# **Comet Ridge**

# Good Oil Conference - Perth 12 September 2019

ASX Code : COI www.cometridge.com.au



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# **Comet Ridge - Corporate Overview**



#### Capital Structure – ASX:COI

Share price (12 September 2019 close)	\$0.26
Shares on issue	727.9m
Performance rights	5.5m
Market capitalisation	\$189m
Cash (30 June 2019)	\$13.0m

Directors					
	James McKay Non-Exec Chairman	<ul> <li>30 years in business (commerce/law background)</li> <li>Considerable public company experience including Sunshine Gas</li> </ul>			
	Tor McCaul Managing Director	<ul> <li>Petroleum engineer 30+ years oil &amp; gas</li> <li>Previously Head of Commercial for Cairn plc in India &amp; LNG Contract Manager for VICO (Bontang)</li> </ul>			
	Gillian Swaby Non-Exec Director	<ul> <li>30+ years in Finance &amp; Resources</li> <li>Former Chair of WA Council of Chartered Sec.</li> </ul>			
	Chris Pieters Executive Director	<ul> <li>Geologist with 12 years in oil &amp; gas</li> <li>Previously Chief Commercial Officer, Sunshine Gas</li> </ul>			
	Martin Riley Non-Exec Director	<ul> <li>35+ years upstream oil &amp; gas</li> <li>Influential in commercial inception and development of CSG industry in QLD with Origin Energy</li> </ul>			

#### **12 Month Share Price Performance**



#### **Share Registry Breakdown**



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# Comet Ridge (ASX:COI) – Project Summary



#### Mahalo Gas Project – Southern Bowen – CSG

- Initial Development Plan (IDP) currently being finalised
- JV with Santos (ASX:STO) and APLNG
- APLNG upstream operator is Origin Energy (ASX:ORG)

#### **Galilee Basin – CSG, Sandstone and Shale**

- Albany 1 well, Sandstone target June 2018 First measured gas flow from Sandstones in the basin
- Albany 2 well drilled with gas shows and reservoir quality above pre-drilling expectation
- Opportunities for early commercialisation
- Gas Resources certified in Sandstones and Coal Seams

#### Gunnedah Basin – CSG – NSW

- Assets cover ~13,000 km<sup>2</sup> located north of Santos Narrabri development
- Santos working to have Narrabri Project approved potential to get Gunnedah Basin appraisal moving



# **Comet Ridge - Investment Thesis**



#### **Corporate Strategy**

- Diversified east coast gas play with multi-basin, multistructure focus
- Significant project upside through exploration, appraisal and development activities
- Actively bidding additional tenure focusing on portfolio synergies



#### Mahalo CSG (with ASX:STO and ASX:ORG as upstream operator for APLNG)

- CSG project with significant appraisal work completed & development process commenced
- Proven low cost gas play close to Gladstone market
- High gas flow rates achieved from Mahalo 7 and Mira 6 lateral pilot wells
- Progressing initial development plan in high gas flow zone with JV partners, Santos and APLNG

#### Galilee Sandstones (with ASX:VEN)

- Enormous project scale with 20+ sandstone gas leads & prospects
- Flow rate achieved at Albany 1
- Albany 2 shows good reservoir quality in a number of sandstones within structural closure
- Albany 1 will be sidetracked and production tested prior to end of year
- Potential for CSG pilot in "shallows" – 100% Comet Ridge

- Joint Venture Equity
  - Comet Ridge (ASX:COI) 40%
  - Santos (ASX:STO) 30%
  - APLNG 30%
- Origin Energy (ASX:ORG)
   Upstream Operator for APLNG
- Central QLD
  - between Emerald & Rolleston
- Area 911 km<sup>2</sup>
- Close to pipeline infrastructure (to Gladstone)
- Development application (PLAs) to government submitted
- FID June 2020





# Mahalo – Initial Development Plan (IDP)



# Development concept – Initially targeting up to 80 TJ/d production

- Modular & simple gas plant (water treatment, dehydration, flare) likely sized for 80 TJ/d
- Modular plant could be expanded at a later time
- Initial production rate expected 40 to 60 TJ/d
- 65km pipeline connection (two available export pipelines to the south) sized up to 120 TJ/d
- Initial development will be a series of mostly dual lateral wells, intersecting vertical production wells.
- Submission of key Federal and State government applications being submitted

**Recently submitted** Petroleum Lease areas called "Mahalo" and "Humboldt" numbered PLA1083 and PLA 1082 respectively by Queensland Government





### **Mahalo – Development Timetable**

- Petroleum Survey Licence application lodged -65km pipeline connection
- Petroleum Lease Application Lodged PLA numbers issued by government
- Initial Development Plan and equipment selection on going
- EPBC submission expected to be lodged shortly
- FID June 2020
- Comet Ridge first gas achievable 15 18 months after FID



8



Potential Simple Gas Plant design supplied by Equinox Engineering



Example of pipeline installation

DEVELOPMENT TIMELINE		2019		2020			2021				
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Pipeline Survey Licence	$\checkmark$										
Initial Development Plan											
PL Applications process	Lodged										
EPBC and EA process											
FID preparation											
First Gas											*
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Comet Ridge's view on timetable to First Gas

