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STATUS OF AFRICAN A&D & FUTURE OUTLOOK: SUNRISE OR SUNSET?

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2 March 2017

AGENDA

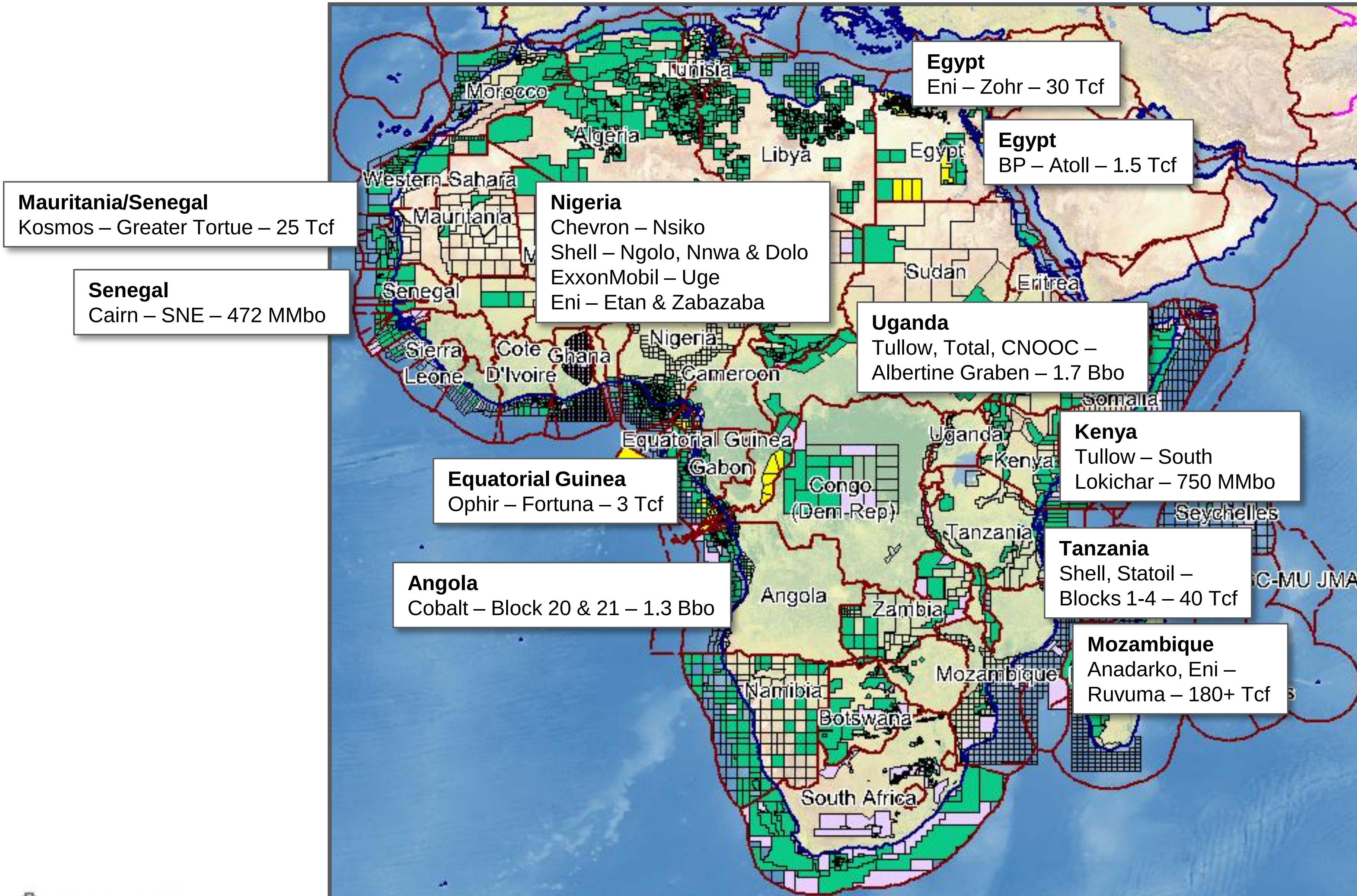
Status of African A&D & Future Outlook: Sunrise or Sunset?

- Introduction
  - Major farm-in deals of 2016-2017

- E&P operations by country
  - Egypt
  - Algeria
  - Mauritania
  - Senegal
  - Nigeria
  - Gabon
  - Congo
  - Angola
  - Mozambique/Tanzania
  - Kenya/Uganda
  - Somalia

- Conclusions

MAJOR UNDEVELOPED DISCOVERIES



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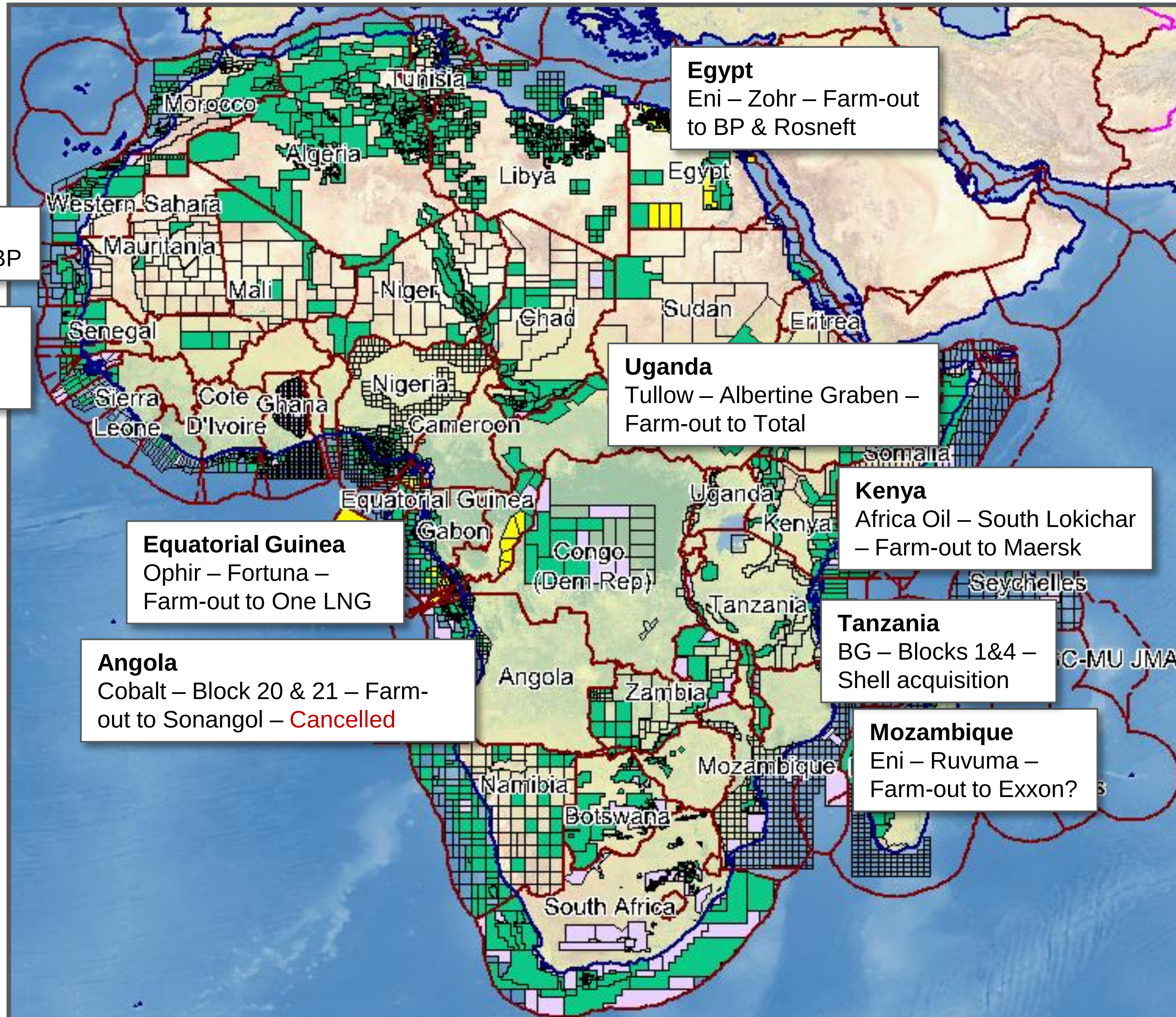
MAJOR FARM-IN DEALS OF 2016-2017 - 1



