



WHY DO WE NEED TO CHANGE?

TRANSPETRO MARITIME TRANSPORT PERSPECTIVE

MARTECH 2016 – Lisboa, 06/jul/2016

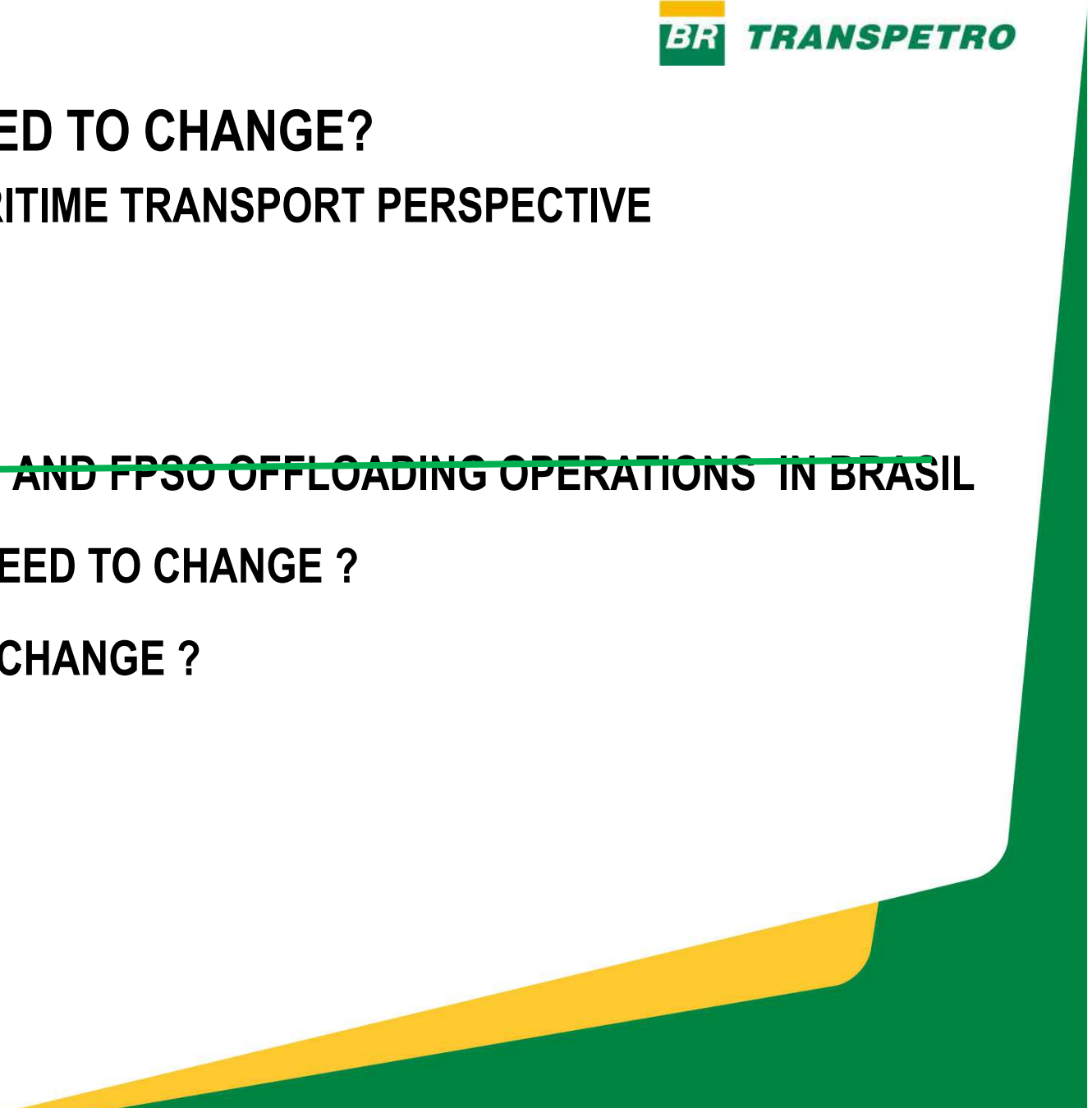
Capitão de Longo Curso Jones Alexandre Barros Soares - AFNI MIFSMA

Master Mariner / Maritime Transport, Executive Manager

cmt.jones@petrobras.com.br

WHY DO WE NEED TO CHANGE?

TRANSPETRO MARITIME TRANSPORT PERSPECTIVE

1. ~~**TRANSPETRO AND FPSO OFFLOADING OPERATIONS IN BRASIL**~~
 2. **WHY DO WE NEED TO CHANGE ?**
 3. **HOW ARE WE CHANGE ?**
 4. **CONCLUSION**
- 

TRANSPETRO BRIEF OVERVIEW

Law 9,478 of **August 6, 1997** – “Petroleum Law”

Art. 65. Petrobras shall establish a subsidiary with specific attributions to operate and construct its pipelines, marine terminals and vessels for handling petroleum, its derivative and natural gas...



TRANSPETRO BRIEF OVERVIEW

28 Marine Terminals

21 Inland Terminals

Storage Capacity: 10.5 million m³ (nominal)

4.7 thousand miles of oil pipelines

4.4 thousand miles of gas pipelines

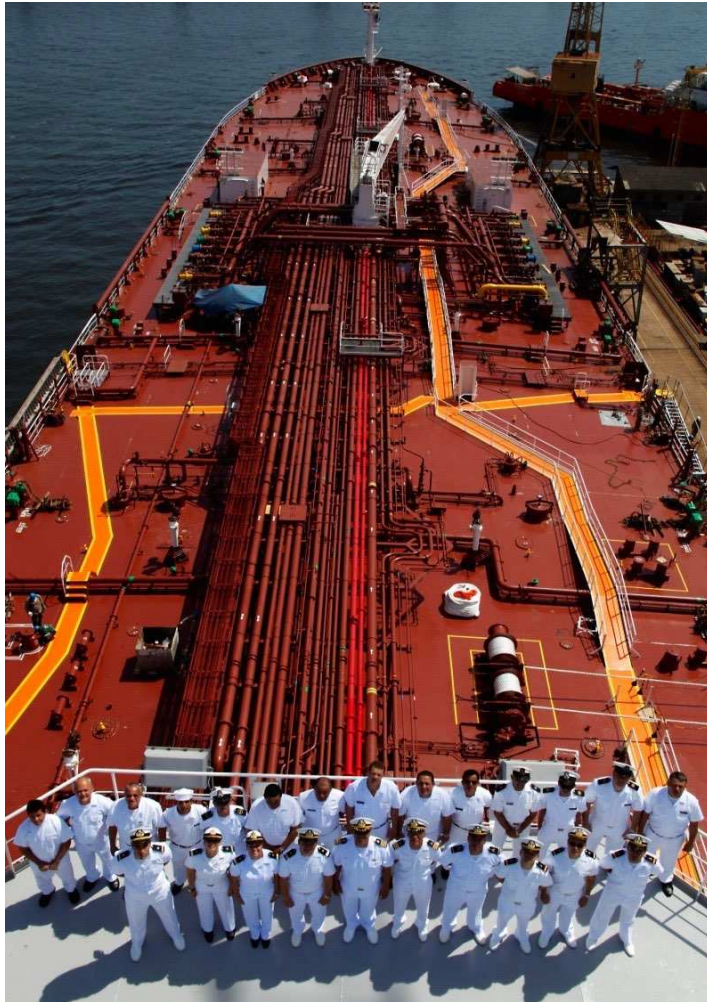
The largest transport and logistics company in Brazil, it transports and stores crude oil, refined products, natural gas and biofuels.

5,700 average nr vessels operations per year

1218 Operations with DP Fleet.




MARITIME TRANSPORT



MARITIME TRANSPORT



 57 ships - divided among:



19 DP (Suezmax & Aframax)



09 (Suezmax)



06 (Panamax)



08 CPP



08 Gas Carrier



06 Product Carrier (MR)



01 Ocean Tug (OSRV)



MARITIME TRANSPORT OPERATIONS TYPE



STS OPERATIONS



Underway



Anchored



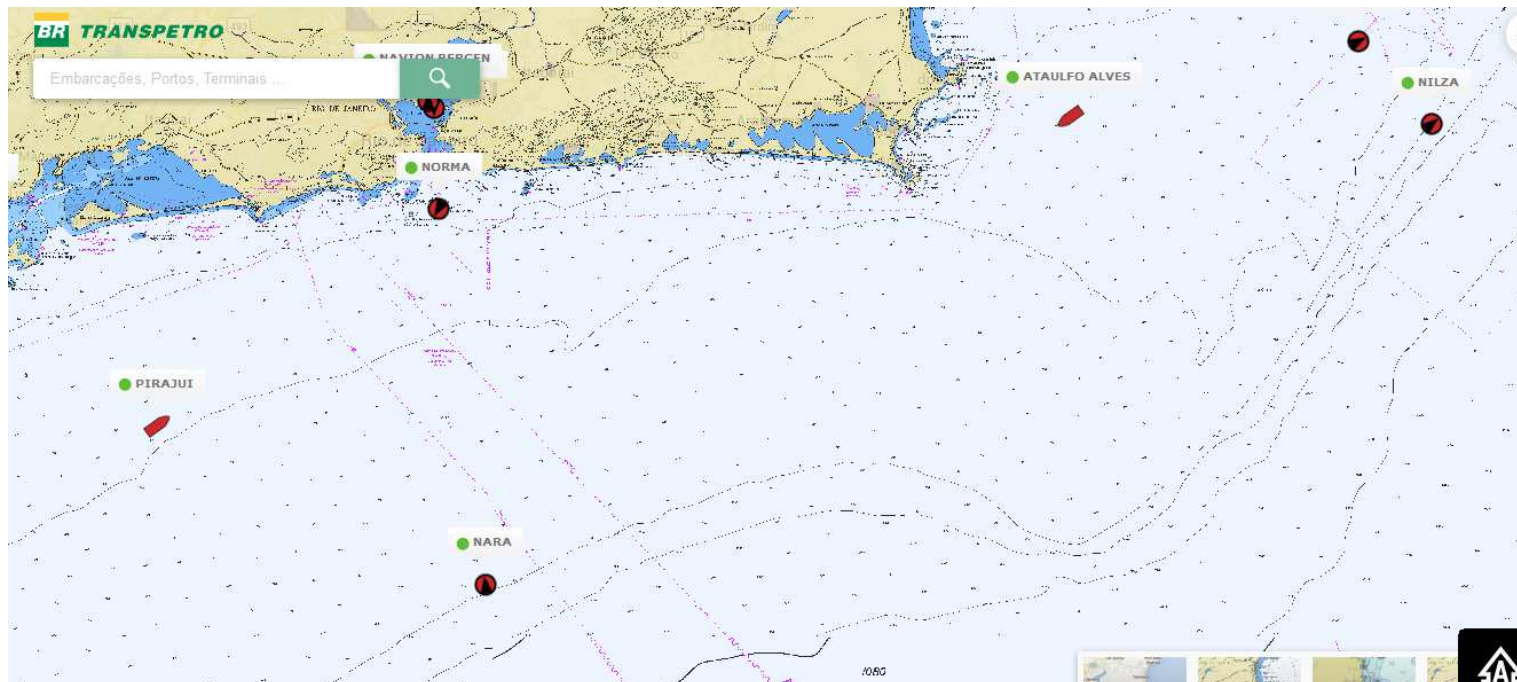
Alongside



MARITIME TRANSPORT OPERATIONS TYPE



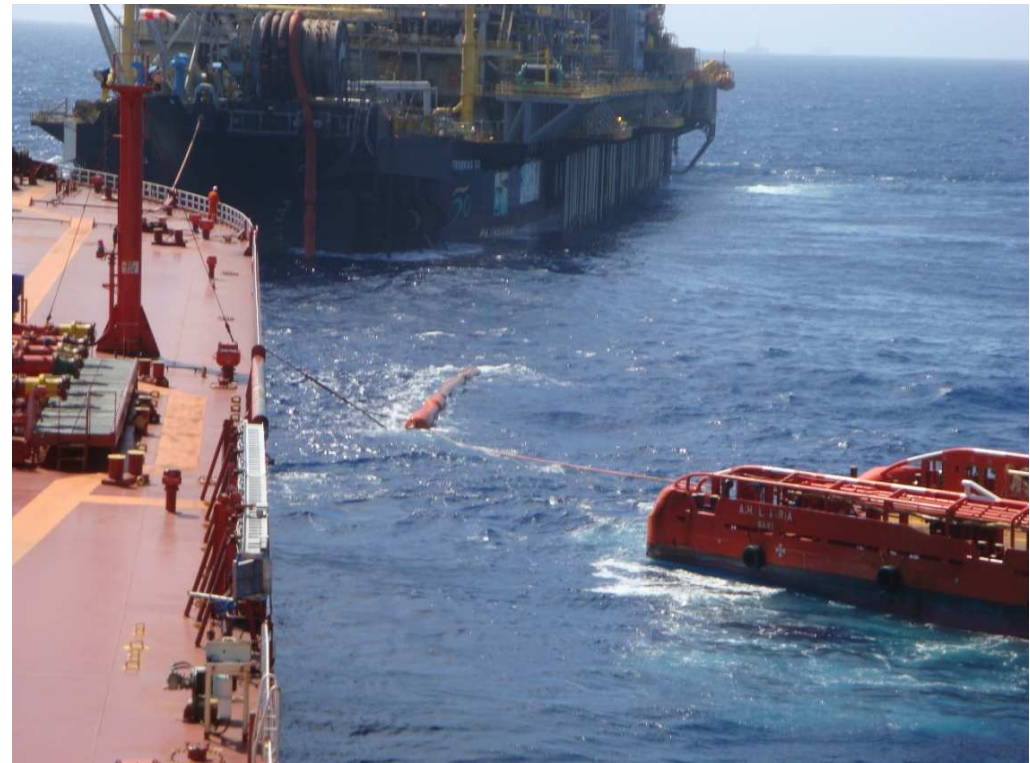
OFFSHORE BUNKERING OPERATION – OILERS FLEET



