# World class oil discovery offshore Senegal

RIU Good Oil Conference 14 September 2016





#### **About FAR**

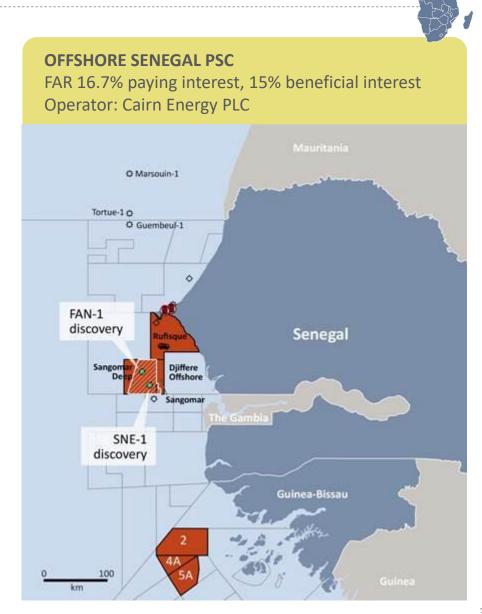
- Africa focussed oil exploration company
- Sixth largest E&P company listed on the ASX: Market cap \$320M\*
- World's largest oil discovery for 2014/15 in SNE Field offshore Senegal
- SNE field 2C contingent recoverable oil resource 641 mmbbls
   (96 mmbbls net to FAR)\*
- 21 months from discovery to **statement on commerciality**
- Planning for development in very low cost environment
- Cash \$66M\*, no debt, funded planned work program
- 'Breakthrough Company of the Year': Oil and Gas Council, Africa





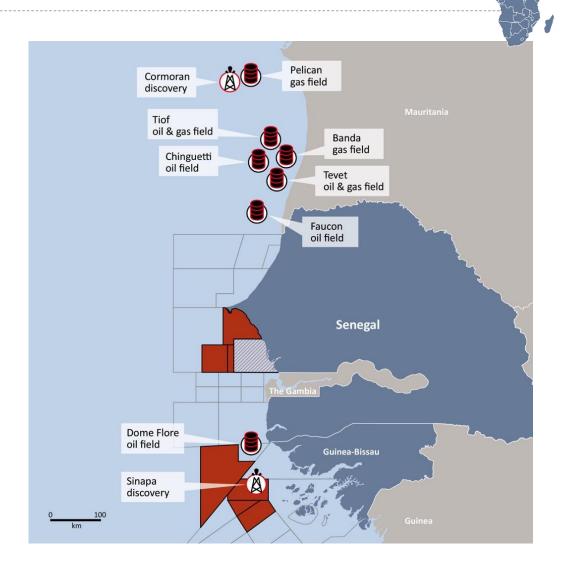
#### FAR in Senegal

- FAR celebrating 10 years in Senegal in 2016
- Western most tip of Africa, capital Dakar, population 14 million
- Peaceful democracy with a stable outlook (S&P sovereign credit rating B+/B)
- Strong in country relationships
- Farmed down to Cairn Energy and ConocoPhillips for US\$196M carry + cash in 2013
- PSC partners: Cairn Energy (Operator) 40%,
   ConocoPhillips 35%, FAR 15%, Petrosen 10%
- President is petroleum geologist!



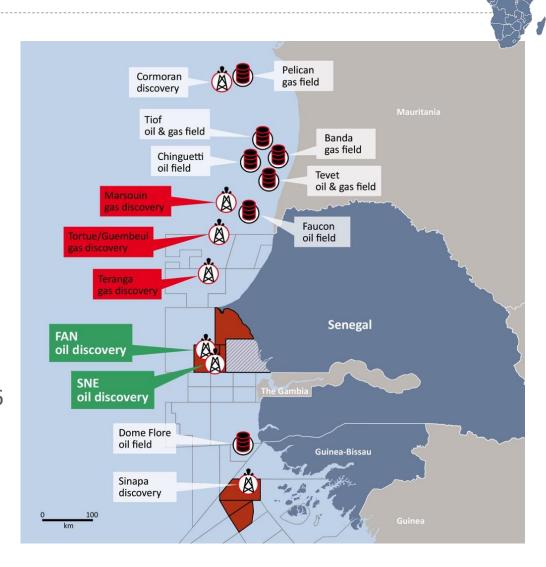
# World hot spot for oil and gas discovery

