

West Coast of Africa Well Intervention Market Overview

Sam Scarpa, Offshore Network

INTRODUCTION

With oil reserves of 129.1 billion barrels, Africa holds 7.6% of the world's proven reserves. More specifically, the West Coast of Africa is home to the continent's two largest producing countries, Nigeria and Angola, while Equatorial Guinea, the Congo and Gabon have proven oil reserves not dissimilar to those found in the United Kingdom.¹

While the West Coast of Africa has been on the radar of many well intervention contractors for a while, it is fair to say that workover and P&A activity has recently been ramping up all the way from Mauritania to Angola. A multitude of factors can be linked to this increase in well work projects, including:

- **Regulatory Imperatives:** As West African nations develop their oil & gas regimes, more scrutiny is being applied to operators to ensure they truly maximise the value of their assets during production and make sure that both financial and operational plans are put in place for safe P&A and decommissioning activities.
- **Oil Price:** As in other parts of the world, the current oil price has led to a decrease in drilling activity and is forcing operators to look at their existing well stock for ways of increasing production and maximising ROI.
- **Technology:** While investment is still being pumped into exploration projects throughout the region (BP announced a US\$1bn partnership with Kosmos in Mauritania and Senegal² and 8 of the top-20 discoveries in 2015 were in Africa³), regional and international operators are looking at innovative technologies that will lower the cost of well intervention and increase the efficiency of operations for existing fields.

This paper is designed to outline well intervention and P&A opportunities available to contractors in the West Coast of Africa by analysing regional levels of activity, operator well stock and major projects.

Disclaimer:

Whilst every effort has been made to ensure the accuracy of the information contained in this publication, neither Offshore Network Ltd nor any of its affiliates past, present or future warrants its accuracy or will, regardless of its or their negligence, assume liability for any foreseeable or unforeseeable use made thereof, which liability is hereby excluded. Consequently, such use is at the recipient's own risk on the basis that any use by the recipient constitutes agreement to the terms of this disclaimer. The recipient is obliged to inform any subsequent recipient of such terms. Any reproduction, distribution or public use of this report requires prior written permission from Offshore Network Ltd.

1. BP Statistical Review of World Energy 2016, Energy Information Administration (USA) (EIA), Websearch, The LNG Industry GIIGNL Report, 2016 Edition, Rystad Energy
2. http://www.oilreviewafrica.com/aaccpp/DigitalMagDownload/ORA_1_2017_Final.pdf p.36
3. <https://www.pwc.co.za/en/assets/pdf/oil-and-gas-review-2016.pdf>

WEST AFRICAN WELL WORK HOT SPOTS

MAURITANIA

After being named one of the top 4 exploration hot spots in 2013 by BNP Paribas, Mauritania has recently seen major offshore investments from the likes of BP and Total. While these fields remain at exploration stages, Mauritania is also witnessing a wave of decommissioning activity at the Chinguetti field following the exit of Petronas due to falling oil prices.

Government Representation: Ministry of Petroleum, Energy and Mines

GHANA

Ghana's offshore basins cover approximately 60,000 km² with offshore exploration dating back to the 1970's. Ghana's mainly deepwater assets include the Jubilee field where first oil was achieved in December 2010 following discovery in 2007. Main players include Tullow, Hess and Eni.

Government Representation: Ghana National Petroleum Corporation (GNPC)

