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# **Challenger Energy Group PLC**

URUGUAY AREA OFF-1: MULTI-BILLION BARREL POTENTIAL IN AN EMERGING OIL & GAS PROVINCE

**June 2022** 

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# **AREA OFF-1: Executive Summary**



# Large shallow water offshore licence

- 14,557 km<sup>2</sup> AREA OFF-1 licence area; 100% working interest
- ~ 100 kms offshore Uruguay in Punte del Este basin
- 20m 1,000m water depth
- Prospects identified in 80m to 1,000m water depth

Low-cost initial 4-year exploration term; long tenure

- Initial 4-year exploration period; low-cost work commitments
   (G&G evaluation, 2D seismic data licencing, 2D reprocessing and interpretation period extendable for drilling / 3D or 2D new acquisition
- 30-year tenure (with potential 10-year extension)
- Initial term commenced 25 May 2022

Multi-billion barrel potential, de-risked by regional analogues and "mega"-discoveries in conjugate margin

- > 60 leads / prospects from Aptian-Albian turbidites to Lower Cretaceous syn-rift structural plays in basin
- 1.36 bn bbl recoverable prospect (Lenteja) identified in 80m water depth
- Recent mega-discoveries in the conjugate Orange Basin (offshore Namibia) by Total and Shell de-risk the -Aptian turbidite play
- Vastly underexplored area; only 3 wells in the Punte del Este basin that covers over 80,000 km<sup>2</sup>; 2 wells drilled in mid-70's in 20m water depth

Low country risk with attractive fiscal terms

- Top ranked country in South America for political risk, social stability, control of corruption and rule of law
- Globally competitive, upper quartile fiscal regime; no bonus / royalties



### **AREA OFF-1: Commercial Context**



#### The region is seeing a significant increase in licencing and operational activity, and is an emerging industry "hot spot"

- The Company's work program and budget for OFF-1 for the balance of 2022 and into 2023 includes sufficient allocation to progress the agreed minimum work obligation, which is low-cost
- In June 2022, Shell and Apache were announced as having successfully bid for 3 new licences in Uruguay, and will undertake 3D work (Shell) and new well drilling (Apache) in accordance with their licence bids
- Licence holders in adjacent Northern Argentina are reported to be planning to undertake 3D seismic acquisition in the coming 12 months (including the CAN-102 block which offsets OFF-1)
- As a result, an estimated >US\$200m is expected to be spent by third parties on technical work / exploration activities in Uruguay and Argentina in coming years
- Multiple expressions of interest have been received for potential partnerships in relation to AREA OFF-1

   the Company intends to consider these over the coming months with a view to potentially expediting a 3D seismic acquisition into the first licence exploration period

#### **URUGUAY LICENCE HOLDINGS**



#### REGIONAL LICENCE HOLDINGS



# **AREA OFF-1: Key Licence Terms**



Licence area and location	• 14,557 km² OFF-1 licence area; Punte del Este basin; ~100kms offshore Uruguay in 20m – 1000m water depth	
WI & Operatorship	100% working interest (no restriction on farm-outs / strategic partnerships); CEG is the Operator	
Licence Tenure	<ul> <li>30-year tenure including exploration (max 12 years) and exploitation (max 25 years)</li> <li>10-year extension available after 25 years and 2 years before expiry</li> </ul>	
Exploration Periods and Work Commitments	<ul> <li>Initial 4-year exploration period, commenced 25 May 2022</li> </ul>	<ul> <li>Geological evaluation &amp; studies including resource estimation</li> <li>Licencing 2,000 kms 2D seismic data from ANCAP</li> <li>Seismic reprocessing and interpretation</li> </ul>
	• 2 <sup>nd</sup> period, if elected, either a 3-year extension	1 well commitment (no relinquishment)
	or, a 2-year extension	<ul> <li>1,000 work units commitment; 50% relinquishment</li> <li>Equivalent to 500 km<sup>2</sup> 3D or 5,000 km 2D; or a mix of the two</li> </ul>
	Optional further 3-year extension	1 well commitment with 30% relinquishment
Fiscal Terms	<ul> <li>Cost recovery and R-factor (revenue / cost ratio) based profit split</li> <li>CEG profits taxed at corporate tax rate (currently 25%)</li> <li>No signature bonus, royalties or annual licence fees except US\$50k annual CSR contribution</li> </ul>	
ANCAP participation	<ul> <li>Up to 20% participating interest in each commercial field developed</li> <li>On heads-up basis (i.e., no carry); reimbursement of pro-rata share of past costs</li> </ul>	