MARITIME TRANSPORT OPERATIONS TYPE



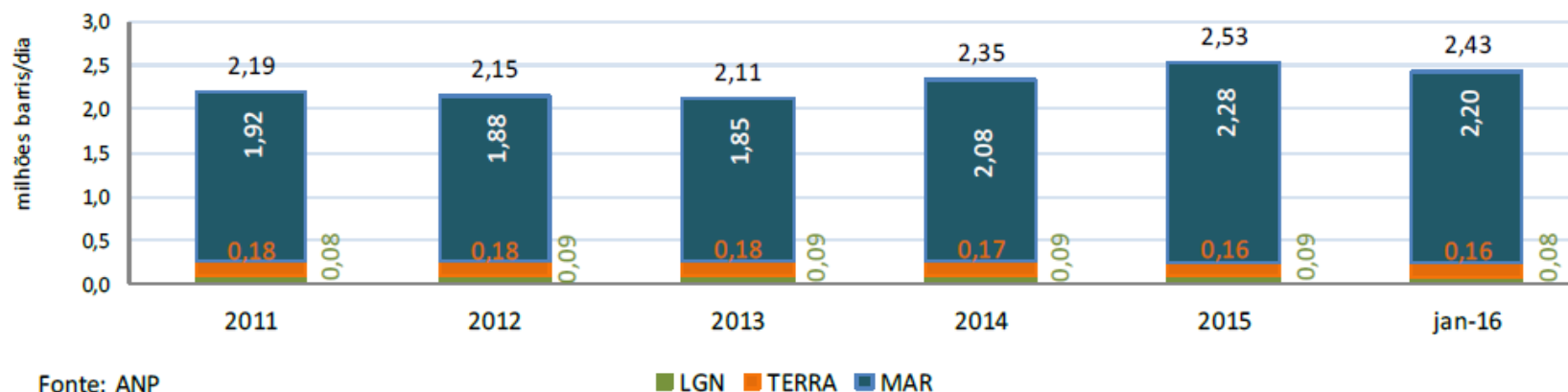
DP OPERATIONS IN PETROBRAS OILFIELDS



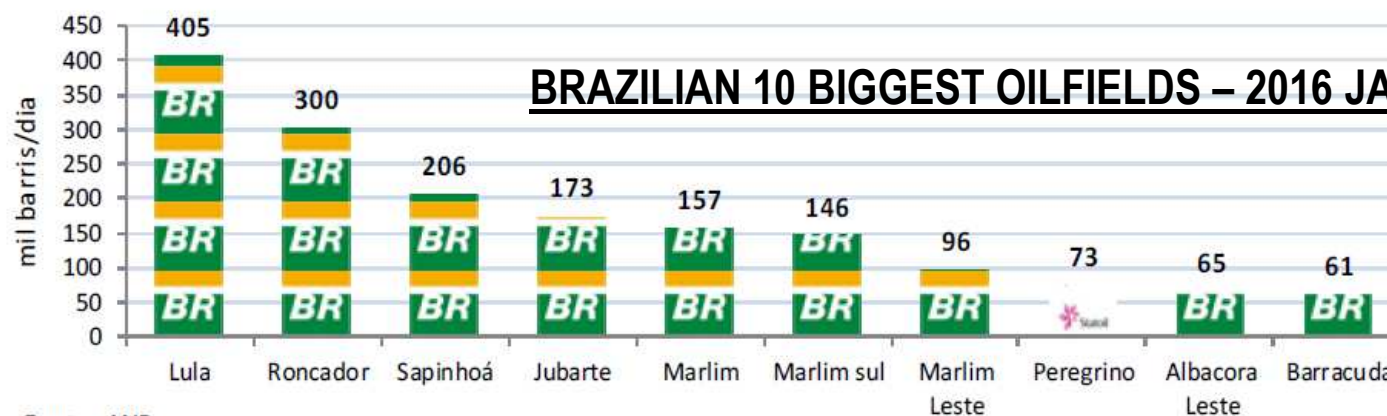
BRAZILIAN OIL PRODUCTION AND LNG - 2016



BRASIL - 2016
PRODUÇÃO MENSAL DE PETRÓLEO e LGN



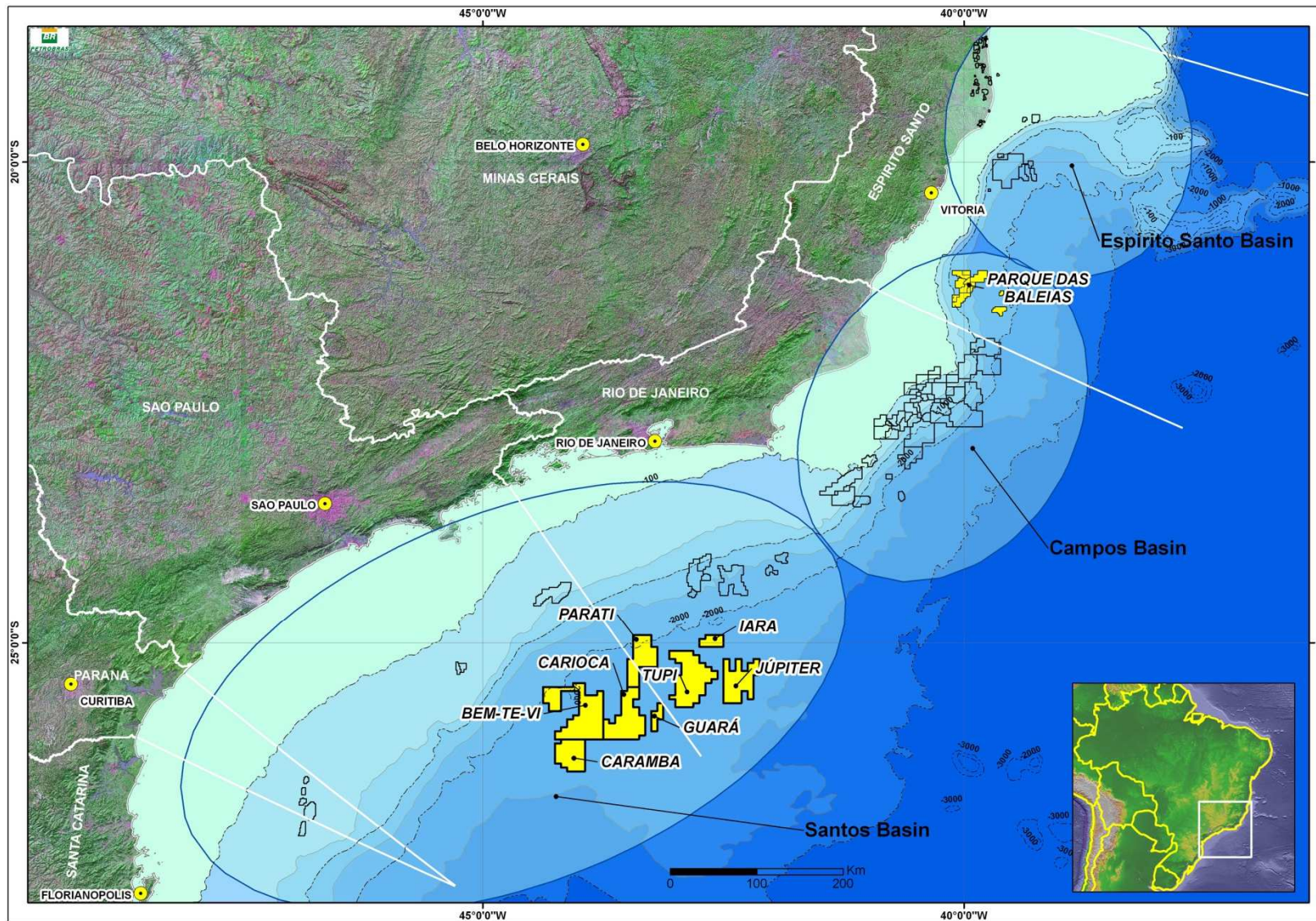
BRASIL - 2016
DEZ MAIORES CAMPOS PRODUTORES DE PETRÓLEO - JANEIRO



BRAZILIAN 10 BIGGEST OILFIELDS – 2016 JANUARY

Fonte: ANP

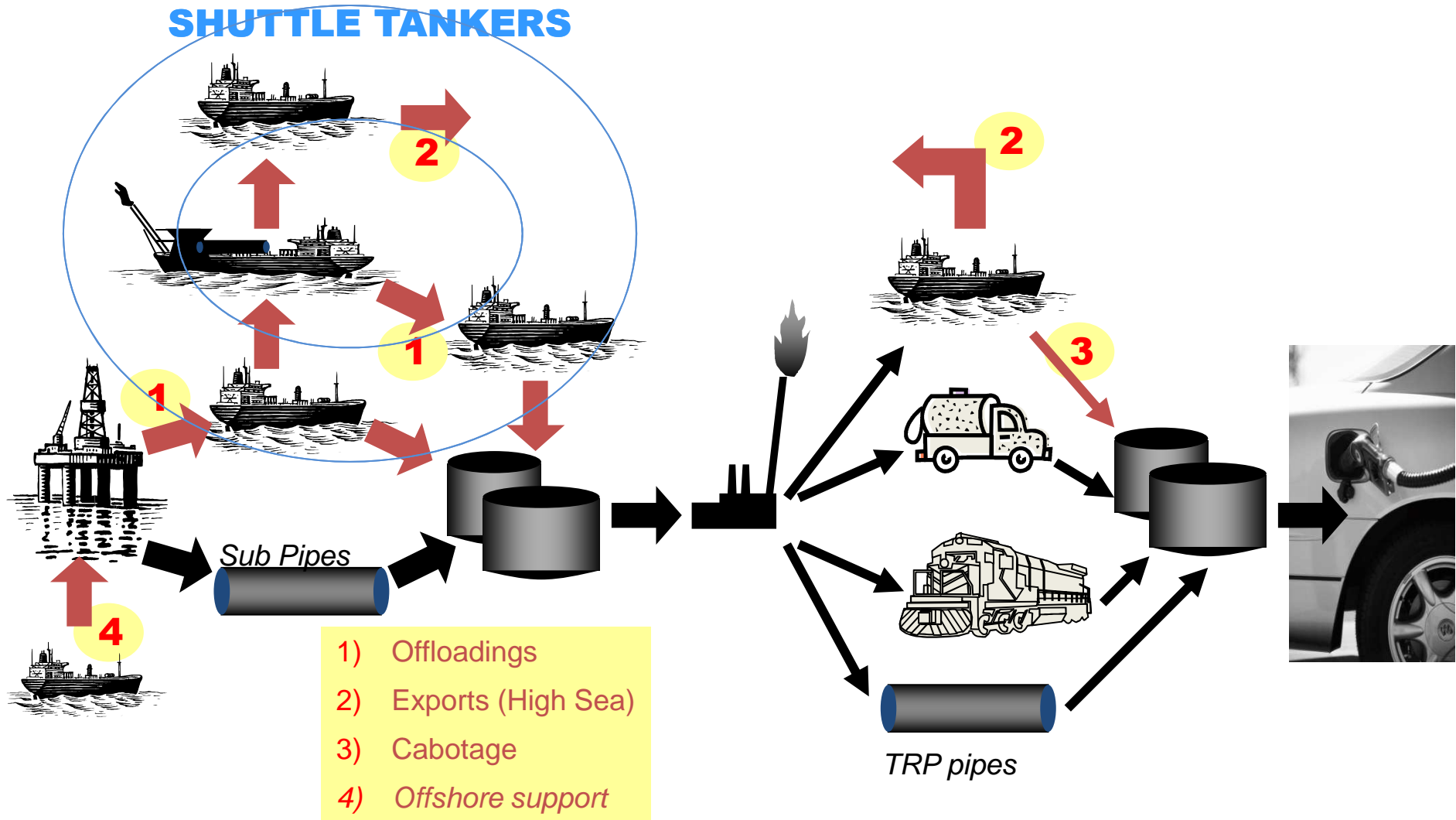
MAIN OILFIELDS LOCATION



Petrobras Logistic Chain



SHUTTLE TANKERS



PRE-SALT LAYER BIG PRODUCTION EVOLUTION



Brazil Offshore Loading Development



Significant changes in Brazil over the last years

Period	Offshore Terminal Type
70's - 80's	1 FSO and CALM Buoys
90's	CALM Buoys, FSOs and the 1st SPM-Turret
1998-2009	DP-FPSO (Seillean), SPMs Turret (14 units) Spread Moored (09 units)
From 2009	more FPSOs are expected (Spread Moored)