Egypt
Eni – Zohr – Farm-out to BP & Rosneft

Mauritania/Senegal
Kosmos – Tortue – Farm-out to BP

Senegal
ConocoPhillips – SNE – Farm-out to Woodside

Uganda
Tullow – Albertine Graben – Farm-out to Total

Kenya
Africa Oil – South Lokichar – Farm-out to Maersk

Equatorial Guinea
Ophir – Fortuna – Farm-out to One LNG

Tanzania
BG – Blocks 1&4 – Shell acquisition

Angola
Cobalt – Block 20 & 21 – Farm-out to Sonangol – Cancelled

Mozambique
Eni – Ruvuma – Farm-out to Exxon?

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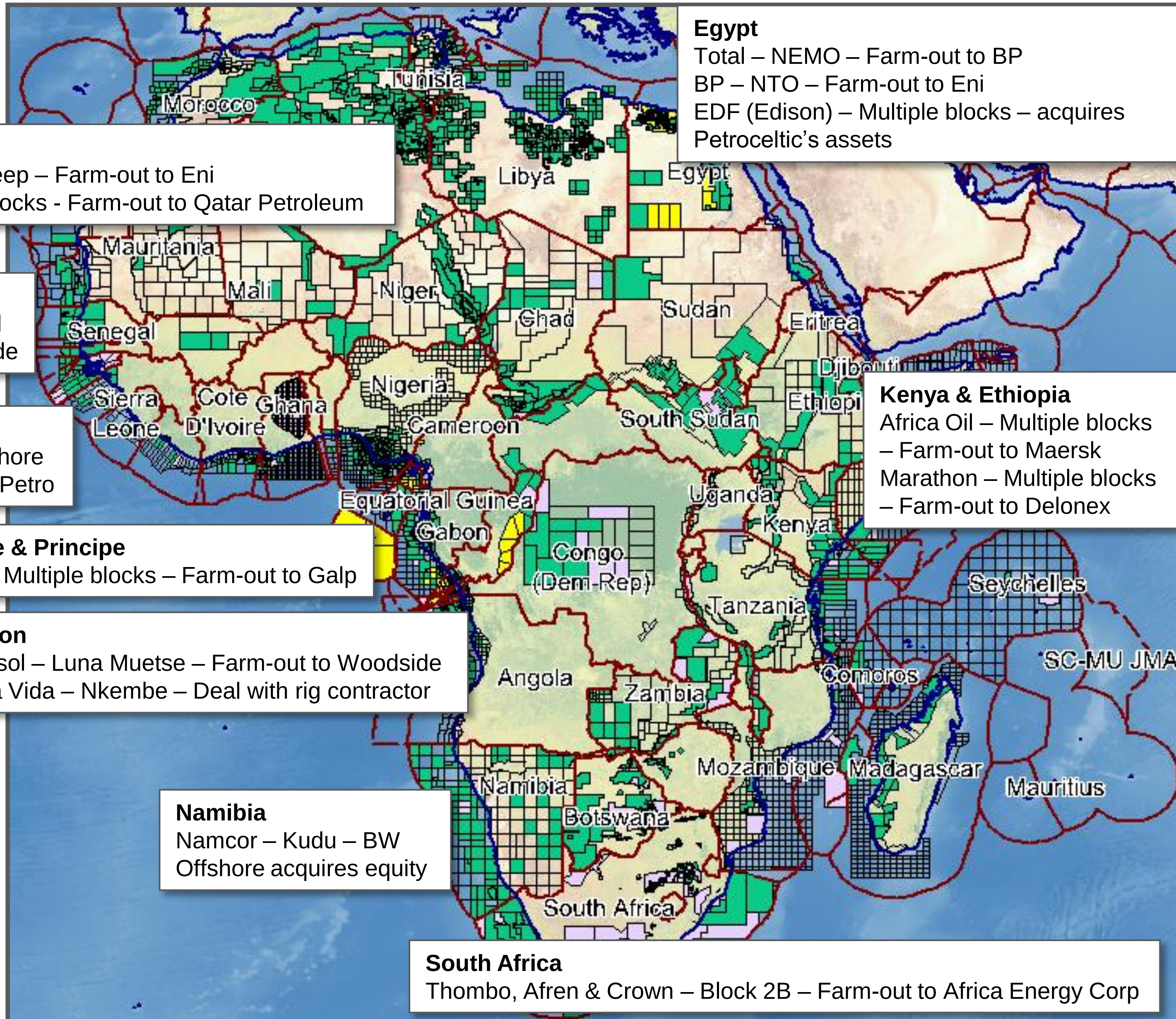
MAJOR FARM-IN DEALS OF 2016-2017 - 2



Egypt
Total – NEMO – Farm-out to BP
BP – NTO – Farm-out to Eni
EDF (Edison) – Multiple blocks – acquires Petroceltic's assets

Morocco
Chariot - Rabat Deep – Farm-out to Eni
Chevron - Three Blocks - Farm-out to Qatar Petroleum

SG-B AGC
Impact – AGC Profond – Farm-out to Woodside

Guinea
Hyperdynamics – Offshore PSC – Farm-out to SAPetro

Kenya & Ethiopia
Africa Oil – Multiple blocks – Farm-out to Maersk
Marathon – Multiple blocks – Farm-out to Delonex

Sao Tome & Principe
Kosmos – Multiple blocks – Farm-out to Galp

Gabon
Repsol – Luna Muetse – Farm-out to Woodside
Pura Vida – Nkembe – Deal with rig contractor