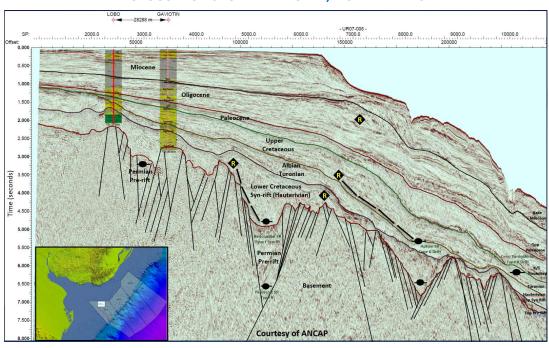
### **AREA OFF-1: Technical Highlights**



#### Two primary petroleum systems; multiple independent plays have been identified on AREA OFF-1 from recently reprocessed 2D

- Extensive data set includes ~8,000 kms 2D seismic over AREA OFF-1 and logs, fluid inclusion and petrography for two legacy shallow water wells (Chevron, 1976)
- ANCAP offshore resource assessment identified over 60 prospect and leads, including Lenteja prospect and additional material prospects located on OFF-1 from Cretaceous turbidites, and Lower Cretaceous syn-rift structural plays
- Lenteja is an Early Cretaceous (Barremian to Hauterivian age), alluvial fan sourced from an Aptian syn-rift lacustrine source sealed by overlying shales in a pinchout stratigraphic/structural trap
- AREA OFF-1 also has exposure to an Early-Mid Cretaceous turbidite onlap plays analogous to the conjugate Orange Basin
- Recent offshore Namibian "mega" discoveries by TotalEnergies and Shell from the conjugate Orange Basin have de-risked a similar Aptian petroleum system/source rock present seismically in Uruguay
- Reprocessed 2D seismic has demonstrated marked imaging uplift and data resolution improvement to increase prospect chance of success (COS) from modern de-ghosting & multiple attenuation techniques

#### **URUGUAY OFFSHORE: AREA OFF-1, MULTIPLE PLAYS**



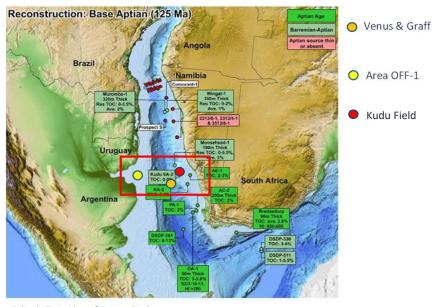
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## AREA OFF-1: De-risked by recent discoveries offshore Namibia



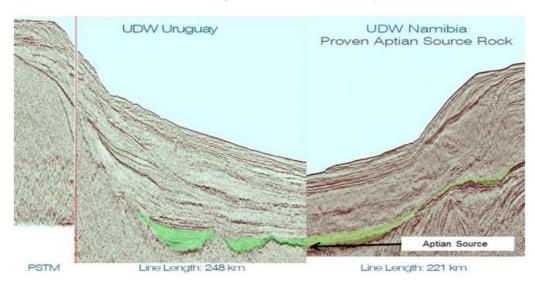
#### Recent Namibian "mega" discoveries de-risk the Aptian source presence and maturity in Northern Argentina-Uruguay basins

- Aptian source rocks are believed to charge the Venus (TotalEnergies) & Graff (Shell) basin floor fan turbidite discoveries in the Orange Basin, Namibia
- Lower Cretaceous Aptian source rock has a diagnostic, high amplitude seismic signature evident on the shelf and deep water
- Aptian lacustrine shale also confirmed as the source rock in the Namibian Kudu field on the shelf
- Aptian source now proven on the South African margin and can be seismically correlated to the South American conjugate basins



Seismic Detection of Source Rocks Ian Davison Earthmoves Ltd.; Karyna Rodriguez and David Eastwell, Spectrum Geo Ltd.

