

PNV – 2450

LOGÍSTICA E TRANSPORTES

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TRANSPORTE OFFSHORE



Associação Brasileira das Empresas de Apoio Marítimo



ABEAM – Associação Brasileira das Empresas de Apoio Marítimo



- **Foundation: April 1977**
- **Main objective is contribute to the development of the national maritime support sector on the activities of production and exploration of hydrocarbons and minerals in the Brazilian continental shelf.**

Support Vessel - Overview

- 116 Brazilian companies authorized by ANTAQ.
- About 45 companies operating (in fact) in the support vessel activities.
 - 24 companies members of ABEAM.
- A fleet of 390 vessels (152 Brazilian / 238 foreign flag).

Support Vessel - Fleet

The support vessels can be split into the following main classes:

- *AHTS - Anchor Handling Tug and Supply, Anchor Handling, Towing and Supply.*
- *PSV - Platform Supply Vessel - Vessel supply platforms*
- *RSV - ROV Support Vessel – Vessel equipped with remotely operated vehicle*
- *DSV - Diving Support Vessel - Dive support vessels*
- *SV - Mini supply*
- *LH - Line handling - Handling of spies*
- *FSV - Suppliers of fast loads*
- *Crewboat- Transporting crews to the platforms*
- *MPSV - Multipurpose Supply Vessel - Multiple Activities*
- *OSRV - Oil Spill Response Vessel - Fighting oil spill*
- *WSV-Well Stimulation Vessel - Stimulation of wells*
- *PLSV - Laying Pipe Support Vessel - Construction and pipelay*

Support Vessel - Fleet

Class	Brazilian	Foreign	Total
PSV	79	106	185
AHTS	16	88	104
LH / SV	40	8	48
CREW / FSV	8	12	20
RSV / ROV	5	10	15
MPSV	3	11	14
Others	1	3	4
Total	152	238	390

Source: ABEAM (Jul2011)

Support Vessel - Fleet

AHTS – Handling Tug Supply



PSV – Platform Support Vessel



Fire Fighting



WSV – Well Stimulation Vessel



Support Vessel - Fleet

MS – Mini Supridor



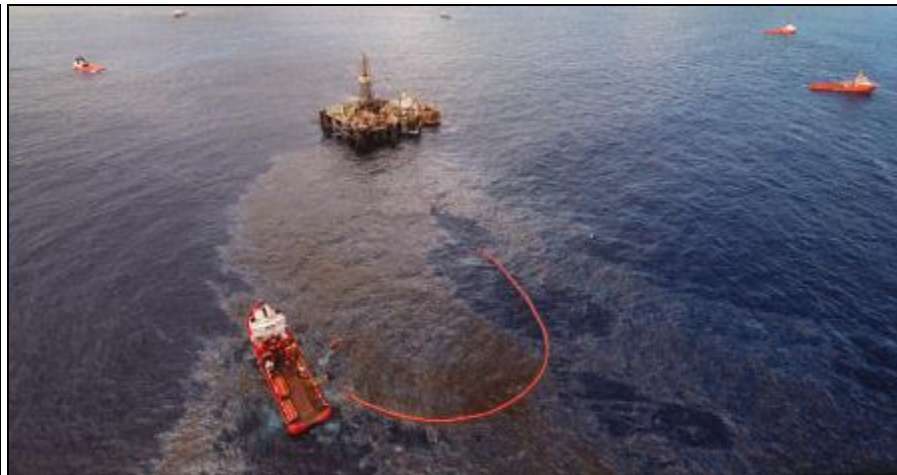
CB – Crewboat



UT – Utility



OSRV - Oil Spill Response Vessel



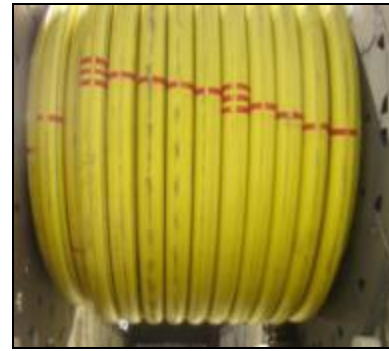
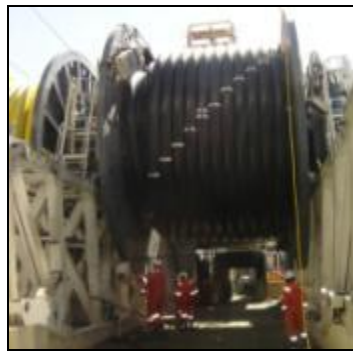
Support Vessel - Fleet

