Regulatory overview – Highlighting Challenges within Offshore Decommissioning in Brazil

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Highlights

- Encourage E&P activities to benefit Brazilian society;
- Expand and enhance the dialogue between regulated entities, industry and civil society;
- Update regulation, minimizing barriers to investment and reduce the costs imposed by regulation;
- Promote productivity and simplify organizational processes
Brazil in perspective

• Proven reserves - Almost 14 billion barrels of oil and 430 billion m3 of NG;
• Billions of oil barrels already discovered waiting to be produced;
• 3,3 millions bbl/day of oil (~50% from pre-salt fields);
• 158 offshore production units, 24 drilling rigs, almost 20 new production units up to 2022;
• 42% offshore production units are more than 25 years of operation – considerable decommissioning scenario for the next 5 years;
• 4 bidding rounds in 2017 (total of 10 up to 2019).
• Strong regulatory incentive to increase the recovery factor of the fields.
Aging platforms in Brazil

Offshore Decommissioning Scenario

- < 15 anos: 67, 42%
- 15 - 25 anos: 61, 39%
- >= 25 anos: 30, 19%

- Fixa: 86, 54%
- Fixa (Concreto): 16, 10%
- FPSO: 44, 28%
- FSO: 6, 4%
- SemiSub: 2, 2%
- Outras: 3, 2%
Aging platforms X Sedimentary basins

- Camamu-Almada: 1 platform
- Campos: 22 platforms (15 - 25 anos: 15, >= 25 anos: 7, < 15 anos: 1)
- Ceará: 9 platforms (15 - 25 anos: 3, >= 25 anos: 6)
- Espírito Santo: 3 platforms (15 - 25 anos: 3, >= 25 anos: 0, < 15 anos: 0)
- Potiguar: 10 platforms (15 - 25 anos: 7, >= 25 anos: 3)
- Santos: 2 platforms (15 - 25 anos: 1, >= 25 anos: 1, < 15 anos: 0)
- Sergipe/Alagoas: 21 platforms (15 - 25 anos: 4, >= 25 anos: 17, < 15 anos: 0)
Relinquishment of the Field

1. Once the Production Phase is completed, the Field shall be relinquished to ANP.

2. The Concessionaire must submit to ANP a Facility Decommissioning Program, detailing all actions required for the decommissioning of the facilities, within no less than three hundred and sixty-five (365) days before the end of Production.

   The Facility Decommissioning Program shall strictly comply with the Applicable Laws and Regulations and the Best Practices of the Oil Industry (...
Resolution ANP nº 27/2006
Decommissioning of facilities

Decommissioning Program

- Rationale for decommissioning
- Inventory of facilities to be decommissioned
- Facilities that will not be removed and reasons why
- Procedures: pipelines cleaning, disposal operations, environmental recovery, etc.
- Schedule for the decommissioning program

Final Decommissioning Report

- Details about the decommissioning activities carried out emphasizing aspects of safety barriers and environmental protection, pictures, etc...
Offshore decommissioning

- According to Brazilian environmental legislation, all the offshore facilities must be removed from site. Exceptions will be assessed by maritime and environmental authorities

  - Production facilities up to 4,000 tons and up to 80m depth, should be completely removed. Occurring seabed erosion process, stakes and well casings must be cut 20 m below the seabed
- **Production facilities, whose removal is not technically advisable, should have the steel jacket cut below a depth of 55 m**
Resolution ANP nº 43/2007
Establishes the Operational Safety Management System (SGSO) for offshore production and drilling units.

Resolution ANP nº 41/2015
Establishes the Subsea Safety Management System (SGSS).

Resolution ANP nº 46/2016
Establishes the Well Integrity Management System (SGIP).

- Guarantee the asset integrity management during all asset lifecycle
- Decommissioning must be based on risk analysis and management
- Inspections and maintenance plans must be implemented during all asset lifecycle
Some improvements

• Comparative assessment (safety, environmental, financial, social, etc...) as a decision making tool

• Clear definition of the minimum content for the decommissioning program

• Non prescriptive regulation, with the objective of creation of an environment for development of decommissioning best practices, including risk assessment, pre and post decommissioning inspection and monitoring, etc

• The same Decommissioning Program must be presented for all regulatory bodies (ANP, IBAMA, Navy)
Some improvements
Inspection and monitoring

Pre - Decommissioning

• Inspection of subsea installations (inventory and conditions)
• Environmental baseline survey (physical, chemical and biological parameters in water column and sediments)

Post - Decommissioning

• Debris survey (clearance post removal)
• Environmental survey (physical, chemical and biological parameters in water column and sediments)
• Conditions of instalations left in place
Some questions...

✓ Concerning shallow waters, should the resolution define a limit of 80 m which the facilities must be removed or should the decision be always the result of the comparative assessment?

✓ Is the use of production facilities as artificial reefs really feasible in Brazilian context (monitoring liability along the years)?

✓ How to address NORM disposal?

✓ What should be the pre and post decommissioning monitoring criteria (frequency, parameters...)?

✓ How to address Coral Sol and any other bioinvasive species?
Thank You!

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