




# The O&G Industry in Brazil: challenges and opportunities



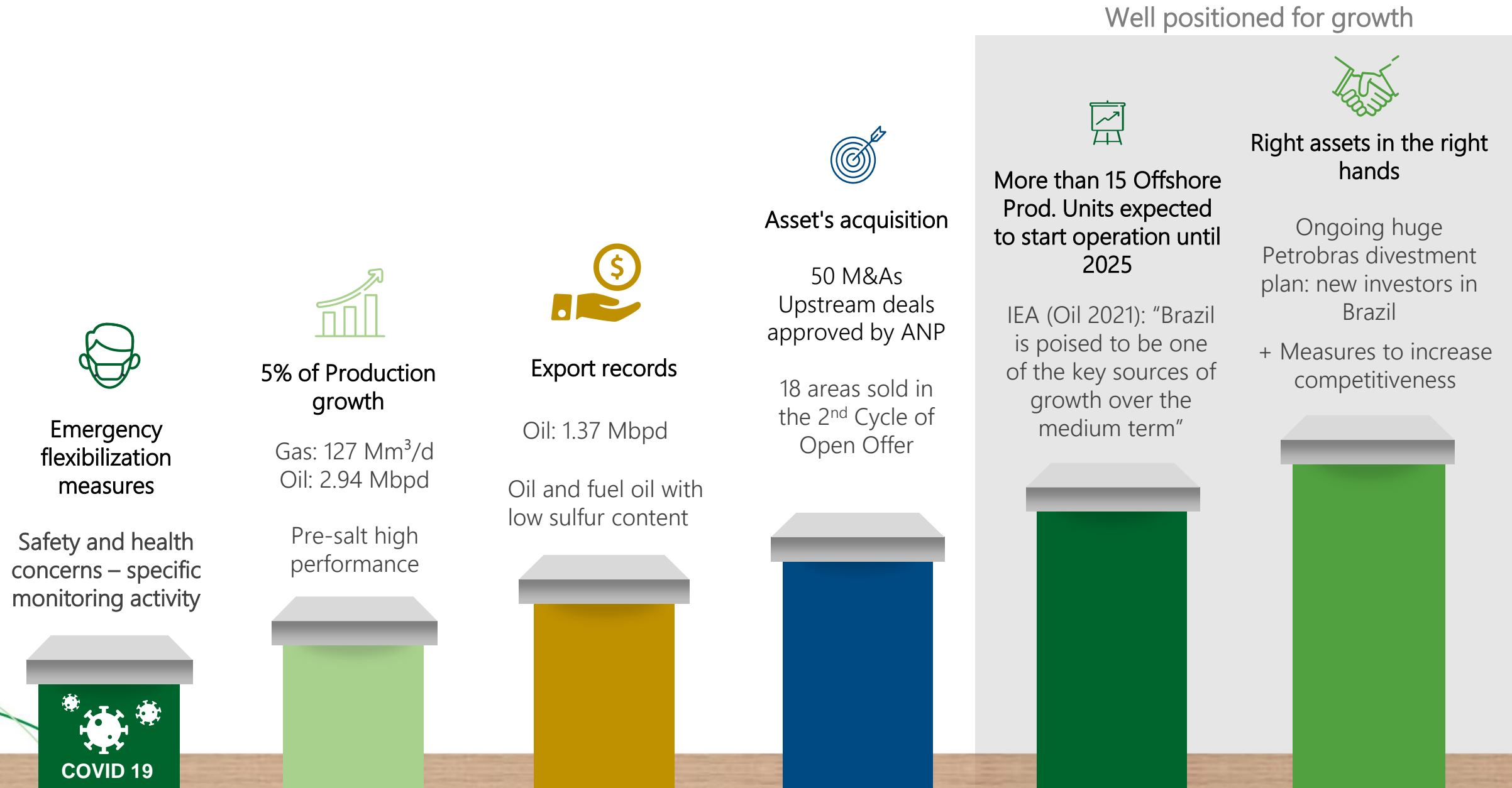
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Director-General

May 19<sup>th</sup>, 2021

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# Resilience in 2020 and ready for recovery



# An unprecedented transformation

We continue to make progress in opening the O&G sector

## E&P



A completely **diverse sector** will emerge from Petrobras' Divestment Plan. All onshore and shallow water fields are being sold, as well as some great offshore post-salt concessions.

With new investments in mature fields, development of pre-salt fields, offshore blocks in the exploratory phase, and a calendar of new auctions, Brazil is ready to grow production and take a leading position in the sector.

## Downstream



For the first time, half of the refining capacity (REFAP • RNEST • REPAR • RLAM • LUBNOR • REGAP • REMAN • SIX) is being sold by Petrobras, which will lead to a **competitive and open refining** and fuel market.

Measures are being taken to deal with the transition to this new environment and to bring competitiveness to the distribution sector.

## Gas



First-ever **effective opening in the natural gas market** with Petrobras leaving the transport and distribution sectors.

A new gas bill has just been approved and a strong regulatory agenda is underway to create a new gas market and opportunities between suppliers and free consumers/distributors. A relevant open season calendar is set for this year.



**#1**

# Exploration & Production

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

Potential to reach more than 5 million oil bpd in 2030 (EPE)

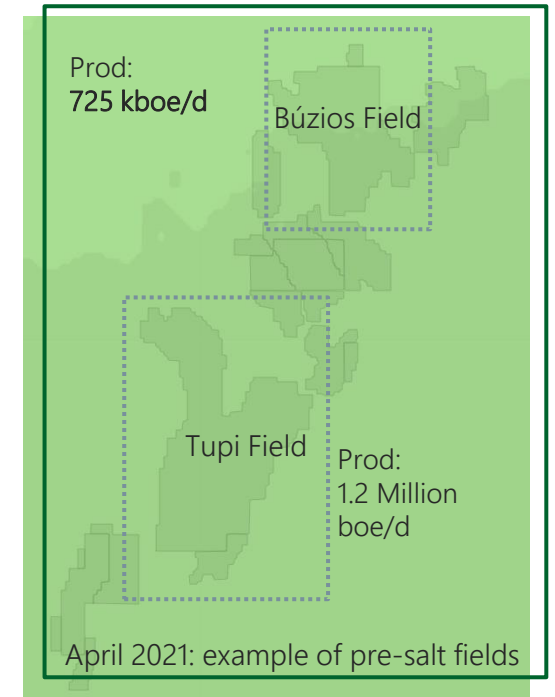
Potential to become the 5<sup>th</sup> largest crude oil exporter in 2030 (EPE)

