



OIL AND GAS
INVESTMENTS

Leveraging the Downstream Market to Access Upstream Opportunities

PETRONOR CONFERENCE
SALVADOR, BRAZIL
JULY 18-20 2018

OIL GROUP STATUS



Exploration and Production

Upstream

Tigre Field and Riacho
Workover start in Q3
2018 testing new
nanotechnology

Rabo Branco
Field in negotiation

Permanent Bid Round
Areas offered by ANP in
evaluation



Refineries

Downstream

Carandá Refinery
Acquisition of 80%
completed, initial
engineering start in July

Port of Açú Refinery
Contract in negotiation,
environmental license
company defined

Investment Funds and
Off Takers
LOI in discussion with
large investors, off takers
and oil supply



Opportunities

Petrobras Divestment

Topázio Clusters Onshore
On cluster in recôncavo
going to Bind Offer, 3
clusters are in non-binding
offer

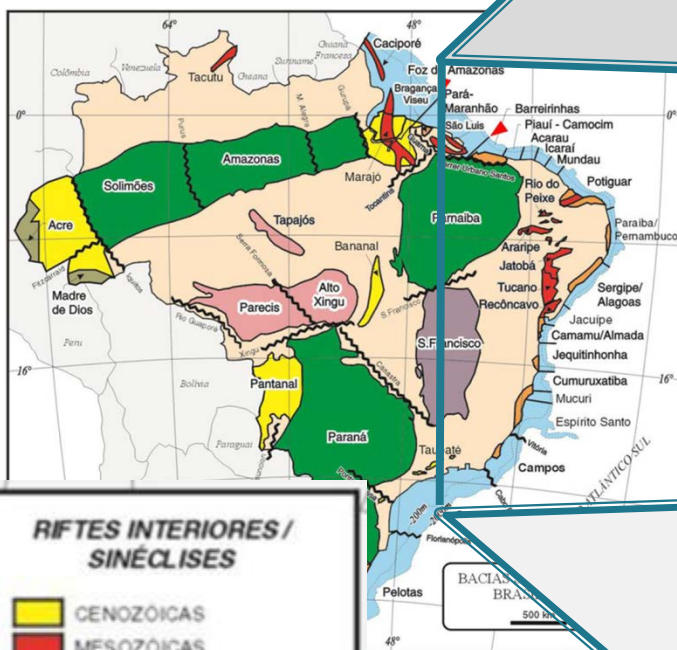
