



THE O&G SECTOR IN BRAZIL

Clean Gulf Conference & Exhibition 2023

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Brazil at a glance


Brazil plays a relevant role in the Global O&G Industry




The largest economy in **Latin America** 

Among the largest economies in the world
(Rank 12th in 2022
1,92 trillion USD -
Austin Rating)

 **3rd** largest recipient of **Foreign Direct Investment** in 2022
(85 billion USD - OCDE)

 **9th**
Largest **Crude Oil and Condensate** producer
(BP Statistical Review 2022)

 **8th**
Largest **Oil Products Consumer**
(BP Statistical Review 2022)

 **4th** Largest **automotive fuel market** in the World
A domestic market of over **203** million inhabitants

Among the **10** largest crude oil exporters in the world

9th
Largest **Refinery Capacity**
(BP Statistical Review 2022)
But still need to import diesel, gasoline, jet fuel and LPG

 **10th**
In sales of **petrochemicals** worldwide
(Statista - 2021)

About ANP

ANP is the independent **regulatory body** for the oil, natural gas and biofuels industry in Brazil



Regulate

Establish the regulation of the oil, natural gas and biofuels industry. ANP must assure **free competition, national supply, and consumers protection** in terms of price, quality and product offer.



Contract

Grant **authorizations** for the O&G and biofuels activities; to promote **E&P bidding rounds** and **sign contracts** on behalf of the Federal Estate.



Inspect

Enforce the standards and rules by the regulated industry. It covers the administrative process, judgment and sanction.

ANP is responsible for **implementing the energy public policies**, but also **subsidizes**, technically, the **National Energy Policy Council**



#1

Exploration & Production Overview

Brazil is taking a leading role in the E&P sector




Nowadays

Production: **3.5** Million bpd of **oil** production (Jul 2023) **154** Million m³/d of **gas** production (Jul 2023)

Reserves: **14.9B** Bbl in proved **oil** reserves (Dec 2022) **406B** m³ in proved **gas** reserves (Dec 2022)

 **90B**
USD **investments** forecast (2023-2027)

 **1.34**
Million bpd of crude **oil export** (2022)

Forecast

 **2025**

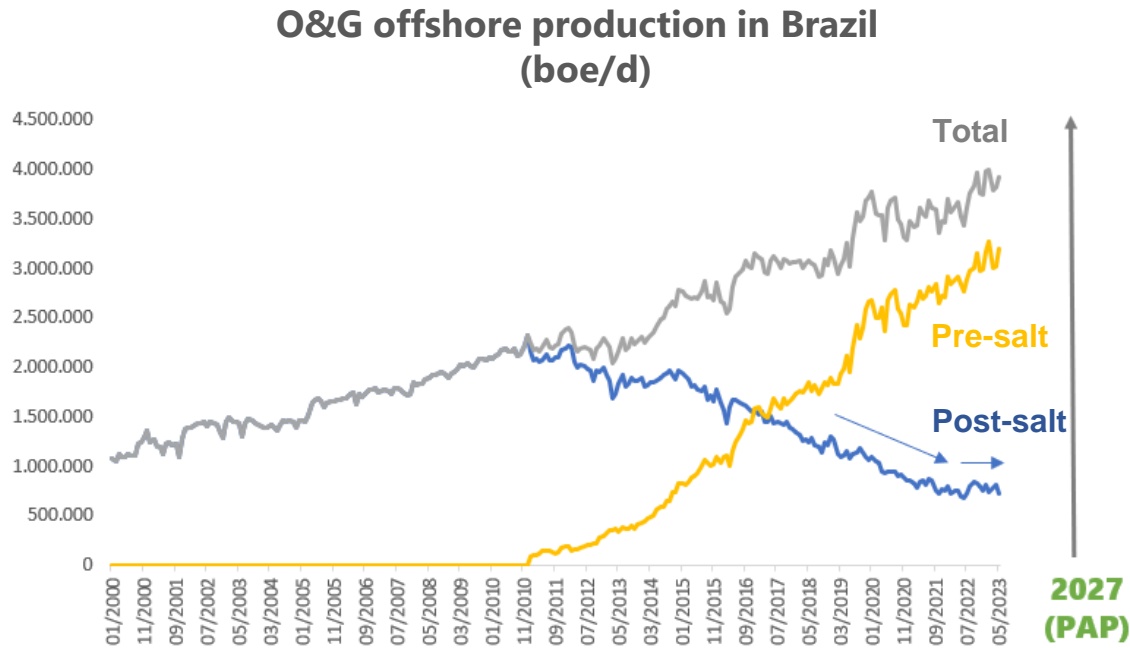
Potential to reach a production of more than

4
Million bpd of **oil**

195
Million m³ of **gas**

Three different E&P environment

Pre-salt production will continue to increase



Pre-salt

Home to the largest offshore oil discoveries in the last decade

75% of total O&G production

141 wells in production

Post-Salt Offshore

All the offshore area besides the pre-salt region, including new frontier areas and a significant number of large mature fields

20% of total O&G production

522 wells in production

Onshore

Mature fields and New Frontier Basins (mostly gas prone)