### Galilee Basin – Targets at multiple levels



- Basin covers a large part of central western Queensland (~250,000 km<sup>2</sup>)
- Comet has a massive position in the east portion of the Basin – 9,685 km<sup>2</sup>
- CSG (Shallows) Comet Ridge 100%
- Sandstone (Deeps) JV
  - Comet Ridge 70%, Vintage Energy (ASX:VEN) 30%
  - Maiden gas flowrate of 230,000 scf/d from Albany 1 Sandstone (June 2018)
  - Albany 2 Drilled better than forecast reservoir quality
- Marine Shales in deeper section
- Potential for early commercialisation with nearby Mining and Industrial gas demand
- Significant interest from Infrastructure Providers to assist with gas transportation



### **Galilee Sandstone – Large Number of Potential Targets**



- Significant gross 3C<sup>+</sup> resources certified in conventional Sandstones (417PJ gross) in one structure (Albany)
- Basin has up to 140m of gross sandstone section
- Koburra 336km 2D Seismic programme complete in late 2018 & early 2019
  - Data processing progressing
  - Initial interpretation ongoing and mapping to follow
  - Several possible leads identified in the vicinity of Lake Galilee 1
  - New structural trends ID by regional lines



Significant number of sandstone leads, and prospects identified from relatively sparse seismic data set in the eastern Galilee

### **Galilee Sandstone – 2019 Work Programme**

#### Current work programme

- Albany 2 drilled to TD of 2702m
- Observed porosity values up to a maximum of 15%
- Preliminary analysis of logs indicates good reservoir quality in a number of sandstones within structural closure
- 62m of predominately sandstone core being analysed to optimise stimulation
- Soon to move to Albany 1 to sidetrack and finish drilling all the original target zone
- Fracture Stimulation of both wells Q4-2019
- Targeted Outcomes
  - Additional drilling targets, data being interpreted now
  - Conversion of Resources to Reserves
  - Gas Sales Agreement(s)





# Galilee Sandstone – Lake Galilee Drilling Target

- Originally drilled in 1964 to evaluate hydrocarbon potential
- Recovered oil and gas-cut mud
- Newly acquired seismic survey shows that Lake Galilee 1 was drilled outside of potential structural closure
- Structure covers an area of  $\sim 20 \text{ km}^2$  with a closure height of  $\sim 60 \text{ m}$ . This structure represents a great target.



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ake Galilee-

### Galilee CSG – recoverable gas estimated 2,173 km<sup>2</sup>

- Gunn Project area (COI 100%) extends across southern portion of ATP744 & ATP1015
- 6 individual coal seams
- Depth to coal 700 1,000m
- 16 to 24m net coal deposited over large area
- Average gas content 4.3 m<sup>3</sup>/t (high 7.3 m<sup>3</sup>/t)
- Good to excellent permeability
- To date, COI has only sought resource certification for ATP744





# What a Galilee CSG Pilot could look like...

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623km<sup>2</sup>

325km<sup>2</sup>

- Initial Pilot Development planning well progressed
- Pilot to target 7.5m C1 coal seam located at the Schmitt 1 well, total coal package 21.1m
- With a 4 well pilot, outside wells 'shelter' the central wells, so the central well ends up producing much less water than a single well pilot
- Schmitt 1 to be used as a pressure monitoring well
- Each pilot well planned to be 500m in seam and 250m apart
- Developable area could be 948km<sup>2</sup>, with 623km<sup>2</sup> accessed via dual laterals & 325km<sup>2</sup> via single lateral wells



Image of potential 4 well coal seam pilot, targeting the C1 coal

### **Potential Galilee Gas Demand – Moranbah / Townsville**



- North Queensland Gas Pipeline (NQGP) is an existing 391km pipeline (capacity up to 108 TJ/d)
- Moranbah/Townsville market is currently supply constrained
- A number of gas customers with significant current and future gas requirements
- Proposed APA pipeline connects Comet Ridge Galilee Projects to Townsville via Moranbah
- Several new developments planned that will build on the volume of gas required



Sponsor	Project	Status	Location	Status	Potential Gas Required (TJ/D)
Incitec Pivot	Ammonium nitrate	Online	Moranbah	Online & Brown field	50 - 100
RATCH	Townsville CCGT	Online	Townsville	Planned	49 - 68
Origin	Mt Stuart OCGT	Online	Townsville	Total potential Demand	108 - 168
Queensland Nickel	Nickel Refinery	Moth-balled	Townsville		

Information displayed in the table has been prepared by Comet Ridge from open source data and internal estimates

### **NSW Potential closer than expected**

- Comet Ridge holds a significant block area with Santos as JV partner over 13,000 km<sup>2</sup> in northern NSW
- Comet Ridge also holds this area for conventional exploration as operator
- Increasing momentum inside NSW for gas development approvals for a state only producing a small fraction of its own gas requirements
- Opportunity to revisit the significant acreage held by Comet Ridge in JV with Santos once Narrabri is approved  $- 13,000 \text{ km}^2$
- Comet Ridge has commenced an exploration review – magnetics, gravity surveys, seismic, old wells