CAMEROON

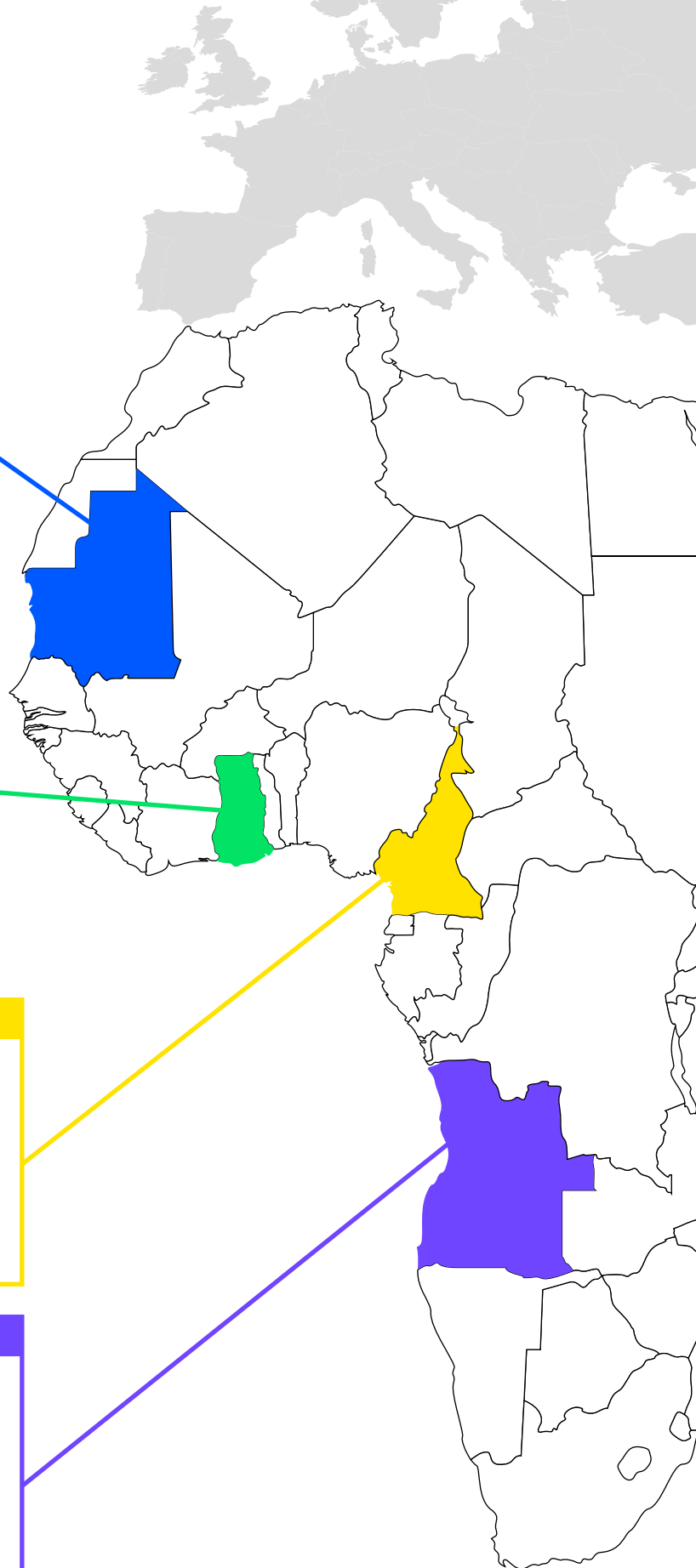
Offering both shallow and deepwater fields, Cameroon continues to emerge as a key African economy with the industrial port of Douala an important gateway to most of Central and West Africa. Perenco and Addax Petroleum are two of the main players with Perenco performing an important number of well interventions each year.⁵

Government Representation: National Oil Company, SNH

ANGOLA

With 75% of oil production coming from mainly deepwater offshore fields, estimates show Angola currently boasts 9.5 billion barrels of proven oil reserves and 11 trillion cubic feet of natural gas. BP describes Angola as one of its most important assets in its E&P portfolio⁴ while the Angolan continental shelf is the largest contributor to Statoil's oil production outside Norway.⁶

Government Representation: Ministry of Petroleum & Sonangol EP



4. https://www.bp.com/en_za/southern-africa/bp-in-southern-africa/Angola/Projects.html

5. <http://www.perenco.com/cameroon>

6. <https://www.statoil.com/en/where-we-are/angola.html>

WEST AFRICAN WELL WORK HOT SPOTS

NIGERIA

As the largest producer in Africa, Nigeria hosts international majors including Shell, Chevron, ExxonMobil and Total and is one of the few West African countries to boast both shallow and deepwater assets, as well as onshore fields.