2021-2025 Investments Forecast: US\$ 50 billion

## 2021



Competitive assets, resilient projects and world-class resources

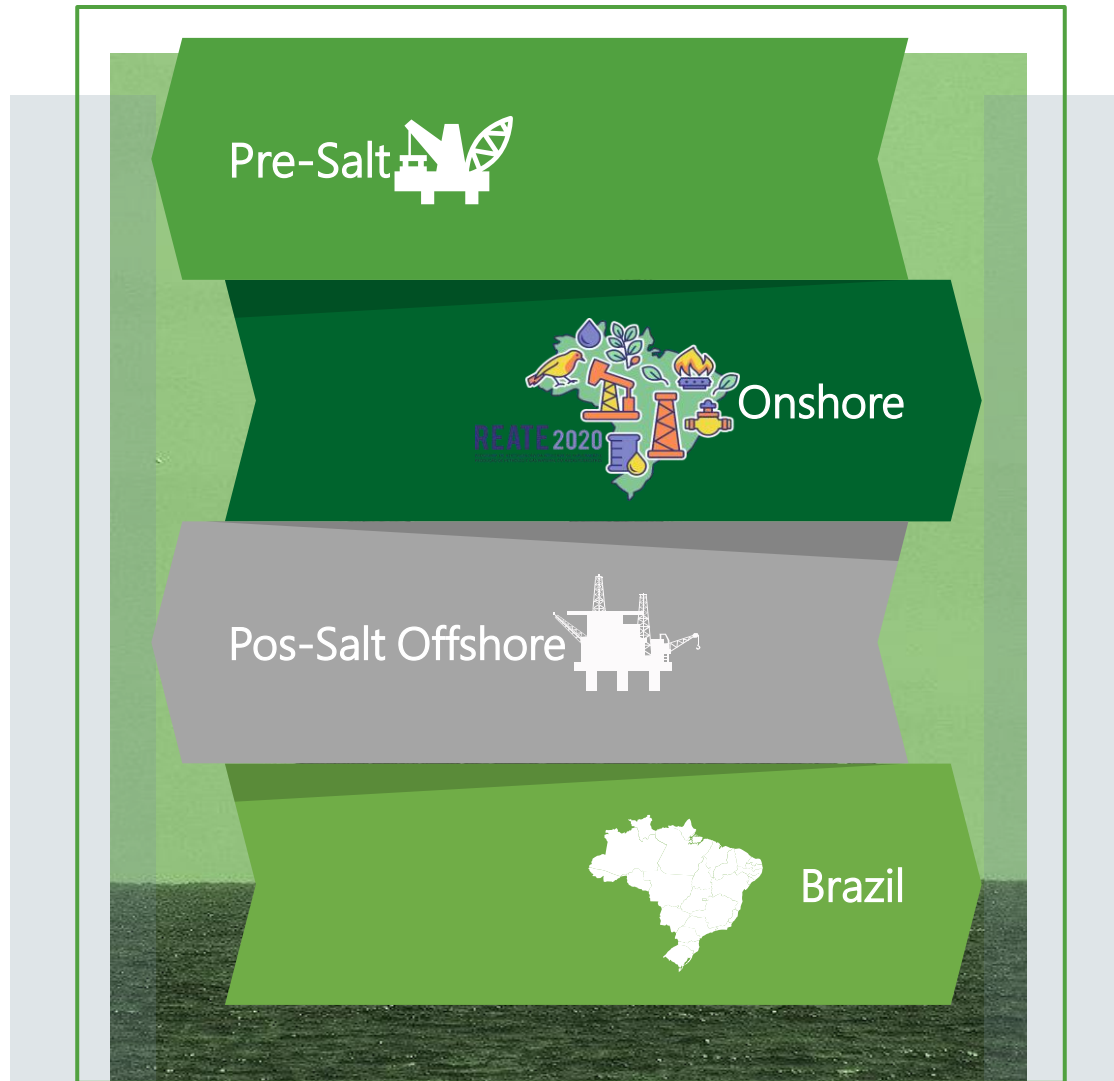


# E&P Strategic Goals

Strategic goals for the three environments (pre-salt, pos-salt offshore and onshore)

Accelerate the **pre-salt** exploration and development

Increase the **mature fields RF** and accelerate exploratory activities in the **new frontier basins**



Revitalize the **onshore**, increase the mature fields RF, **promote** the **small and medium producers' market**, intensify **exploratory activities**, quantify the oil potential

Attract the **right players for each environment** (assets in right hands)

# Ongoing measures in the E&P

\* April 2021 average



73% of Brazilian Total Production



22% of Brazilian Total Production



5% of Brazilian Total Production

Measures to further increase competitiveness being studied in the BidSIM Program.  
Ongoing discussion over the best fiscal regime

More pre-salt areas on offer: new pre-salt frontier in the 17th Bidding Round / 2<sup>nd</sup> Transfer of Rights Surplus Bidding Round

Petrobras Divestment Plan & New areas in the Open Acreage: attracting new investors/agents

Conditions for new entrants (Access to Infrastructure / New Gas Market etc.)