### **Comet Ridge – Growth Pipeline**

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#### Moving Resources to Reserves as quickly and capital efficiently as possible



### **Comet Ridge – Key take away messages**

- Mahalo is one of the east coast's largest, most productive and proximal to market gas fields not currently in production
- Significant upside from Galilee Proof of concept with successful flow of gas from Albany 1 and Albany 2 drilled with good reservoir quality in a number of sandstones
- East coast gas market continues to tighten due to moratoria on gas exploration, shutdown of coal fired generation and increasing LNG demand
- Comet Ridge well placed to form part of the supply solution for the east coast gas market





LEGEND

#### **Glossary of Terms**

EPBC	Environment Protection & Biodiversity Conservation Act 1999
EA	Environmental Authority (Qld Govt)
IDP	Initial Development Plan
FID	Final Investment Decision
PL	Petroleum Lease (Qld Govt)
PJ	Peta Joule (measure of energy – 10 <sup>15</sup> Joule)
CSG	Coal Seam Gas
SCFD	Standard Cubic feet (of gas) per day
ATP	Authority to Prospect (Qld Govt tenure)



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### **ASX Listing Rule 5 Disclosure**



#### Competent Person Statement and ASX Listing Rules Chapter 5 - Reporting on Oil and Gas Activities

The Contingent Resource for the Albany Structure located ATP 744 are taken from an independent report by Dr Bruce McConachie of SRK Consulting (Australasia) Pty Ltd, an independent petroleum reserve and resource evaluation company. The Contingent Resources information has been issued with the prior written consent of Dr McConachie in the form and context in which they appear in this Presentation. His qualifications and experience meet the requirements to act as a qualified petroleum reserves and resource evaluator as defined under the ASX Listing Rule 5.42 to report petroleum reserves in accordance with the Society of Petroleum Engineers ("SPE") 2007 Petroleum Resource Management System ("PRMS") Guidelines as well as the 2011 Guidelines for Application.

The estimate of Reserves and Contingent Resources for the Mahalo Project as part of ATP 1191P provided in this Presentation, is based on, and fairly represents, information and supporting documentation determined by Mr Timothy L. Hower of MHA Petroleum Consultants LLC Inc (MHA) in accordance with Petroleum Resource Management System guidelines. Mr Hower is a full-time employee of MHA, and is a qualified person as defined under the ASX Listing Rule 5.42. Mr Hower is a Licensed Professional Engineer in the States of Colorado and Wyoming as well as being a member of The Society of Petroleum Engineers. Mr Hower has consented to the publication of the Reserve and Contingent Resource estimates for Mahalo in the form and context in which they appear in this Presentation.

The reserve and contingent gas resource estimates for ATP 1191P provided in this presentation were originally released to the Market in the Company's announcement of 28 August 2014, updated in an announcement dated 2 December 2015, and further upgraded in an announcement dated 6 March 2018 and were estimated using the deterministic method with the estimate of contingent resources not having been adjusted for commercial risk.

The contingent resource estimates for the unconventional gas located in ATP 744 provided in this Presentation are based on and fairly represent, information and supporting documentation determined by Mr John Hattner of Netherland, Sewell and Associates Inc, Dallas, Texas, USA, in accordance with Petroleum Resource Management System guidelines. Mr Hattner is a full-time employee of NSAI, and is considered to be a qualified person as defined under the ASX Listing Rule 5.42 and has given his consent to the use of the resource figures in the form and context in which they appear in this presentation.

The contingent gas resource estimates for ATP 744 provided in this statement were originally released to the Market in the Company's announcement of 25 November 2010, and were estimated using the deterministic method with the estimate of contingent resources for ATP 744 not having been adjusted for commercial risk.

COI confirms that it is not aware of any new information or data that materially affects the information included in any of the announcements relating to either ATP 1191P or ATP 744P referred to above and that all of the material assumptions and technical parameters underpinning the estimates in the announcements continue to apply and have not materially changed.

The contingent resource estimates for PEL 6, PEL 427 and PEL 428 referred to in this presentation were determined by Mr Timothy L. Hower of MHA Petroleum Consultants LLC in accordance with Petroleum Resource Management System guidelines. Mr Hower is a full-time employee of MHA, and is a qualified person as defined under the ASX Listing Rule 5.42. Mr Hower consented to the publication of the resource figures which appeared in the announcement of 7 March 2011 made by Eastern Star Gas Limited (ASX:ESG) and any reference and reliance on the resource figures for PEL 6, PEL 427 & PEL 428 in this Presentation is only a restatement of the information contained in the ESG announcement.

The contingent resource estimates for PEL 6, PEL 427 and PEL 428 were estimated using the deterministic method with the estimate of contingent resources for PEL 6, PEL 427 and PEL 428 not having been adjusted for commercial risk.

COI confirms that it is not aware of any new information or data that materially affects the information included in the ESG announcement of 7 March 2011 and that all of the material assumptions and technical parameters underpinning the estimates in the announcements continue to apply and have not materially changed.