

December 18, 2019

## Monthly Upstream Report: November 2019 Global Projects – Brazil Starts the Fourth FPSO of 2019 in Pre-Salt Area

Stratas Advisors

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### Global Upstream Summary

In November, global upstream activity was busy with new oil and gas exploration and new project developments: two noteworthy gas discoveries were made in China and Australia, respectively. Projects with first production were announced in offshore Brazil and China, onshore Egypt and Tunisia; and five other projects located offshore Thailand, Cambodia, Russia and Norway made notable progress. Lastly, seven A&D transactions involving operating assets round out the month's operating asset headlines. New oil and gas discoveries could unveil an estimated resource of around 1.5 Trillion cubic feet of natural gas. The value of these A&D transactions is estimated at as much as US \$6 billion. Notably, in ultra-deep water Brazil, Petrobras started P-68 FPSO operation in Berbigao project. So far, it is the fourth start-up FPSO of Petrobras this year in pre-salt region.

Development projects of significance during this month include the Berbigao in ultra-deep water in Campos Basin of Brazil; the Aerfugl Phase 1 and Phase 2 projects in Norwegian Sea; the South Disouq onshore Egypt; the Nawara project onshore Tunisia; the Caofeidian 11-1/11-6 project in Bohai Bay, China; the Ubon project in offshore Thailand; the Apsara project offshore Cambodia; and the Triton project in Okhotsk Sea, Russia. The Caofeidian 11-1/11-6, Berbigao, South Disouq and Nawara projects started first production which altogether are going to produce up to around 220,000 b/d of oil and 380 MMcf/d of natural gas at plateau to global hydrocarbon supply. The Ubon project aims for Front End Engineering Design (FEED) soon, expecting its first production in 2023 with 12,000 b/d of oil capacity and 39 MMcf/d of natural gas capacity; The Apsara project is currently under Engineering, Procurement and Construction (EPC) stage, and is targeting first production in 2020. Aerfugl Phase 1 and Phase 2 projects are also under EPC stage, being developed through subsea tieback to Skarv FPSO, and targeting first production in 2020.

Stratas continues to monitor the upstream scene. Key projects on our radar include Noble Energy operated Leviathan stage 1 project, which is going to start first gas production by December; Also, the Liza phase 1 project will start up first production via the Liza Destiny FPSO in December. The project will produce 120,000 barrels per day of oil at peak, the second phase will output 220,000 barrels per day of oil in mid-2022, and the third phase is set to start-up by 2023. In addition, Equinor operated Barnacle project is going to come onstream and will bring 180,000 b/d of oil production capacity in December.

### Upstream Calendar

December 2019 GUPA Calendar

| Monday        |                           | Tuesday       |  | Wednesday     |  | Thursday      |                                   | Friday        |                          |
|---------------|---------------------------|---------------|--|---------------|--|---------------|-----------------------------------|---------------|--------------------------|
| Project/Event | Note                      | Project/Event | Note   | Project/Event | Note   | Project/Event | Note                              | Project/Event | Note                     |
| 2             | Buzios Phase 4 onstream 4 | 3             | Dongfang Development onstream 4<br>BIG-P project starts first production 1 | 4             | Stonefly onstream 4  | 5             | the 177th Meeting of the OPEC 1   | 6             |                          |
| 9             |                           | 10            | Dorado project Conceptual stage 4  | 11            | Alaska leasing sale 1<br>Leviathan Stage 1 onstream 4<br>Afina-1 oil discovery 1 | 12            |                                   | 13            |                          |
| 16            |                           | 17            |  | 18            |  | 19            |                                   | 20            |                          |
| 23            |                           | 24            | Stratas Advisors Holiday   | 25            | Stratas Advisors Holiday   | 26            | Barnacle field first production 4 | 27            |                          |
| 30            |                           | 31            | ExxonMobil Norway Assets<br>Divestment to Vaar energi Wrap up 4            | 1             | Stratas Advisors Holiday   | 2             | Stratas Advisors Holiday          | 3             | Stratas Advisors Holiday |

January 2020 GUPA Calendar

| Monday        |                          | Tuesday       |                              | Wednesday     |   | Thursday      |   | Friday        |                               |
|---------------|--------------------------|---------------|------------------------------|---------------|---|---------------|---|---------------|-------------------------------|
| Project/Event | Note                     | Project/Event | Note                         | Project/Event | Note  | Project/Event | Note                                    | Project/Event | Note                          |
| 30            |                          | 31            |                              | 1             | Stratas Advisors Holiday                    | 2             | Stratas Advisors Holiday                | 3             | Stratas Advisors Holiday      |
|               |                          |               |                              |               | Mozambique sixth<br>licensing round 4       |               | Myanmar New Acreages<br>Bidding Round 4 |               |                               |
| 6             |                          | 7             |                              | 8             |   | 9             |   | 10            |                               |
| 13            |                          | 14            | Dorado project FEED 4        | 15            |   | 16            | Ubon FEED Stage 4                       | 17            |                               |
| 20            | Stratas Advisors Holiday | 21            | Alaska leasing plan closes 1 | 22            | Senegal first offshore<br>licensing round 4 | 23            |   | 24            |                               |
| 27            |                          | 28            |                              | 29            |   | 30            |   | 31            | South Sudan Licensing Round 4 |

Sources: Stratas Advisors research, company reports and other public sources

Notes

1. New entry
2. Previously reported, no change
3. Previously reported, revised
4. Specific date unknown, expected in month

Data Source: Stratas Advisors' research

Picture 1: Location Map of Global Upstream Projects Developments Updates in November 2019

