

## AGM 11 December 2019



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### **Company Overview and Strategy**



 International oil and gas company focused on the exploration and appraisal of unconventional oil and gas assets

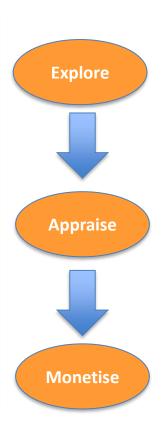


#### Australia

- 4.6 million gross acres
- Successful Stage 1 drilling program in 2015-2016
- 6.6 TCF 2C gross contingent resource estimate discovered so far

### **Corporate strategy is to:**

- Explore unconventional oil and gas basins
- Following successful exploration, continue with appraisal programs to determine commercialisation options
- Monetise assets prior to production



### Beetaloo Sub-basin

### - Asset Overview



Beetaloo Sub-Basin

Darwin

- Falcon Australia (1) owns 30% of three exploration permits in the Beetaloo Sub-basin (EP76, EP98, EP117)
- Total gross acres 4.6 million, net 1.4 million acres to Falcon's 30% participating interest
- In 2014 Falcon Australia farmed out 70% of the Beetaloo exploration permits to Origin<sup>(2)</sup> (who became Operator) in a deal worth A\$200<sup>(3)</sup> million (~US\$143 million)
- The joint venture drilled four wells in the Stage 1 work program
- Stage 2 drilling commenced in Q4 2019
- Stage 3 to follow in 2020
- Falcon is carried up to ~A\$113 million (~US\$77 million) for the costs for Stage 2 and Stage 3 in accordance with the terms of the farm-out deal

Source: Close et al. 2016 AAPG, "Unconventional Gas Potential in the Northern Territory, Australia: Exploring the Beetaloo Sub-Basin"

<sup>16&#</sup>x27;5 OT Downs Beetaloo permits

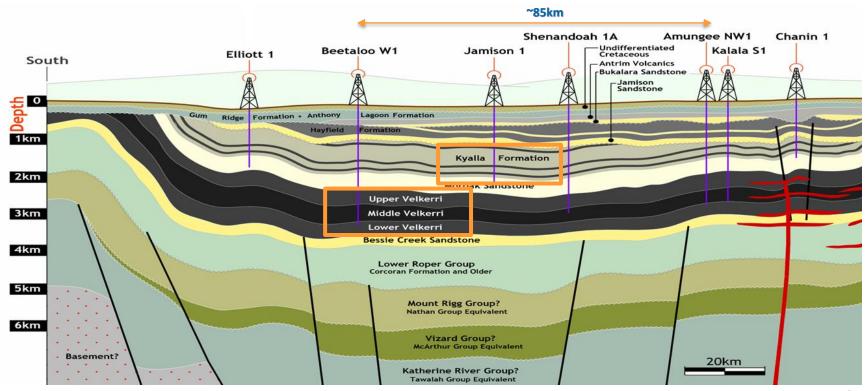
<sup>&</sup>lt;sup>(1)</sup>Falcon Oil & Gas Australia Limited (c. 98% subsidiary of Falcon Oil & Gas Ltd.)
<sup>(2)</sup>Subsidiary of Origin Energy Limited.

<sup>&</sup>lt;sup>(3)</sup>Included cash consideration, contributions to Stages 1, 2 and 3 and reduction of ORRIs

# Beetaloo Sub-basin - Petroleum Geology



- Identified plays in the Beetaloo Sub-basin include:
  - Velkerri shale dry gas play
  - Kyalla shale and hybrid liquids rich gas plays
  - Velkerri shale liquids rich gas play



# Beetaloo Sub-basin - JV Work Program Strategy



### From Exploration -> Appraisal -> Commerciality

**Stage 1** Prove the presence, quality and continuity of the Velkerri shale play

Stage 2 Evaluate the potential of liquids rich gas fairways in the Kyalla and Velkerri shale plays