Shallow Water
Offshore



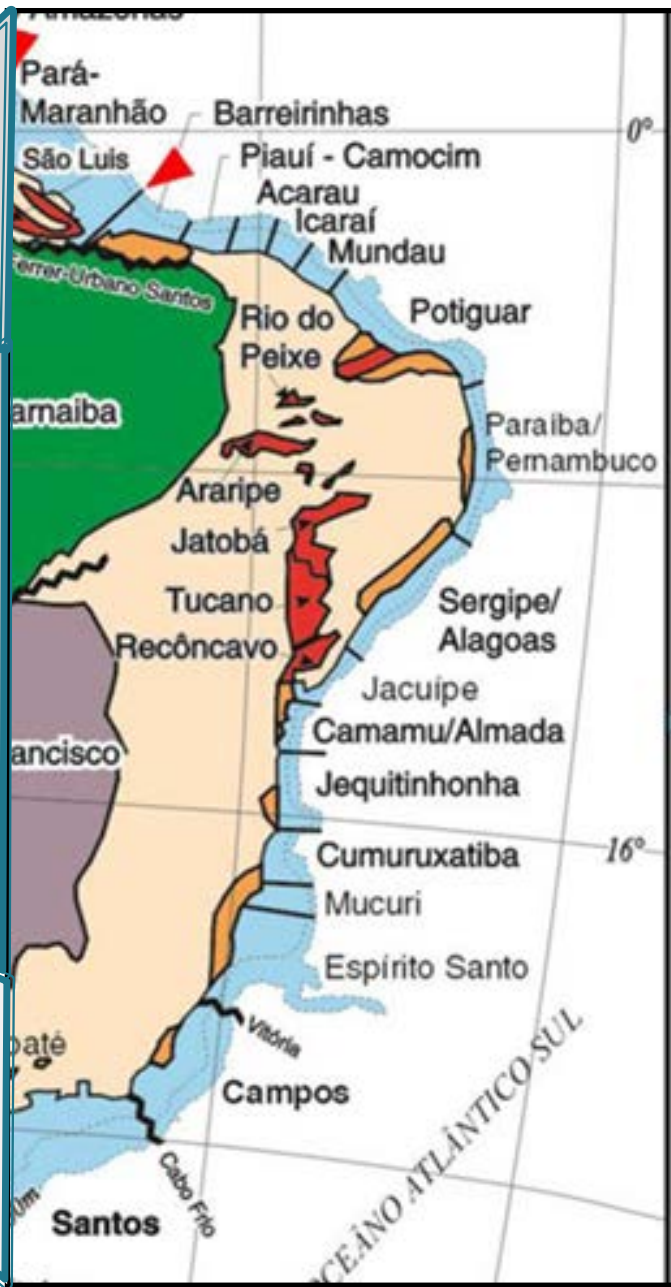


OIL AND GAS INVESTMENTS

ONSHORE BRAZIL - GREAT EXPLORATION AND M&A OPPORTUNITIES FOR JUNIORS



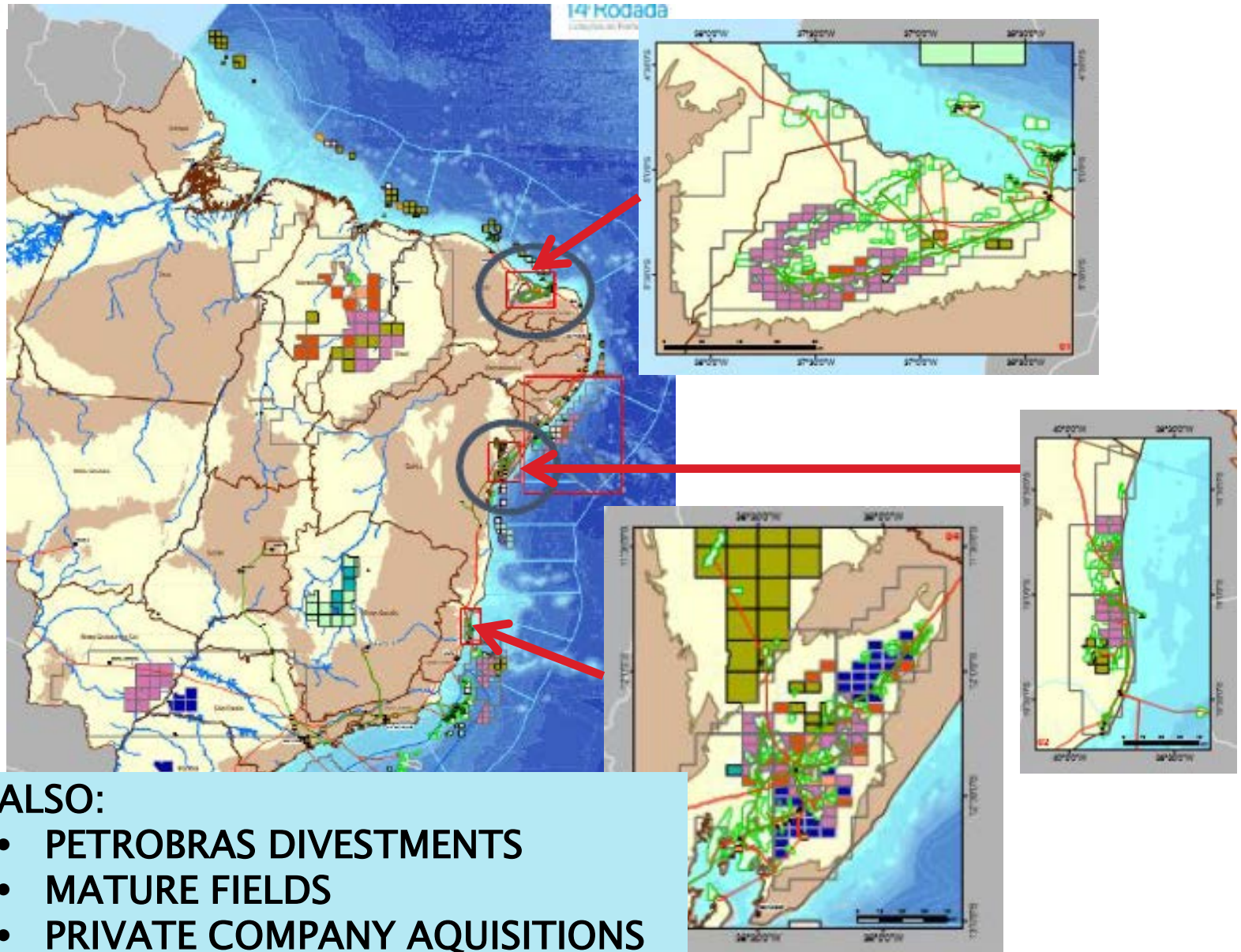
MESO. / CENOZOÍCAS RELACIONADAS À MARGEM PASSIVA	RIFTES INTERIORES / SINÉCLISES
MARGINAL ONSHORE	CENOZOÍCAS
MARGINAL OFFSHORE	MESOZOÍCAS
ARCOS REGIONAIS	PALEOZOÍCAS
	PROTEROZOÍCAS / MESOZ.
	PROTEROZOÍCAS / PALEOZ.