Namibia
Namcor – Kudu – BW Offshore acquires equity

South Africa
Thombo, Afren & Crown – Block 2B – Farm-out to Africa Energy Corp

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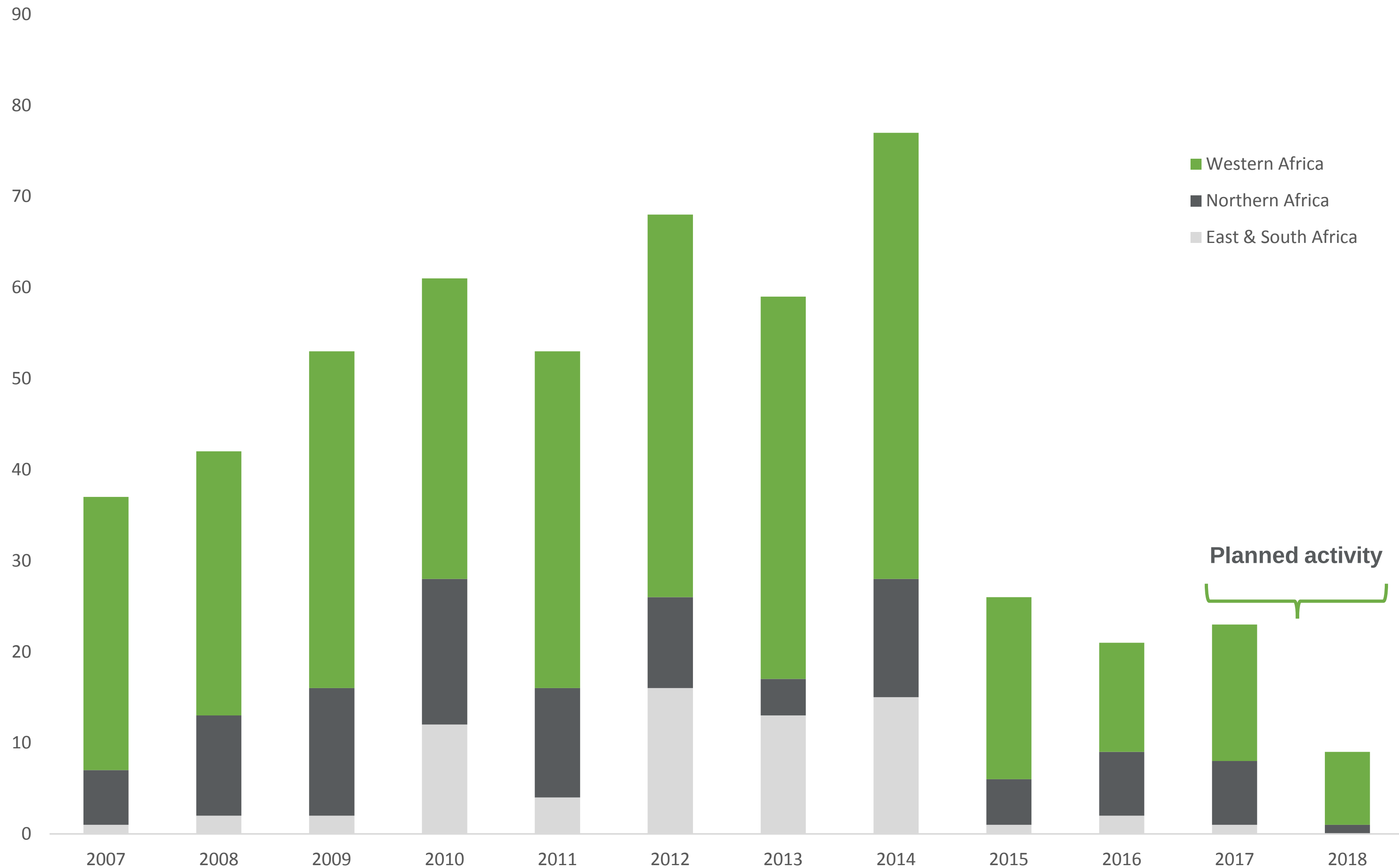
OFFSHORE NFWS UNDERTAKEN/PLANNED SINCE 2007

No real boost in expected number of offshore NFWs before 2019



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COUNTRY BY COUNTRY OVERVIEW

EGYPT – HUNGRY FOR GAS

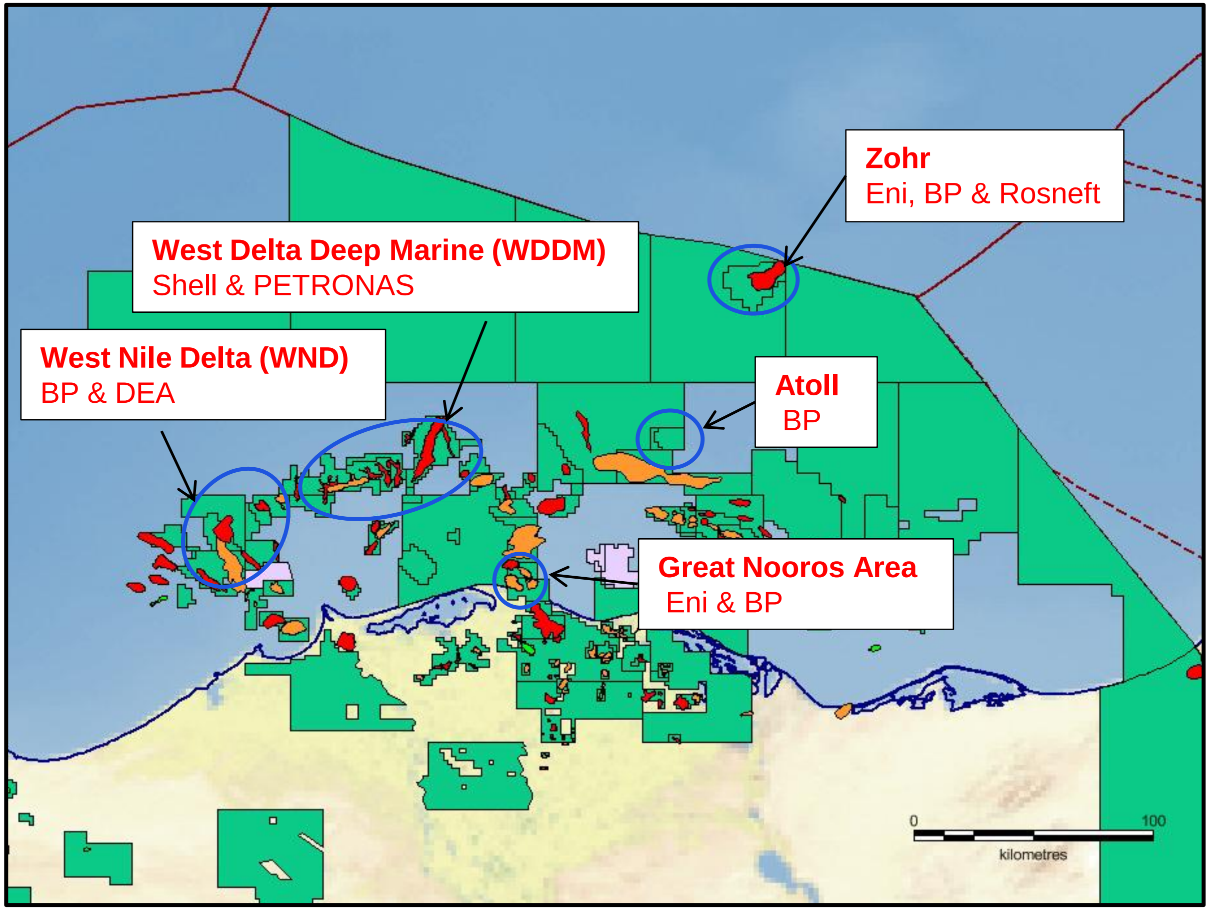
- Energy shortage/crisis
  - Net gas importer since 2011, LNG imports began in 2015

- Response
  - Approval of ~US$ 30 billion investment by IOCs to 2019
  - Fast-tracked developments (Atoll, Nooros, Zohr)
  - Wellhead price increases
  - Bid rounds (two in 2016)

- 2017/18 Start-ups/increases
  - Zohr (30 Tcf) - Q4 2017
  - WND (5 Tcf) - Q2-Q3 2017
  - Atoll (1.5 Tcf) - H1 2018
  - Nooros (3 Tcfg) - 1 Bcfg/d in 2017
  - 2 Bcfg/d increase end-2018

- Zohr – game-changer?
  - Play-opener
  - Deep oil potential?
  - Review model of eastern Med

- Issues still remain
  - US$ 3.5 billion arrears (early 2017)
  - Saudi oil imports halted Nov 2016
  - Energy price hikes