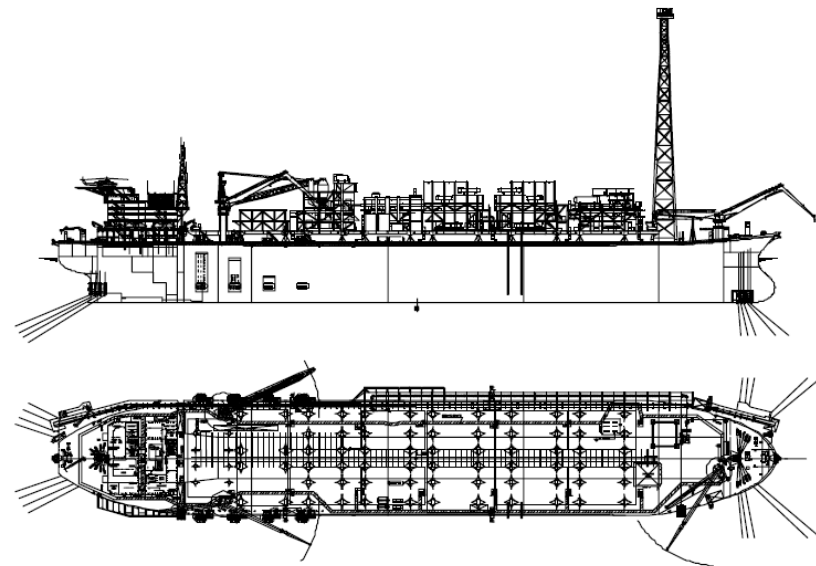
Source: MTS DP Conference 2009, Tannuri et. al



TURRET FPSO



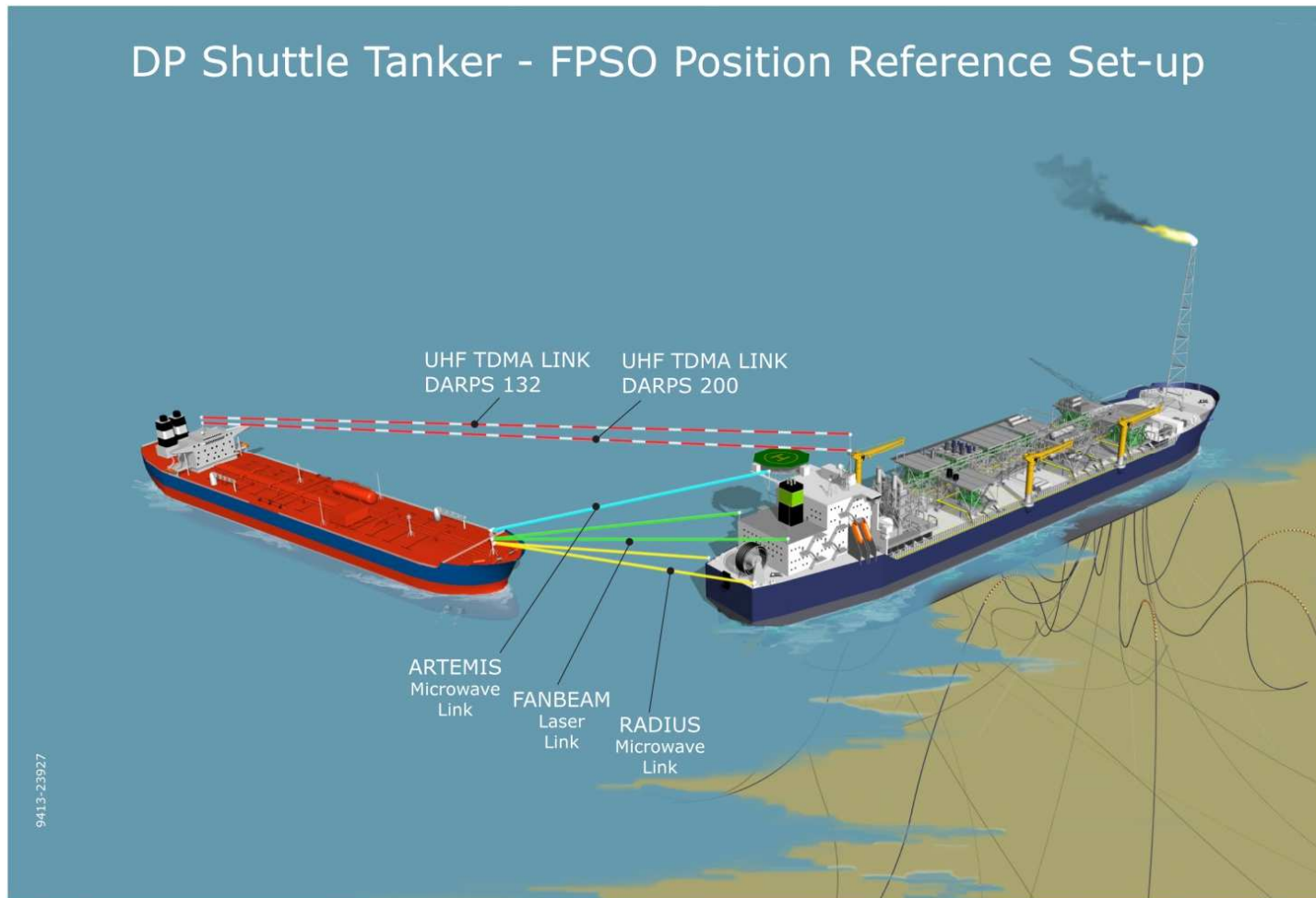
SPREAD-MOORED FPSO

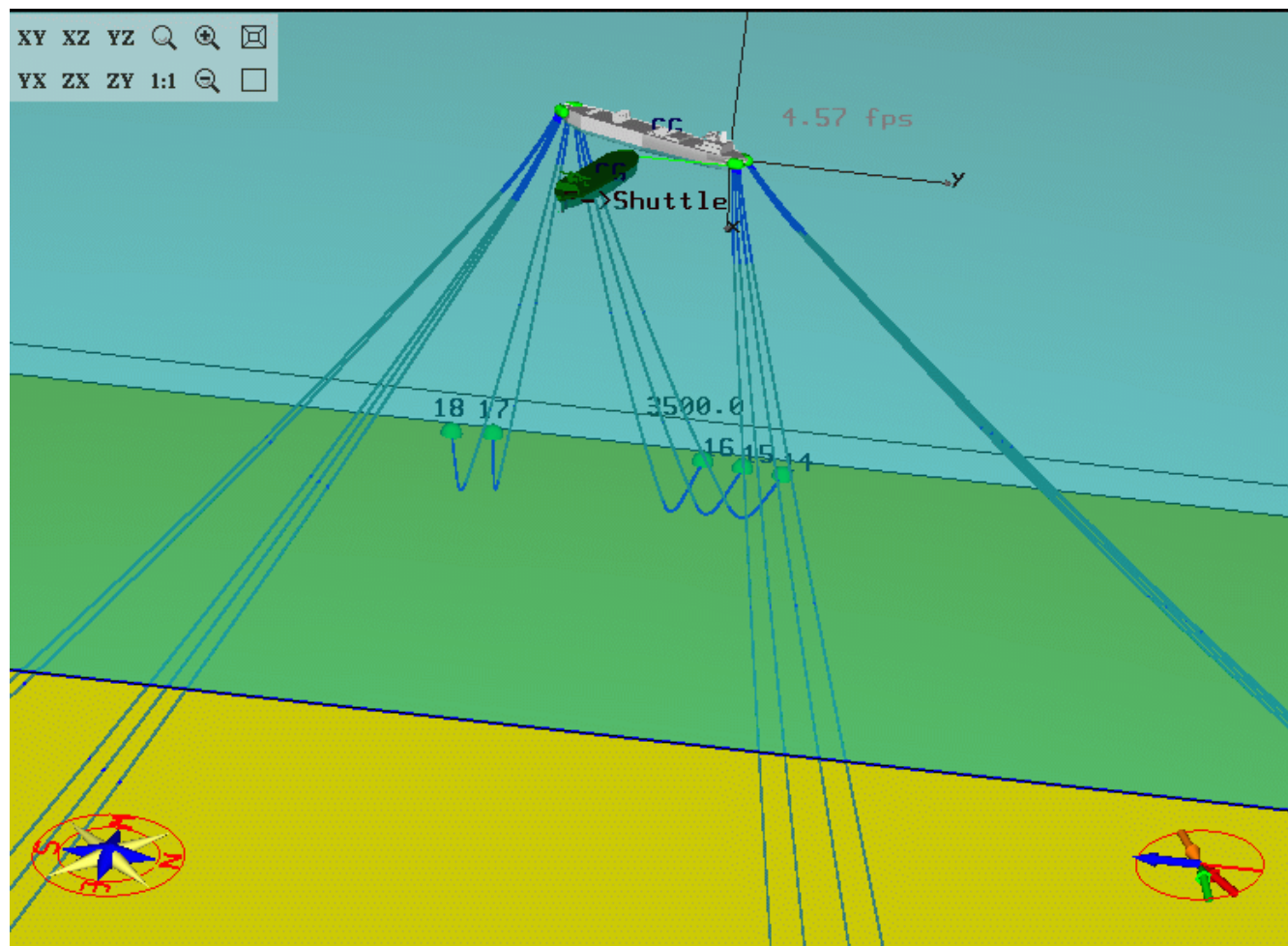


OFFLOADING IN TURRET FPSO



ALL STANDARD AND TRADITIONAL DP CONCEPTS APPLICABLE







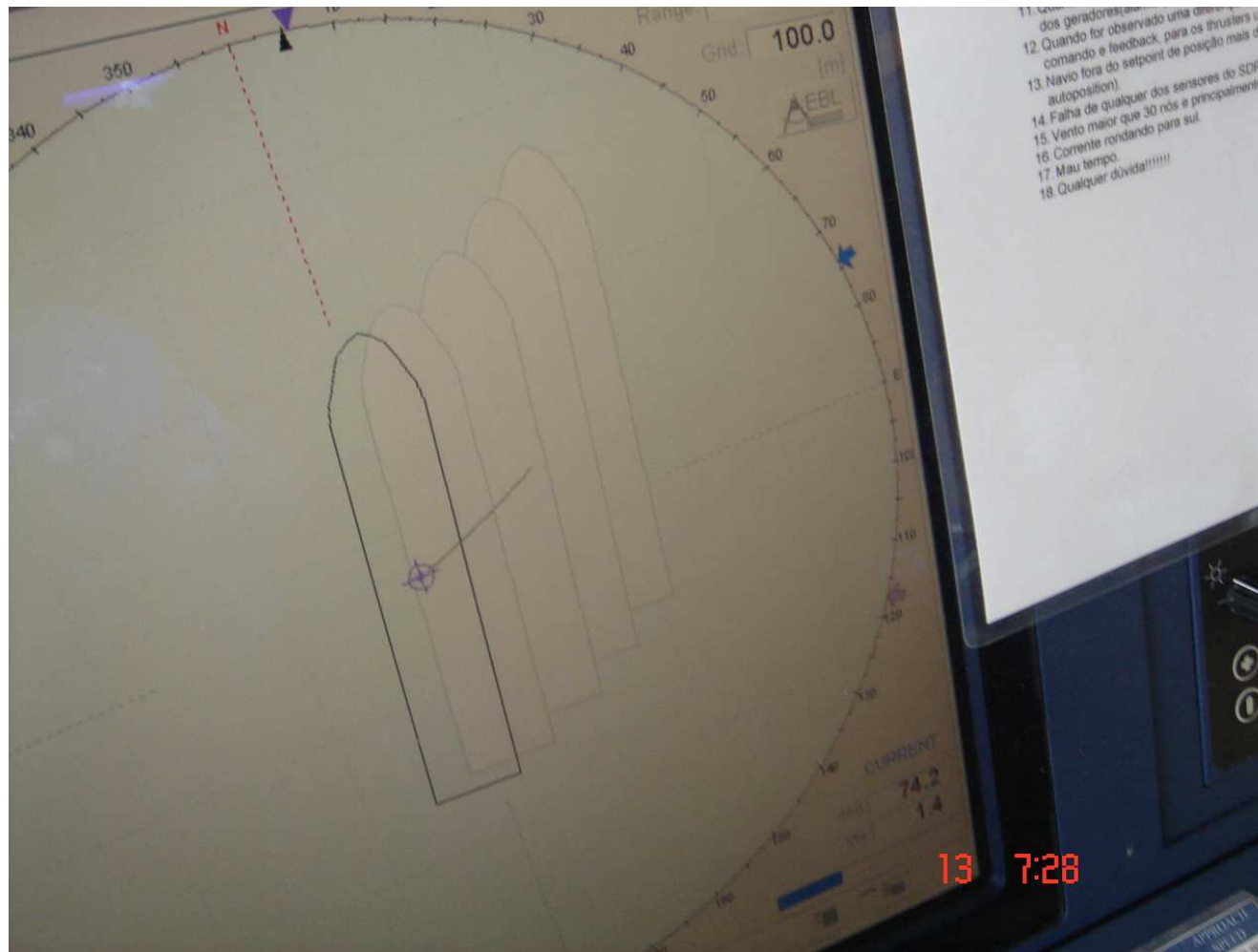
DP Offloading in spread-moored FPSO's characteristics:

- FIXED HEADING**
- HAWSER CONNECTED**
- MAXIMUM OPERATION ENVIROMENTAL FORCES LIMITS SHORTER**



FPSO TURRET (HEADING 090)

FPSO SPREAD (HEADING 230)

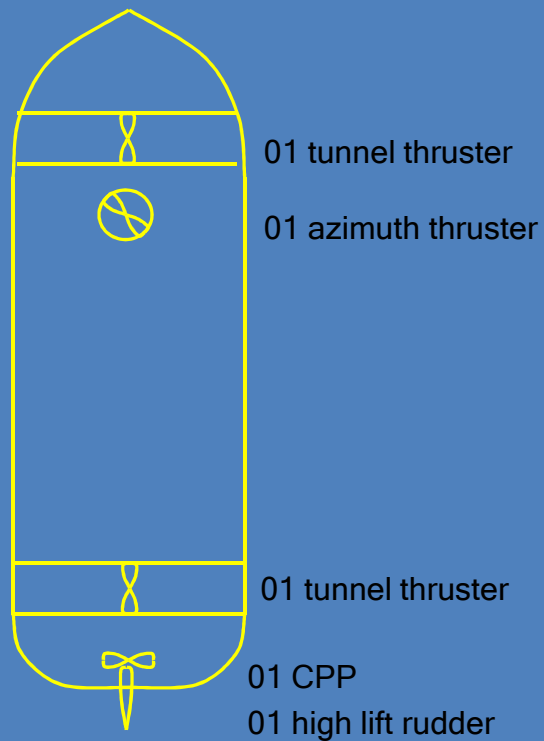


**EXTERNAL ENVIROMENTAL FORCES ACTUATING UNFAVORABLE,
CAUSING DRIFT OFF SITUATIONS**

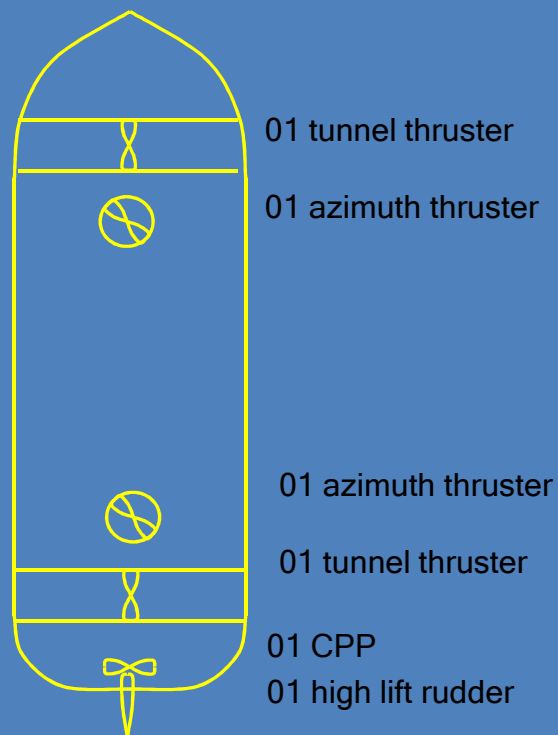
Shuttle Tankers Generation



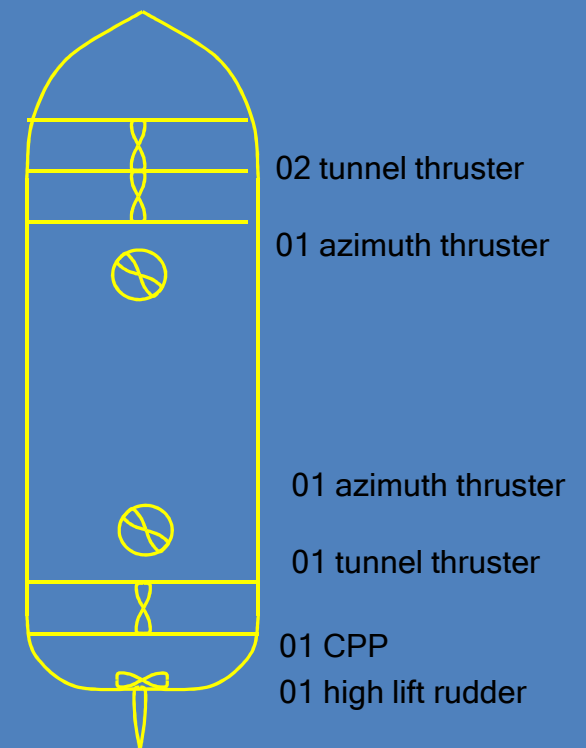
Turret Moored Operations 1st generation



Spread Moored Operations 2nd generation



Santos Basin Operations 3rd generation



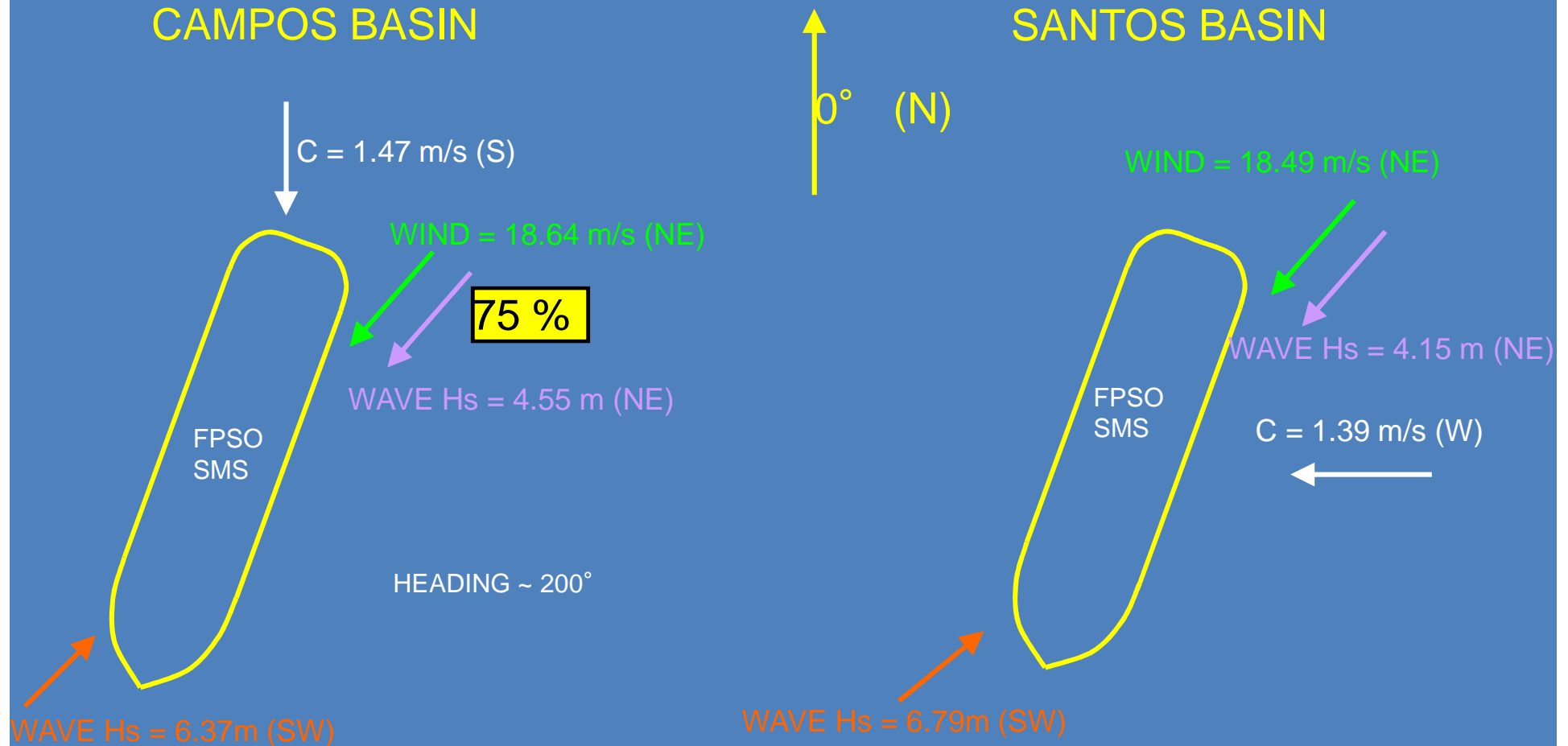
CAMPOS BASIN X SANTOS BASIN

ONE YEAR PERIOD RETURN

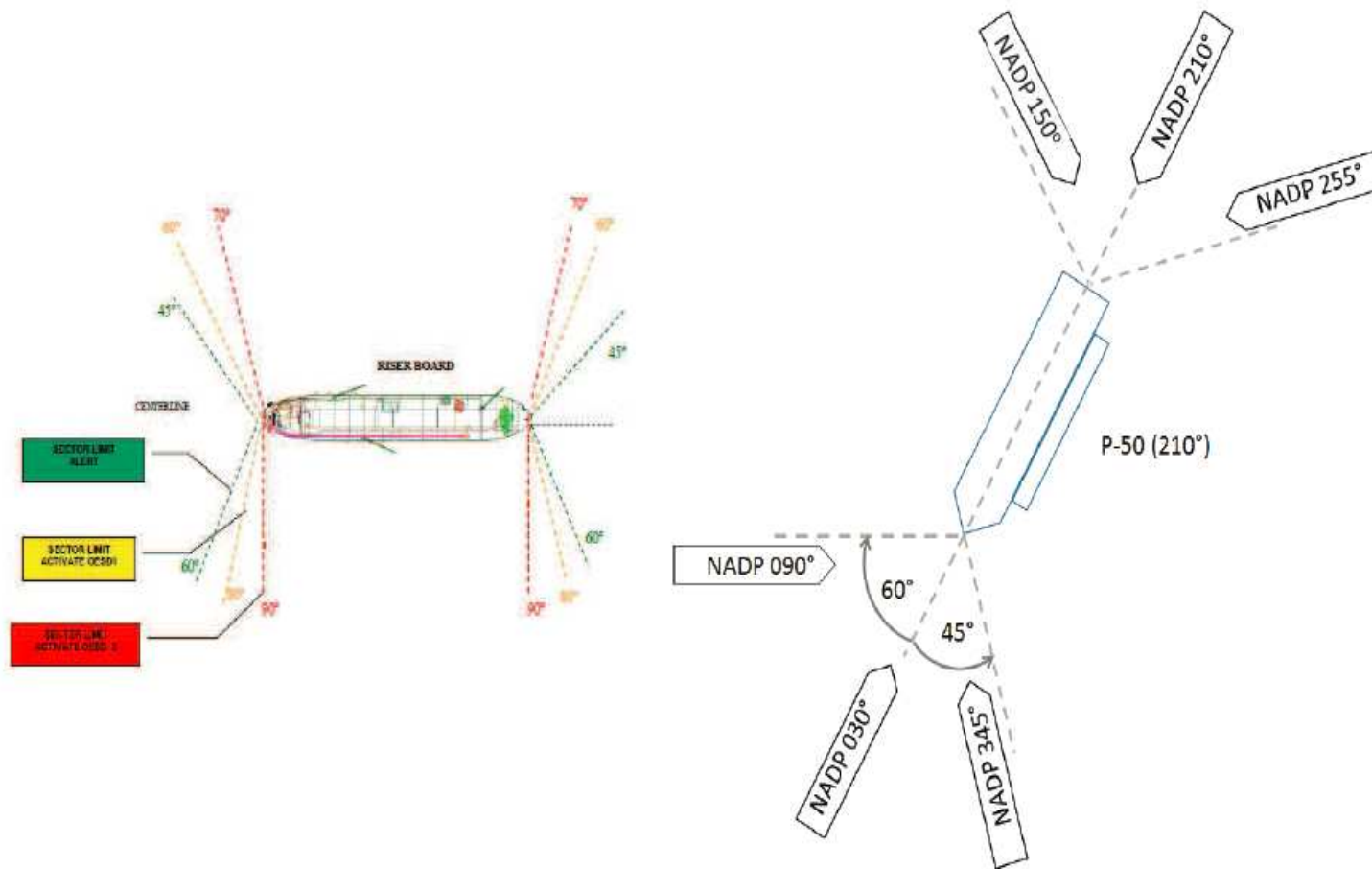


CAMPOS BASIN

SANTOS BASIN



$H_s > 4,5m$ – occurrence frequency 11 times bigger than Santos Basin



SPREADMOORED FPSO OPERATIONAL ENVELOPE



Ship Manoeuvring Simulator Centre AS Certificate of Achievement

**Jones Alexandre Barros
Soares**

Born: 29.11.1970

Has successfully completed the full mission simulator course:

**Offshore loading, Shuttle tankers, SP,
Spread Moored FPSO Tandem loading for
Transpetro**

From 28.02.2008 to 29.02.2008

References:

STCW 95: Table A-II/1: "Manoeuvre the ship"

STCW 95: Table A-II/2 "Manoeuvre and handle
the ship in all conditions"

(See overleaf for description.)