OIL AND GAS
INVESTMENTS

BID ROUND OPPORTUNITIES



MULTIPLE OPPORTUNITIES

- ▶ **UNEXPLORED OR LIGHTLY EXPLORED AREAS**
- ▶ **ACQUISITION OF JUNIOR E&Ps**
- ▶ **EXPLOIT PETROBRAS DIVESTITURES**
- ▶ **RESERVOIR MANAGEMENT FOCUS**
 - **RESERVOIR EVALUATION AND CHARACTERIZATION**
 - **RECOMPLETION AND DEEPENINGS**
 - **DELINEATION, STEP-OUTS, DEEPER POOL**
 - **ADVANCED DRILLING TECHNIQUES**
 - **SECONDARY AND TERTIARY RECOVERY**



OIL AND GAS
INVESTMENTS

A LOT OF OPPORTUNITY, BUT...



I would like to discuss
our pipeline access and
refinery netback, please.

**... PETROBRAS HAS
ALWAYS BEEN THE
800 LB. GORILLA.**



PETROBRAS IS CHANGING

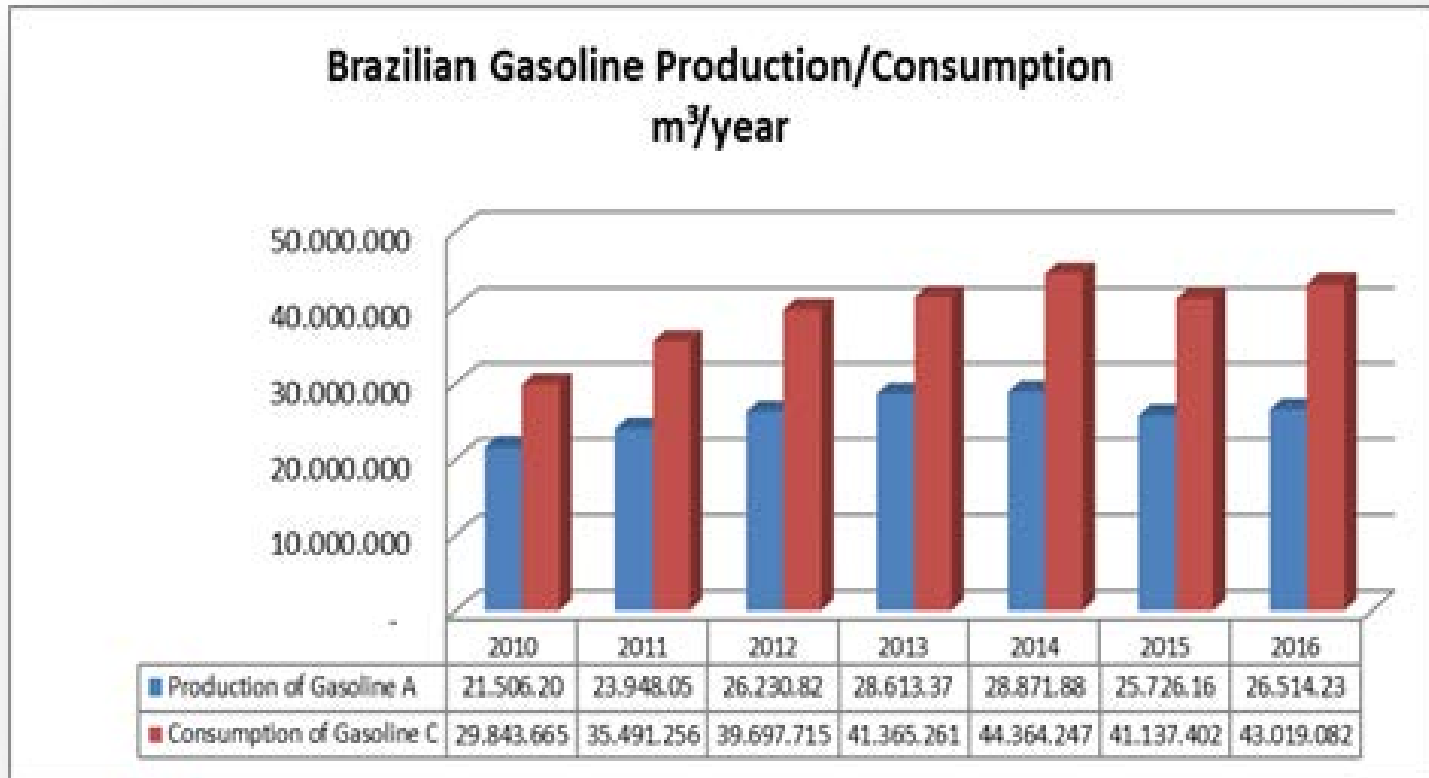
- ▶ FOCUSING FUTURE E&P INVESTMENTS ON GIANT PRE-SALT FIELDS AND DIVESTING ONSHORE FIELDS
- ▶ CANCELLED THEIR PLANS FOR 3 NEW REFINERIES AND 1 EXPANSION
- ▶ THIS OPENS MIDSTREAM AND DOWNSTREAM TO PRIVATE SECTOR INVESTMENTS
- ▶ BRAZILIAN IMPORTS OF OIL DERIVATIVES IS 30% AND GROWING
- ▶ CHANCE TO EXPLOIT M&A OPPORTUNITIES, e. g. PETROBRAS DIVESTITURES PRIVATE SECTOR M&A