- Status of offshore fields in mid 2014
- No oil exploration drilling offshore Senegal for 40 years
- No deepwater drilling ever offshore Senegal



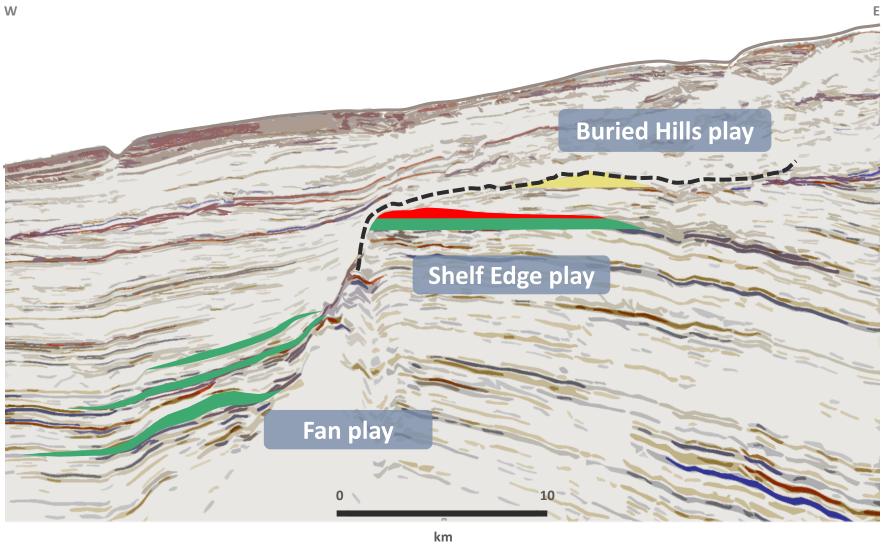
## World hot spot for oil and gas discovery

- Mid 2016 update
- Basin opening FAN-1 and SNE-1 oil discoveries 2014
- 4 successful SNE appraisal wells drilled 2015/16
- 100% drilling success to date
- Cairn Energy (operator) NPV of US\$12.75/bbl at project FID (2018/19) and US\$70/bbl oil price\*
- Major gas discoveries made in 2015/16 offshore N Senegal/S Mauritania