Ship Manoeuvring Simulator Centre AS.
Trondheim 29.02.2008


Course instructor


Course manager



**SPECIAL BRAZILIAN SPREADMOORED FPSO DP OPERATION TRAINING COURSE
CREATED FOR TRANSPETRO SHUTTLE TANKERS DPOS**

TRANSPETRO DP FLEET



FLEET GETRAM 3



7 VESSELS

BRAZILIAN CREW



DP CLASS 1 ENHANCED



- ✓ ATAULFO ALVES
- ✓ CARTOLA
- ✓ NAVION BERGEN
- ✓ NAVION GOTHENBURG
- ✓ NORDIC BRASILIA
- ✓ NORDIC RIO

DP CLASS 2



- ✓ NAVION STAVANGER

FLEET GETRAM 5

11 VESSELS

DP CLASS 1 ENHANCED

- ✓ NORDIC SPIRIT
- ✓ STENA SPIRIT

DP CLASS 2

- ✓ FORTALEZA KNUTSEN
- ✓ RECIFE KNUTSEN
- ✓ DAN CISNE
- ✓ DAN SABIA
- ✓ ANGRA DOS REIS
- ✓ MADRE DE DEUS
- ✓ RIO GRANDE
- ✓ SÃO SEBASTIÃO
- ✓ SÃO LUIZ

FOREIGN CREW



TRANSPETRO DP SHIPS TRANSPORTED IN 2015 :

3RD WORLD DP FLEET IN SIZE

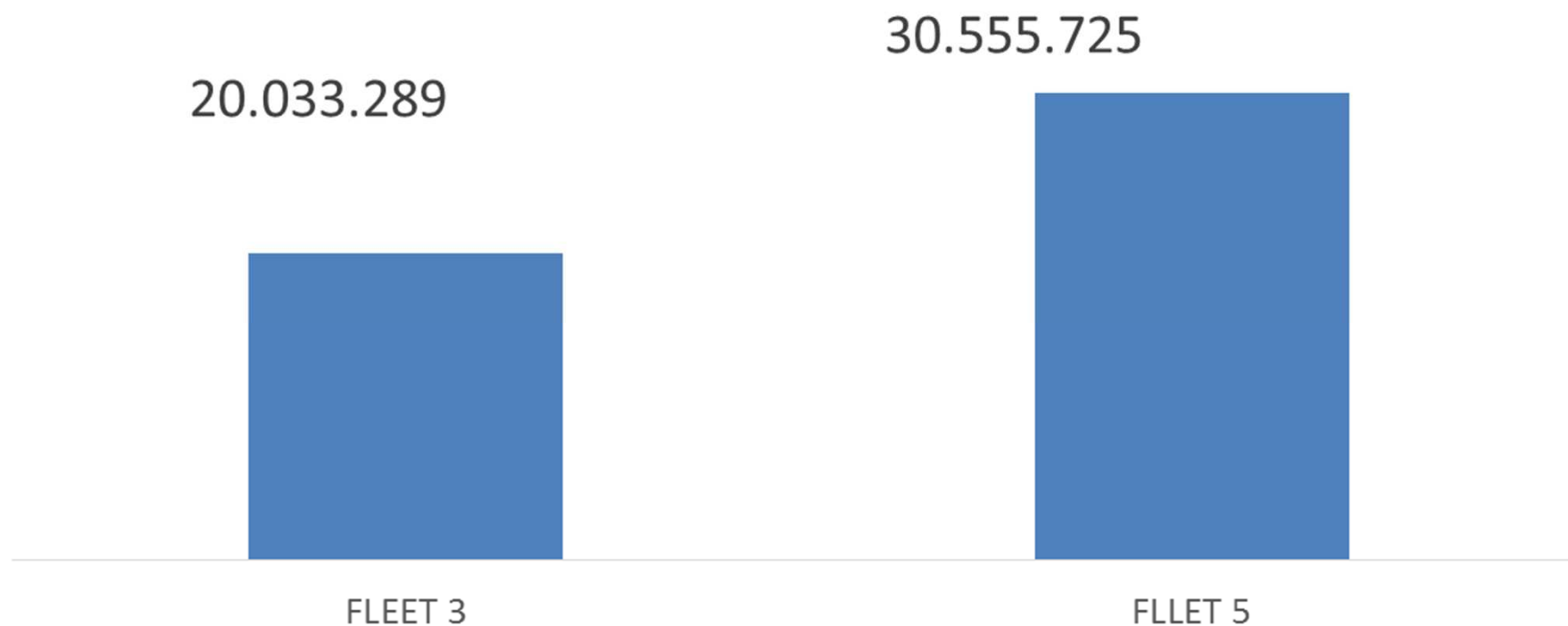
74 % OF TOTAL TRANSPETRO CARGO

29 % OF TOTAL PETROBRAS CARGO

67 % OF TOTAL PETROBRAS DP CARGO



CARGO TRANSPORTED 2015 (in millions of tons)