RSV – ROV Support Vessel



Support Vessel - Fleet

PLSV – Pipe Laying Support Vessel – Flexible Pipelines and Umbilicals



Support Vessel - Fleet

PLSV – Pipe Laying Support Vessel – Rigid Pipeline and Subsea Construction



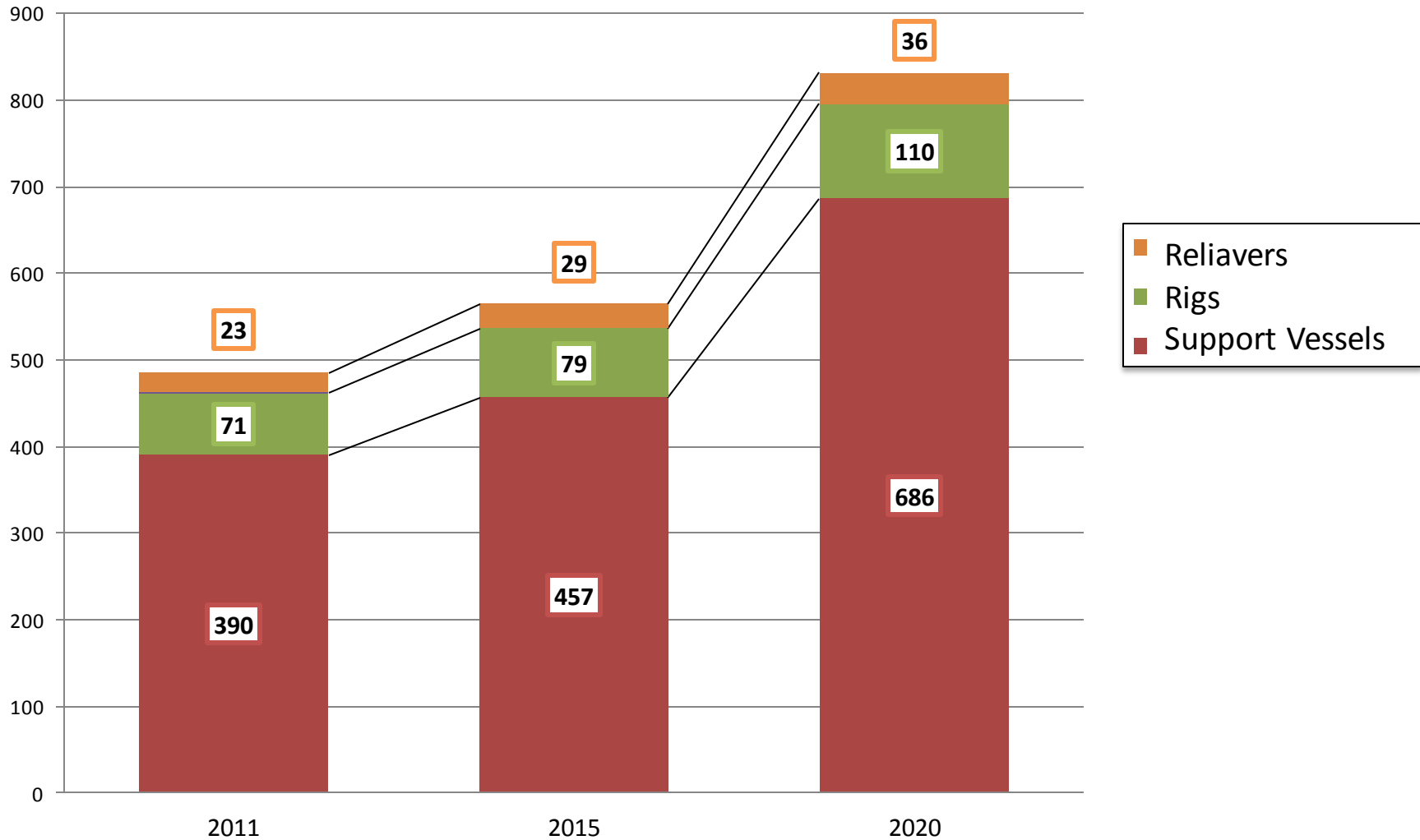
Support Vessel - Main O&G Operators / Clients



