

OTC2017

OFFSHORE TECHNOLOGY CONFERENCE
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LIBRA PROJECT

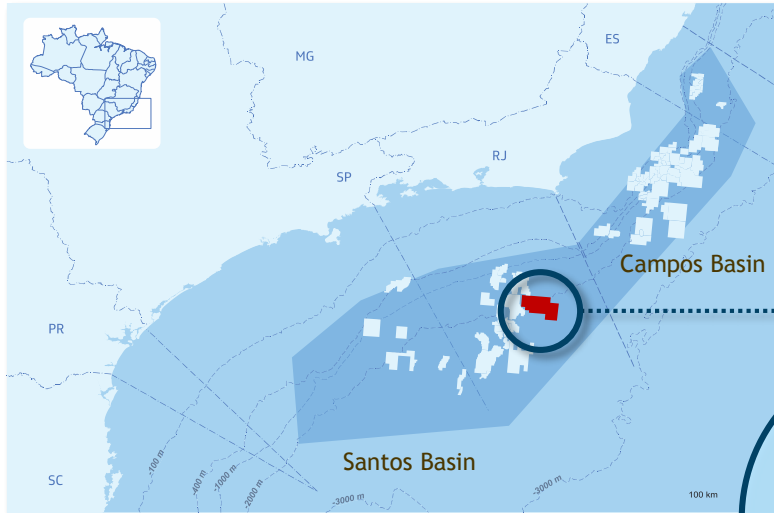
Reducing Breakeven and Preparing for First Oil

Fernando Borges, Libra Project, Petrobras

Joint Venture Operator



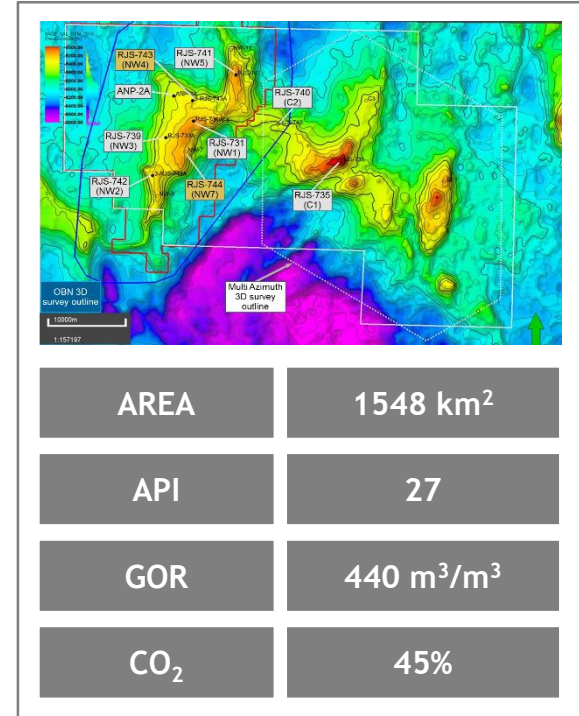
LIBRA IS A DEEP-WATER PRE-SALT PROJECT IN A GIANT STRUCTURE



LOCATED IN SANTOS BASIN

164 KM OFFSHORE RIO DE JANEIRO

WATER DEPTH: 2100 M



LIBRA PRODUCTION SHARING CONTRACT (PSC) - OVERVIEW

To maximize the contract's value it is necessary to create drivers to optimize cost recovery

KEY DEFINITIONS OF CONTRACT

- Total duration of 35 years (not renewable).
- Exploration phase: 4 years, until Dec. 17, (extendable).



Fixed rate of 15 % of total production.

- 50% on the 1st and 2nd years, after 30%¹
- Recovery begins after declaration of commerciality; Cost recognition depends on PPSA's approval;
- There is no monetary correction.

Federal Union share (41.65%), varying according to the wells' productivity and Brent price

Consortium's share:



DRIVERS

- Advancing the commercial production to begin cost recovery
- Synchronizing the expenditure with the cost recovery (e.g. prioritization of charter contracts)
- Maximizing costs recognition to preserve the project's profitability
- Contracting dedicated resources for the project

LIBRA DEVELOPMENT STRATEGY IS DIVIDED IN TWO STAGES: DATA ACQUISITION AND PRODUCTION OPERATION

PHASE 0 - DATA ACQUISITION (2014 - 2020)

Seismic

- Reprocessing of existing seismic;
- Acquisition of a new 3D seismic OBN.