**Stage 3** Prove flow rates of gas/liquids that provide a range of commercialisation options



Source: Origin

### Stage 1 – Successful Initial Drilling Program

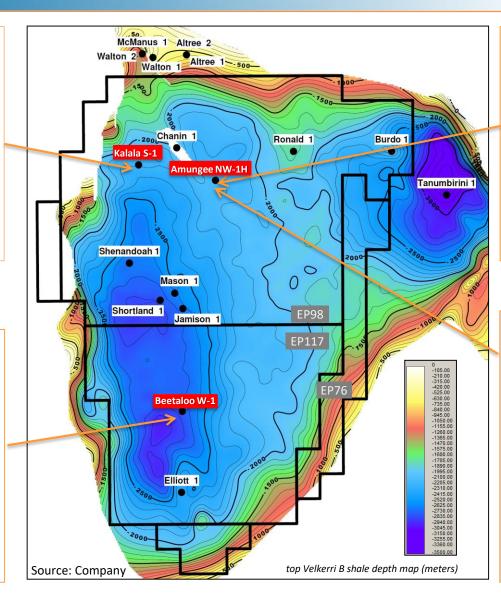


#### Kalala S-1 (2015)

- TD 2,622m MD (measured depth)
- Confirmed the presence of 3 organic rich intervals in the Middle Velkerri target (A, B & C shales)
- Full log suite
- Core vault, sidewall cores
- DFIT

#### Beetaloo W-1 (2016)

- TD 3,172m MD
- Confirmed the presence and continuity of A, B & C Velkerri shales to the south
- Confirmed the presence and continuity of the Kyalla SRRs
- Full log suite
- Full-diameter (Kyalla) and sidewall cores



#### Amungee NW-1 (2015)

- TD 2,609m MD
- Confirmed the presence and continuity of A, B & C
   Velkerri shales
- Full log suite
- Full-diameter (C shale) and sidewall cores
- DST in Hayfield Sandstone

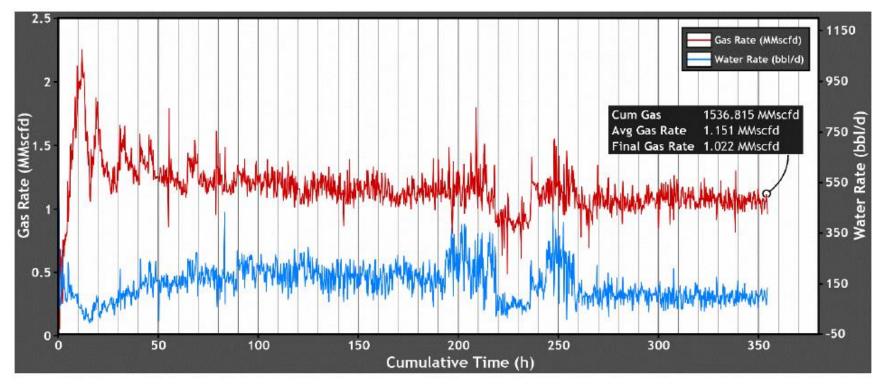
## Amungee NW-1 Horizontal (2015)

- Amungee NW-1 sidetrack
- Landed in the B shale, 100% in zone
- TD 3,808m MD
- Successful extended production test (57 days)
- Notice of discovery, basis of contingent resource estimate

# Stage 1 - Amungee NW-1 Horizontal Test Results



- Extended well test duration: 57 days, with cumulative production of 63 MMscf
- Variable gas rates through 2-3/8" production tubing ranged between 0.8-1.2 MMscf/d
- Proved up discovery of shale gas accumulation



### Stage 1 - Middle Velkerri B Shale Gas Volumetrics



Middle Velkerri B Shale P50 Volumetric Estimates as of 15 February 2017*(1)				
	Gross Best Estimate	Net Attributable Best Estimate <sup>(2)</sup>		
Area km <sup>2</sup> ( <sup>3</sup> )	16,145	4,751		
Original Gas In Place ("OGIP") (TCF)	496	146		
Combined Recovery / Utilisation Factor (4)	16%	16%		
Technically Recoverable Resource (TCF)	85	25		
OGIP Concentration (BCF/km²)	31	31		

Middle Velkerri B Shale Pool 2C Contingent Gas Resource Estimates within EP76, EP98 and EP117 as of 15 February 2017*(5)				
Measured and Estimated Parameters	Units	Best Estimate		
Area <sup>(6)</sup>	km²	1,968		
OGIP <sup>(7)</sup>	TCF	61.0		
<b>Gross Contingent Resource</b> (8)	TCF	6.6		
Net Contingent Resource <sup>(2,8)</sup>	TCF	1.94		