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ALGERIA – SONATRACH SURPRISINGLY SUCCESSFUL

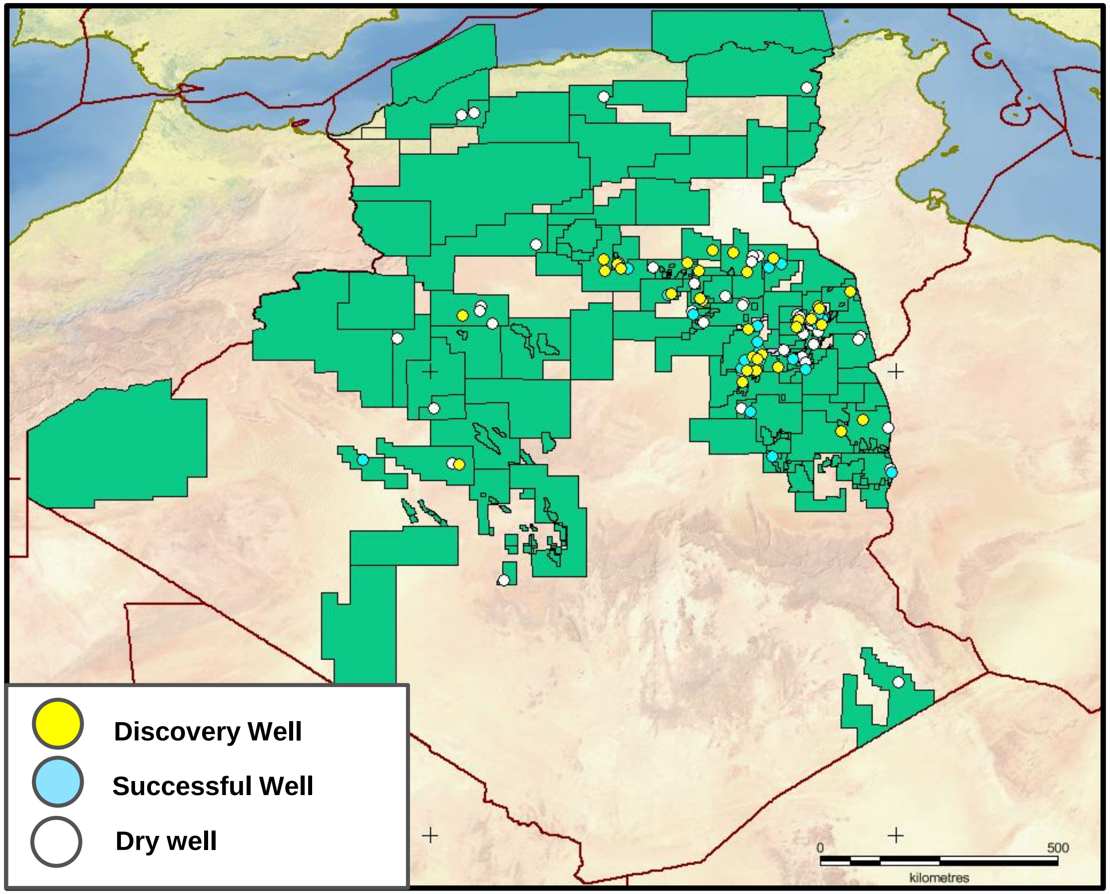
- Government revenues impacted by downturn

- Stagnating production

- Shale gas exploration shelved

- Environment not conducive for IOC investment
  - Bureaucracy, harsh fiscal terms
  - Security concerns
  - Sonatrach near monopoly

- Ambitious upstream programme
  - US$ 60 billion investment to 2019
  - Bring undeveloped discoveries onstream
  - Intensive exploration programme; can this be done without IOC funds?

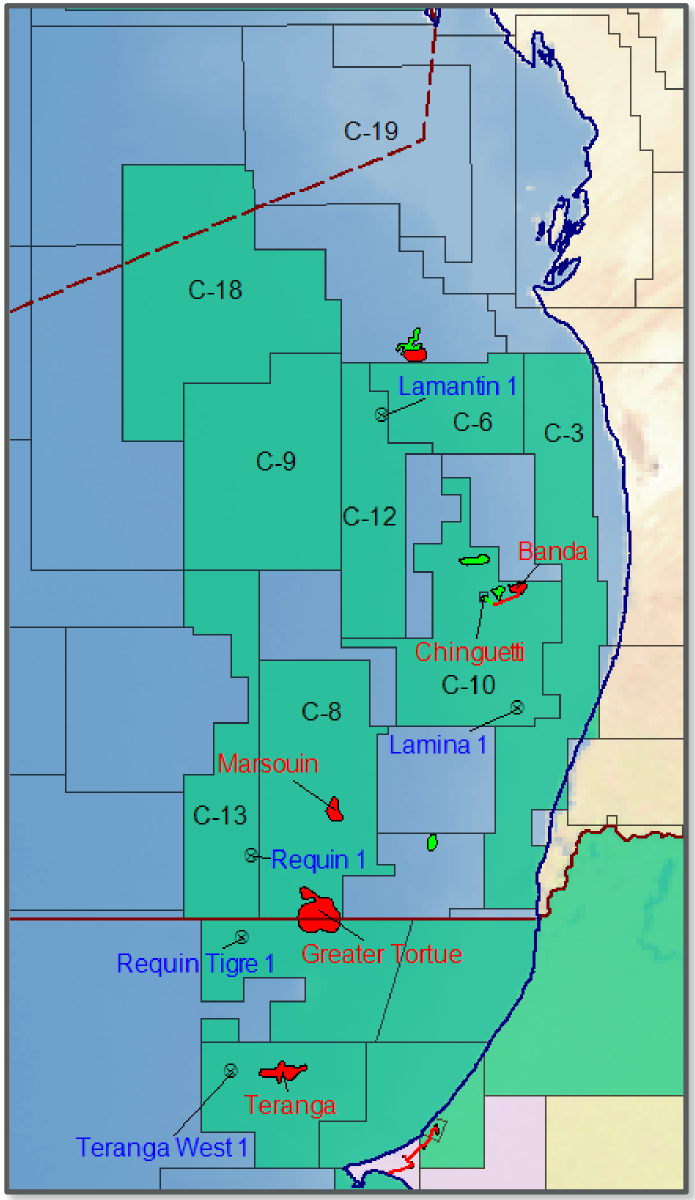


- 2016 exploration campaign (to Nov)
  - 96 Exploration wells concluded (5 IOC wells)
  - 32 discoveries
  - 22 successful appraisals

  - 100 wells planned for 2017

MAURITANIA/SENEGAL – GREATER TORTUE PROJECT

- Multiple gas discoveries
  - Five successful wells
  - 25 Tcf discovered, with 50 Tcf upside
- BP farm-in
  - US$ 916 million, inc upfront costs and exploration & development carries
  - Follows Chevron backing out
- Seismic ongoing – PGS
  - Started Sep 2016 over southern blocks
- Drilling program to restart in 2017
  - 3/4 wells planned
  - Atwood Achiever in Mauritania
- Elsewhere in Mauritania
  - Tullow looking to drill, planning seismic
  - Total acquiring seismic
  - Chariot pull out