BRAZILIAN REFINERIES

REFINERY	OWNER	OPERATION START	SITE	AREA	PRODUCTION CAPACITY
Paulínia REPLAN	PETROBRAS	1972	Paulínia-SP	9.1 km ²	415 k B/D
Landulpho Alves RLAM	PETROBRAS	1950	São Francisco do Conde-BA	6.5 km ²	323 k B/D
Henrique Lage REVAP	PETROBRAS	1980	São José dos Campos-SP	10 km ²	252 k B/D
Duque de Caxias REDUC	PETROBRAS	1961	Duque de Caxias-RJ	13 km ²	239 k B/D
Abreu e Lima RNEST	PETROBRAS	2014	Ipojuca-PE	6.3 km ²	230 k B/D
Presidente Getúlio Vargas REPAR	PETROBRAS	1977	Araucária-PR	10 km ²	207 k B/D
Alberto Pasqualini REFAP	PETROBRAS	1968	Canoas-RS	0.58 km ²	201 k B/D
Presidente Bernardes RPBC	PETROBRAS	1955	Cubatão-SP	-	178 k B/D
Complexo Petroquímico do Rio de Janeiro COMPERJ	PETROBRAS	-	Itaboraí-RJ	45 km ²	165 k B/D
Gabriel Passos REGAP	PETROBRAS	1968	Betim-MG	12.8 km ²	150 k B/D
Capuava RECAP	PETROBRAS	1954	Mauá-SP	3.7 km ²	53 k B/D
Isaac Sabbá	PETROBRAS	1957	Manaus-AM	-	46 k B/D
Potiguar Clara Camarão	PETROBRAS	2010	Guamaré - RN	-	37 k B/D
Ultrapar Braskem	PETROBRAS ULTRAPAR BRASKEM	1937	Uruguaiana-RS	0.4 km ²	17 k B/D
Grupo Magro	GRUPO MAGRO	1954	Rio de Janeiro-RJ	0.6 km ²	15 k B/D
Lubnor	PETROBRAS	1966	Fortaleza-CE	0.4 km ²	8 k B/D
Univen Petróleo	UNIVEN	-	Itupeva-SP	-	8 k B/D
Unidade de Industrialização do Xisto SIX	PETROBRAS	1972	São Mateus do Sul-PR	-	5.88 k T/D
Dax Oil	DAX OIL	2010	Camaçari-BA	0.051 km ²	4.5 k B/D