Wells

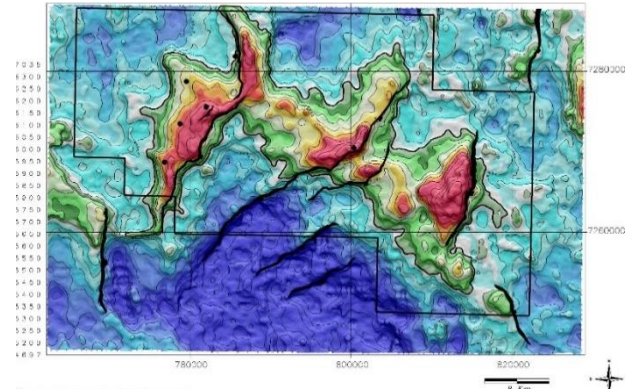
- 11 appraisal wells until Declaration of Commerciality;
- 5 wells between 2018 and 2021.

Production systems

- 1 Extended Well Test (EWT);
- 3 Early Production Systems (EPS);
- 1 Production System (Libra 1)

PHASE 1 - PRODUCTION OPERATIONS (2021 - 2030)

- +3 Production Systems in the NW region
- Potential for deployment of additional production systems in the Central and Southeast regions (to be confirmed by 2019).



WHAT WE HAVE DONE SO FAR

ACQUISITION OF 1,548 KM2 OF 3D SEISMIC

WELLS:

✓	8	drilled
✓	2	drilling on going
✓	4	tested
✓	3	completed



WHAT WE HAVE DONE SO FAR

2 RIGS 6TH GENERATION DP3 DRILLSHIP
HIRED FOR LIBRA:



West Tellus



West Carina

LIBRA PAD FOR NW AREA (DISCOVERY
EVALUATION PLAN) WAS SUBMITTED TO ANP.

ACQUISITION OF 4 X-TREES FOR THE EWT AND
1ST EPS FROM PNBV TO LIBRABV.



WHAT WE HAVE DONE SO FAR

OCEAN BOTTOM NODES (OBN) CONTRACTED FOR LIBRA:



Full Azimuth

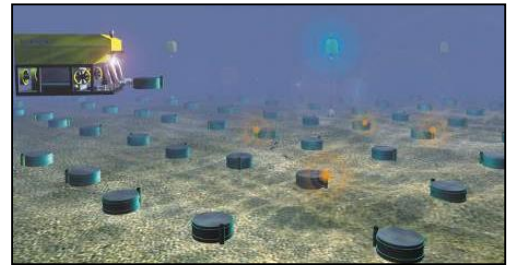
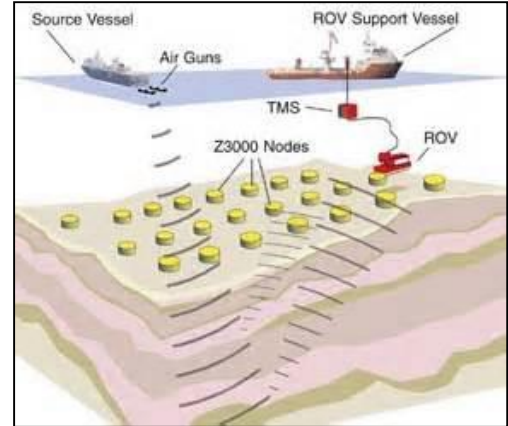


Broadband



Repeatability (4D)

ISSUED PREVIOUS LICENSE (LP) FOR EWT
WITH ASSOCIATED TECHNICAL OPINION



WHAT WE HAVE DONE SO FAR

HSE CULTURE:



HSE Dashboard



Rig Auditing process

INCREASINGLY INFORMED

GENERATIVE

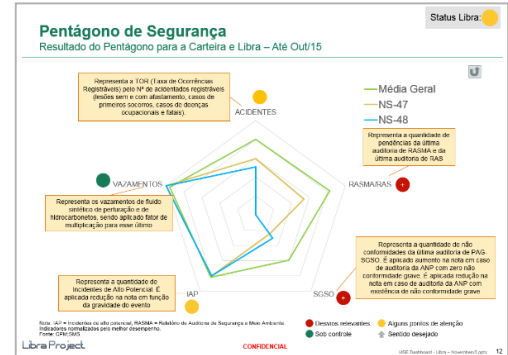
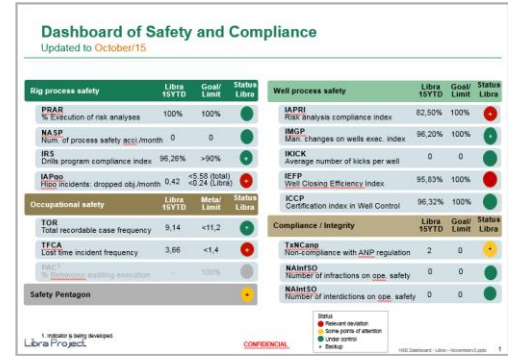
PROACTIVE

CALCULATIVE

REACTIVE

PATHOLOGICAL

INCREASING TRUST AND ACCOUNTABILITY



WHAT WE HAVE DONE SO FAR

EWT FPSO SAILED AWAY FROM SINGAPORE



WHAT WE HAVE DONE SO FAR

PILOT FPSO CALL FOR TENDER:



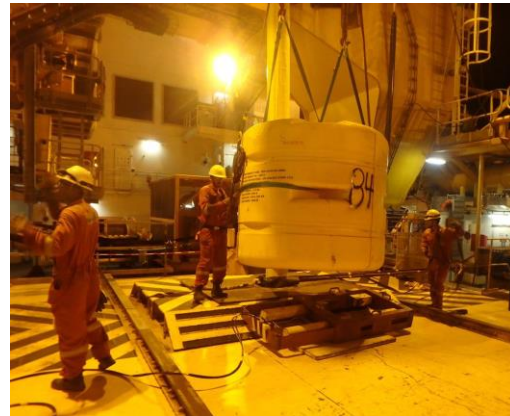
The FPSO will have **180k bpd** oil capacity, **12MMm3/d** gas capacity and **225k bdp** water injection capacity, and is certainly among the most complex FPSO projects in the industry.



WHAT WE HAVE DONE SO FAR

ISSUED INSTALLATION LICENSE (LI) FOR EWT WITH ASSOCIATED TECHNICAL OPINION

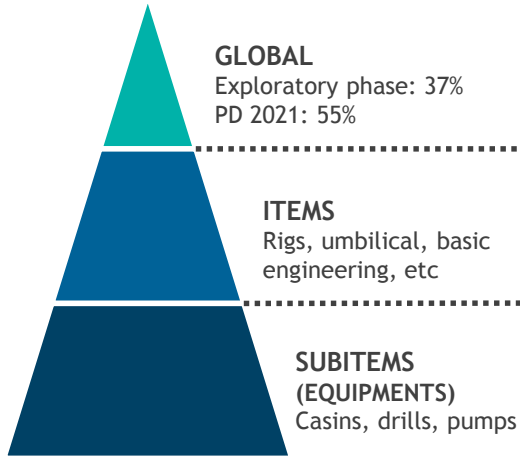
BEGINNING OF MOORING AND SUBSEA INSTALLATION FOR EWT



LOCAL CONTENT COMMITMENTS

Waiver negotiation with ANP is fundamental

3 LC REQUIREMENT LEVELS



LC FINES: 60% -100% OF THE
“UNREALIZED LC”

EXONERATION OF LC (WAIVER) IS POSSIBLE FOR ITEMS AND SUB-ITEMS

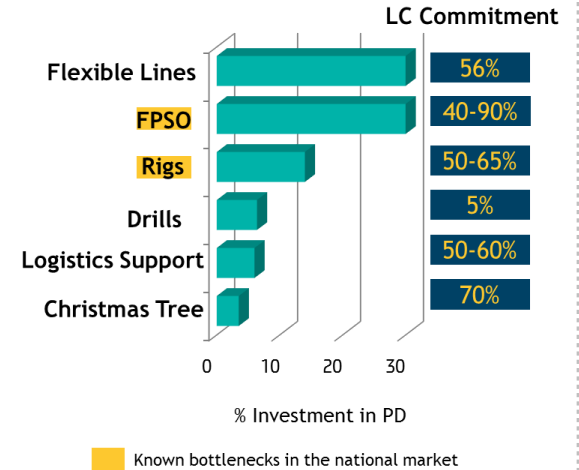
WAIVER NOT APPLICABLE

WAIVER IS APPLICABLE WHEN:

- There is no Brazillian supplier
- Excessive duration
- Excessive price
- New technology