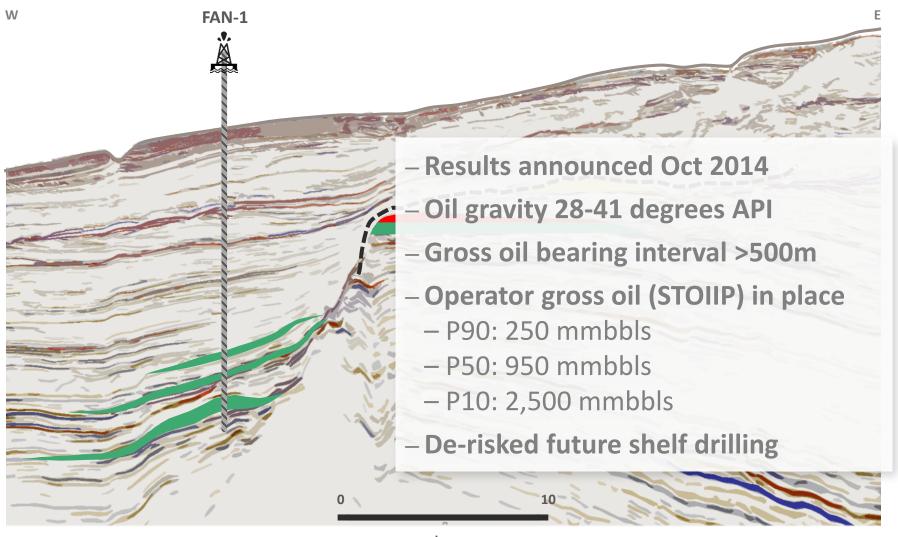
# Senegal geological setting





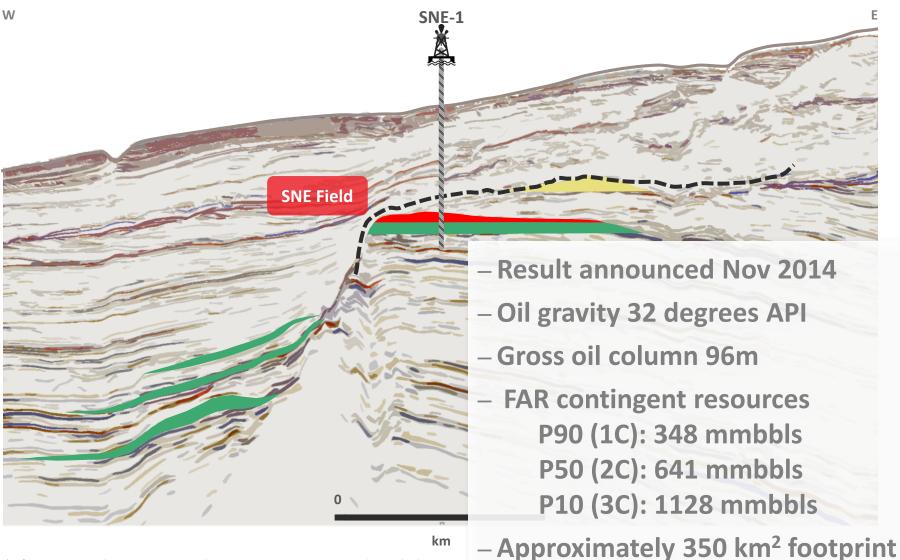
### FAN-1 Discovery





### **SNE-1** Discovery

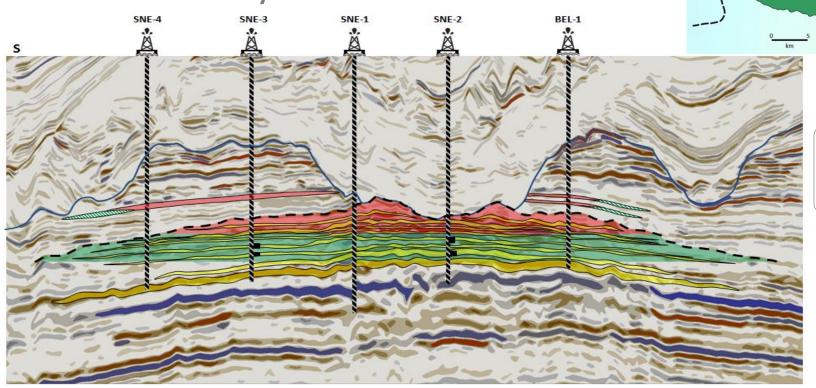


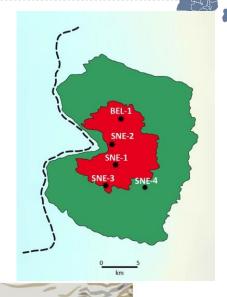


## SNE appraisal program

#### **Objective of wells:**

- Size of oil pool
- Test reservoir properties and deliverability from logging, coring and testing
- Measure field connectivity

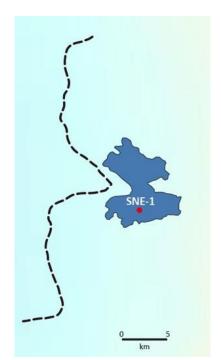




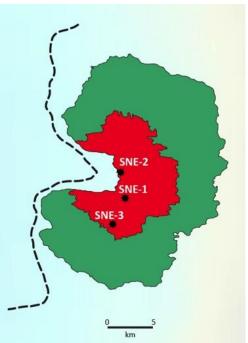
Drilling
Oil Traps
Flow tested

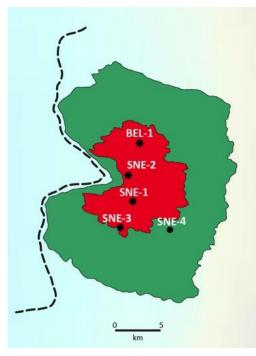
#### Size of the SNE oil pool











#### **Pre-Drill**

(Oct 2014)

P90 : 50mmbbls **P50 : 154 mmbbls** 

P10: 350 mmbbls

#### **Post discovery**

(Nov 2014)

1C: 150 mmbbls

2C: 330 mmbbls

3C: 670 mmbbls

#### **RISC** audited

(April 2016)

1C: 277 mmbbls

2C: 561 mmbbls

3C: 1071 mmbbls

#### **Latest RISC audited**

(August 2016)