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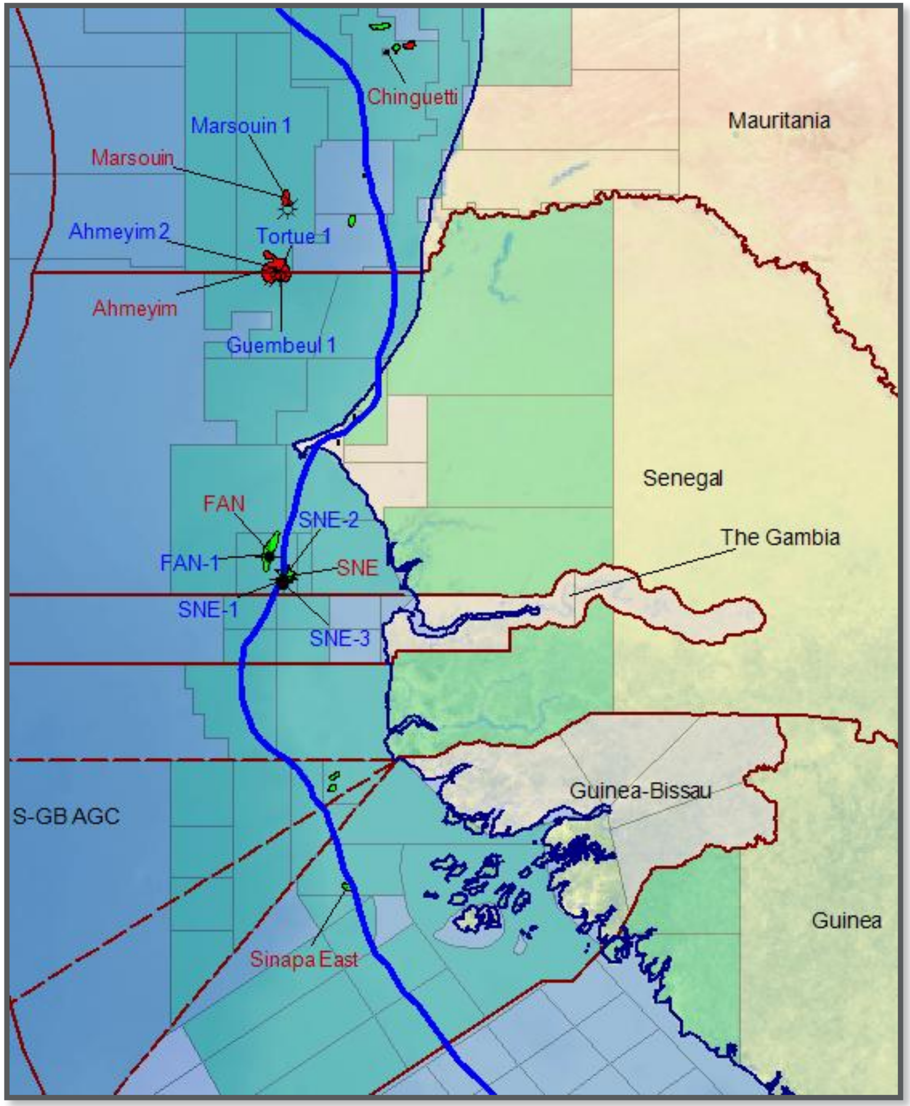
SENEGAL – BIG OIL DISCOVERIES

- SNE-1 – One of worlds largest oil discoveries of 2014
  - SNE-5 drilling ongoing
  - Pre-engineering studies underway
  - FID in H1 2019?
  - First oil 2021-2023?

- High ranked prospects to be drilled by 2019
- Woodside farm-in from ConocoPhillips
  - Option to acquire operatorship

- Elsewhere in Senegal
  - Licensing Round delayed
  - Government to revoke exploration licences???

- Elsewhere in MSGBC Basin
  - TGS acquiring MC
  - SG-B AGC – Woodside/Impact transaction – drilling planned
  - Guinea – Hyperdynamics drilling?????



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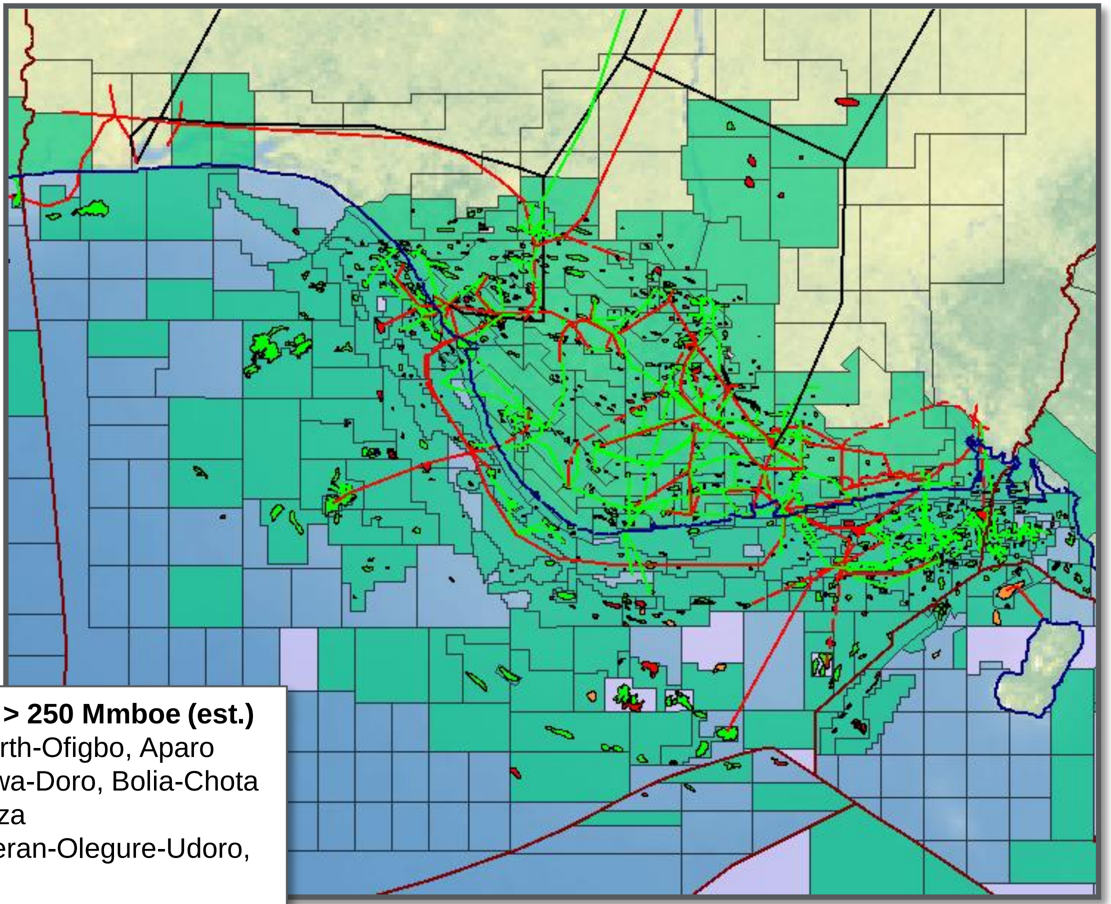
NIGER DELTA – HUGE RESOURCE POTENTIAL

But serious above ground risk

- 1000's MMbo remains undeveloped
- Uncertainties in PIB have stopped almost all expensive exploration and development
- Gas development question
- But all IOCs are sitting on massive resources
  - Farm-outs not needed
- Proximity to existing DW infrastructure is key – even if development may be 5 -10 years off
- End of the road for Nigerian exploration?
  - No



Undeveloped Resources > 250 Mmboe (est.)
Chevron – Nsiko-Nsiko North-Ofigbo, Aparo
Shell – Greater Ngolo, Nnwa-Doro, Bolia-Chota
ExxonMobil – Bosi, Uge-Nza
Eni – Etan, Zabazaba, Oberan-Olegure-Udoro,
Total - Preowei