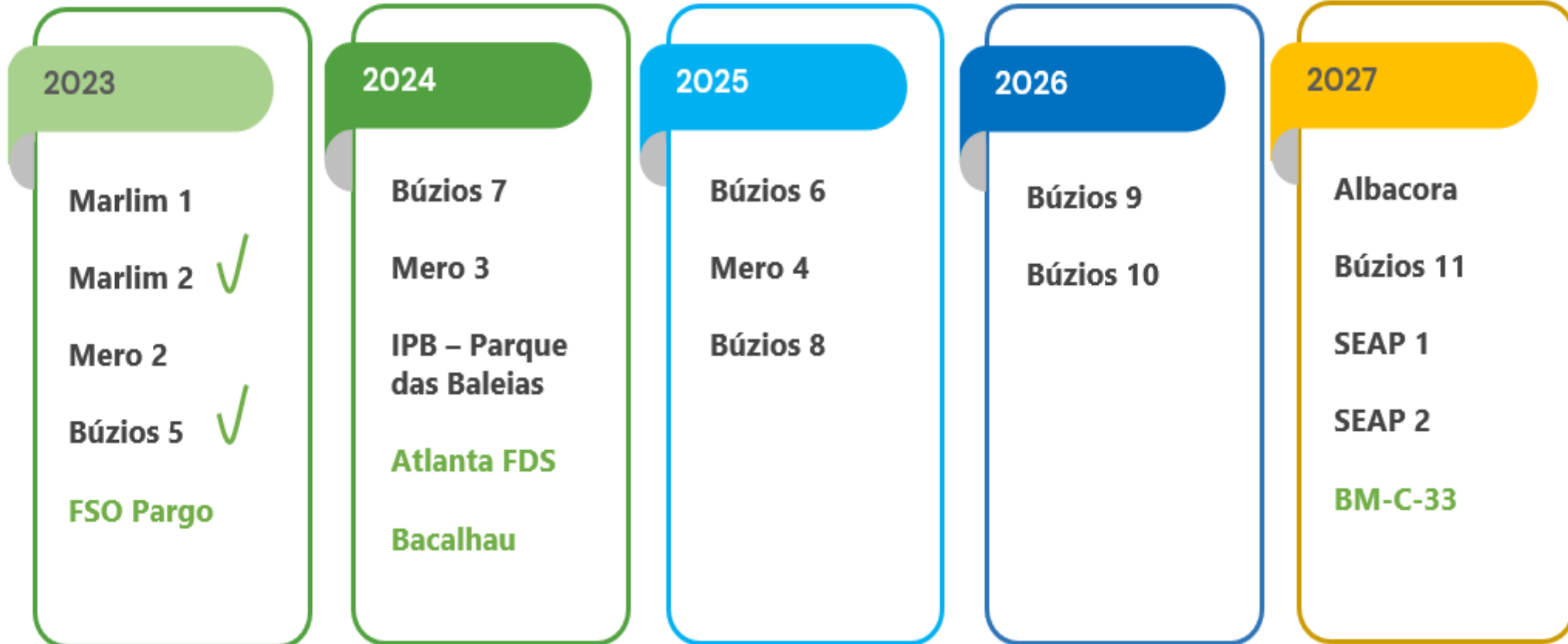
5% of total O&G production

5,813 wells in production

Brazil is poised to be one of the key sources of production growth over the medium term

BRAZIL is home for the MAJORITY of FPSOs projects under development

20 new production units to start operation from 2023 to 2027



Investment is revamping mature offshore post-salt fields

Pargo, Vermelho e Carapeba – **380% of production growth** since farm-in (boe/d)

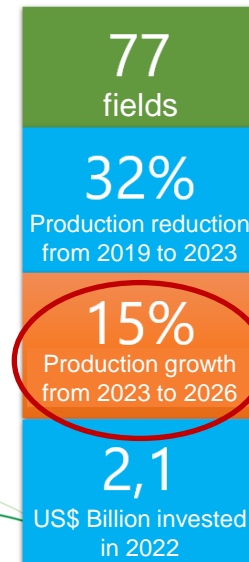
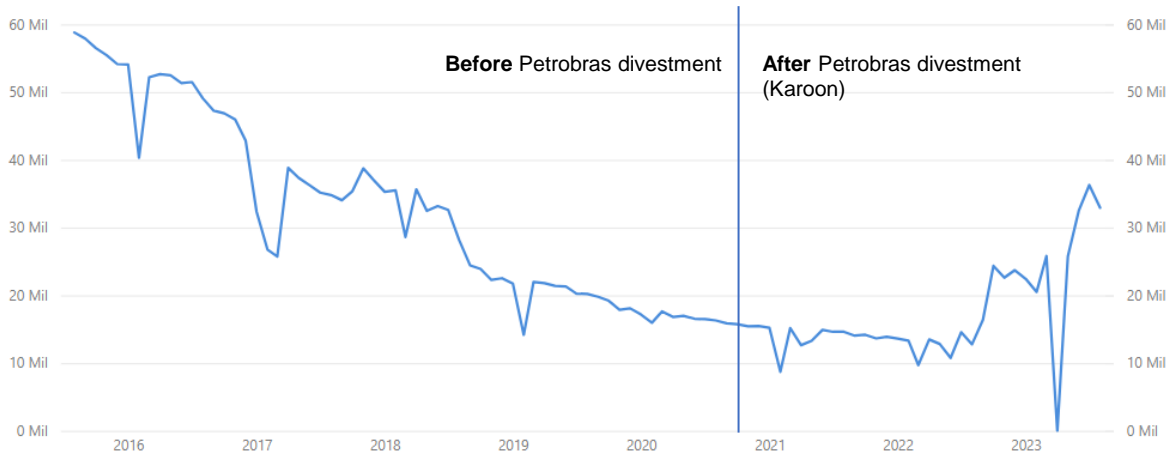


Opportunity to increase RF in Campos Basin

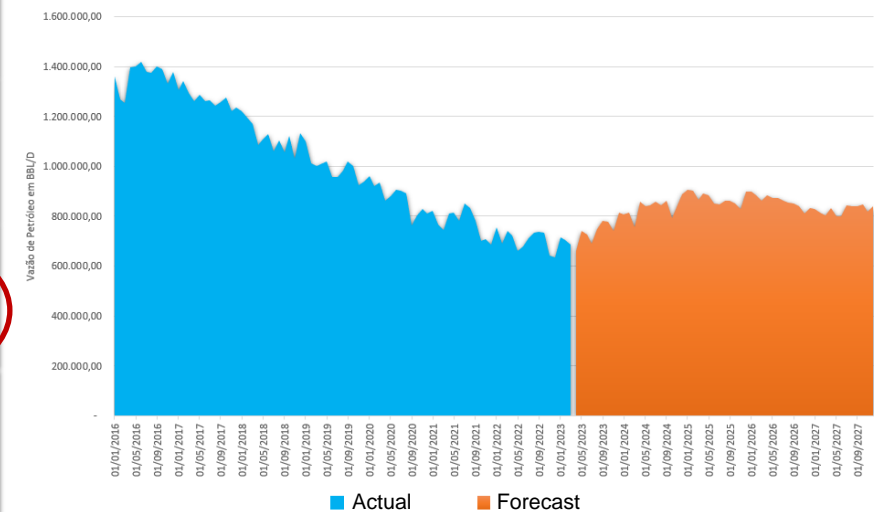


● Recovered so far ● RF forecast (1P) ● RF forecast (3P) ● FR previsto reservas 3P