MAIN ITEMS PER % INVESTMENT

Main items per % Investment



WAIVER REQUEST GUIDELINE

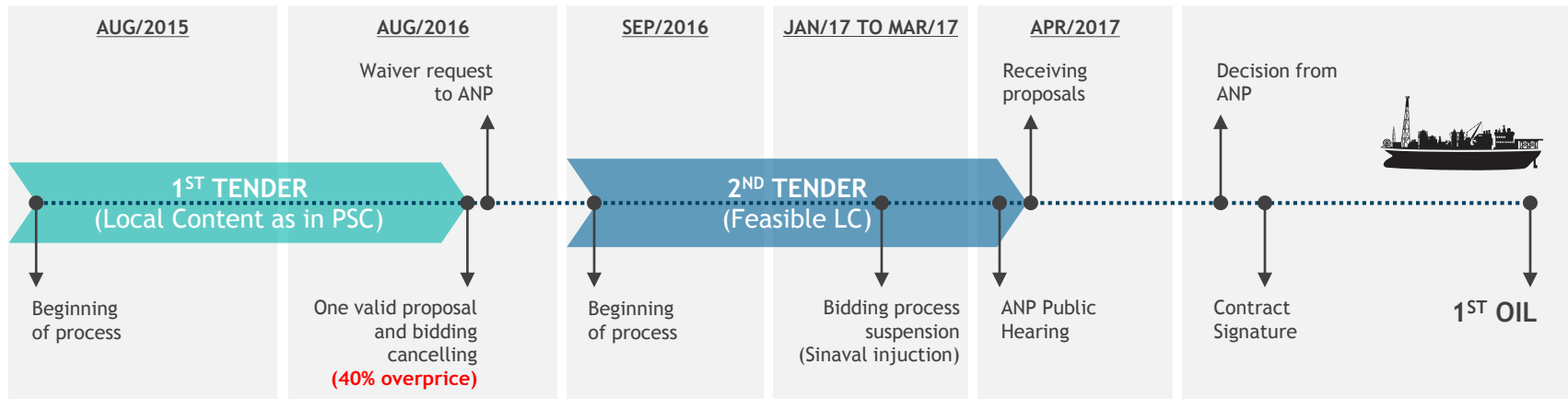
The PSC provides the possibility of the Libra Consortium being exempted from the obligation of compliance with the local content in relation to the contracting of goods and services by:

Absence of local suppliers;

Excessive prices;

Excessive delivery terms;

Technological replacement.



LIBRA PARTNERS

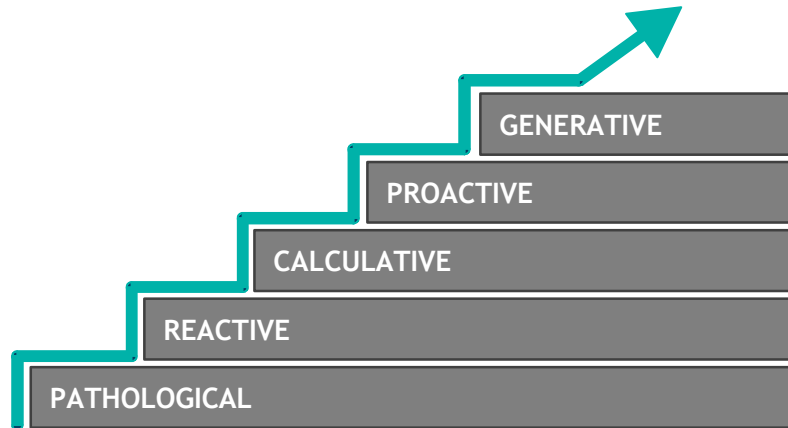
Six different companies from different parts of the world with different backgrounds and different philosophies for project development and operations working together as a fully integrated team