Contract's extension approval with royalty's reduction on the incremental production

Onshore public technical data available for free

Measures to accelerate the approval of M&As at ANP

Royalties Reduction for Small and Medium Companies under public consultation

Contracts and rules simplification

Other measures to increase competitiveness being studied in the ProMar and REATE Programs



# Onshore public technical data available for free

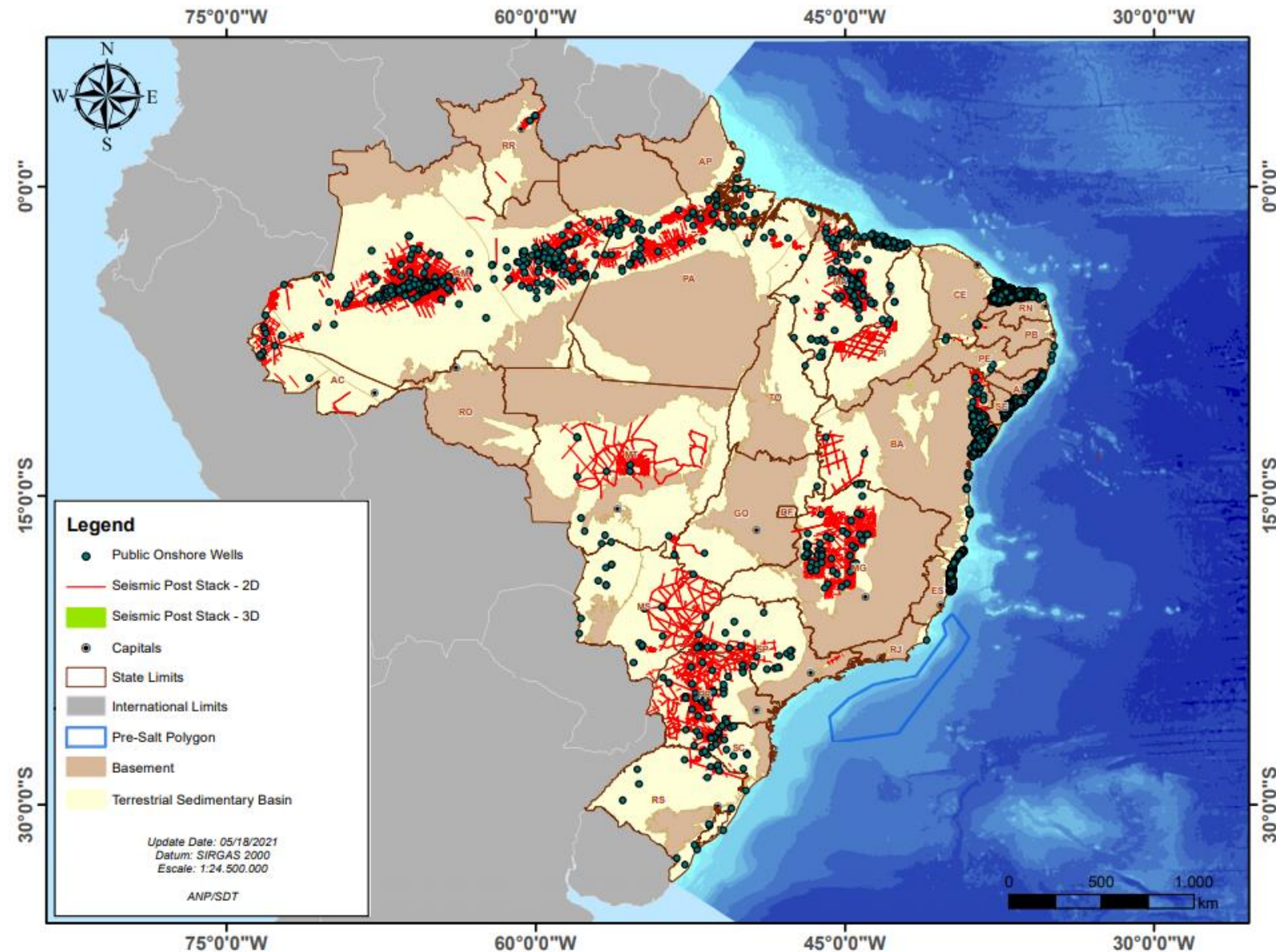
23 packages, totalizing **2.5 terabytes**

- 22,641 wells
- 329 2D seismic surveys
- 204 3D seismic surveys
- 217 non-seismic surveys (gravimetry, magnetometry, magnetotellurics and gamma spectrometry)
- 38 geochemical surveys
- 17 studies

Download (no need for registration):

[Reate.cprm.gov.br/anp](https://Reate.cprm.gov.br/anp)