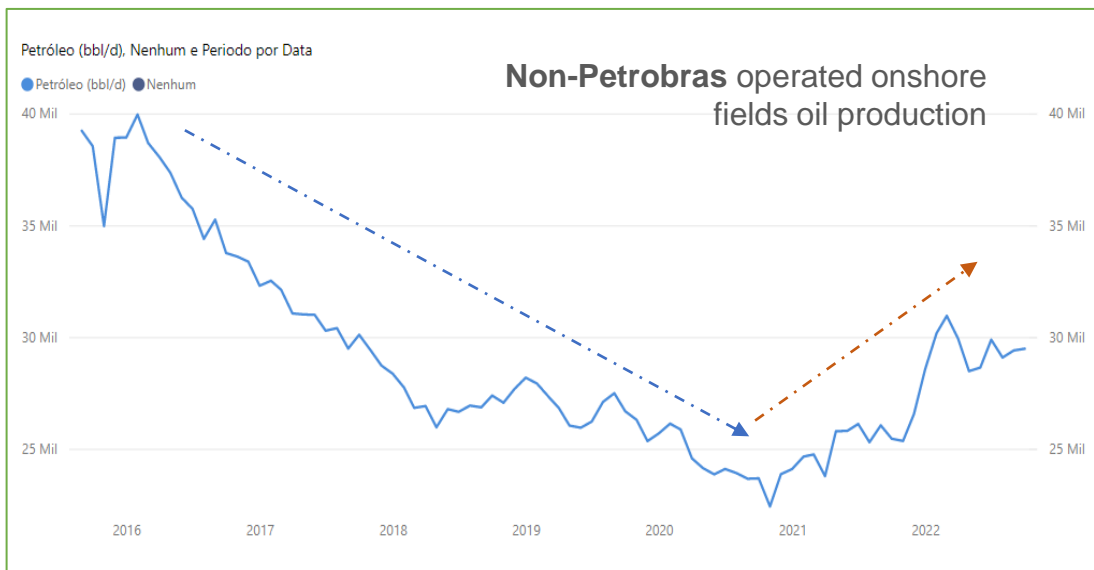
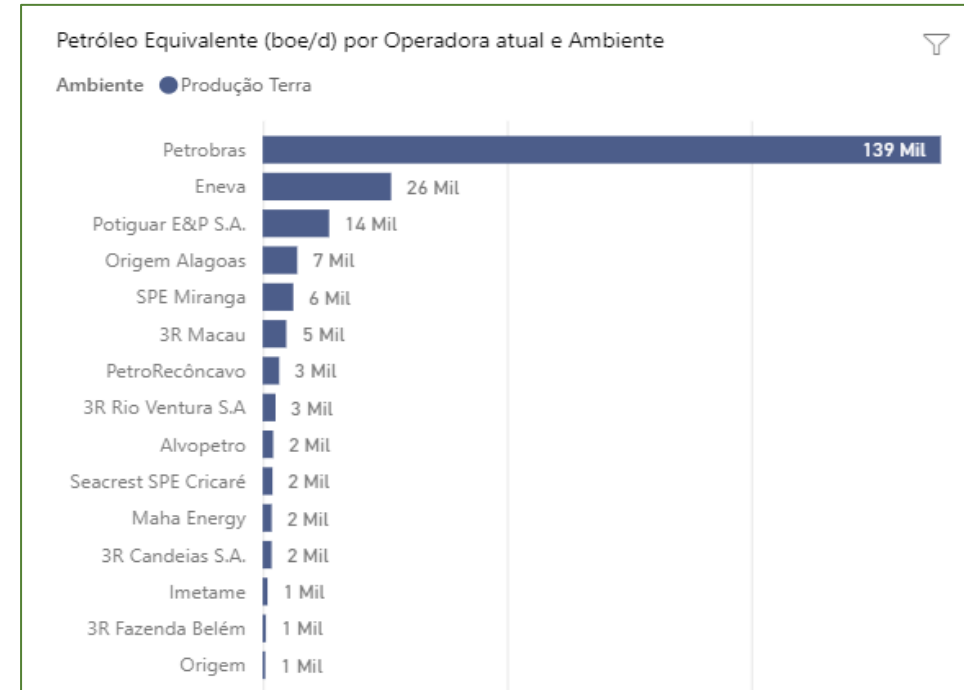
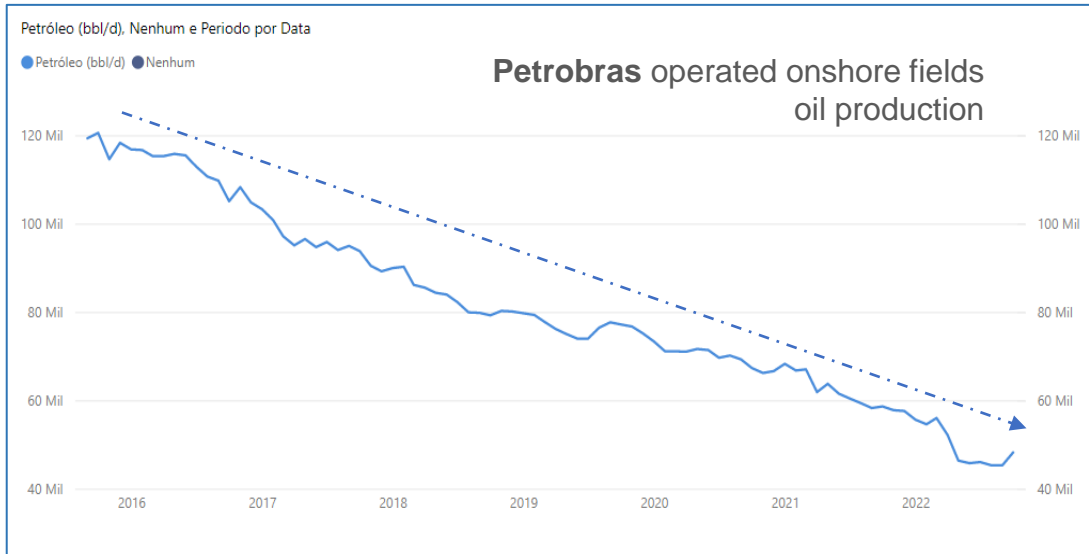
Baúna – **113% of production growth** since farm-in (boe/d)