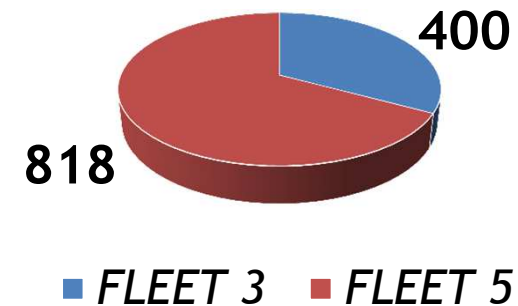
DP OPERATIONS – IN 2015 – TOTAL: 1218

AVERAGE OPERATIONS PER MONTH

FLEET 3 = 57,14

FLEET 5 = 74,36

TOTAL OPERATIONS



DP INCIDENTS – ONE DRIVE OFF IN 14 YEARS ONLY IN 2011

SPILL: ZERO SPILL INCIDENTES IN OFFLOADINGS IN 14 YEARS


2015 DP SHIP`S READYNES INDEX (without docking):

FLEET 3 – 98,14 %

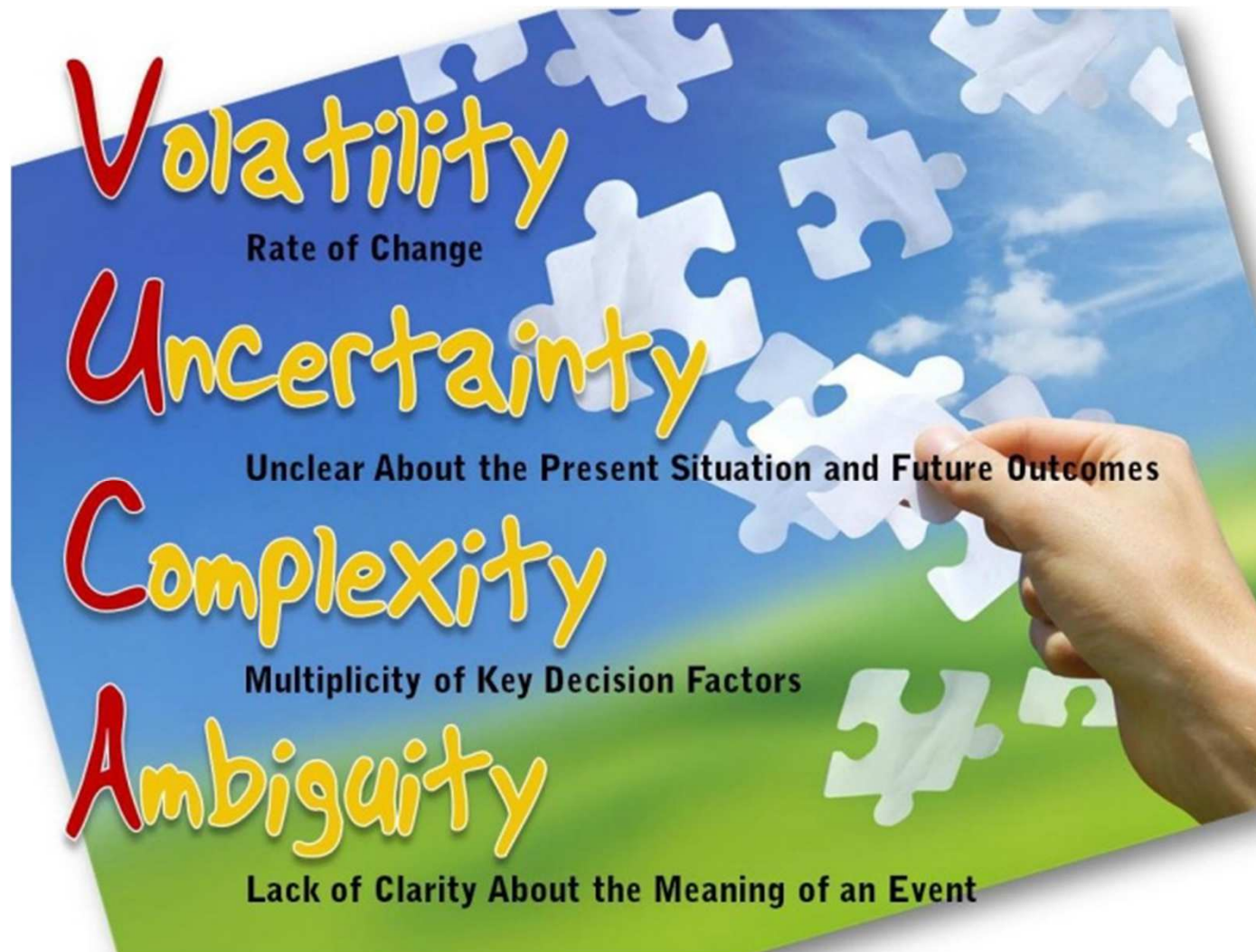
FLEET 5 – 100 %

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ITS A VUCA WORLD

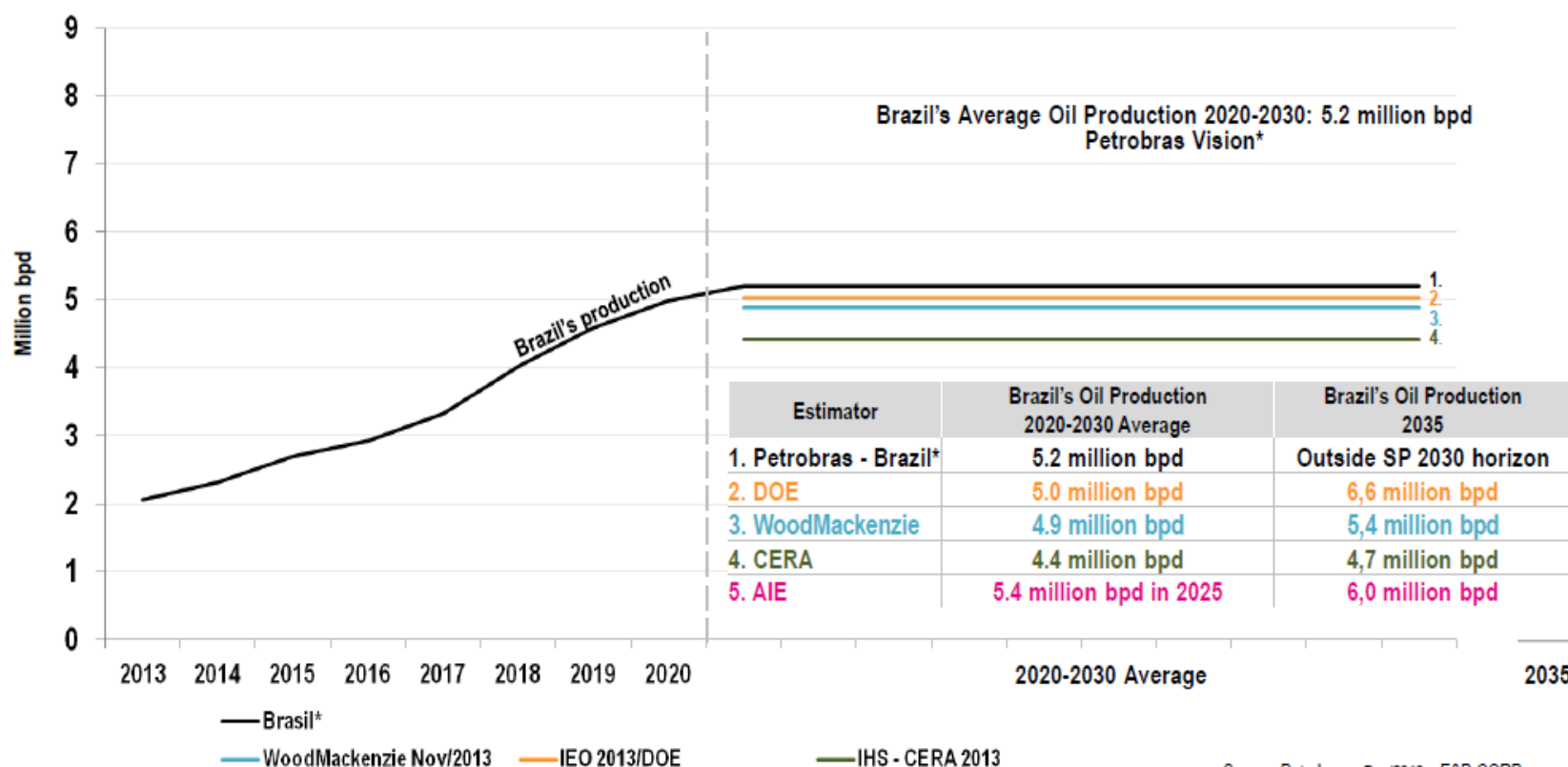


OLD COURSE BEFORE 2014

Oil and NGL production scenarios in Brazil



In 2035, according to estimators, Brazil's oil production will range from 4.7 to 6.6 million barrels of oil per day. International Energy Agency places Brazil as the 6th largest oil producer in 2035.



OLD COURSE BEFORE 2014

2014 – 2018 BMP: Financial Planning Assumptions



Financing analysis only incorporates projects under **Implementation + Bidding = US\$ 206.8 Billion**

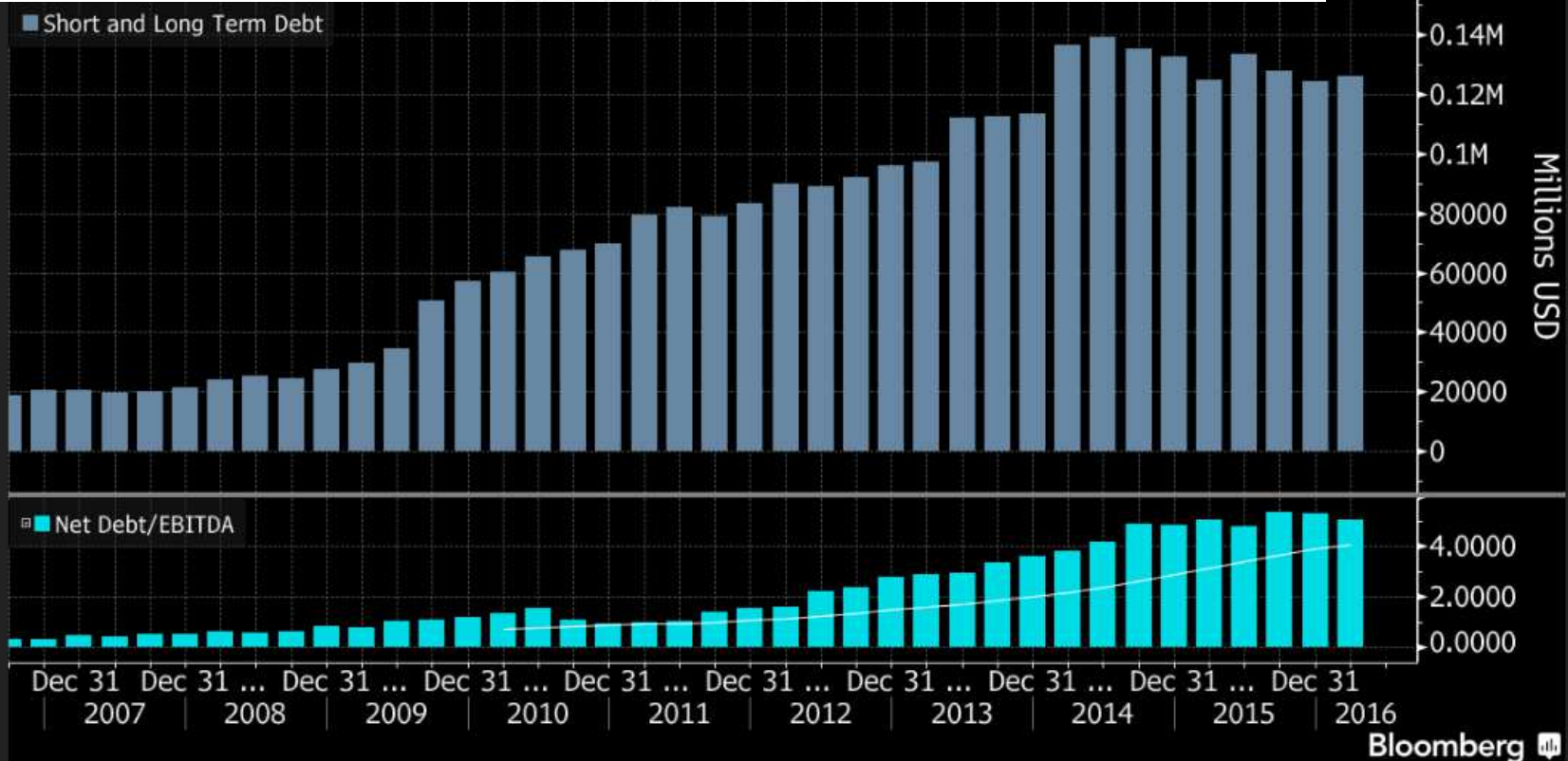
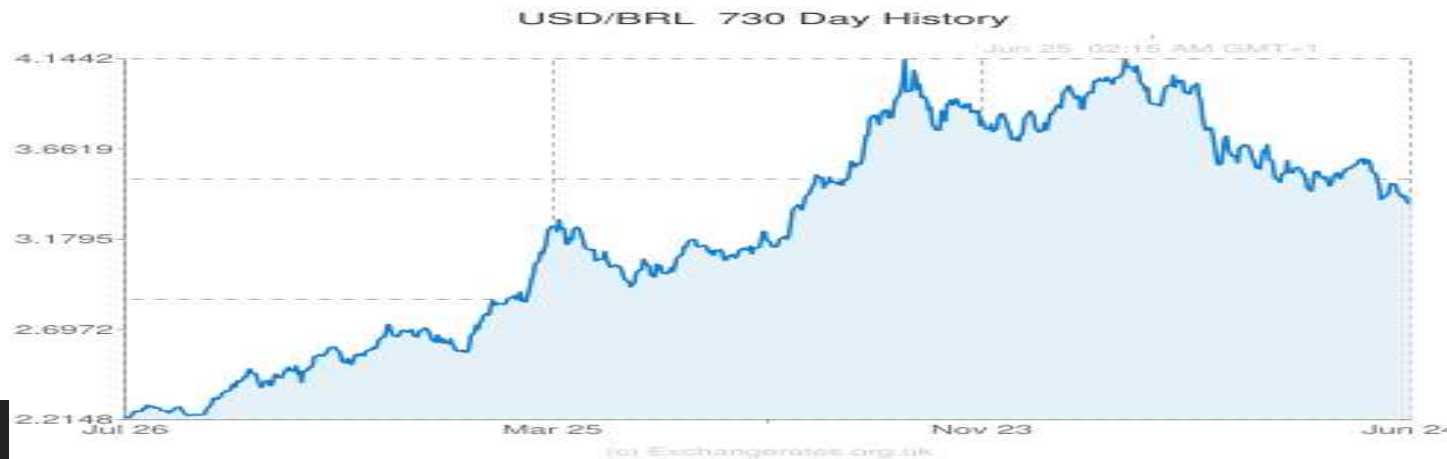
No equity issuance	Investment grade maintenance
Main Assumptions for Cash Flow Generation and Investment Levels	
2014-2018 BMP is based on constant currencies from 2014.	
Brent Prices (US\$/bbl)	US\$ 105 in 2014, declining to US\$ 100 by 2017 and to US\$ 95 in the long term
Average Exchange Rate (R\$/US\$)	R\$ 2.23 in 2014, strengthening to R\$ 1.92 in the long term
Leverage	Limit: < 35% Declining leverage (although limit surpassed in 2014)
Net Debt/ EBITDA	Limit: < 2.5x Limit will be surpassed in 2014 and will fall below 2.5x from 2015 and below 2.0x in the end of period
Oil Product Prices in Brazil	Convergence of prices in Brazil to international benchmarks, according to diesel and gasoline price policy appreciated by the Board of Directors on November 29 th , 2013.

BAROMETER IN FREE FALL

Oil Prices - Brent



BAD WEATHER



BAD WEATHER



- At the end of 2015, Spencer Dale, chief economist of BP, proposed that a new set of principles would be necessary to reflect the “The New Economics of Oil”.
- Our understanding of the **Global Oil Economy** has changed dramatically, considering these new principles in contrast to the past four core principles.

Core Principles (traditional understanding)	New Core Principles (new understanding)
(i) Oil is a finite resource	(i) Oil is not likely to be exhausted
(ii) Oil demand and supply curves are very price inelastic	(ii) Shale oil has different supply characteristics
(iii) Oil flows from east to west	(iii) Oil is likely to flow increasingly from west to east
(iv) OPEC stabilizes the oil market	(iv) OPEC remains a central force in the oil market

Source: Lathan & Watkins LLP

BAD WEATHER



1. Oil is unlikely to be exhausted

- For the past 35 years, two barrels have been added to reserves for each one consumed.
- Political pressure on curbing climate change= likely to limit consumption of fossil fuels, however as coal is the highest-carbon fuel it is most likely to be affected by policy.
- Technological progress= continues driving down costs for oil extraction in difficult environments

Source: Lathan & Watkins LLP

2. Different supply characteristics of shale oil

- Shale oil = in short run more responsive to price changes than conventional oil - drilling can be done in a matter of weeks- low fixed production costs but high variable costs. Since industry is finance-dependent it's more exposed to financial shocks.
- Shale oil = shock absorber for reducing price volatility-when prices fall shale oil supplies decline due to high variable costs. On price recovery, shale oil production increases thus helping prevent oil price spikes.

Source: Lathan & Watkins LLP

BAD WEATHER



3. Oil is likely to flow increasingly from west to east

- Demand for oil = falling in the west due to tighter regulation and technological advances. Meanwhile, economies in the Far East are increasingly dependent on energy imports. China and India likely to account for approx. 60% of global oil demand increase over next 20 years.
- North America = has become major energy supplier- US import demand has halved over the past eight years- US is expected to be energy self-sufficient by the early 2020s –for oil by early 2030s.

Source: Lathan & Watkins LLP

4. OPEC -remains a central force in oil market

- OPEC =accounts for about 40% of crude oil - stabilizes the market in response to temporary shocks in supply or demand . Dale questions OPEC's ability to respond to persistent shocks — such as US shale oil on the supply side or mass-produced electric cars on demand side.

Source: Lathan & Watkins LLP

TIME FOR CHANGE



WHY DO WE NEED TO CHANGE?