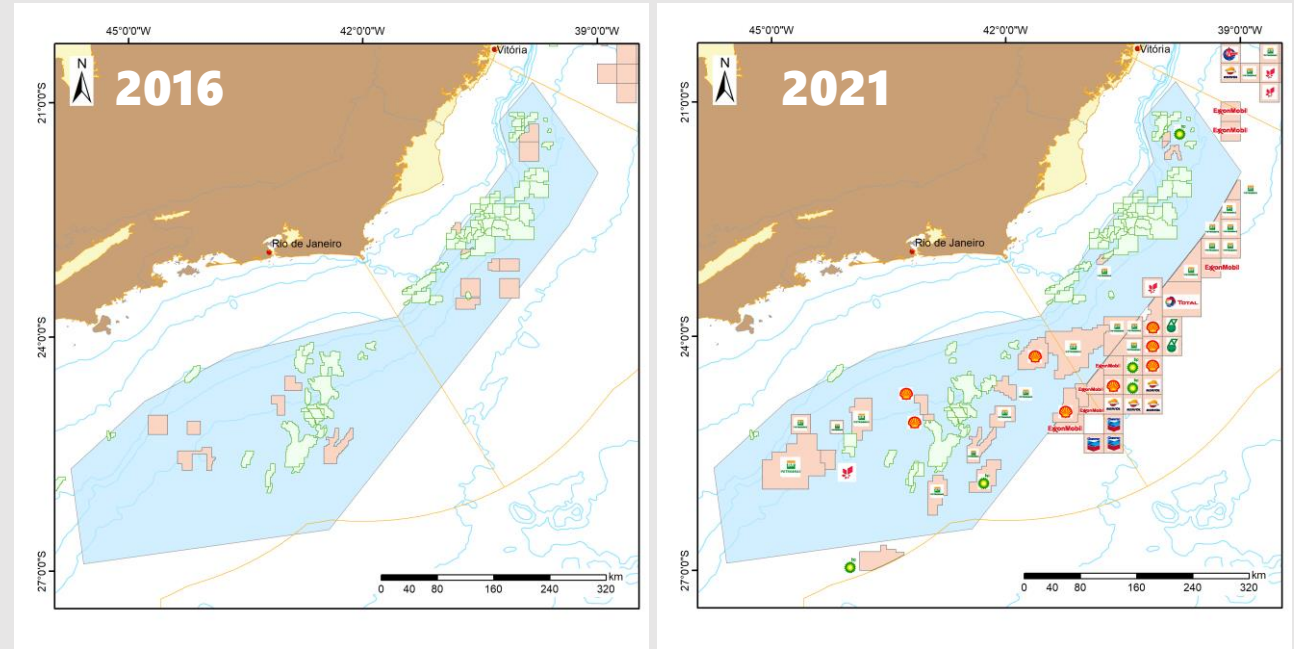
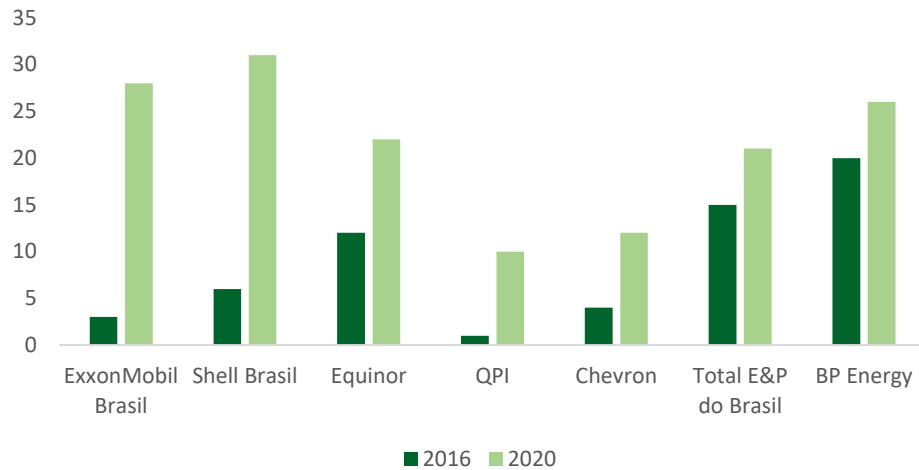
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# A lot has been done with great results

Since 2016, the government has conducted a lot of measures to resume the E&P activities in Brazil with great results  
 Petrobras divestment plan is the big opportunity to establish a new onshore and offshore post-salt market, with diversity of agents

**Number of E&P Contracts (example of majors)**



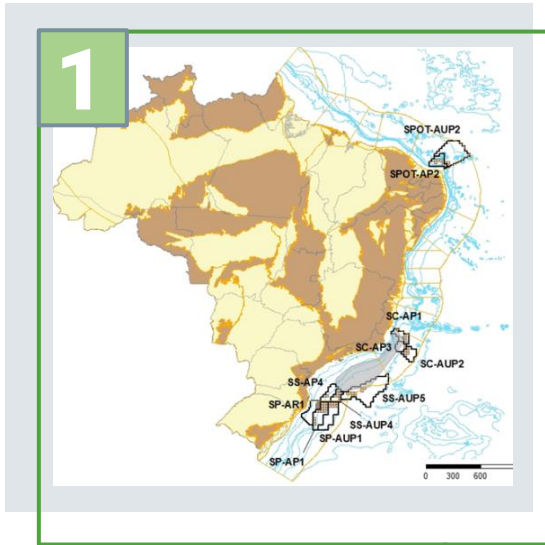
A new onshore market was established:

**32**

New onshore companies (since 2016) – 2 IPOs

The auctions held since 2017 yielded around **112 billion reais** in signature bonuses and resulted in the contracting of **90 thousand km<sup>2</sup>** in area

# Brazil has great opportunities in 2021 auctions



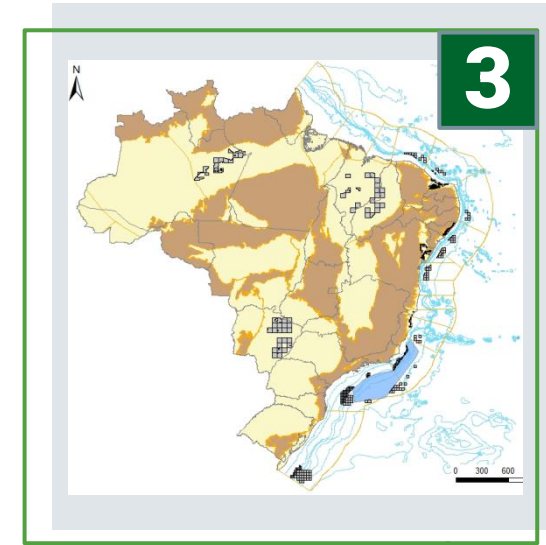
**92 blocks on offer**  
Campos, Pelotas, Potiguar and Santos Basins  
Pre-salt opportunities beyond 200 nautical miles with 3D seismic recently acquired  
**October 7<sup>th</sup>**

**ROUND 17**  
Brazil  
OIL AND GAS CONCESSIONS



2 pre-salt fields: **Atapu** (prod. In March: ~81 thousand boepd) and **Sépia** (first oil scheduled this year)  
~**12 Billion** bbl (OOIP)  
Technical and Economical Parameters approved by CNPE  
To be scheduled (most likely in **December**)

TRANSFER OF RIGHTS SURPLUS  
Brazil  
PRODUCTION SHARE



In addition to the **691 blocks** available, we aim to put more **377 new blocks** (72 onshore and 305 offshore) in July  
The 3rd cycle depends on the **interest declaration**