Government Representation: Department of Petroleum Resources (DPR) & Nigerian National Petroleum Corporation (NNPC)

EQUATORIAL GUINEA

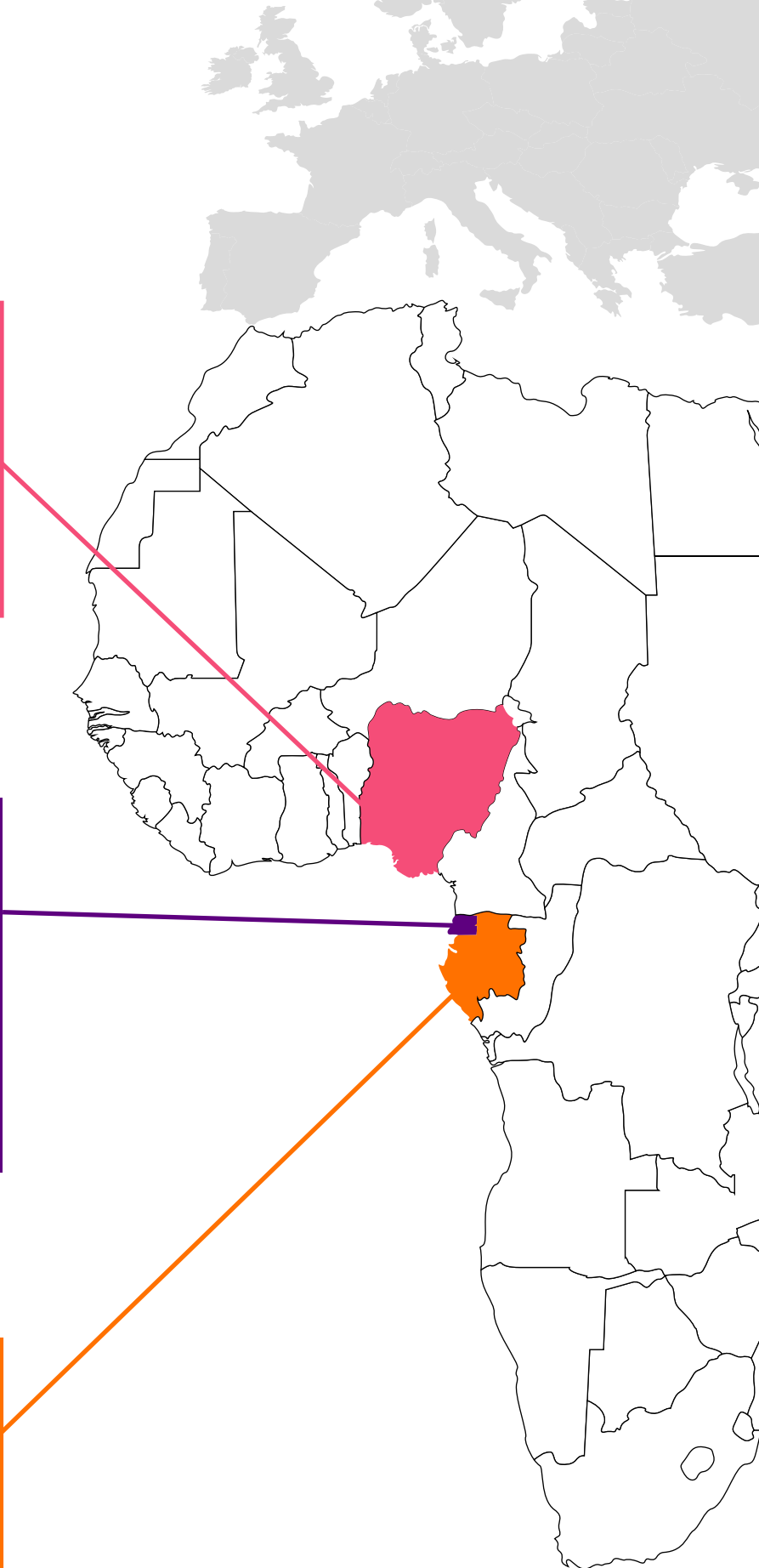
With exploration dating back to the 1990's, Equatorial Guinea hosts a number of operators including Mobil Equatorial Guinea (MEGI), Hess, Marathon and Noble Energy. Stringent decommissioning rules and several ultra-deepwater wells make Equatorial Guinea a country to look out for when it comes to upcoming activity.