19 REFINERIES
15 PETROBRAS
4 INDEPENDENT

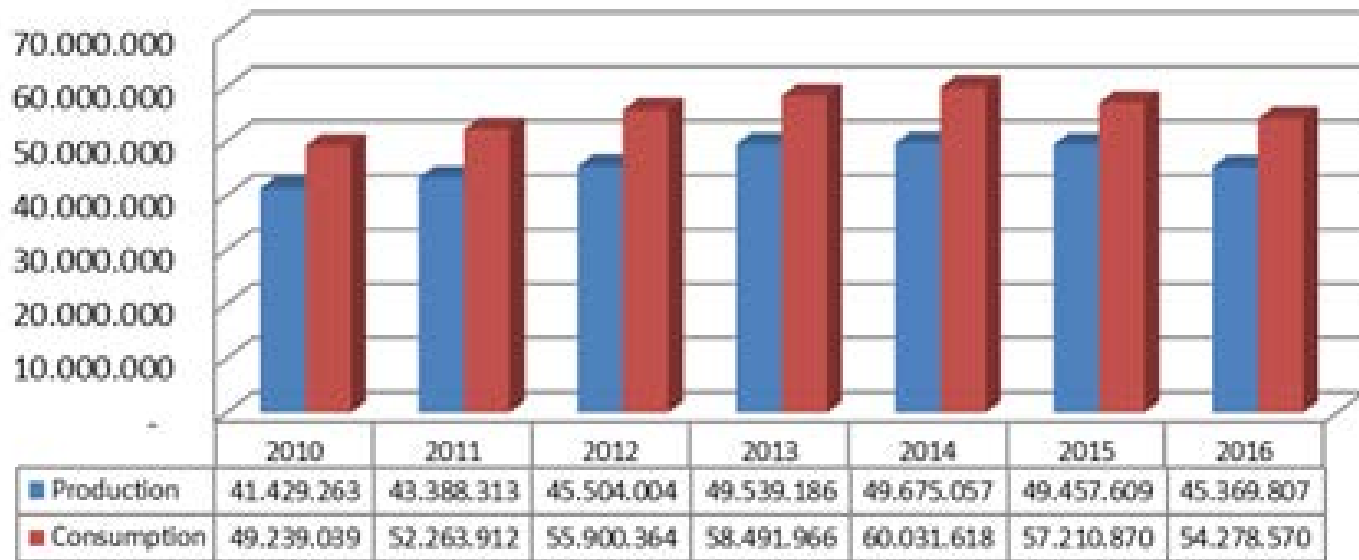
GASOLINE PRODUCTION/CONSUMPTION



GASOLINE CONSUMPTION EXCEEDS PRODUCTION BY 103.8 MMBO

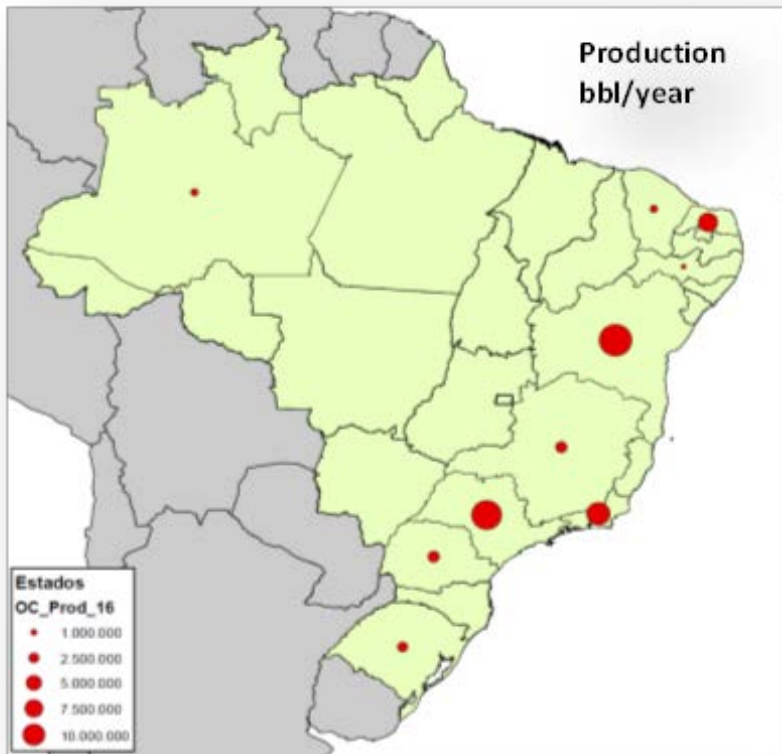
DIESEL PRODUCTION/CONSUMPTION

**Brazilian Diesel Production/Consumption
in m³/year**



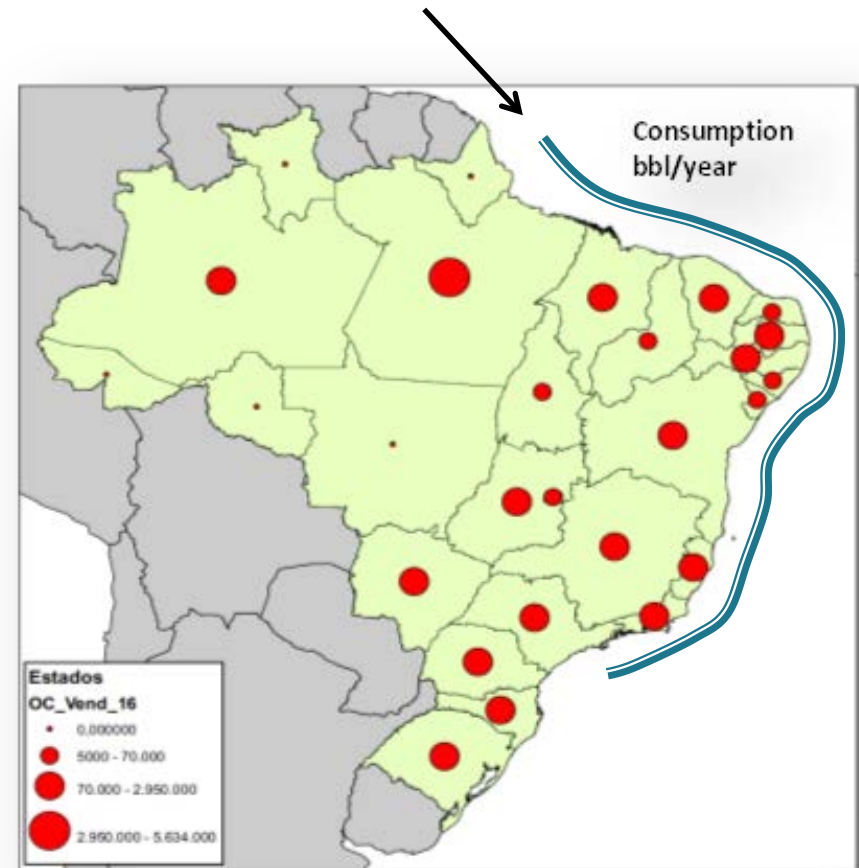
DIESEL FUEL CONSUMPTION EXCEEDS PRODUCTION BY 56 MMBO

FUEL OIL PRODUCTION/CONSUMPTION



CARGO VESSELS (IRON ORE, GRAIN, OIL TANKERS) CARRY ROUND TRIP FUEL DUE TO LACK OF BUNKER FUEL IN MANY PORTS.

HIGH DEMAND FOR MARINE FUELS ALONG COAST. MANY PORTS LACK FUEL FOR CARGO VESSELS.



DOWN STREAM OPPORTUNITY

- ▶ INCREASING DEPENDENCE ON IMPORTATION OF REFINED PRODUCTS – 30% OF CONSUMPTION AND GROWING
- ▶ MANY PORTS LACK BUNKER FUEL AND GASOLINE SUPPLIES
- ▶ MODULAR SMALL-SCALE REFINERIES ARE A FLEXIBLE, COST-EFFECTIVE OPTION FOR CRUDE PRODUCERS IN REMOTE AREAS



*Can we connect the
Upstream and
Downstream ?*



MODULAR REFINERY SOLUTION

- ▶ **MODULAR PREFABRICATION AND CONSTRUCTION AND QUICK START-UP TIME**
- ▶ **LOW O&M COSTS**
- ▶ **MODERN, EFFICIENT, EXCELLENT ENVIRONMENT AND SAFETY RECORD**
- ▶ **FOCUS ON MARINE FUELS TARGETS LARGE UNDERSERVED MARKET**
- ▶ **ABILITY TO IMPORT AND EXPORT INSULATES FROM GOVT PRICE CONTROLS**

Installation of four modular refineries in strategic areas in Brazil with growing demands, thereby obtaining logistical and commercial advantages

- Close to small and midsize oil producers
- Strategic oil byproducts market to supply
- Close to a sea terminal facility
- Comply with Brazilian and international specifications
- Comply with Brazilian environmental law
- Adopt international safety procedures and standards
- High automation & up-to-date technologies level
- Low conversion (low Nelson Index)