OPEN ACREAGE  
Brazil  
OIL AND GAS CONCESSIONS

**#2**

**Downstream**

# The Downstream Sector

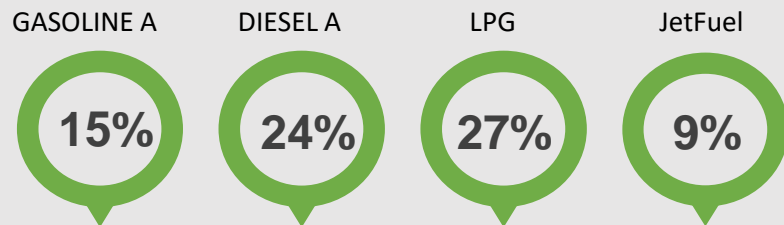
8<sup>th</sup> largest refinery park – 19 refineries  
 50 Biodiesel Plants and 358 Ethanol Plants  
 132 Mm<sup>3</sup> consumed in 2020 (including biofuels)

**98%** of the refining capacity in Brazil belongs to Petrobras (price maker): half in the divestment plan

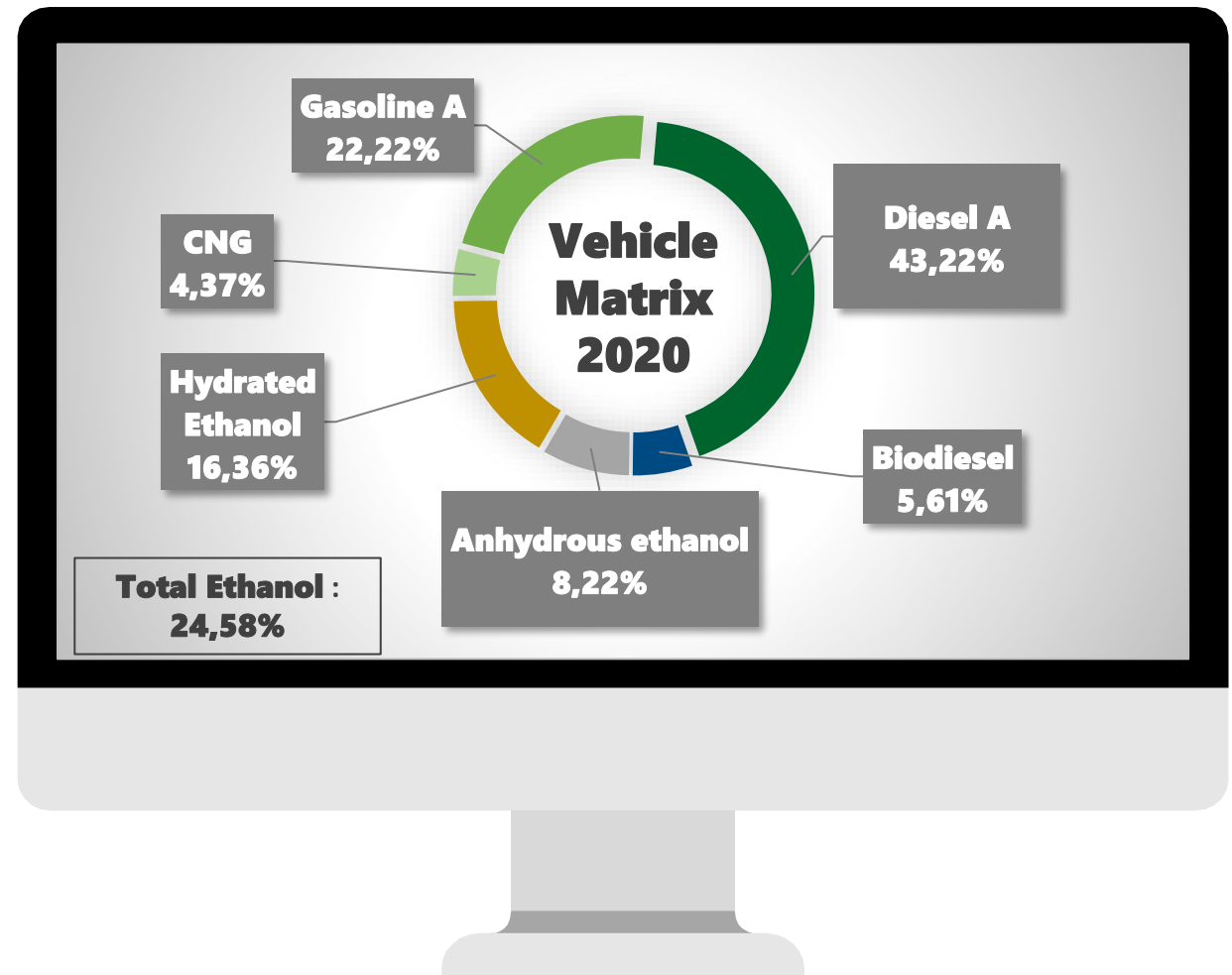
2020 National Oil Products Production :

**1.9** million bpd

Import percentage in relation to sales  
 (2020 average):



Brazilian Vehicle Matrix with relevant participation of biofuels: **30%**



# The Supply Chain

239 distributors (wholesale) & 124,343 retail stations and regulated consumers  
7<sup>th</sup> largest oil products consumer

## Importer



Gasoline A: 3,944,014  
Diesel A: 11,994,559  
Ethanol: 1,099,833

## Producer



Gasoline A: 23,395,022  
Diesel A: 42,215,122

## Biodiesel Plants



Ethanol: 32,803,191  
Biodiesel: 6,432,008

## Wholesale



**Sales (m<sup>3</sup>) 2020**

**Gasoline C** 35,823,614  
(Gasoline A + Ethanol)  
**Diesel B** 57,472,056  
(Diesel A + Biodiesel)  
**Hydrated Ethanol** 19,257,933