Government Representation: Ministry of Mines, Industry and Energy (MMIE) & GEPetrol

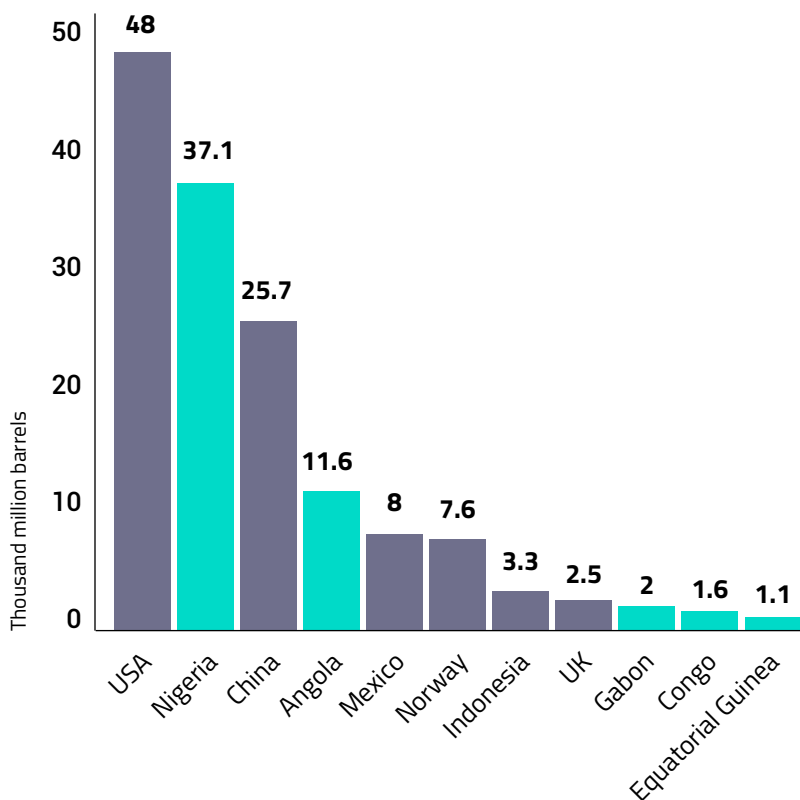
GABON

According to the Oil & Gas Year, Gabon's 19 deepwater plays cover an area of 128,000 km, or just over 50% of the country's total acreage. These are operated by 10 companies, including players such as Marathon Oil, Total, Perenco, Ophir and Vaalco.

Government Representation: Ministry of Petroleum and Hydrocarbons & Gabon Oil Company (GOC)

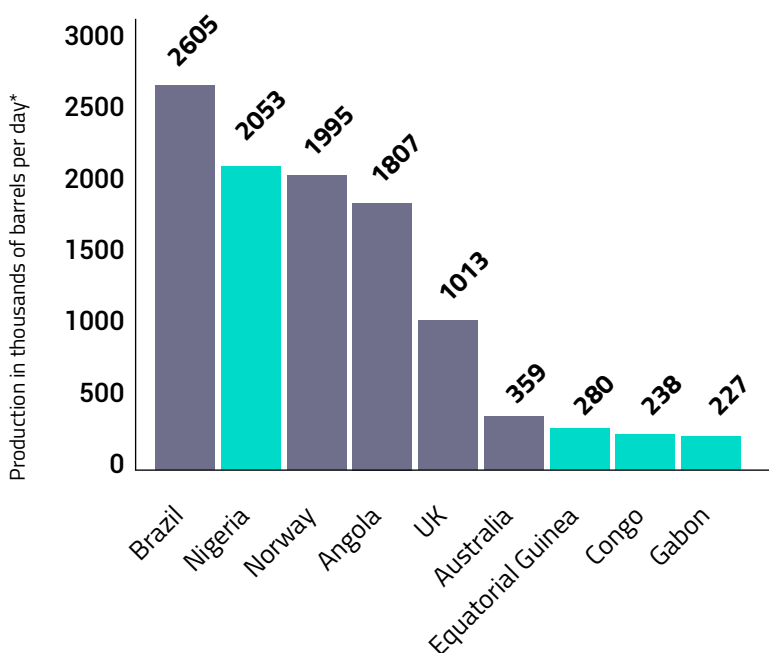


PROVEN OIL RESERVES IN THOUSAND MILLION BARRELS



Proven reserves	Thousand million barrels
USA	48
Nigeria	37.1
China	25.7
Angola	11.6
Mexico	8
Norway	7.6
Indonesia	3.3
UK	2.5
Gabon	2
Congo	1.6
Equatorial Guinea	1.1

PRODUCTION IN THOUSANDS OF BARRELS PER DAY



Production	Thousand barrels daily
Brazil	2605
Nigeria	2053
Norway	1995
Angola	1807
UK	1013
Australia	359
Equatorial Guinea	280
Congo	238
Gabon	227
Total World	92150
Total Africa	7892

Source: BP Statistical Review of World Energy - June 2017