#### Notes:

- <sup>1</sup>The estimates included in the table above were not prepared in accordance with the Canadian Oil and Gas Evaluation Handbook ("COGEH")
- <sup>2</sup> Falcon's working interest is 29.43%, net attributable numbers do not incorporate royalties over the Beetaloo JV Permits (EP76, EP98, EP117)
- <sup>3</sup> Area defined by a depth range at a maturity cut-off consistent with the dry gas window within the Beetaloo JV Permits (EP76, EP98, EP117)
- <sup>4</sup> The factor range was applied stochastically to the OGIP range to calculate the range of technically recoverable resource within the Beetaloo JV Permits
- <sup>5</sup> Contingent resource estimates have been prepared on a statistical aggregation basis and in accordance with the Society of Petroleum Engineers Petroleum Management System (SPE-PRMS). Contingent resource estimates are those quantities of gas (produced gas minus carbon dioxide and inert gasses) that are potentially recoverable from known accumulations but which are not yet considered commercially recoverable due to the need for additional delineation drilling, further validation of deliverability and original gas in place, and confirmation of prices and development costs. If the estimates were to be prepared in accordance with COGEH, Falcon is highly confident that there would be no change to the contingent resource estimates above
- <sup>6</sup> P50 area from the contingent resource area distribution
- <sup>7</sup> OGIP presented is the product of the P50 Area by the P50 OGIP per km<sup>2</sup>
- 8 Estimated contingent gas resource category of 2C. There is no certainty that it will be commercially viable to produce any portion of the resources

<sup>\*</sup>Reference should be made to the Company's most recent Annual Information Form for further particulars regarding the resource estimates, details found at the following link <a href="https://falconoilandgas.com/reports-and-filings-new/">https://falconoilandgas.com/reports-and-filings-new/</a>

### Stage 2 – Work Program Overview



Drilling operations include the drilling and hydraulic fracture stimulation of two horizontal wells

#### 1. Kyalla shale and hybrid liquids rich gas plays

- Three source rock and two hybrid target intervals in Kyalla formation
- Estimated liquid yields in the range of 15-60 bbl/MMscf
- Kyalla formation prospective areas confined to the JV permits
- Expected cost advantage over the Velkerri given it is shallower
- Likely to be liquids rich gas that could also improve economics considerably

#### 2. Velkerri shale liquids rich gas play

- Liquids rich gas play fairway along the northern and south-eastern flanks at 1,200-2,000m TVD
- Regional gas composition and maturity data indicate CGR at an estimated 5-40 bbl/MMscf<sup>1</sup>
- Indications that porosity and permeability are higher in these areas
- Increased potential for a stacked liquids rich targets

Northern Birdum Creek 1 **Territory Hayfield Sandstone** oil/condensate play Velkerri shale liquids rich gas play 16°5 Daly Waters Burdo 1 Chanin 1 O Ronald 1 Kalala S1 Velkerri shale dry gas play Tanumbirini 1 Shenandoah 1A **FP 98** Shortland 1 A Mason 1 Jamison 1 Kyalla shale liquids rich gas play Velkerri shale **EP 117** liquids rich gas play 17°S O Beetaloo W 1 Kyalla hybrid liquids rich gas play ♦ Elliott 1 Legend Beetaloo permits **EP 76** Elliott @ Road **Existing well** 

 $<sup>^{1}</sup>$ : Côté et al. 2018 APPEA, "Australia's premier shale basin: five plays, 1 000 000 000 years in the making"

### Kyalla 117 N2-1 – Vertical Well Evaluation



## Evaluation of the Kyalla 117 N2-1 vertical well advances

- Confirmed the continuation of the regionally pervasive Kyalla formation between the Beetaloo W-1 and Amungee NW-1H wells.
- 45 metres of conventional coring was acquired in each of the Upper and Lower Kyalla reservoir sections.
- Elevated gas show with relatively high C<sub>3</sub>, C<sub>4</sub> and C<sub>5</sub> components, which were observed across the carbonaceous shales.
- Three source rock reservoir ("SRR") sections were identified within the Kyalla Shale Formation, characterised as the Lower, Middle and Upper Kyalla.
- Thickness of entire Kyalla Shale Formation measured almost 900 metres.
- Gross thickness of each SRR interval is between 75 and 125 metres.
- Diagnostic fracture injection tests ("DFITs") were performed on each SRR.



