



Horizon Oil Limited

2018 Reserves and Resources Statement

as at 30 June 2018

Highlights

- Strong performance from producing conventional oil assets in China and New Zealand with a 16% increase in sales volumes on the prior year at 1.6 mmbbl.
- Proved plus Probable Reserves (2P) of oil increased by 1 mmbbls to 8.9 mmbbls following strong production in China and New Zealand and the increase in Horizon Oil's participating interest in the Maari project from 10 to 26 percent.
- Following delivery¹ of the infill wells WZ 12-8W-A7H and -A8H in the WZ 12-8W and WZ 12-8M oil pools in Beibu Gulf, all undeveloped 1P and 2P reserves are now on production.
- Contingent Resources (2C) of oil and condensate increased as a result of the identification of additional infill opportunities in New Zealand and an increase in the expected recovery of condensate from the Elevala-Ketu and Ubuntu fields in Papua New Guinea. These increases were offset by review of the technical basis and commercial considerations of the Manaia-Moki development in New Zealand. In aggregate, Contingent Resources (2C) of oil and condensate decreased by 1.9 mmbbls to 27 mmbbls.
- Contingent Resources (2C) of gas in Papua New Guinea increased by 49 PJ to 505 PJ of Sales Gas with incorporation of process design considerations including heat and mass balance calculations completed as part of the Western LNG project.

Proved and Proved plus Probable Reserves

Proved and Proved plus Probable Reserves (Horizon Oil share)							
		1P Developed Liquids <i>mmbbl</i>	1P Undeveloped Liquids <i>mmbbl</i>	1P Total Liquids <i>mmbbl</i>	2P Developed Liquids <i>mmbbl</i>	2P Undeveloped Liquids <i>mmbbl</i>	2P Total Liquids <i>mmbbl</i>
China							
Block 22/12	WZ 6-12 + WZ 12-8W	2.8	0.1	2.9	4.3	0.2	4.5
New Zealand							
PMP 38160	Maari + Manaia	1.9	-	1.9	4.5	-	4.5
Closing Balance 30 June 2018		4.7	0.1	4.8	8.8	0.2	8.9

¹ Refer ASX announcement dated 8 August 2018.

Reconciliation of Proved and Proved plus Probable Reserves

- **Production:** strong net production of 1.6 mmbbl (0.5 mmbbl in New Zealand, 0.8 mmbbl in China with a further 0.4² mmbbl of cost-recovery oil in China) up 16% on the prior year.
- **China:** revisions following review of actual field performance and adjustment for preferential cost-recovery due to upward revisions to the oil price forecast.
- **New Zealand:** revisions following review of actual field performance and the acquisition of an additional 16% participating interest in Maari, increasing Horizon Oil's net working interest from 10% to 26% (an increase of 1.2 mmbbl on a 1P basis and 3.1 mmbbl on a 2P basis).

Proved and Proved plus Probable Reserves Reconciliation		
	1P Liquids mmbbl	2P Liquids mmbbl
Opening Balance 30 June 2017	5.0	7.9
Production (Net Working Interest)	(1.3)	(1.3)
Production (Cost Recovery Oil Entitlement)	(0.4)	(0.4)
Revisions of Previous Estimates	0.5	(0.2)
Economic Interest Adjustment	(0.2)	(0.2)
Transfers, Discoveries and Extensions	-	-
Acquisitions and Divestments	1.2	3.1
Closing Balance 30 June 2018	4.8	8.9

Contingent Resources

Contingent Resources (Horizon Oil share)				
		2C Liquids mmbbl	2C Raw Gas bcf	2C Sales Gas PJ
China				
Block 22/12	WZ 6-12 + WZ 12-8W	0.2	-	-
Block 22/12	WZ 12-8E	2.8	-	-
sub-total		3.0	-	-
New Zealand				
PMP 38160	Maari + Manaia	4.3	-	-
PMP 38160	Manaia-Moki development	-	-	-
sub-total		4.3	-	-

² Cost recovery oil is reconciled as an Economic Interest Adjustment.