Offshore mature fields production



And are also revamping onshore fields

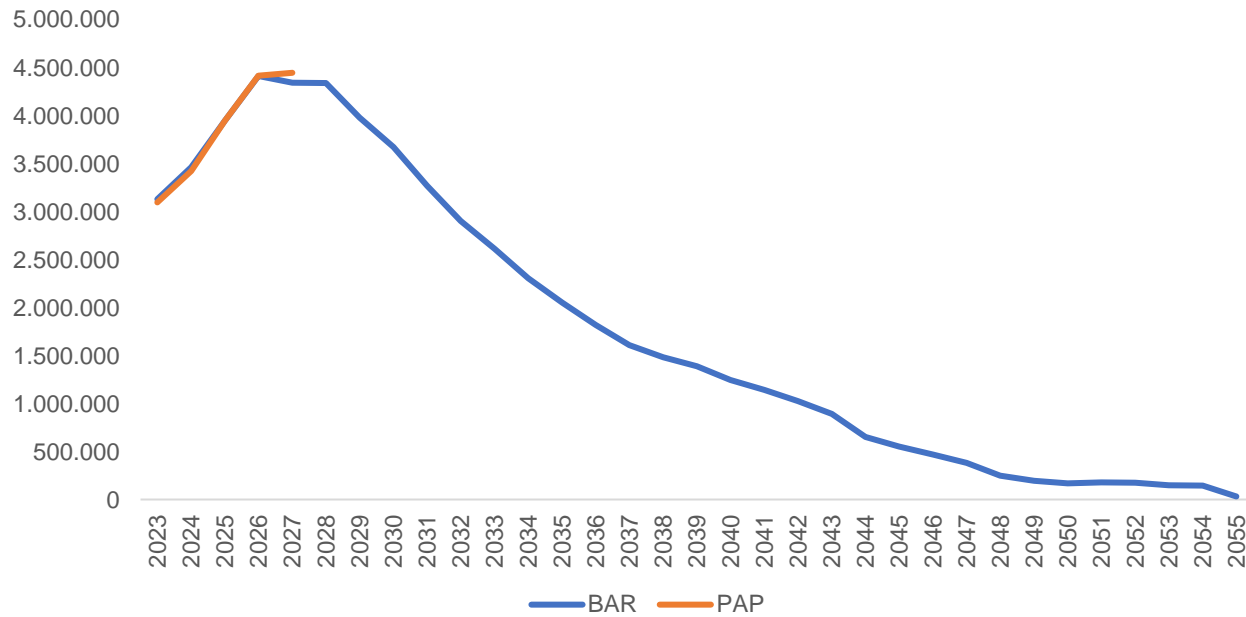


In 2021 and 2022, **non-Petrobras operators drilled 73 onshore wells**, whilst **Petrobras drilled 37 onshore wells**.



But we need to increase exploration to prevent production from decreasing from 2030 onwards

Offshore oil production forecast



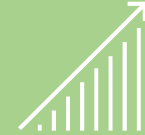
E&P strategic goals



**RIGHT ASSETS IN
THE RIGHT HANDS**



**INCREASE RECOVERY
FACTOR**



**INCREASE
EXPLORATORY
ACTIVITIES**



**MAKE MARGINAL
DISCOVERIES VIABLE**

We need to keep increasing **above ground competitiveness** in order to achieve our main goals

Many measures have already been taken to encourage E&P activities

2018

Local Content waivers
(ANP Resolution n° 726/2018)

Royalty reduction on the incremental production
(ANP Resolution n° 749/2018)

Reserve Based Lending
(ANP Resolution n° 785/2019)

Mandatory investment or M&A in onshore and shallow water fields; deadline for Petrobras divestment
(RD n° 568/2018)

2019

A new type of auction:
Open Acreage

Unlocking the **Transfer of Rights Auction**

2020

ANP Resolutions:
Flexibility as a result of the pandemic

2021

Royalties' reduction for S&M companies
(ANP Resolution n° 853/2021)

Adjustment Agreement to Local Content
(ANP Resolution n° 848/2021)

Area Nomination
(ANP Resolution 837/2021)

Decommissioning Guarantees
(ANP Resolution n° 854/2021)

All onshore data for free

2022

Marginal Fields Definition
(ANP Resolution n°877/2022)

Offshore well data for free

Extension of the Exploration Phase for 18 months
(ANP Resolution n° 878/2022)



Bid Rounds
US\$ 25 B in signature bonuses
(2017/2022)



And more measures to increase competitiveness are in the pipeline



Offshore mature fields pre-stack seismic data available for free

The Board is expected to approve this measure next Thursday



Flexibility for the minimum exploratory commitments

Regulatory impact analysis is done and a draft regulation is going to be submitted to public consultation shortly



Larger exploratory blocks

Average area of offshore blocks in Brazil: 650 km²
In Uruguai: 13.000 km².