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NEW COURSE PASSAGE PLAN

Initial address ceremony - May 8 2016:

New CEO presents the pillars that should guide our management

"The first pillar is the consolidation of a new corporate governance, one that is able to ensure the company's full recovery and credibility among its shareholders, suppliers, the market, public and legal authorities, and the whole of society," he said. "The second pillar is the adoption of economic and financial responsibility in absolutely all company plans and actions," he remarked, noting that investments and actions must be clearly related to the ability to generate adequate economic return. The third pillar is strengthening risk management. "Risks include not only the strategic and operational ones, but also market, credit, and image risks, with careful attention to operating safety and environmental risks," he said.

NEW COURSE PASSAGE PLAN



MANAGEMENT IN PRICING POLICY IN PETROBRAS IS RESPONSABILITY OF EXECUTIVE BOARD ONLY

Política de Preços



Política Empresarial

- A gestão da Política de Preços na Petrobras é atribuição da Diretoria Executiva, conforme estabelecido no Estatuto Social.
- A Petrobras busca praticar preços competitivos, tendo como referência o mercado internacional de derivados.
- A Petrobras avalia permanentemente a competitividade de suas práticas e condições comerciais.

NEW COURSE PASSAGE PLAN



CNBC

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Brazil Senate votes to improve management of state companies

Tuesday, 21 Jun 2016 | 8:19 PM ET



REUTERS

SAO PAULO, June 21 (Reuters) - Brazil's Senate approved a bill on Tuesday that aims to improve governance and management at state companies by increasing transparency and setting competency standards for who can be appointed to run them.

The "law of responsibility for state companies" is an attempt to improve corporate decision-making after corruption scandals like the one at state-run oil producer Petrobras .

The measure, which now goes to the lower house of congress, would prohibit people with a union, ministerial or senior local government position from being nominated for top executive roles or a board seat at state companies.

(Reporting by Eduardo Simões; Editing by Peter Cooney)

Source: <http://www.cnbc.com/2016/06/21/reuters-america-brazil-senate-votes-to-improve-management-of-state-companies.html>



TRANSPETRO

NEW COURSE PASSAGE PLAN



Brazil's interim President Michel Temer has approved a law on state-controlled companies that imposes a ban on politicians or party campaigners taking a post during the three years after their involvement in an election, in a bid to curb corruption.

NEW COURSE PASSAGE PLAN

2015-2019 Business and Management Plan Targets



DELEVERAGE

Capital discipline

Strengthening of performance management

By 2018

- Net Leverage below 40%
- Net Debt / EBITDA below 3.0x

By 2020

- Net Leverage below 35%
- Net Debt / EBITDA below 2.5x

GENERATE VALUE FOR SHAREHOLDERS

Focus on profitability

E&P

Prioritization of oil production projects in Brazil, focusing on the pre-salt

Downstream,
G&P and
Other Areas





Maintenance of Operations

NEW COURSE PASSAGE PLAN





2015-2019 Business and Management Plan Adjustments

As adjusted in 12/jan/2016

Investments (US\$ billion)

	2015-2019 BMP	Adjustment - Oct/15	Current projection
2015	28 	25 	23
2016	27 	19 	20

Manageable Operating Costs¹ (US\$ billion)

	2015-2019 BMP	Adjustment - Oct/15	Current projection
2015	30 	29 	29
2016	27 	21 	under revision

NEW COURSE PASSAGE PLAN



As adjusted in 12/jan/2016

Investments – 2015-2019
(US\$ billion)

	Investments	%
Exploration and Production*	80.0	81
Refining, Transportation and Marketing**	10.9	11
Gas and Power	5.4	6
Other Areas ***	2.1	2
Total	98.4	100

* Includes investments abroad (US\$4.9 billion)

** Includes BR Distribuidora

*** Engineering, Technology and Materials; Financial; Corporate and Services; Governance, Risk and Compliance; and CEO's Office

This new 2015-2019 capex, of US\$ 98.4 billion, represents a reduction of US\$ 32 billion relative to the previous amount (US\$ 130.3 billion), and is a result of portfolio optimization (- US\$ 21.2 billion) and exchange rate effect (-US\$ 10.7 billion).

Source: Petrobras Business & Management Plan 2015-2019

NEW COURSE

Governance Structure



Construction of a new management model



- Created in the end of 2014 / Election in January 2015
- Independent Executive Officer hired from the market
- 3-year mandate, renewable for an additional 3-year period
- Chief GRC Officer must approve any matter submitted to the Executive Board
- Veto power in the decision-making process
- Integration with business and support areas, although independent
- Assist the areas in designing and implementing controls and evaluating their effectiveness

Committees

- **Special Committee**
 - Reporting line of the independent internal investigations carried out by specialized firms
 - Composed by: the GRC Executive Officer; Ellen Gracie Northfleet, former Ministry of the Federal Supreme Court; and Andreas Pohlmann, former Chief Compliance Officer of Siemens AG
- **Board of Directors and Independent Committees**
 - Strategic Committee; Financial Committee; Audit Committee; Safety, Environment and Health Committee; Remuneration and Succession Committee
- **Multidisciplinary Investment and Divestment Committee**

NEW COURSE PASSAGE PLAN



GOVERNANCE, COMPLIANCE AND CONFORMITY MEASURES

Due Diligence in Integrity – We have made the supplier management process stricter to increase security in goods and services and to mitigate risks of fraud and corruption. To be entered into the registration, companies must provide detailed information on the structure, finance, and compliance mechanisms to fight fraud and corruption. From August to November, 6,625 Integrity Due Diligence cases were opened by the Registration System.

Denunciation Channel - Petrobras' new Denunciation Channel, operated by an independent and specialized company, in which - in addition to reporting the identified situation - the complainant can monitor the progress made in addressing his or her complaint.

Denunciation Channel is reaching its goal and that the results show the tool is credible. In 13 days, the new channel has received 195 records of complaints and denunciations, including cases of theft or fraud.



Source: www.petrobras.com.br

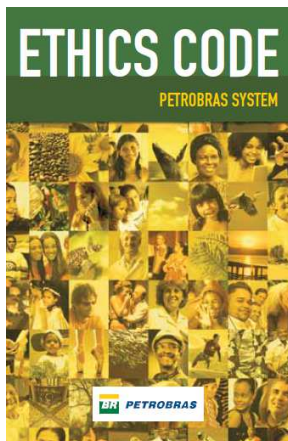
NEW COURSE PASSAGE PLAN



GOVERNANCE, COMPLIANCE AND CONFORMITY MEASURES



Training - One of the compliance measures was the number of trainings conducted. In 2015, an audience of over 3000 people was reached through lectures or on-site courses. By 2016, the goal is to train 100 percent of the employees through various means, including e-learning. Among the topics of the training sessions are the Brazilian Anti-Corruption Act, the American Anti-Corruption Act (FCPA - Foreign Corrupt Practices Act), the Code of Ethics, and the Conduct Guide.



Source: www.petrobras.com.br



Petrobras
Conduct Guide




NEW COURSE PASSAGE PLAN

GOVERNANCE, COMPLIANCE AND CONFORMITY MEASURES

The Petrobras Corruption Prevention Program (PCPP) features continuous actions to prevent, detect and correct acts of fraud, corruption and money laundering, as set out in this program.

The program is designed for our different stakeholders, such as: customers, suppliers, investors, partners, public authorities, employees and outsourced service providers.

A graphic element consisting of a green rectangle with a yellow diagonal stripe running from the bottom-left corner to the top-right corner. The text 'PETROBRAS CORRUPTION PREVENTION PROGRAM' is written in white capital letters on the green background, with a small yellow horizontal line below the word 'PROGRAM'.

**PETROBRAS
CORRUPTION
PREVENTION
PROGRAM**

NEW COURSE PASSAGE PLAN

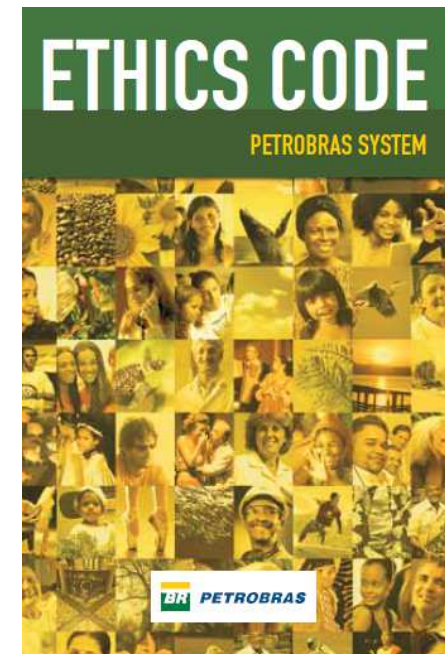
Governance, Compliance and Conformity Measures

The Petrobras Conduct Guide is composed of practical measures to implement the Petrobras System Code of Ethics (Code of Ethics) and other regulations. It encompasses all people subject to the Code of Ethics and presents the conduct to be adopted, guided by the principles of respect, honesty and responsibility, among others. This conduct makes up the basic rules for ethical action.

The types of conduct described here should be viewed as orientation for behavior in situations in people's professional lives or in situations arising from them.

Through this guide, Petrobras intends to prevent deviations in conduct, promoting the dissemination of educational guidance and activities, without prejudice to the application of appropriate disciplinary measures when any such deviations are identified.

Source: www.petrobras.com.br



Petrobras
Conduct Guide

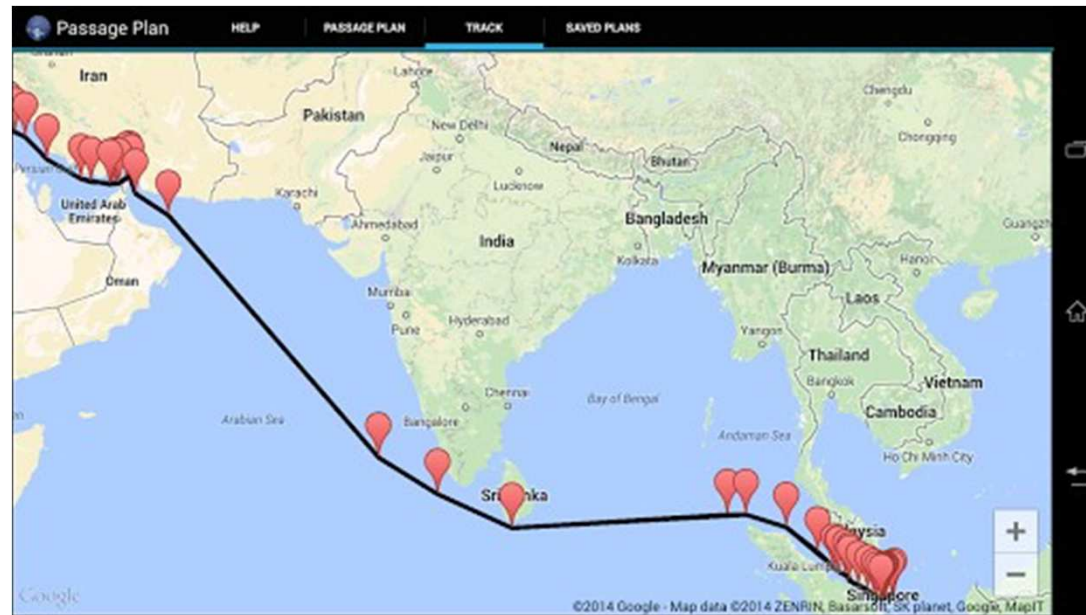
IN TRANSPETRO MARITIME TRANSPORT

What is in progress to change?



NEW COURSE

Critical Points to Pass Storm in Transpetro



- **Keeping strong focus on health, environment and safety**
- **Operational and financial discipline**
- **Total synergy between Transpetro and Petrobras**
- **Optimize performance management and costs control**
- **Built a new management model**
- **Review and adequacy of internal controls**
- **Start looking for new clients**

NEW COURSE

Export of Oil from Brazil



Brazil increased by 52% amount of oil exported in 2015

The amount of crude oil exported by Brazil increased 52% between January and October this year, driven by higher domestic production and orders for large markets like China and the United States.