BG BRASIL

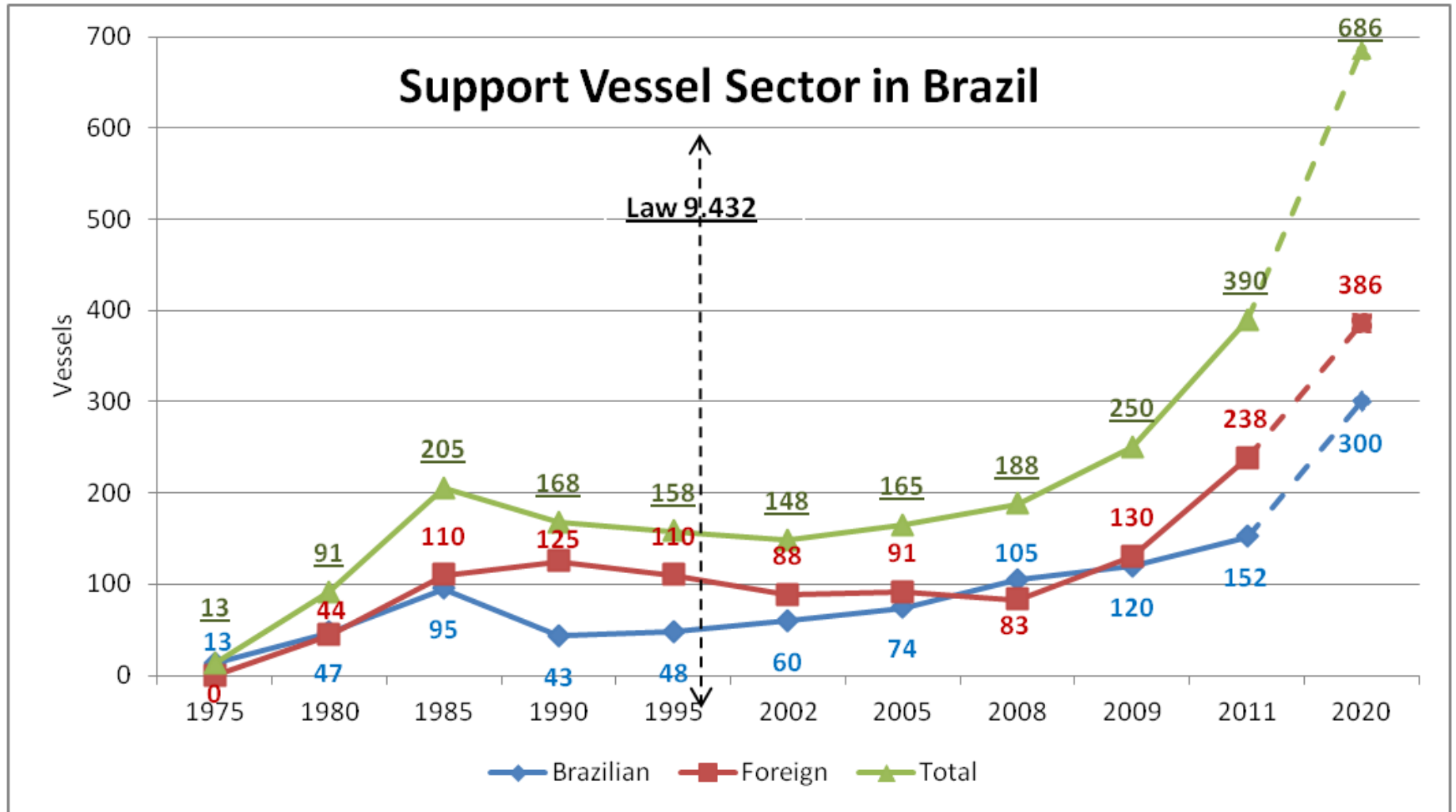


Support Vessel Forecast Scenario



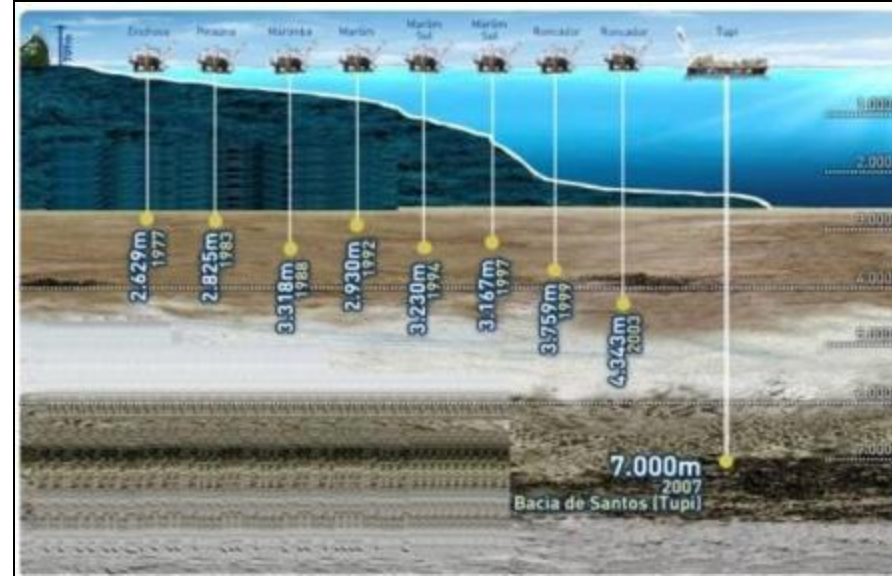
Source: SYNDARMA (Jul2011)

Support Vessel Sector in Brazil



Challenges and Barriers

- First oil production targets are audacious;
- Ultra deep water depth - 2,200m;
- Fields located more than 300km from the coast;
- Large reserves with high volumes to be produced;
- Reservoirs with considerable concentration of CO₂ and H₂S
- New province (Santos Basin) far from the current offshore pole (Campos Basin / Espírito Santos Basin);



Challenges and Barriers



Brazilian Crew

- High demand for merchant navy officers.
- High cost of wages of the crews.
- Extremely difficult to train crews and technicians.
- Deficit of +760 officers in the merchant navy in 2013.
- Typical composition of AHTS vessel types, RSV, and PLSV WSV is up to 22 marine crew and 20 to 50 technical professionals.



Contractual Structure

- Brazilian legislation is complex and subject to many taxation and rules.
- The contract of our main client, Petrobras, is general and not flexible, considering risk distribution and liabilities.
- How to have a clean contract with the right/fair risk distribution.



Vessel Importation (foreign flag) is subject to the following rules:

- Circularization - (60 + 7) days prior to the importation of the vessel
- RN 72 requires huge number of Brazilians in all crew positions - 1 / 3 after 90 days and 2 / 3 after 180 days.
- Period of validity of 12 months for the CAA's
- REPETRO - bureaucratic and delays to release imported vessels and equipment.

Challenges and Barriers



Complex logistic to meet the new loads and dimensions of equipment and subsea pipelines, to the big distance from the coast and the current operations centres (Campos Basin / Espírito Santos Basin);



New solutions of logistic processes becomes crucial. Also bases and vessels capable of attend the new provinces;



Production goals will require a review of current models of hiring, legislation, training policies and staff training, among others.



Availability of sites specialized on the construction of sophisticated offshore support vessels to meet anticipated demand, and dockings of class and the emergence of a fleet of approx. 300 vessels.

Conclusion

- The challenges are huge and difficult to overcome, requiring major investment in a short time;
- Given the range of challenges, it is necessary that the industry is engaged in various fronts, without disregarding prior alternatives or technologies that may prove themselves to be necessary in the future;
- Both the suppliers of oil and gas, but mainly the operators, must find new ways of working together to gain greater flexibility in the process of developing solutions;
- The formation of a skilled workforce will be a critical task due to the expected growth in demand allied with the need for technological upgrading of existing professionals to follow the advent of new technologies;
- The Public institutions should be convened to debate in order to allow and perform all this effort on required time.



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