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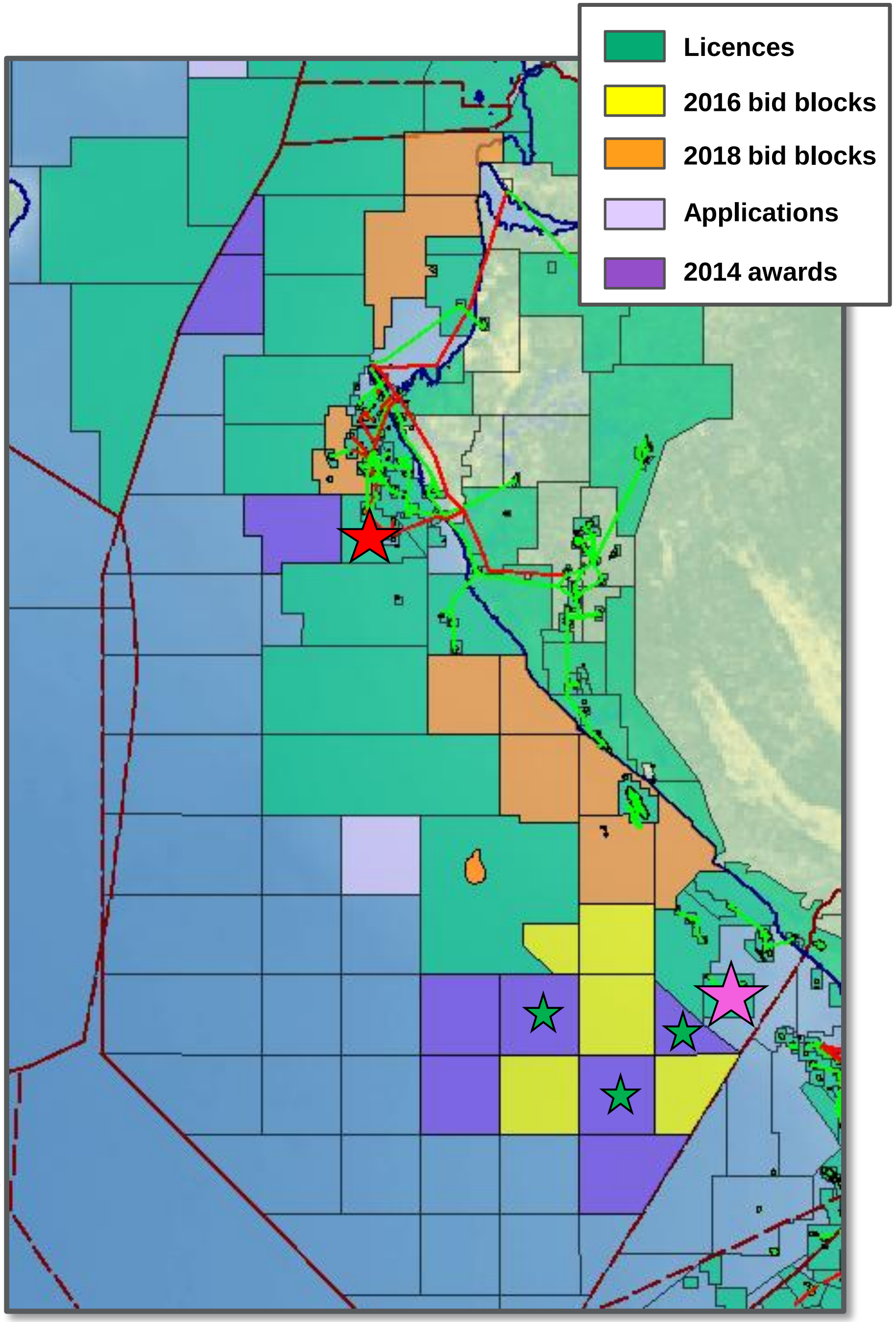
GABON – WHERE NEXT?

- 2013-2014 pre-salt drilling disappointing
  - Options for Gabonese gas limited
- Apparent change in focus to South Gabon basin
  - CGG acquired 25,000 sq km 3D seismic
  - 2017/2018 drilling planned?
    - Marathon
    - Repsol/Woodside
    - Petronas?
  - Still no results announcement from 2016 LR
- Shallow water seismic ongoing – Spectrum
  - 3 phases
  - 18,000 sq km in total
  - Shallow water licensing round in 2018?
- Elsewhere in Gabon
  - Shell onshore exit
  - Pura Vida Nkembe deal with rig contractor
  - BW Offshore farm-in to Dussafu Marin



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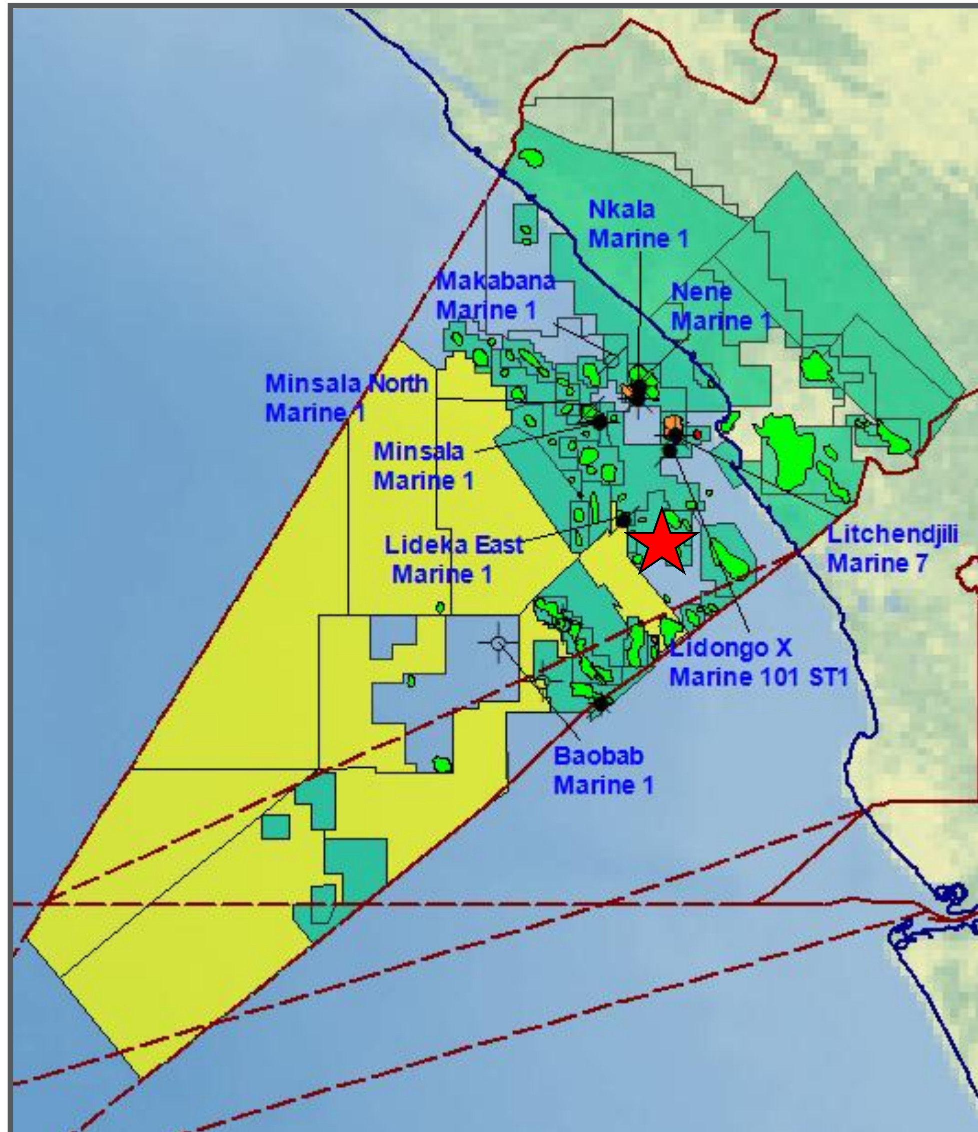
CONGO – BIG DISCOVERIES IN SHALLOW WATER

- Eni – Marine XII
  - Some 5.5 Bboe discovered
  - Brought onstream very quickly
  - FLNG planned?
  - Soco awarded Lidongo Marine Production Licence

- 2016 Licensing Round – ongoing
  - New Petroleum Code finally in place
  - PGS supporting SNPC
    - Acquired 21,000 sq km Mega Survey
    - Planning additional 9,000 sq km in shallow water
  - Shallow water LR planned 2017? More likely 2018

- Elsewhere in Congo
  - Total/Eni withdraw from PNGF fields
    - Perenco/Hemla Vantage/Petromal farm-in