## Retail Station



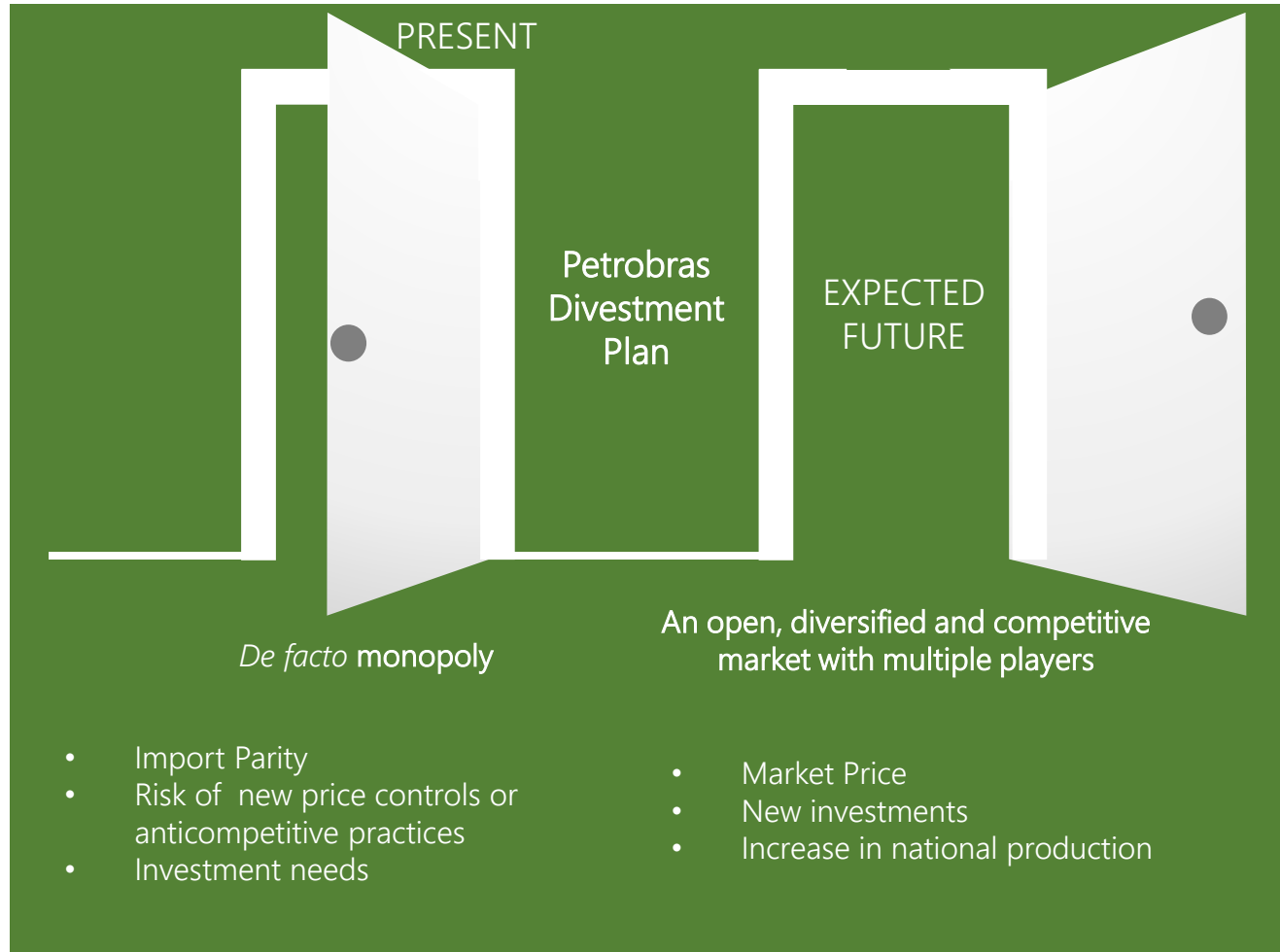
**TRR (Diesel B)**





C  
O  
N  
S  
U  
M  
E  
R


\*Only for Diesel, Gasoline and Ethanol – 2020 numbers in m<sup>3</sup>


# The Greatest Transformation



- 

The refineries' sale process will contribute to diversify the supply and to **increase competition** in the downstream sector.
- 

The role of ANP is to work in the transition with an emphasis on **guaranteeing supply** and improving the regulatory framework, aiming an open and competitive market
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In addition, ANP is working to better monitor the oil products stocks and to **ensure transparency on the prices**
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There is also a huge regulatory agenda to increase competitiveness in the wholesale and resale sectors

**#3**

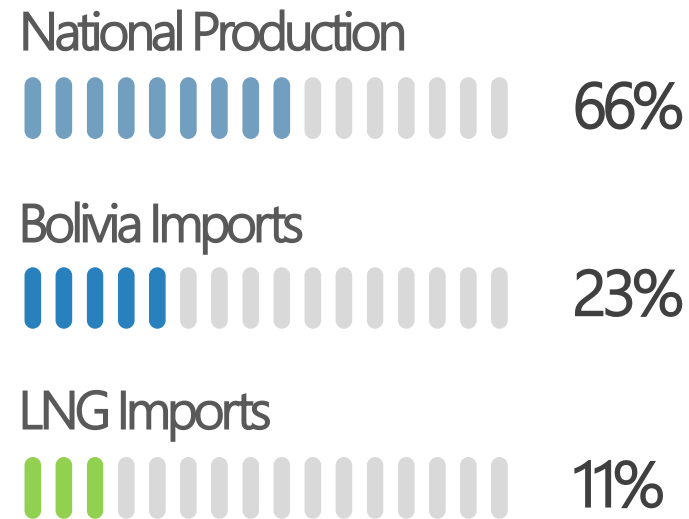
# Natural Gas Market



# The Natural Gas Market in numbers

Natural gas used in Brazil has a predominantly national origin and mainly is associated with oil produced in offshore fields  
 Other sources include imports through pipelines from Bolivia and LNG through regasification terminals  
 Only around 40% of the national production is consumed by the Brazilian market due to lack of demand/infrastructure and high gas prices