Source: Company

### Kyalla 117 N2-1 – Horizontal Drilling Commenced



## Drilling of the Kyalla 117 N2-1H horizontal well has commenced

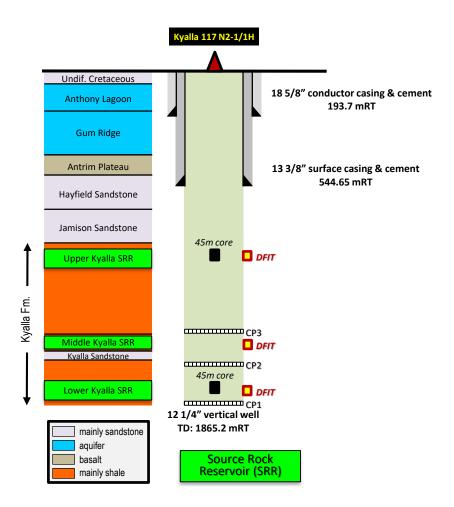
- The JV elected to land the horizontal well within the Lower Kyalla shale, at a depth of ~1800mTVD
- The horizontal section will be drilled between approximately 1,000-2,000 metres.
- On completion of drilling, the horizontal section will be fracture stimulated and production tested.
- Ongoing analysis of conventional cores acquired in each of the Upper and Lower Kyalla reservoir sections, along with sidewall cores, DFITs and extensive wireline logging, will enable a fullscale evaluation of the prospectivity of the Kyalla Formation in the central part of the Beetaloo Sub-Basin.



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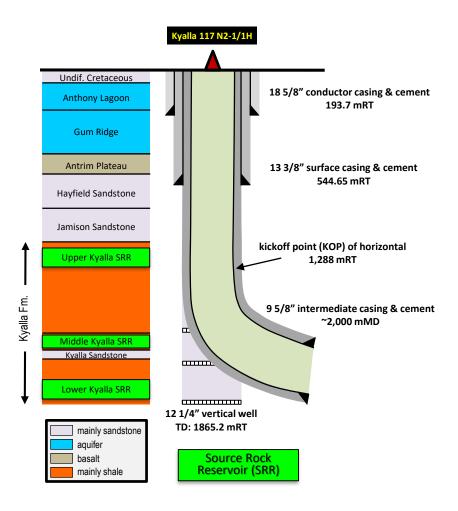
### Kyalla 117 N2-1 – Vertical Well Section





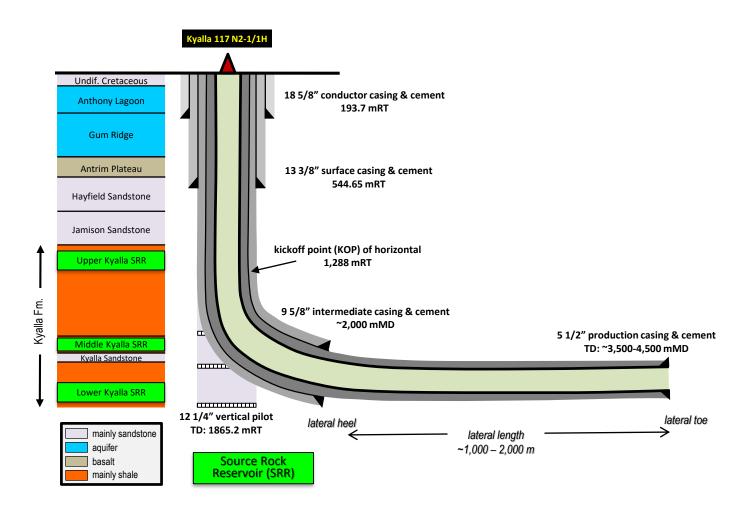
### Kyalla 117 N2-1 – Intermediate Horizontal Section





### Kyalla 117 N2-1 – Horizontal Section





### Stage 3 – Work Program Overview



- Stage 3 objective is to achieve commercial production flow rates
- Drilling operations targeted for 2020 include the drilling and hydraulic fracture stimulation of two horizontal wells targeting one or more of the three plays:
  - Velkerri B shale gas play
  - Kyalla shale and hybrid liquids rich gas plays
  - Velkerri shale liquids rich gas play



Source: Origin

### Market Overview – Gas Infrastructure





### **Key LNG Projects**

#### **Ichthys LNG**

Start date: 2018

Cost estimate: US\$45bn

#### **Darwin LNG**

Major partners: ConocoPhilips, Santos, Inpex,

ENI

Start date: 2006

Annual capacity: 3.7 MT (~178BCF)

Cost estimate: US\$1.5bn



Annual capacity: 8.9 MT (~427BCF)











#### **New Pipeline Infrastructure**

#### **Northern Gas Pipeline (NGP)**

The A\$800m, 622km Northern Gas Pipeline, commenced operations in January 2019



Potential to invest a further A\$3-4bn increasing the capacity of the pipeline on the back of a Northern Territory commercial discovery