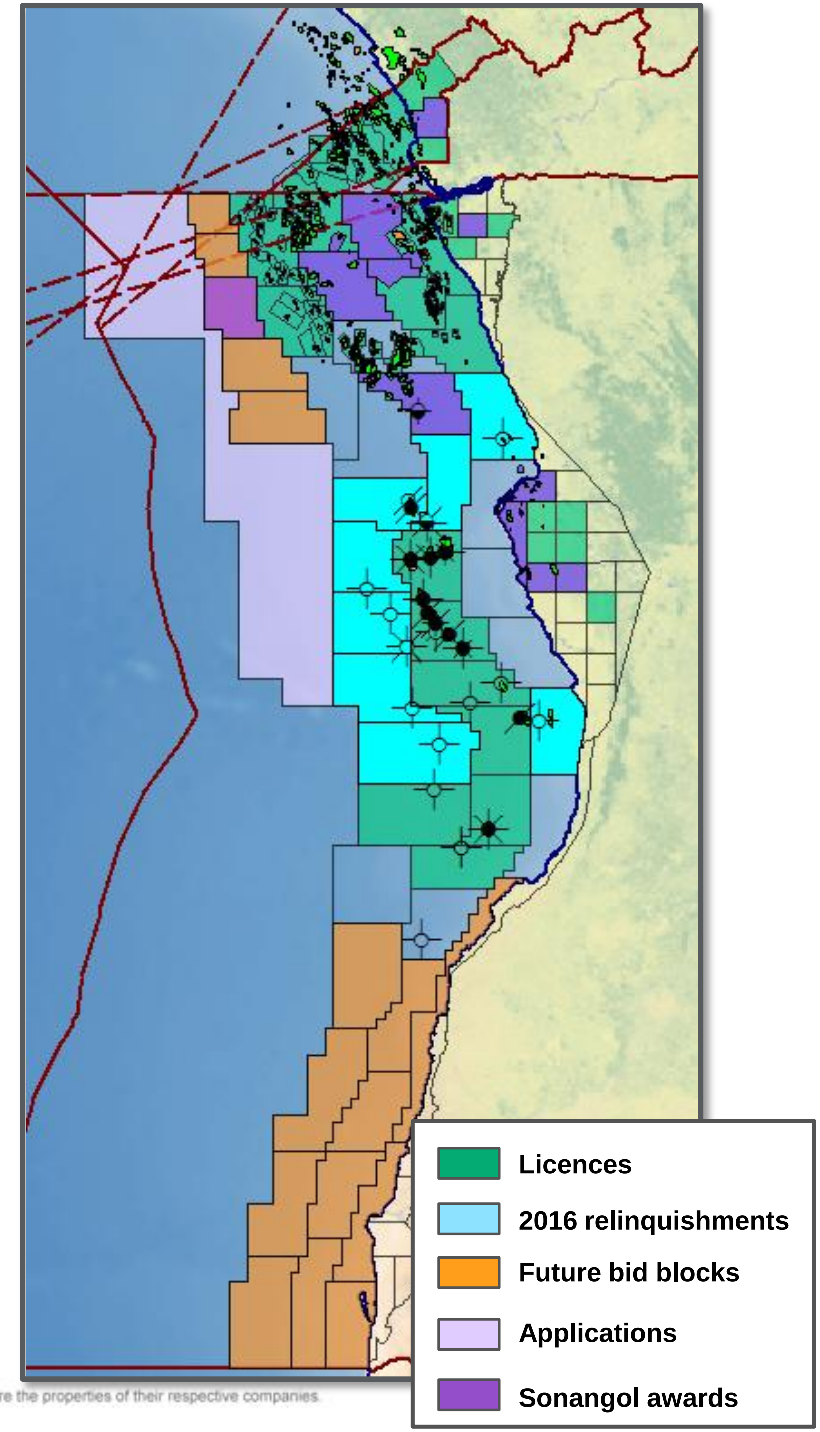


ANGOLA – DEEPWATER KWANZA UNSUCCESSFUL

- Pre-salt drilling disappointing
  - Many blocks not renewed in December 2016
  - Cobalt still looking for partners

- Lower Congo & Namibe Basin Offshore LR
  - Not until problems at Sonangol resolved

- Sonangol quietly awarding itself vast tracts of acreage
  - Will need experienced technical partners



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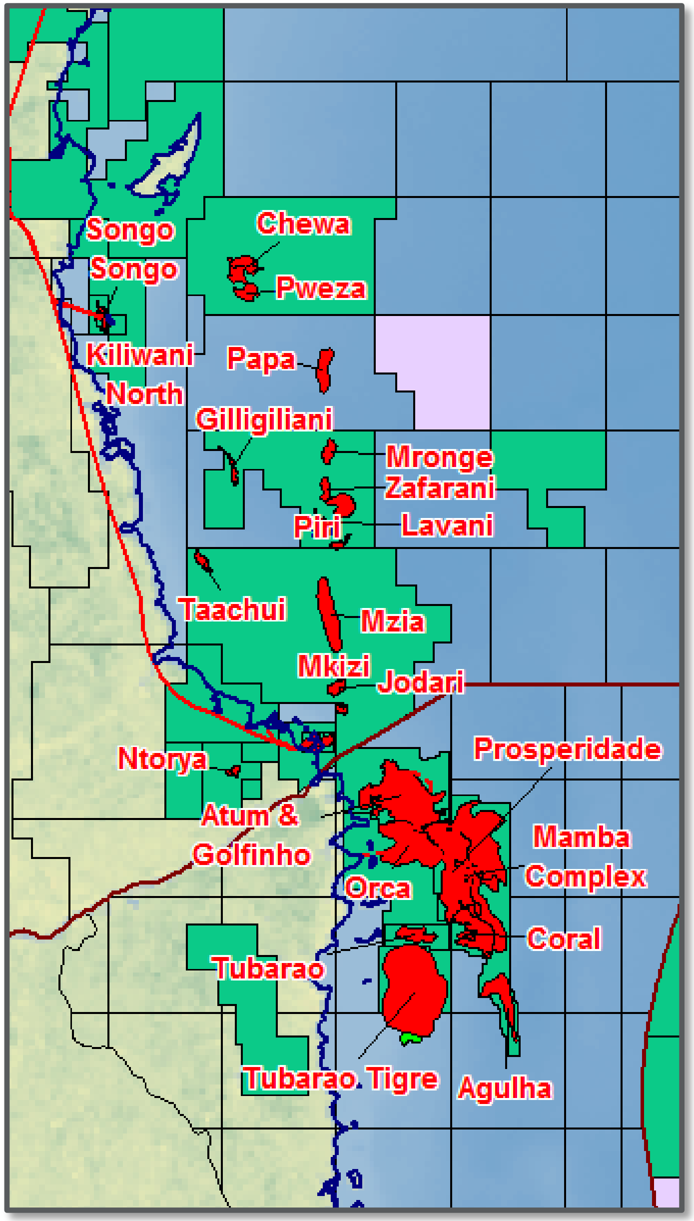
RUVUMA BASIN – LNG UPDATE

- Tanzania – Block 1,2 & 4
  - Fiscal terms for gas?
  - Government agreed to LNG exports & commercial framework established
  - No investment decisions taken
  - Lindi onshore LNG project: land acquired
  - Two-train LNG terminal & 200km pipeline to offshore fields
  - US$ 30 billion
  - First gas planned 2020s

- Mozambique
  - Eni – Coral FLNG – ROA 4
    - To develop 5 Tcfg
    - FDP approved, FID in 2017? First gas 2021?
    - 3.3 MMt/a platform capacity
    - First gas 2021
  - Eni & Anadarko – Mamba & Prosperidade – ROA 1 & 4
    - Onshore LNG
    - FID in 2017?
    - 24 Tcfg coordinated development
  - Anadarko – Golfinho & Atum – ROA 1
    - Onshore LNG
    - Aug '15: MOU signed