## SUPPLY

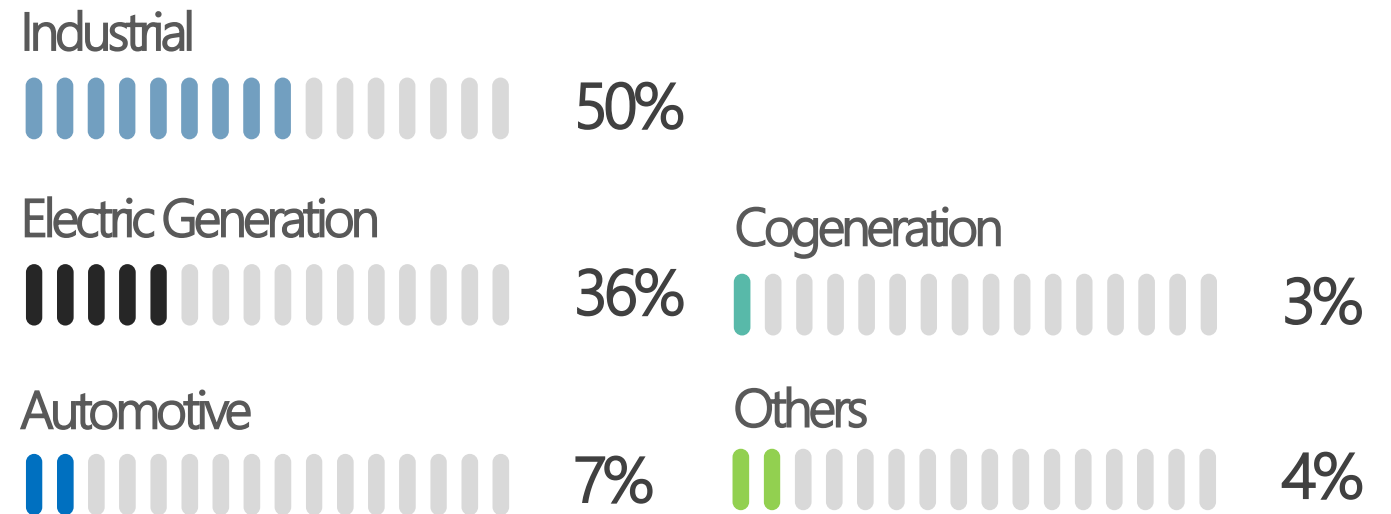


\*2020 Average numbers

## DEMAND



### Consumption by sector



# The Natural Gas Infrastructure

Brazil: continental size with limited natural gas infrastructure

~9.4 Thousand km of transmission gas pipelines

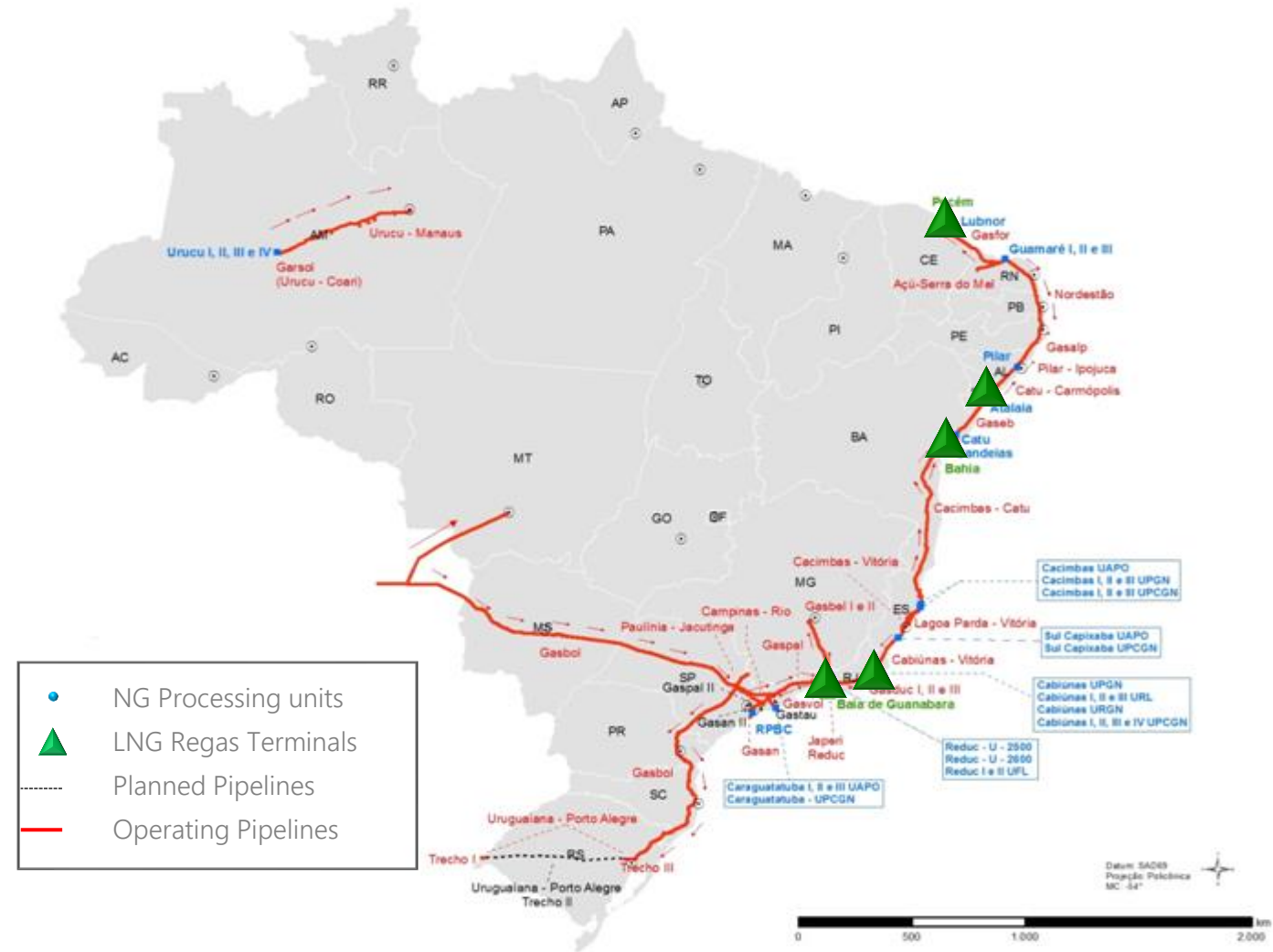
~2.2 Thousand km of transfer gas pipelines