Contingent Resources

Contingent Resources (continued) (Horizon Oil share)				
		2C Liquids <i>mmbbl</i>	2C Raw Gas <i>bcf</i>	2C Sales Gas <i>PJ</i>
Papua New Guinea				
PDL 10	Stanley	3.4	123	110
PRL 21	Eleva-Ketu	15.2	351	371
PRL 28	Ubuntu	1.1	23	24
sub-total		19.7	497	505
Closing Balance 30 Jun 2018		27.0	497	505

Reconciliation of Contingent Resources

Contingent Resources Reconciliation			
	2C Liquids <i>mmbbl</i>	2C Raw Gas <i>Bcf</i>	2C Sales Gas <i>PJ</i>
Opening Balance 30 June 2017	28.9	497.0	456.0
Production (Net Working Interest)	-	-	-
Production (Cost Recovery Oil Entitlement)	(0.1)	-	-
Revisions of Previous Estimates	(1.7)	-	49.0
Economic Interest Adjustment	(0.1)	-	-
Transfers, Discoveries and Extensions	-	-	-
Acquisitions and Divestments	-	-	-
Closing Balance 30 June 2018	27.0	497.0	505.0

- **China:** 0.2 mmbbl adjustment for cost recovery entitlement due to upward revisions to the oil price forecast and adjustment to economic interest.
- **New Zealand:** an increase of 0.9 mmbbl associated with the identification of additional infill opportunities in the Maari Moki and Manaia Mangahewa reservoir offset by a decrease of 2.6 mmbbl of oil resulting from a review of the technical basis and commercial considerations of the Manaia-Moki development in New Zealand.
- **Papua New Guinea:** an upward revision of 0.9 mmbbl liquids and 49 PJ of Sales Gas with incorporation of process design considerations including heat and mass balance calculations completed as part of the proposed Western LNG project and an increase in the expected recovery of condensate from the Eleva-Ketu and Ubuntu fields.

Pending Revision in Contingent Resources

Subject to, and on PNG government approval of, the acquisition of a 20% economic interest in PRL 40 and divestment of a 20% interest in PRL 28³ an increase to net Contingent Resources (2C) will be realised.

Pending revision in Contingent Resources (Horizon Oil share)									
Before government approval					After government approval				
	Working Interest	2C Liquids	2C Raw Gas	2C Sales Gas	Working Interest	2C Liquids	2C Raw Gas	2C Sales Gas	
	%	mmbbl	bcf	PJ	%	mmbbl	bcf	PJ	
Papua New Guinea									
PRL 28 Ubuntu	50%	1.1	23	24	30%	0.7	14	14	
PRL 40 Puk Puk etc.	0%	-	-	-	20%	0.1	111	109	
Total		1.1	23	24		0.8	125	123	

Gross Contingent Resource Base for Western LNG

- Horizon Oil has estimated the Contingent Resources (2C) in four licenses in the Western Province of Papua New Guinea that may supply gas to the Company's proposed Western LNG development.
- Gross Contingent Resources (2C) of the combined licenses are tabulated below and have been subject to external audit.

Gross Contingent Resource Base for Western LNG (100% share)			
	2C Liquids	2C Raw Gas	2C Sales Gas
	mmbbl	bcf	PJ
Papua New Guinea			
PDL 10, PRL 21, PRL 28 and PRL 40	64.4	2,170	2,188

³ The Group will exchange a 20% interest in PRL 28 for a 20% interest in PRL 40 (Puk Puk, Douglas, Langia and Weimang gas fields) in a trade with Kumul Petroleum Holdings, PNG's national oil company. Completion of this transaction is conditional on customary PNG Government approvals