MODULAR REFINERY SOLUTION

- ▶ 10MBOPD OR 20 MBOPD UNITS
- ▶ \$USD 118MM TO \$USD 227 MM
- ▶ 18 MONTH PROJECT TIME
- ▶ 28% IRR

Construction 4 Refineries Strategy Located

Opportunity

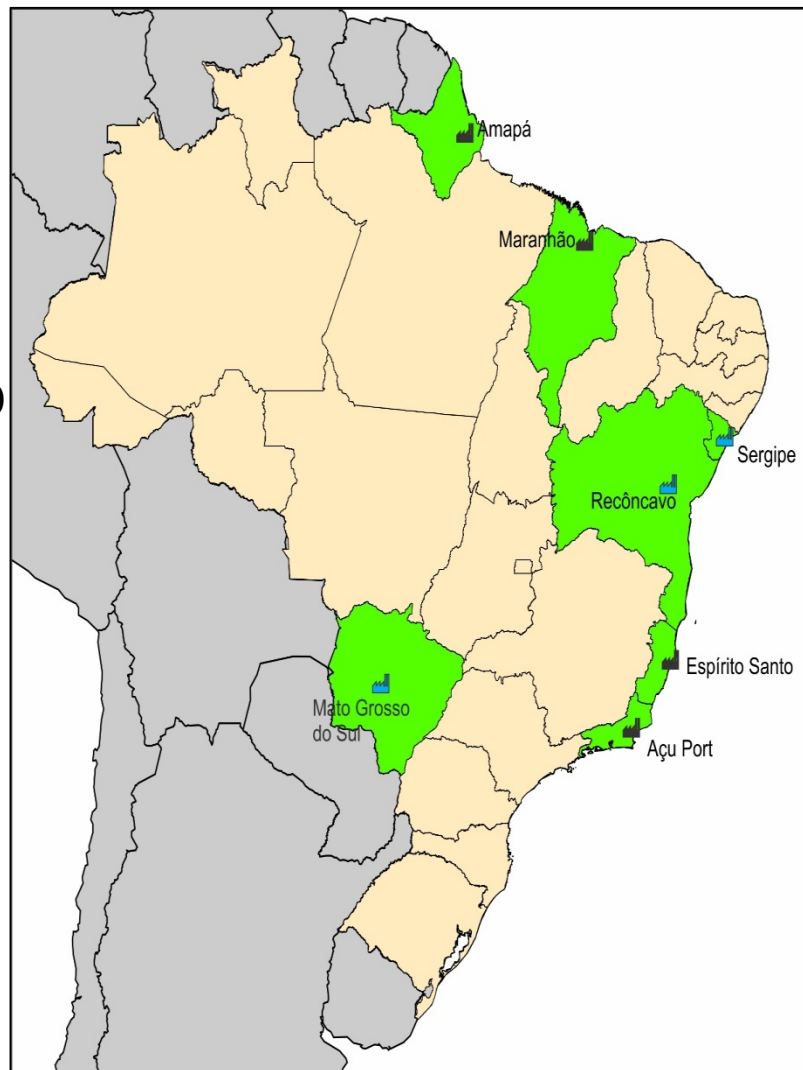
Project: construction of four refineries.

Sites Selected and Land Agreement Signed:

- #1 Açu (Rio de Janeiro) – Design for 20,000 bbl/day
- #2 Santana (Amapá) – Between 10,000 and 20,000 bbl/day
- #3 São Mateus (Espírito Santo) – 10,000 bbl/day
- #4 São Luiz (Maranhão) – 10,000 bbl/day

Sites in Evaluation

- #1 Sergipe and Bahia – Onshore Fields
- #2 Centro Oeste – Mato Grosso do Sul





GOING FORWARD

- ▶ **EXCELLENT RECEPTION OF CONCEPT BY INVESTMENT COMMUNITY**
- ▶ **LOIs SIGNED WITH MOC AND REGIONAL COMPANIES FOR 100% SUPPLY AND OFFTAKE**
- ▶ **SITES LOCATED IN STRATEGIC E&P AREAS NOW UNDERGOING EVALUATION**
- ▶ **UNIQUE EQUITY STRUCTURE FOR EACH REFINERY**



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A photograph of an industrial refinery or oil processing plant at sunset. The sky is a vibrant orange and yellow, with silhouettes of various structures, including tall distillation columns and complex piping, against the bright background.

THANK YOU!

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