# URUGUAY- NAMIBIA/SOUTH AFRICA CONJUGATE BASINS (Aptian Source Rock Correlation)

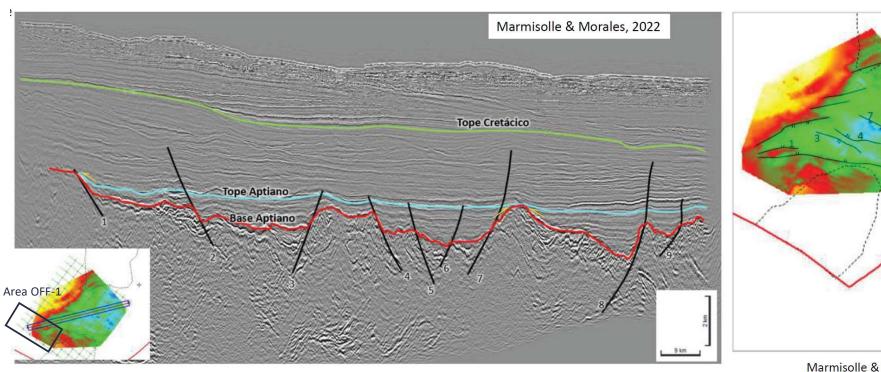


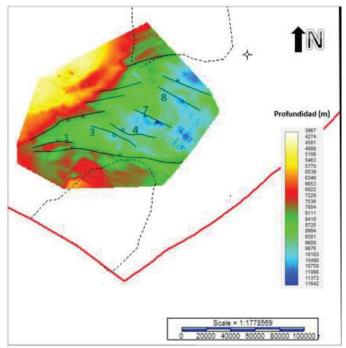
Source: Spectrum. https://www.spectrumgeo.com/press-release/exxon-and-

# **Uruguay Margin: Aptian Source Rock Present**



- Aptian interval can be mapped and represents the first regional transgressive event along the Uruguayan margin
- Aptian marine shale (SR) drapes over horst shoulders highs and onlaps into the graben lows
- The Aptian depocenter in the south corresponds to the Rio de la Plata transfer zone in a NW-East orientation

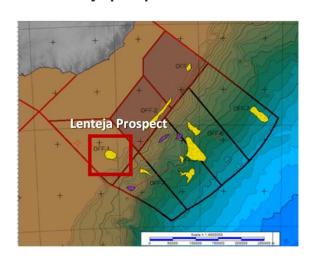




Marmisolle & Morales, 2022

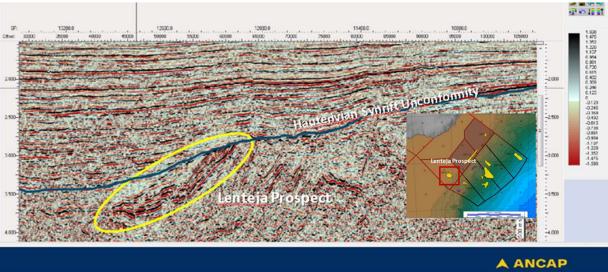
# Lenteja: a Billion Barrel+ Prospect

#### The Lenteja prospect has estimated recoverable volumes of 1.36 billion barrels oil (P50-EUR)



- Analog to the South Africa Ganzania well scheduled to drill Q3, 2022
- The prospect lies in ~ 80 meters water depth with the top reservoir predicted at 3,800 meters, shallow water drilling with the reservoir at relatively modest well depth, below any biodegradation risk
- Basin modelling (Genesis 2D) indicates the Aptian restricted marine Type II source interval is oil mature and in the current day oil window

#### LENTEJA PROSPECT – 1.36 MMBOE RECOVERABLE



- Trap closure area is estimated up to 423 km<sup>2</sup>
- Lenteja is an Early Cretaceous (Barremian to Hauterivian age) alluvial fan sourced from an Aptian syn-rift lacustrine source sealed by overlying shales in a pinch-out stratigraphic / structural trap

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