1C: 348 mmbbls

2C: 641 mmbbls

3C: 1128 mmbbls

<sup>\*</sup>Reference FAR ASX releases dated 23 August 2016, 13 April 2016, 20 Nov 2014: unrisked contingent resources, 100% basis, oil only
RISC is an independent technical expert that reviewed and modified a probabilistic resource evaluation carried out by FAR in accordance with industry standard SPE-PRMS definitions

# **Deliverability** of oil from SNE



## Connectivity

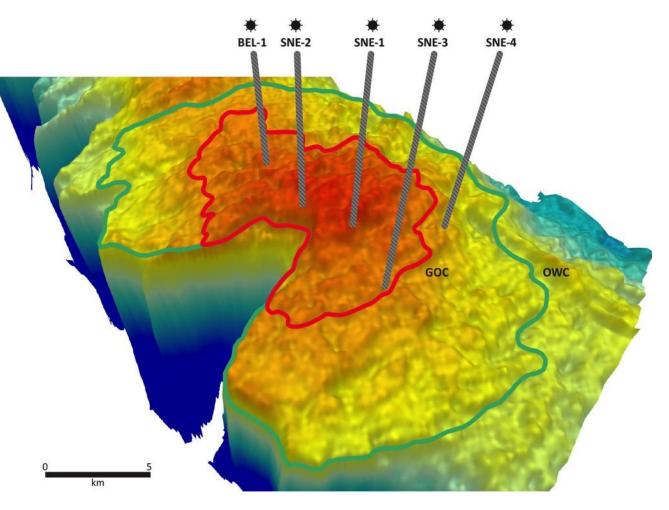


# Two well program planned to commence November 2016

#### **Drilling program objectives:**

- Improving SNE project definition
- Confirm volumes, connectivity and productivity:
  - Planned interference program between wells
  - Evaluate reservoirs not flow tested to date

Field size ~350km<sup>2</sup>



## Appraisal program to date

- Size of oil pool ✓
- Test reservoir properties and deliverability
- Measure field connectivity
- Each well has confirmed:
  - ~100m gross oil column
  - High quality 32° API oil
  - Correlation of principal reservoir units
- Program completed safely, efficiently and under budget
- Costs coming down!

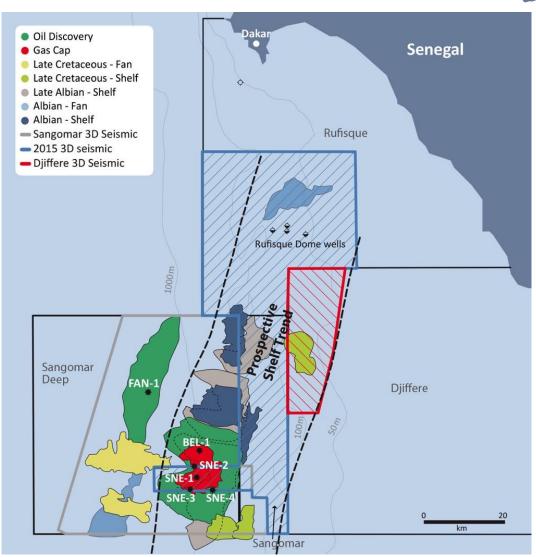


\*Cairn Energy Half Yearly Result 16/08/2016

## Scratching the surface of the prospectivity



- Undrilled exploration prospects with >1bn bbls (unrisked) potential
- FAR option over 75% of Djiffere block
- New joint venture 2015 3D seismic shot along trend from SNE
- Preliminary processed seismic products now at hand and final products arriving Q3