### **Other Beetaloo Explorers**







18 Source: Company

### Market Overview

### - Route to commercialisation



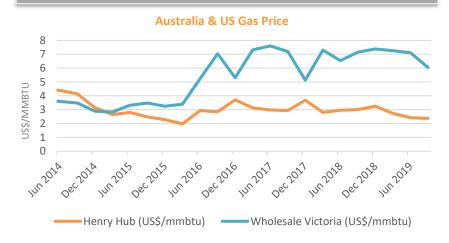
#### **Demand driven fundamentals**

#### Chinese and Japanese Actual and Estimate LNG Imports 2014- 2030



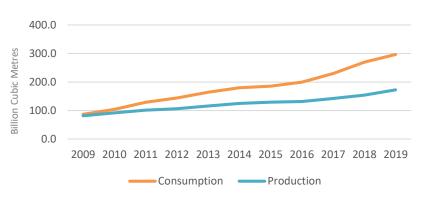
Source: BP Statistical Review, Oxford Energy, International Gas Union

#### An attractive Australian market



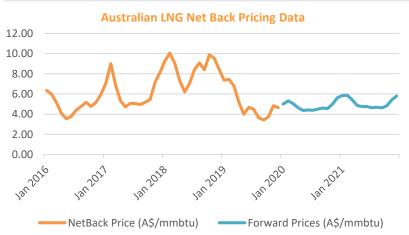
### **Upward trend in LNG imports**

#### Widening Gap Between Chinese Net Gas Consumption & Production



Source: BP Statistical Review, National Energy Administration (NEA)

### Underpinned by strong pricing environment





## **Appendices**

# Appendix A Corporate Information



### Share Capital & Cash

Common shares in issue 981,847,425

Share options outstanding 40,333,334

Warrants outstanding 10,000,000

Fully diluted share capital 1,032,180,759

Cash as at 30 September 2019 US\$13.2 m

### **Major Shareholders**

Lamesa Holding S.A.	16.00 %
Sweetpea / PetroHunter	6.28 %
Nicolas Mathys	5.15 %
Burlingame Asset Management	4.97%

### **Trading Details**

Toronto: TSXV Ticker: FO.V

London: AIM Ticker: FOG.L

#### **Contact Details**

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Source: Company as at 8 October 2019

# Appendix B Middle Velkerri Characterisation - Comparision with US basins



	Marcellus Shale <sup>1</sup>	Barnett Shale <sup>1</sup>	Middle Velkerri Shale
Estimated Basin Area (km²)	246,050	12,950	17,070 <sup>4</sup>
Typical Depth (m)	1,220-2,590	1,980-2,590	1,000-2,500
Gross Thickness (m)	60	60-305	45- >420
Net Thickness (m)	15-105 (45)	30-215 (90)	60-86 (73) <sup>2</sup>
Reported Gas Contents (scf/ton)	60-150	300-350	100 <sup>2</sup>
Porosity (%)	4-12 (6.2)	4-6 (5)	2-8
Gas-filled Porosity (%)	4	5	2.5 <sup>2</sup>
Water Saturation (%)	43	38	58 <sup>2</sup>
Permeability Range (average) (nD)	0-70 (20)	0-100 (50)	10-100 (50)
Reported Silica Content (%)	37	45	49 (1-77)
% Ro (average range)	1.5 (0.9-5)	1.6(0.85-2.1)	1.5->2.5 <sup>3</sup>
TOC present-day (average in wt%)	4.01 (2-13)	3.74 (3-12)	3.74 (1-10)

Source: Close et al. 2016 AGES, "Unconventional gas potential in Proterozoic source rocks: Exploring the Beetaloo Sub-basin"

<sup>&</sup>lt;sup>1</sup>Jarvie DM, 2012. Shale Resource Systems for Oil and Gas: Part 1—Shale-gas Resource Systems: in Breyer JA (editor). 'Shale Reservoirs: Giant Resources for the 21st Century'. AAPG Memoir 97, 69–87

<sup>&</sup>lt;sup>2</sup> Origin Energy Ltd estimated average values from C, B, and A shale in Kalala S-1 and Amungee NW-1

<sup>&</sup>lt;sup>3</sup> Value represent Equiv. %Ro estimated from alginite reflectance

<sup>&</sup>lt;sup>4</sup> Based on Beetaloo JV permit area