First draft estimated to be presented until the end of this year



Contracts extension

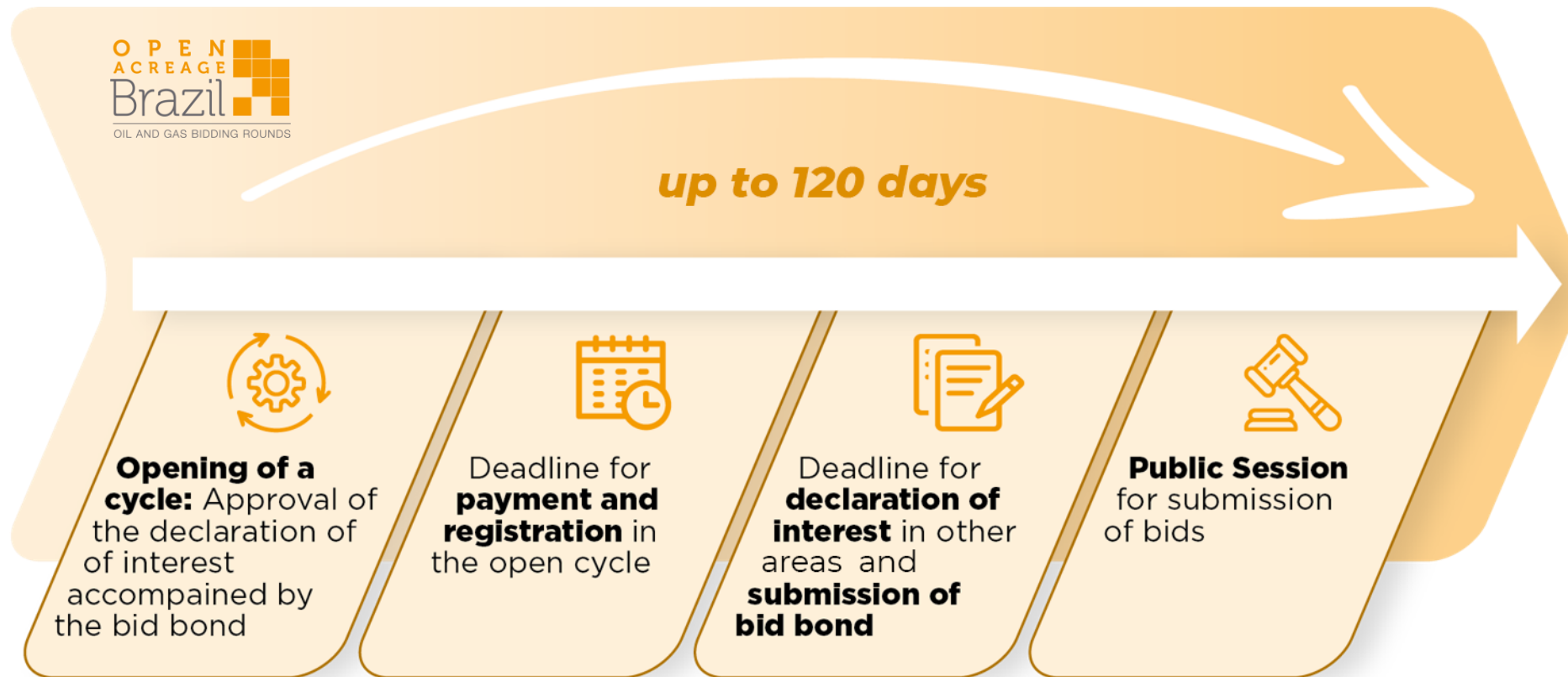
Almost 100 requests already granted

Royalties reduction for marginal fields

74 offshore fields are considered marginal fields

Opportunities in the Open Acreage

The Open Acreage allows the market to decide when bidding rounds will take place and what areas from the stock will be offered.



The schedules of the Open Acreage cycles will begin with the approval of a declaration of interest submitted by a registered bidder accompanied by a bid guarantee.

4th cycle of concession regime open acreage

955 blocks are available in the open acreage. The 4th cycle is currently underway, with 602 blocks to be auctioned on December 13.