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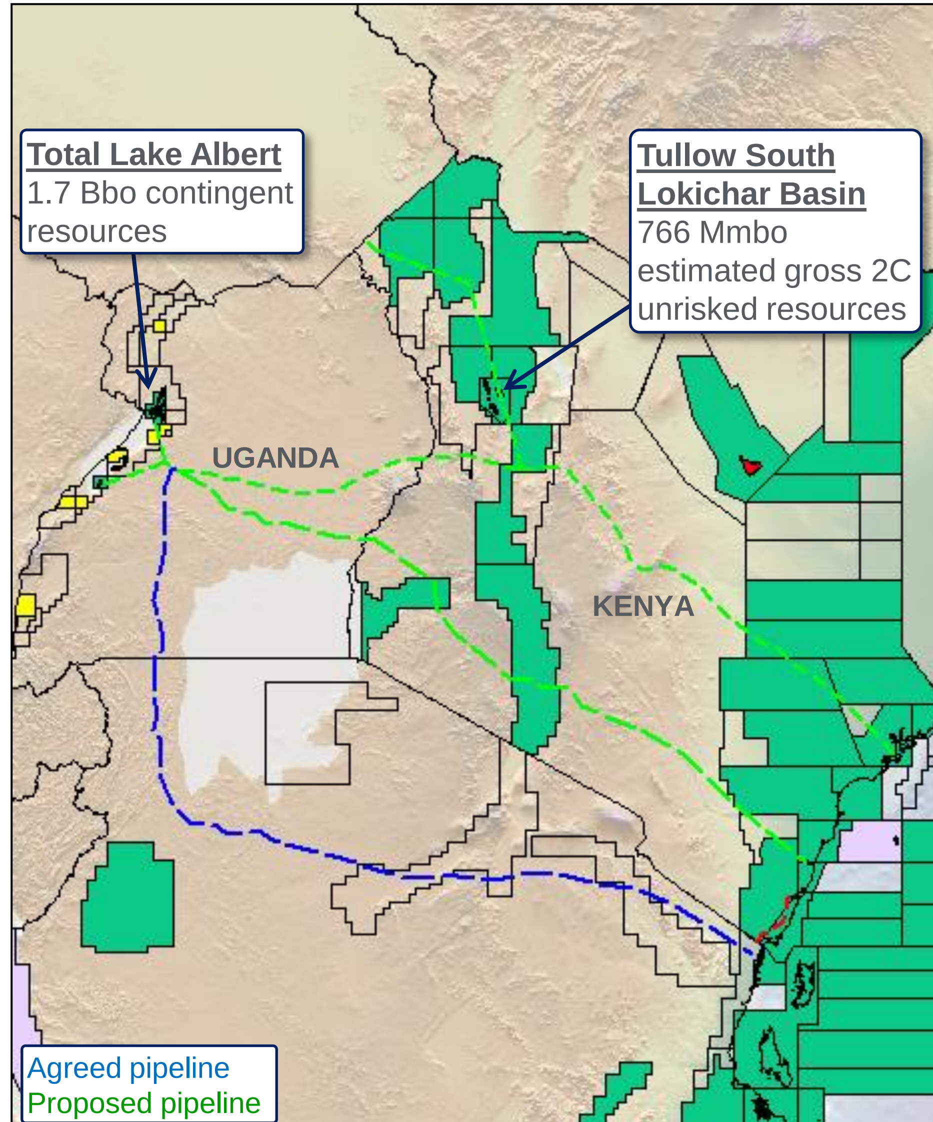
KENYA/UGANDA – MOVING FORWARD?

- Total acquires equity from Tullow
- Uganda-Tanzania pipeline route announced May 2016
  - 1,400km 24" heated pipeline
  - Total providing funding (US$ 3.55 billion)
- Government demands:
  - 31 December 2016 deadline for FID
  - 2020 deadline for first oil
- Kenya competing Lokichar-Lamu pipeline
  - Security issues cited
  - Funding uncertain (US$ 4.2 billion)
  - Assessing JV with South Sudan
  - Early development by road/rail?
- Awards from First Uganda Bid Round due
- Kenya offshore?



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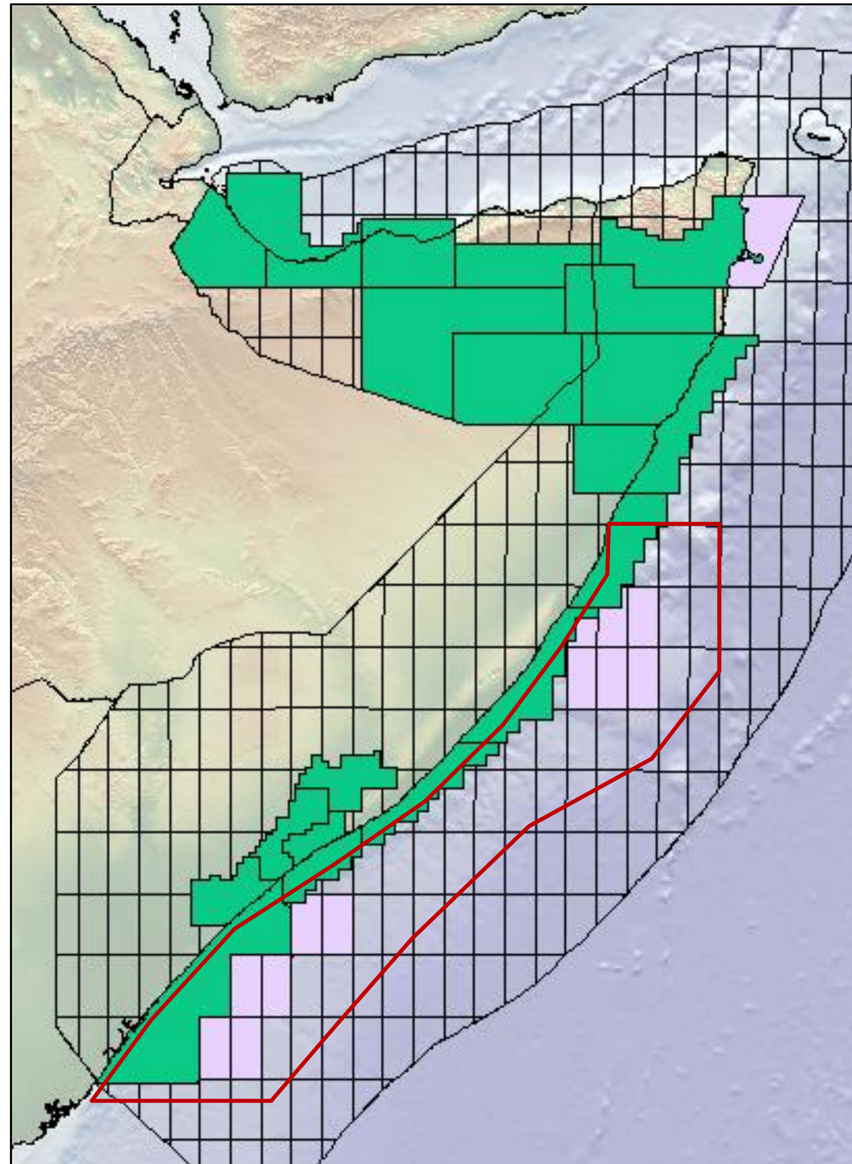
SOMALIA – A NEW BEGINNING AT LAST?

- Feb 2017 Presidential elections
- Soma Oil & Gas deal
  - 20,000km 2D data acquired
  - Soma submitted applications for 12 licences
  - FCO investigations closed
- Spectrum acquires additional 20,500km 2D seismic
- LR planned Q2 2017?
  - World Bank assisting with drafting of amendments to Petroleum Law
- IOCs required to submit documentation regarding pre-1991 licences
- Maritime boundary dispute with Kenya ongoing



CONCLUSIONS

Sunrise or sunset?

- Lots of positives remain
  - Much of the continent remains unexplored
  - Stumbling blocks generally related to above ground problems
  - Gas can be a good thing

- Governments are key
  - Legislation needs updating faster
  - Financial conditions must reflect current realities

- Changes have taken place
  - Seismic/service costs lower
  - Majors now seem willing to commit to development projects

- But frontier drilling expected to remain sporadic for now

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THANK YOU

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