15 NG Processing Plants  
Capacity: ~108 Million m<sup>3</sup>/d

| LNG Terminal                      | Capacity (Million m <sup>3</sup> /d) |
|-----------------------------------|--------------------------------------|
| Pecem                             | 7                                    |
| TRBA (Bahia)                      | 20                                   |
| TRBG (Baia de Guanabara)          | 20                                   |
| Barra dos Coqueiros (SE - CELSE)* | 21                                   |
| Porto de Açú (UTE GNA I)*         | 21                                   |

\*In pre-operation in nov/20

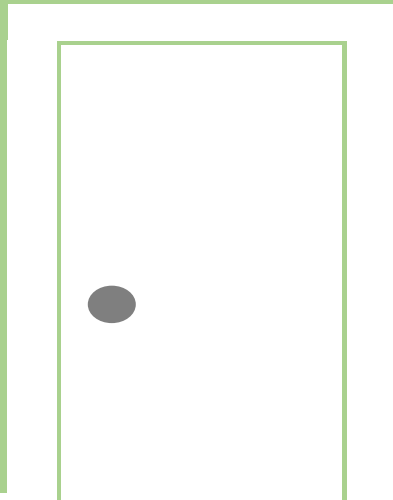
5 LNG Terminals + 4 LNG Terminals expected



Source: ANP Statistical Yearbook (2020)

# Towards an Open and Competitive Natural Gas Market

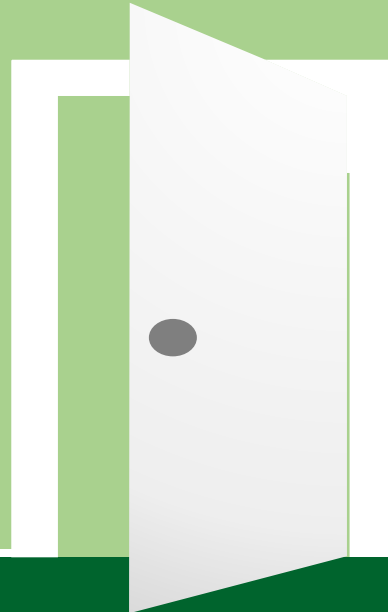
PAST



## Monopoly

- Vertical Integration
- Open Access not possible
- Prices solely defined by one player

PRESENT



## Market Development

- Developing Effective Open Access
- Unbundling from transportation and competitive activities
- Effective competitiveness for gas supply to Consumers and Distribution Companies
- Gas prices negotiated by players

Petrobras  
Divestment Plan  
&  
CADE Agreement

FUTURE



## Open and Competitive Market

- Total Unbundling
- Effective Open Access
- Competitiveness for gas supply to all final users
- Prices determined by the market (lower gas prices)

# 2021 ANP Measures

The new Gas Law (Law 14,134 / 2021) represents a decisive step towards an open, liquid and competitive market. A robust regulatory agenda is underway to implement the new NG market.

## 2021 Regulatory Agenda

- ✓ Independence criteria for gas pipelines transmission operators – to be approved in the first semester
- ✓ New ANP Order on Interconnection between gas pipelines
- ✓ Review of the ANP Order on Tariffs (ANP nº 15/2014)
- ✓ Review and unification of the ANP Order on Gas Transportation Carriers (ANP nº 51/2013) & Commercialization (ANP nº 52/2011) – New conceptual model of the gas market under discussion
- ✓ Work Group to address third party access to essential facilities

## 2021 Open Season Calendar

### Incremental Open Season:

TAG  
TBG (Focused on expanding the southern section)  
NTS (Focused on the implementation of the Itaboraí Guapimirim Gas Pipeline)

### Annual Open Season to offer available capacity:

- TBG Open Seasons 2 and 3 to offer available capacity for 2021 (starting on May)-2025 and 2022-2026  
- NTS Open Season 1 to offer the available capacity for 2022-2026 - Preferably coordinated with Open Season 3 from TBG  
- TAG Open Season 1, to offer available capacity for 2022-2026



**#4**

# Energy Transition

# Brazil is in a privileged position in the energy transition



Renewables account for 46% of the energy matrix. Emissions in the energy sector are lower compared to the world average. Big opportunities due to diverse energy and environmental assets



Since 2009, O&G production operated by Petrobras increased more than 40% without increasing emissions. Petrobras goals: 25% reduction in absolute operating emissions by 2030; Zero routine flaring by 2030; 40Mton CO2 reinjection by 2025 in CCUS projects



30% of the vehicle matrix is fueled by renewables (ethanol and biodiesel). 3% of the R&D resources from the O&G industry obliged to be applied in Brazil are spent on renewables projects.



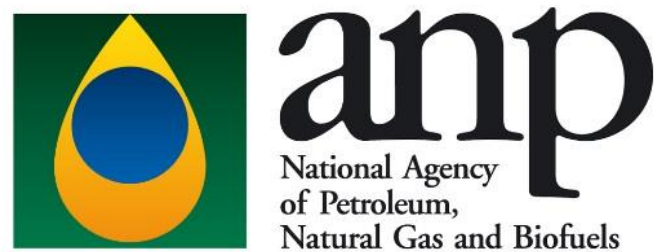
Brazil is the 2<sup>nd</sup> largest producer and consumer of biofuels and benefits from a longstanding well-established industry: 80% of our automobiles are flex-fuel.



Public policies like Renovabio Program show the country will continue to advance in this agenda. In 2020, more than 14 million tons of greenhouse gas emissions were avoided.



A new government program (**Fuel of the future**) was approved by the CNPE (i.e.: incentives to the large-scale use of 2<sup>nd</sup> generation ethanol; R&D to encourage fuel-cell technology; creation of green corridors to supply heavy vehicles powered by biomethane; introduction of BioJetFuel etc)



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