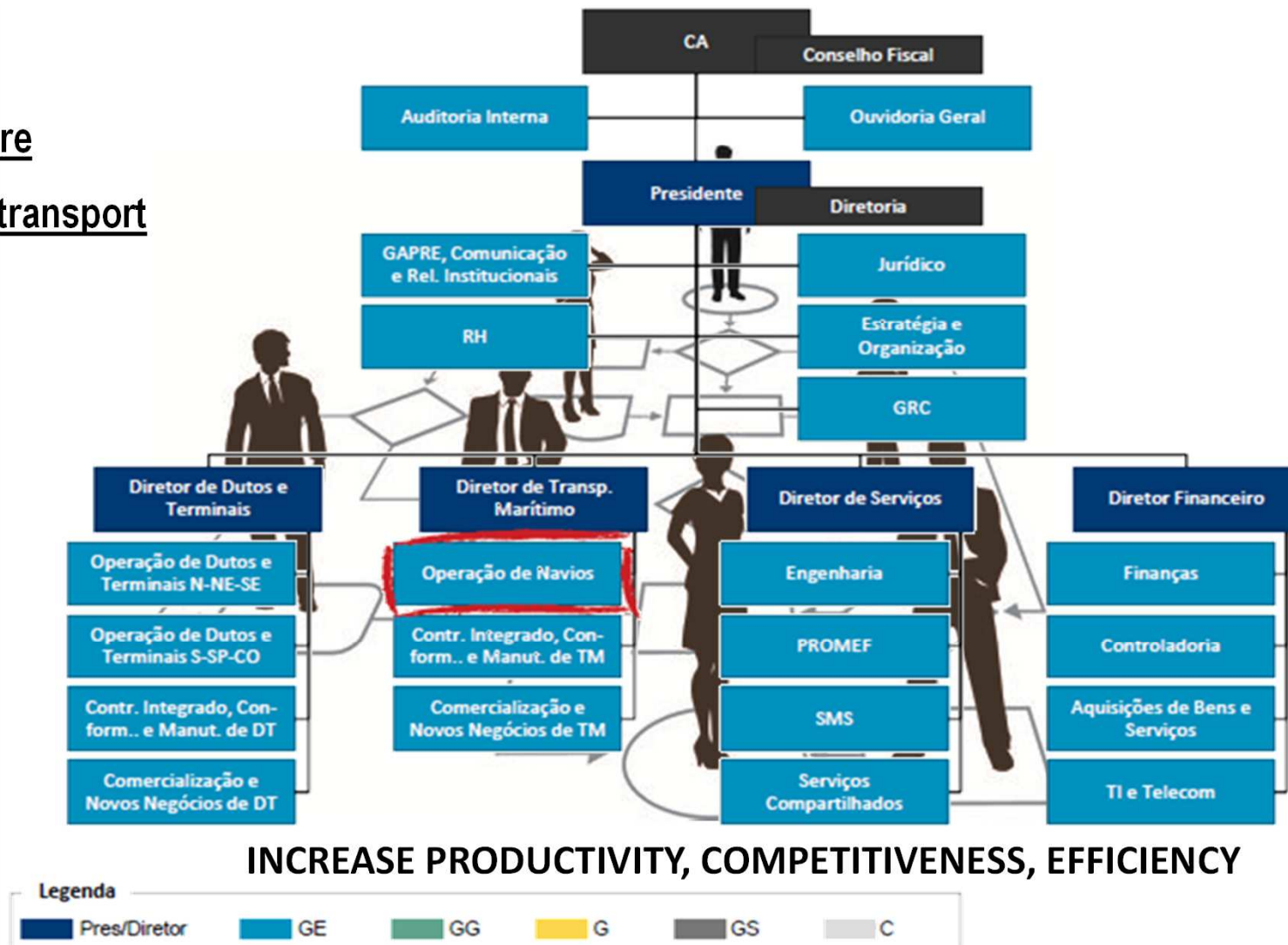
The performance gives impetus to the trade balance and increases the inflow of funds in the country.



IN TRANSPETRO MARITIME TRANSPORT

What is in progress to change?

New structure
in maritime transport



INCREASE PRODUCTIVITY, COMPETITIVENESS, EFFICIENCY

IN TRANSPETRO MARITIME TRANSPORT

What is in progress to change?

- New structure in maritime transport
- **New management program ship 1000**



INCREASE PRODUCTIVITY, COMPETITIVENESS, EFFICIENCY

IN TRANSPETRO MARITIME TRANSPORT

What is in progress to change?

- New structure in maritime transport
- New management program ship 1000
- **New clients**



IN TRANSPETRO MARITIME TRANSPORT



What is in progress to change?

- New structure in maritime transport
- New management program ship 1000
- New clients
- **Repair team**



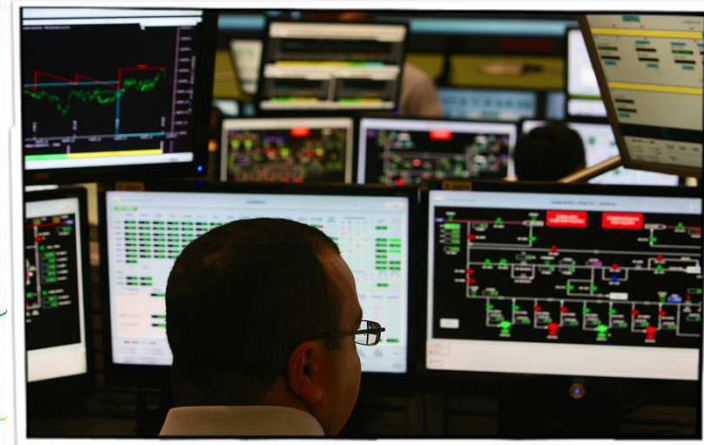
INCREASE PRODUCTIVITY, COMPETITIVENESS, EFFICIENCY

IN TRANSPETRO MARITIME TRANSPORT

What is in progress to change?

- New structure in maritime transport
- New management program ship 1000
- New clients
- Repair team
- **Adjusts in ships Manning /drydocking/Builting Program**

INCREASE PRODUCTIVITY, COMPETITIVENESS, EFFICIENCY



IN TRANSPETRO MARITIME TRANSPORT

What is in progress to change?

More use of Big Data



- CNAN – SHIP'S NAVIGATION AND MONITORING CENTER

WHY DO WE NEED TO CHANGE?

TRANSPETRO MARITIME TRANSPORT PERSPECTIVE

1. WHY DO WE NEED TO CHANGE ?
 2. HOW ARE WE CHANGE ?
 3. **CONCLUSION**
-

TO SHAPE VUCA WORLD WITH VUCA



CLARITY

Create clarity and focus. Accept what you do not do and make clear decisions based on the information

VISION

Keep the big picture in mind all the time. Know what your vision is and work towards it, maintaining a

UNDERSTANDING

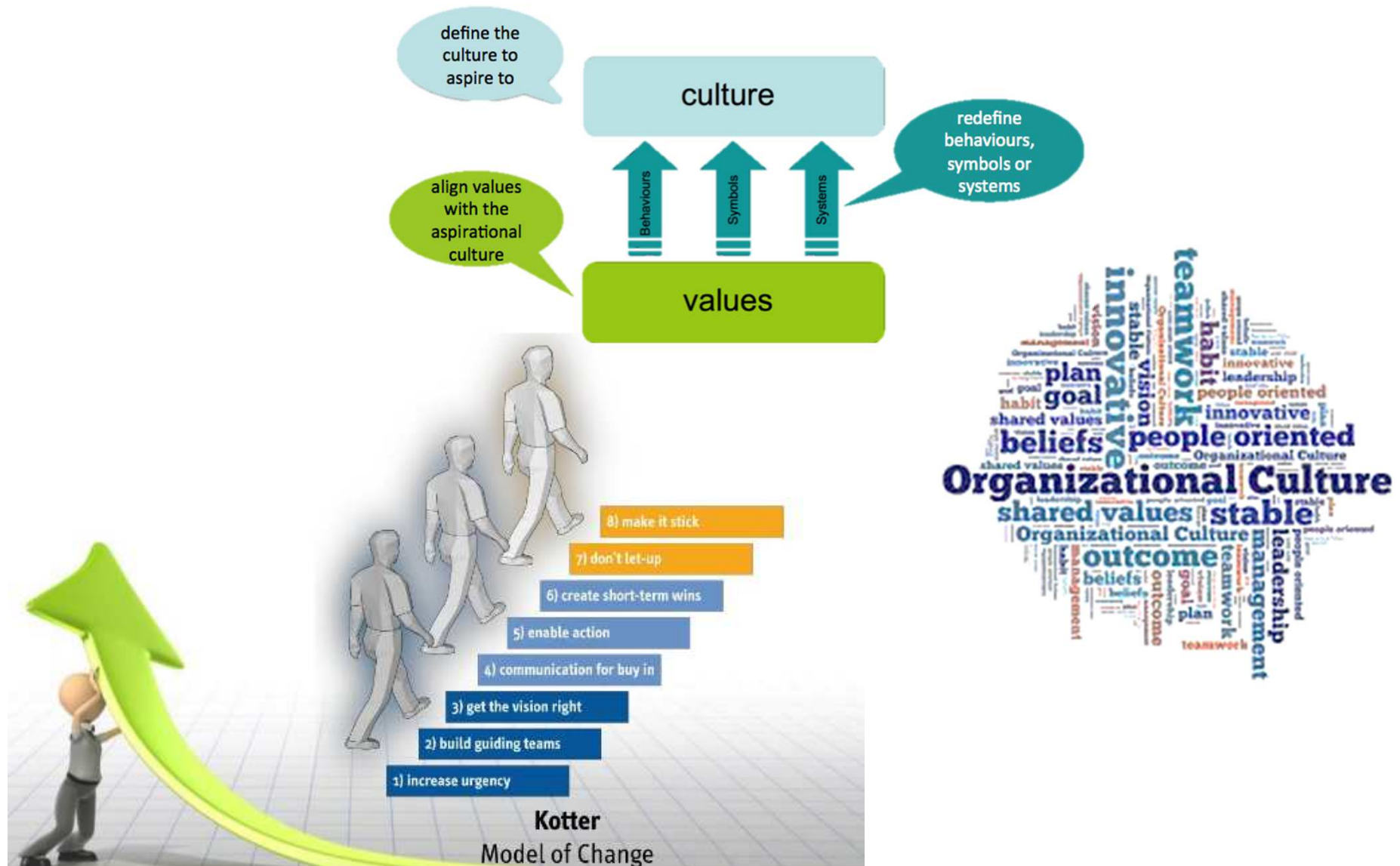
Create security for people so that they can get on with their job. Break down tasks into smaller

AGILITY

Involve people, communicate as openly as you can and get feedback from others. The more you

CULTURAL CHANGE TO NEW COURSE

Kotter's Theory of Change



BAD WEATHER CONTINUES



INCREASE PRODUCTIVITY, COMPETITIVENESS, EFFICIENCY

- Oil and other fossil fuels are still projected to be the dominant form of energy as we look ahead to the 2020s and 2030s.
- Demand for oil is likely to continue to rise in developing economies with burgeoning middle classes, increased urbanization and industrialization — most notably the growing Far Eastern economies led by China and India.
- Technological progress, pressure to curb climate change and the shale industry = likely to dampen these effects- interesting to see if the hypothesis of shale oil as a shock absorber holds true in the long run.
- Demand for oil in the west = falling due to tighter regulation and technological advances, however growing Far Eastern economies increasingly dependent on energy imports (China and India=likely to account for 60% of global oil demand increase over next 20 years).

World Bank: Crude oil, \$/barrel

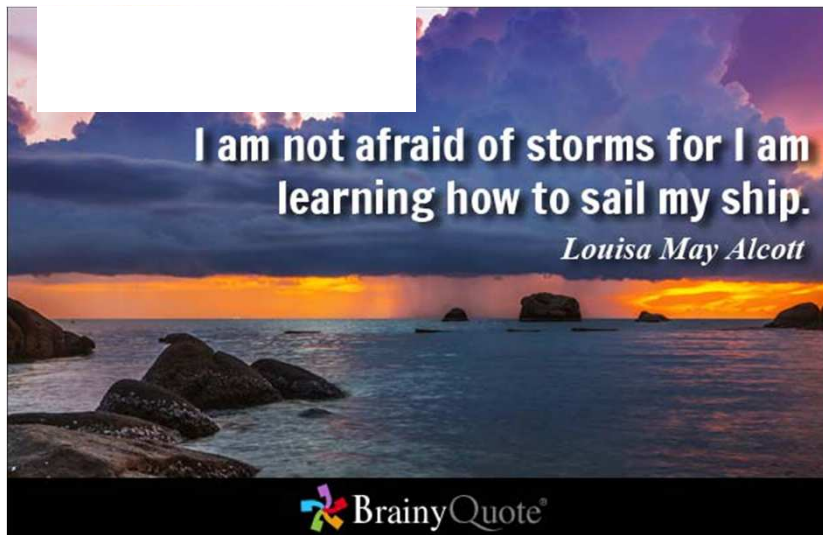
2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
96.2	50.8	41.0	50.0	53.3	56.7	60.4	62.9	67.3	72.0	77.1	82.6

Source: [World Bank Commodity Forecast Price Data, April 2016](#)

EIA: Brent Crude oil, \$/barrel

2014	2015	2016	2017
98.89	52.32	40.52	50.65

Source: EIA US Energy Information Administration, May 2016



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► Frase de Luís de Camões



“Jamais haverá ano novo se continuar a copiar os erros dos anos velhos.”

LUÍS DE CAMÕES



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MUITO OBRIGADO E FIQUEM COM DEUS.
THANK YOU VERY MUCH