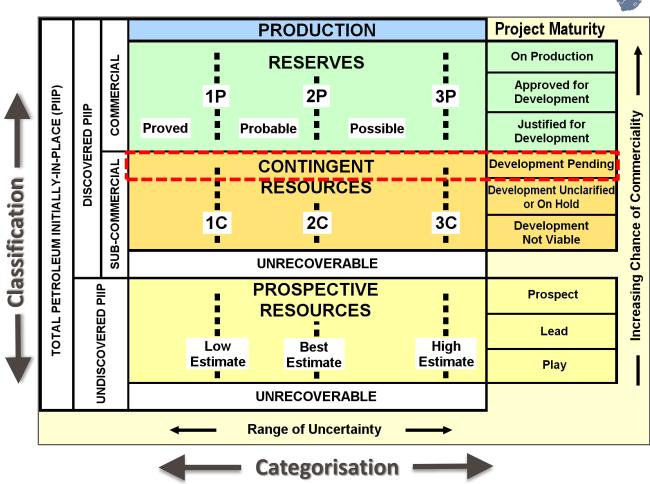


### Status of SNE development planning



# Development planning underway

Currently in pre-FEED stage (concept select) \*
Low cost environment



Source: Society of Petroleum Engineers, Petroleum Resource Management System

<sup>\*</sup>Cairn Energy Half Yearly Result 16/08/2016

### SNE development and tie back concept



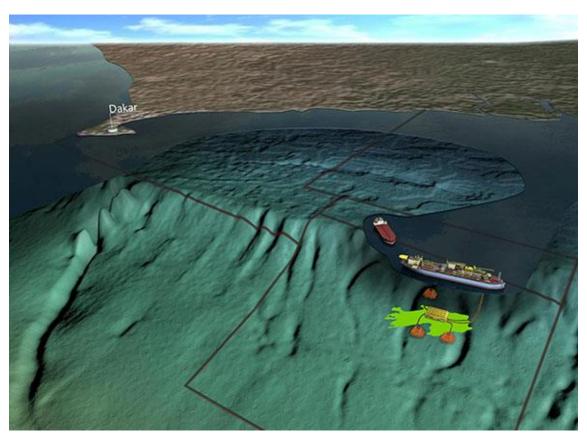
- Standalone FPSO: expansion capability for tie-backs
- Plateau production: rate expected to be 140,000 bopd
- Development expenditure:

US\$12- US\$15/bbl\* (previous US\$17-US\$26/bbl)

Operating expenditure:

<US\$10/bbl\* (previous US\$5-US\$15/bbl)

Breakeven oil price: US\$35/bbl\*

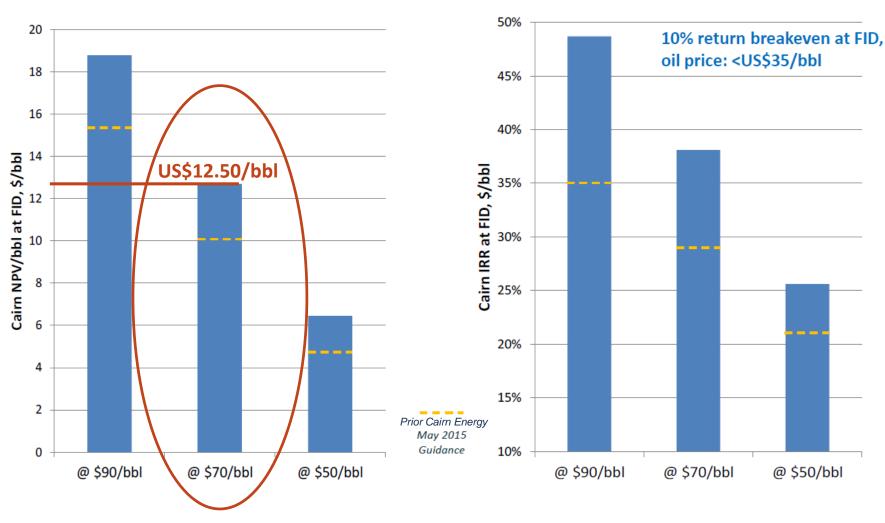


Reference FAR ASX release dated 24 September 2015 and 4 January 2016 \*Cairn Energy Half Yearly Result 16/08/2016

## Operator economic development scenario



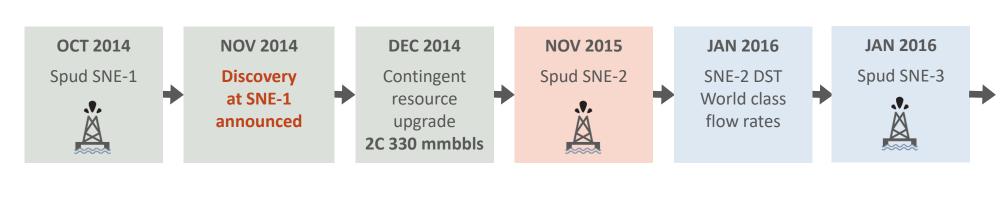
#### SNE stand alone development (based on Cairn 2C 473 mmbbls)