Sectors on offer

33

Sectors
chosed by
companies

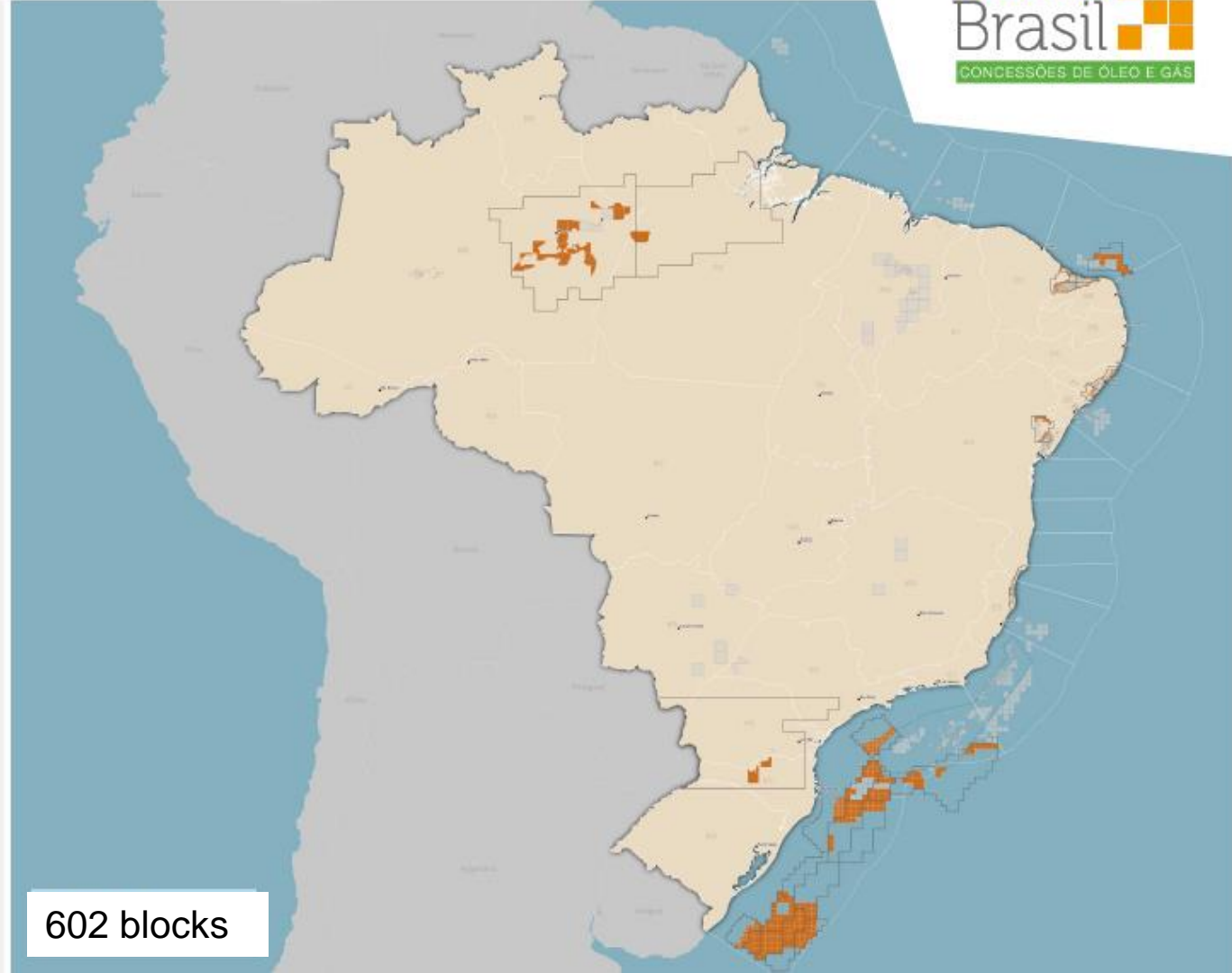
+ Japiim

in

9

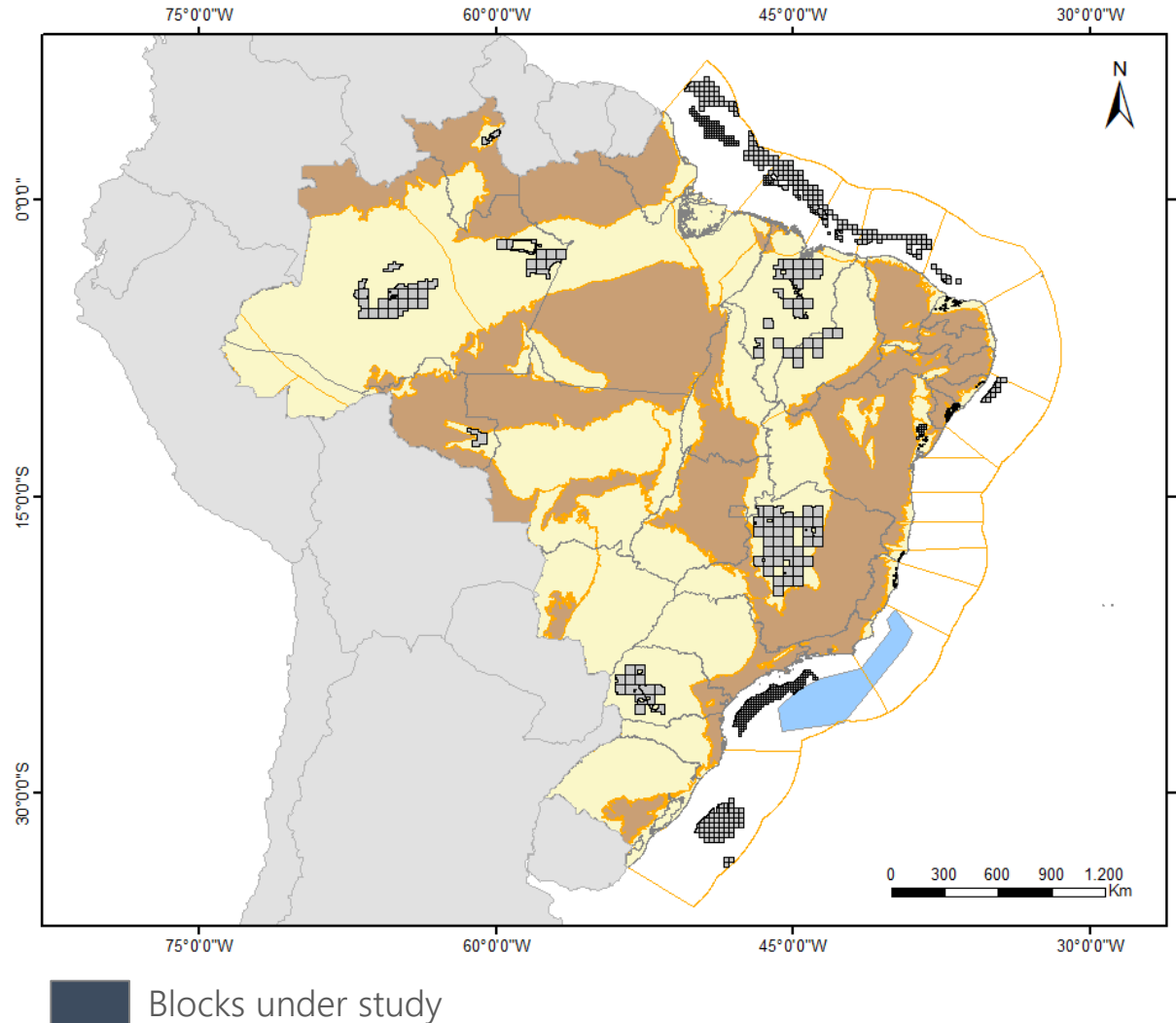
basins

602 blocks



And more is to come to the concession regime open acreage

Blocks
Under
Study to
be added
in the
future



Under Study:

+800
Blocks

2nd cycle of production sharing regime open acreage

6 blocks are available in the open acreage. The 2nd cycle is currently underway, with 5 blocks to be auctioned on December 13.

