SEAL-10	SEAP-1	120	2031

S&P Global: Brazil's pre-salt production oil rate (K bpd)



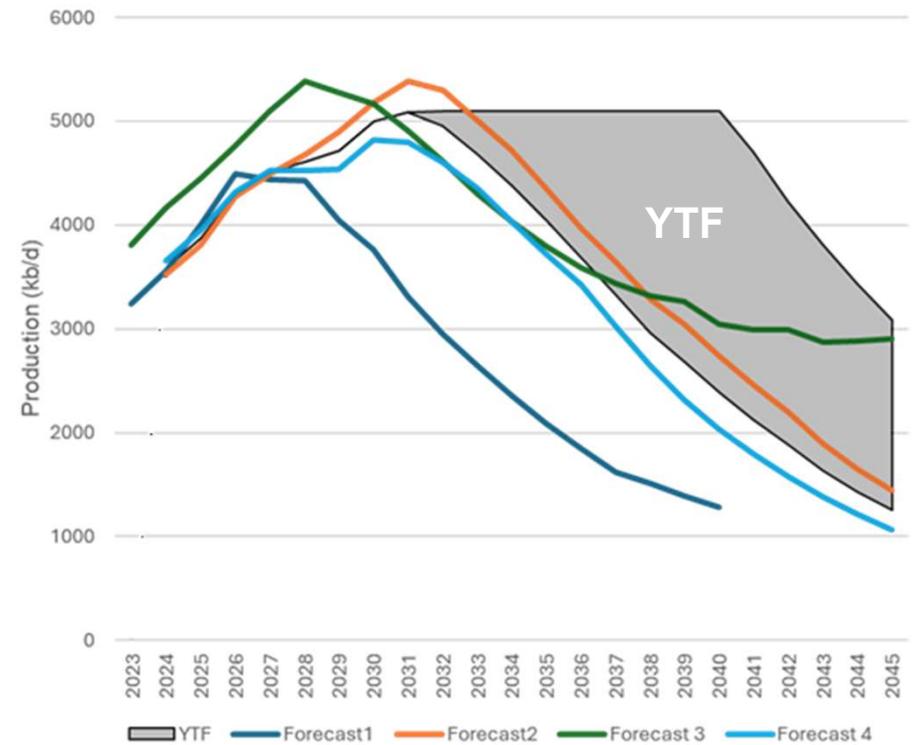
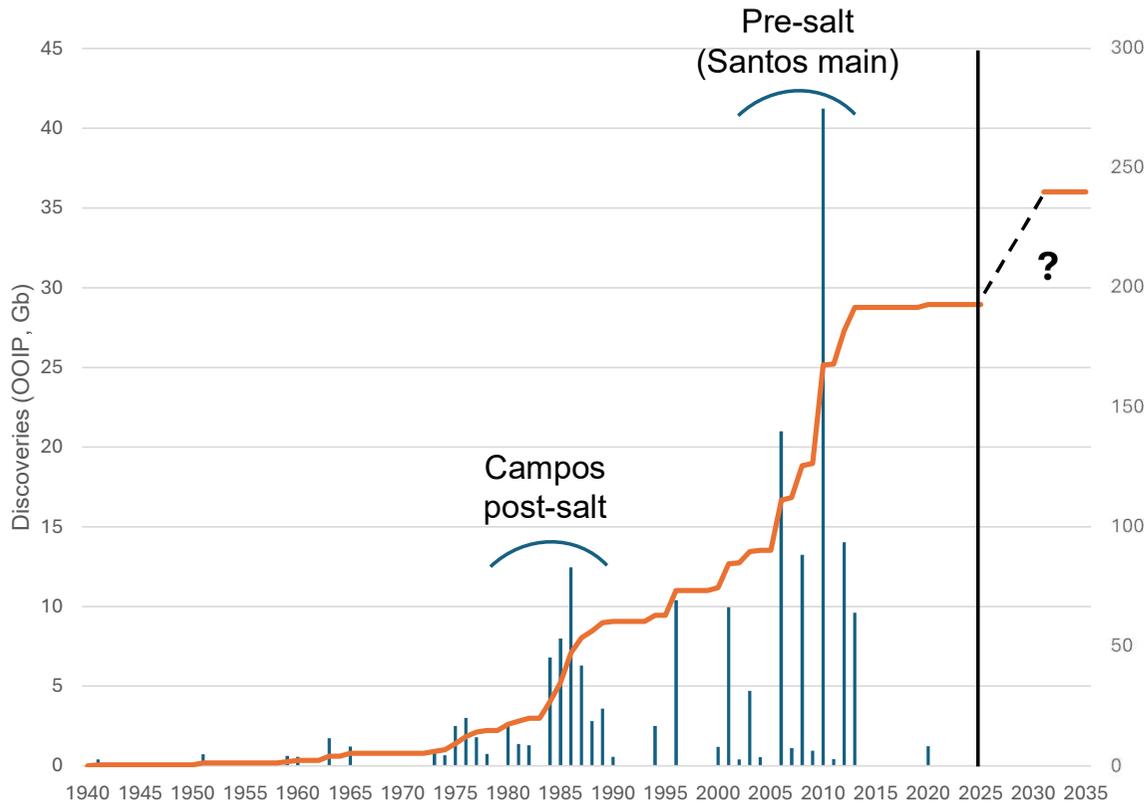


Brazilian Oil Industry: And Now ?

Brownfields revitalization

Greenfields expansion

Exploration



Sources of the public figures used

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