#### SNE story so FAR



#### 21 months from discovery to statement of commerciality



#### **FEB 2016**

DST Greater than expected flow rates Contingent

resource upgrade 2C 468 mmbbls

#### **MAR 2016**

Spud BEL-1 to target exploration prospect & flanks of SNE field



#### **APR 2016**

Contingent resource upgrade 2C 561 mmbbls

Spud SNE-4 as step out well



#### **JUN 2016**

Demob Ocean Rig Athena Drillship

Statement on commercial viability & entering pre-FEED

**AUG 2016** 

Contingent

resource

upgrade 2C 641

mmbbls

Spud of SNE-5 to test upper reservoirs & commence JV development planning

Q4 2016



# Social responsibility

FAR and its partners are supporting activities that deliver positive, lasting social and economic benefits to Senegal:

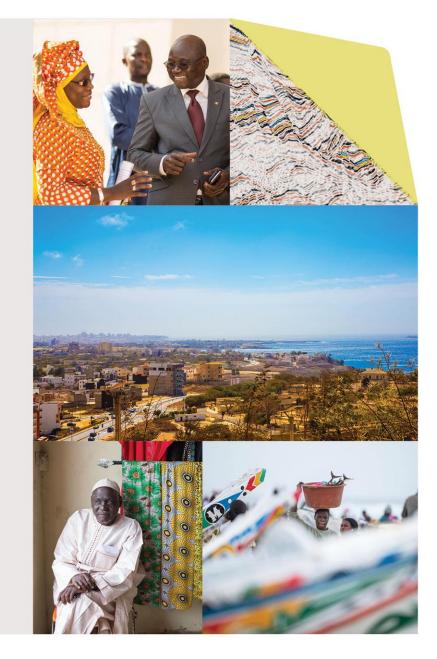
- English language training for the energy sector
- The Hunger Project support for a microfinance program
- FAR has sponsored regional soccer competitions through provision of 200 balls
- FAR has provided mosquito nets to rural communities





## What's next in Senegal?

- Two firm well program to commence November
- New JV and Djiffere seismic data products
- Decision to progress Djiffere option
- Upgrade to prospective resource inventory
- Project in Pre-FEED, building development plan for 2017





# 2016 revealing the prize

2013: Year of farmout

**2014:** Year of discovery

2015/2016: Evaluating the SNE Field

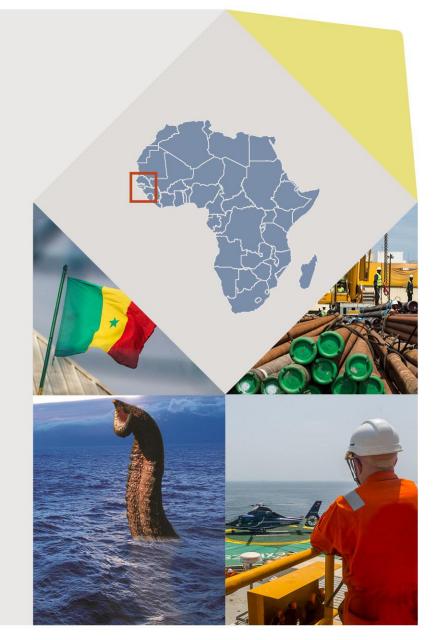
100% success rate to date offshore Senegal

**Statement on commerciality** 21 months from discovery

Undrilled exploration prospects with1bn bbls potential

Possible look-a-likes of SNE in Guinea Bissau

**FAR committed** to finding more elephants lurking under Senegalese waters!





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  recovered by the future application of a development project may relate to
  undiscovered accumulations. These estimates have an associated risk of
  discovery and risk of development. Further exploration and appraisal is
  required to determine the existence of a significant quantity of potentially
  moveable hydrocarbons.
- Information in this report relating to hydrocarbon resource estimates has been compiled by Peter Nicholls, the FAR exploration manager. Mr Nicholls has over 30 years of experience in petroleum geophysics and geology and is a member of the American Association of Petroleum Geology, the Society of Exploration Geophysicists and the Petroleum Exploration Society of Australia. Mr Nicholls consents to the inclusion of the information in this report relating to hydrocarbon Prospective Resources in the form and context in which it appears. The Prospective Resource estimates contained in this report are in accordance with the standard definitions set out by the Society of Petroleum Engineers, Petroleum Resource Management System.