Blocks on offer

5

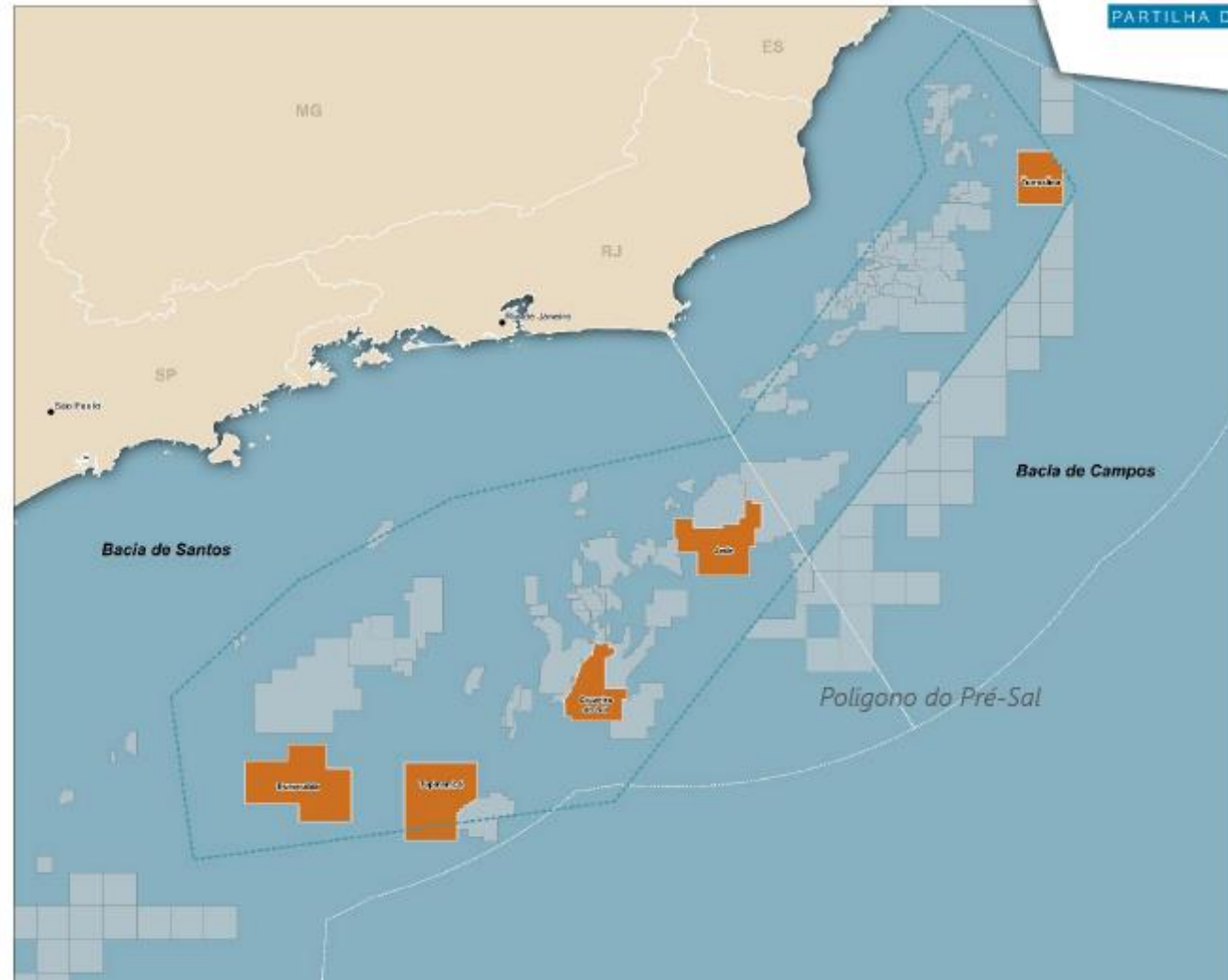
blocks chosed
by companies

In the pre-salt

4 blocks in the Campos Basin
1 block in the Santos Basin

6

Qualified
companies






#2


Energy transition


Brazil in the energy transition

A country of plenty and diverse energy resources and one of the world's leading player in the energy transition
 Brazil's electricity matrix is one of the cleanest in the world



 **47%**
 Share of **primary energy from renewable sources, 2022**
 World Average – 14% (MME)


 **4th**
 Largest **share of primary energy from renewables**
 1st – Iceland, 2nd Norway, 3rd Sweden (Our World in Data)

 **87%**
 Share of **electricity production from renewables, 2022**
 World Average – 28% (MME)

 **2nd**
 Largest Producer and Consumer of **Biofuels**
 (BP Statistical Review 2022)

 **3rd**
 Largest **Hydropower** generation in 2021
 (Our World in Data)

 **6th**
 Largest **Wind Generation Capacity**
 (GWEC 2021)

Less than **10** 
 kgCO₂e/boe is the **carbon intensity in the pre-salt**

14 kgCO₂e/boe is the offshore average in Brazil

Compared to OGCI average – 19 kgCO₂e/boe

We are well positioned to remain competitive in the energy transition

01

Pre-salt: world class assets with **low breakeven** and **low greenhouse gas emissions**



High productivity and low sulfur levels:



Carbon intensity: 9 – 10 kgCO₂e/boe

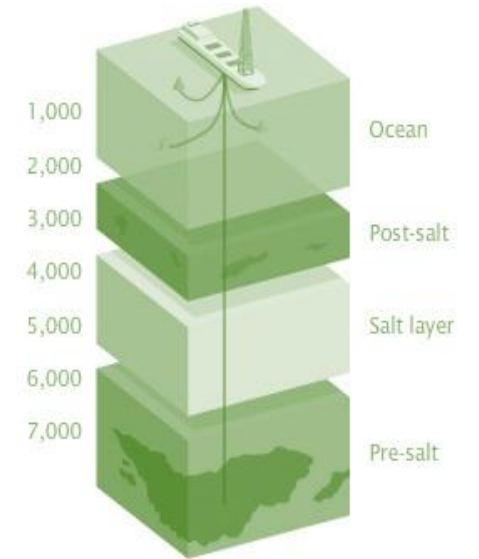
Half of global E&P average (19,5kgCO₂e/boe em 2020)

02

Largest offshore operators, as Petrobras, are committed to net zero

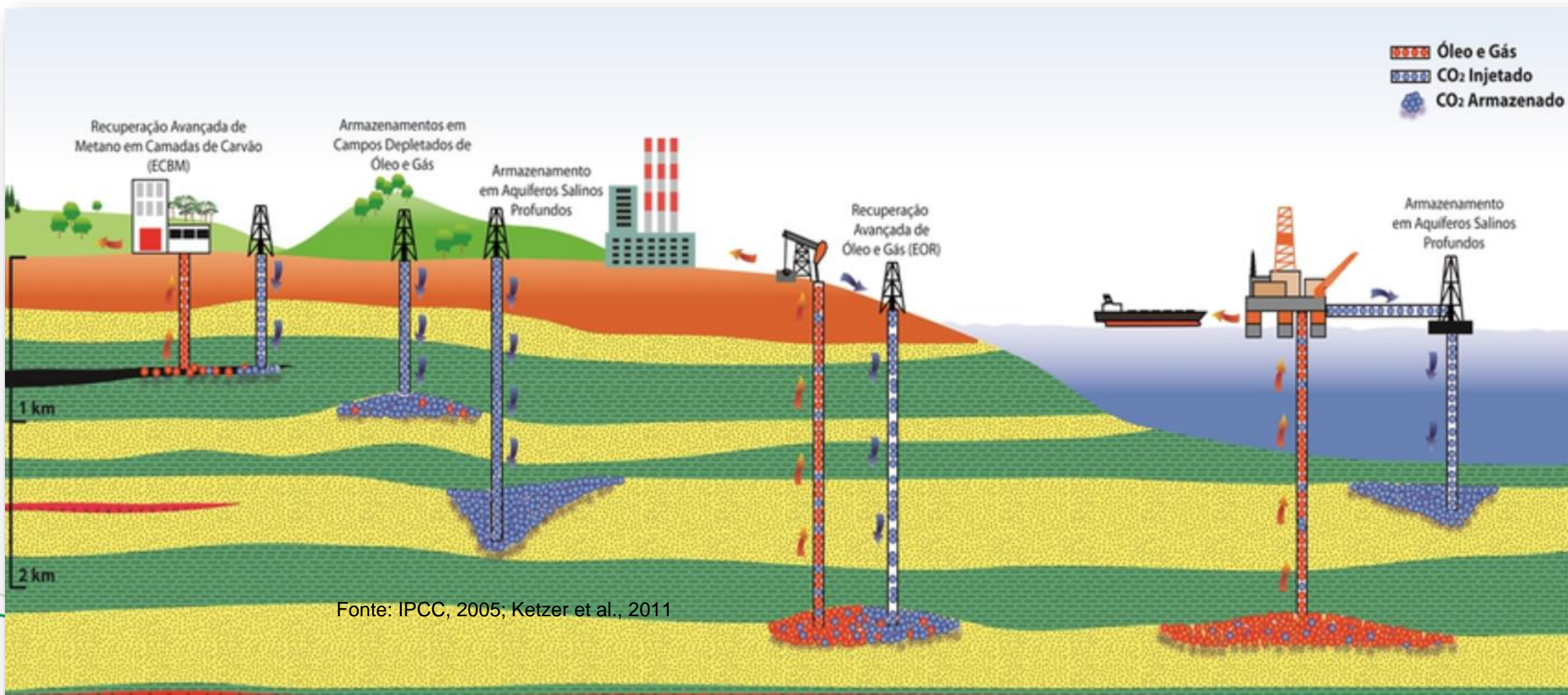
03

ANP is publishing **upstream emissions**. Flaring is 2% of associated gas production.



Brazil has huge potential for CCS

Interest in CCS projects in Brazil is growing



Fonte: IPCC, 2005; Ketzer et al., 2011

And also for hydrogen



ANP is taking part in the federal program for hydrogen



There is a taskforce for establishing a national strategy for hydrogen



A number of studies are being undertaken as Congress discusses a hydrogen bill. Legislative proposals have been recently presented by both chambers of Congress. The executive branch is also working on a related bill.



#4

Final Remarks

Brazil is a country of great opportunities



Our Strengths

Sanctity of Contract

Geological potential

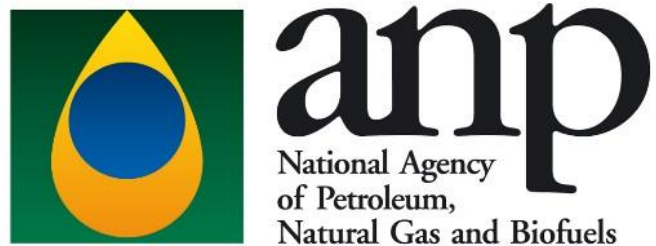
Pre-salt: world-class assets with low carbon intensity

IOR opportunities in mature fields

Market Opening in the midstream (New Gas Law) and downstream

One of the largest fuel market

Great Potential for renewables and biofuels



Official ANP profiles on
social media



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