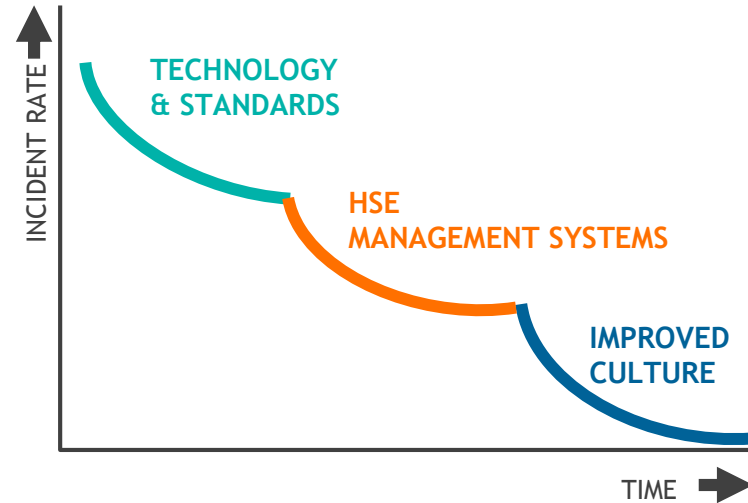
RESULTS OF COLLABORATION IN LIBRA

HSE CULTURE PLAN

HSE CULTURE LADDER



HSE PERFORMANCE OVER TIME



TECHNOLOGY APPROACH

Libra benefits from the collaboration of major companies. We are a joint industry project in terms of project based technology development. Creating:

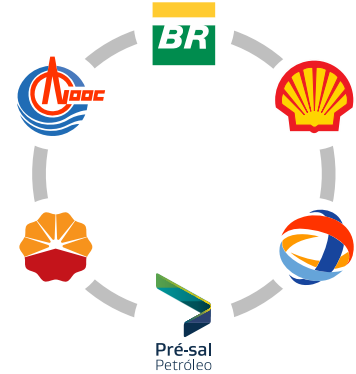
Global Technology Transfer

Technology Pull

Ownership for the Technology

Direct Application Link









Easy Assessment of Technology Value



Libra leverages existing technology and aims to identify and close technology gaps in an integrated approach to maximize project value

LIBRA @35

Initiative Leverages Existing Petrobras Corporate Cost Optimization Programs

TOPIC	CAPEX*		OPEX	
	WELLS	SUBSEA	OPERATIONS	OVERHEAD
RELEVANT PETROBRAS CORPORATE PROGRAMS	  INICIATIVES CUSTOMIZATION  INICIATIVES ENHANCEMENT	  INICIATIVES CUSTOMIZATION  INICIATIVES ENHANCEMENT	 INICIATIVES CUSTOMIZATION  INICIATIVES ENHANCEMENT	

The combined effect of cost reduction and increase in Recovery Factor can lead to competitive break-even prices

LIBRA @35 STRATEGIC INITIATIVE AIMS AT ENSURING PROJECT'S COMPETITIVENESS UNDER LOW OIL PRICES

Key levers to reduce break-even price are: CAPEX reduction and enhanced production

CAPEX reduction can come partially from declining prices from equipment and services

Goal is to achieve a break-even price of US\$35/bbl (all NW region - point forward)

Closing Remarks

The **exploratory** wells that have been drilled up until now **demonstrate the great potential of Libra's Northwest area**, which may hold up to **4 new production systems**.

The management of the projects in a **multidisciplinary and dedicated fashion** has brought **agility** in the **analyses and decisions**.

The presence of the **partners in the project team**, unprecedented in Brazil, **bring new points of view** on Petrobras' assumptions for project development, **enhancing the results** and bringing robustness to the project.

PPSA, as manager of the contract, has actively **participated** in the project **implementation discussions**.

Critical factors to keep and increase project profitability:

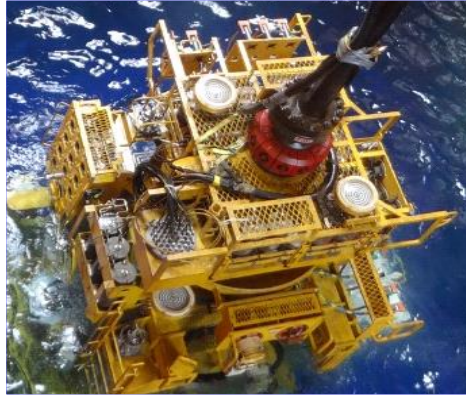
- **Costs** reduction
- **Production** increase
- **Successful** LC waiver negotiations with ANP

FINAL CONSIDERATIONS

COLLABORATION 2.0



FPSO PIONEIRO DE LIBRA
EWT Program



First X-Tree installation

“If you have an apple and I have an apple and we exchange these apples then you and I will still each have one apple. But if you have an idea and I have an idea and we exchange these ideas, then each of us will have two ideas.”

George Bernard Shaw

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Thank You



Joint Venture Operator