Permits, Licences and Interests Held

Permit or License	Operator	Material Projects	Working Interest (%)	
			30 June 2018	30 June 2017
China Block 22/12	CNOOC	WZ 6-12, WZ 6-12S, South & WZ 12-8 West fields	26.95%	26.95%
		WZ 12-8 East field	55.00% ⁴	55.00%
New Zealand PMP 38160	OMV	Maari and Manaia fields	26.00% ⁵	10.00%
Papua New Guinea PDL 10	Repsol	Stanley field	30.00% ⁶	30.00%
PRL 21	Horizon Oil	Eleva-Ketu fields	30.15%	30.15%
PRL 28	Horizon Oil	Ubuntu field	50.00% ³	50.00%
PPL 574	Horizon Oil	Exploration activities	80.00%	80.00%
PPL 430	Horizon Oil	Exploration activities	100.00%	100.00%
PPL 372	Horizon Oil	Exploration activities	95.00%	95.00%
PPL 373	Horizon Oil	Exploration activities	100.00%	100.00%
PRL 40	Repsol	Puk Puk, Douglas, Weimang and Langia fields	⁻³	-

⁴ China National Offshore Oil Corporation ("CNOOC") is entitled to participate at up to a 51% equity level in any commercial development within Block 22/12.

⁵ As announced on 31 May 2018, Horizon Oil completed the acquisition of Todd Maari Limited's 16% interest in PMP 38160, which contains the producing Maari and Manaia fields.

⁶ PNG government may appoint a state nominee to acquire up to a 22.5% participating interest in any commercial development within the PNG licence areas.

Notes

- 1 All estimates are prepared in accordance with the Society of Petroleum Engineers (SPE) Petroleum Resources Management System (PRMS).
- 2 Relevant terms used in this statement, capitalised or otherwise, have the same meaning given to those terms in the SPE PRMS.
- 3 Reserves are those quantities of petroleum anticipated to be commercially recoverable by application of development projects to known accumulations from a given date forward under defined conditions.
- 4 Contingent Resources are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations by application of development projects, but which are not currently considered to be commercially recoverable owing to one or more contingencies.
- 5 Contingent Resource estimates quoted for China have assumed China National Offshore Oil Corporation ("CNOOC") participation at 51%. CNOOC is entitled to participate at up to a 51% equity level in any commercial development within Block 22/12.
- 6 Contingent Resource estimates quoted for PNG do not assume PNG State Nominee participation at this time. The PNG government may appoint a state nominee to acquire up to a 22.5% participating interest in any commercial development within the PNG licence areas.
- 7 Liquids are equal to the total of oil, condensate and natural gas liquids where 1 barrel of condensate or natural gas liquids equals 1 barrel of oil.
- 8 Raw Gas is natural gas as it is produced from the reservoir which may include varying amounts of heavier hydrocarbons which liquefy at atmospheric conditions, water vapor and other non-hydrocarbon gases such as hydrogen sulphide, carbon dioxide, nitrogen or helium.
- 9 Sales Gas represents volumes that are likely to be present a saleable product. Sales Gas are reported assuming average values for fuel, flare and shrinkage considering the variable reservoir fluid properties of each constituent field on an energy basis the customary unit is PJ. PJ means petajoules and is equal to one quadrillion joules.
- 10 Depending on the asset, either deterministic estimates or probabilistic estimates have been used to calculate the petroleum reserves, contingent resources and prospective resources in this statement.
- 11 Reported estimates of petroleum reserves and contingent resources have been aggregated by arithmetic summation by category.
- 12 Unless otherwise noted, estimates are reported according to Horizon Oil's economic interest ("Horizon Oil share"), this being Horizon Oil's net working interest as adjusted for entitlements under production-sharing contracts and risked-service contracts; and are reported net of royalties and lease fuel up to the reference point. For New Zealand, the reference point is defined as the outlet of the Raroa Floating Production Storage and Offtake (FPSO) facility. For China the reference point is the exit flange of the loading hoses at Weizhou Terminal.
- 13 Horizon Oil employs a Reserves Management System to ensure the veracity of data used in the estimation process. This process includes review by senior staff where data is endorsed for inclusion in the estimating process. Estimates are reviewed annually, at a minimum, with interim reviews as required, to respond to any material changes. Horizon Oil undertakes semi-regular external reviews to complement its own internal process.
- 14 The estimates of petroleum reserves and resources contained in this statement are based on, and fairly represent, information and supporting documentation prepared by staff and independent consultants under the supervision of Mr Andrew McArdle, Chief Operating Officer of Horizon Oil Limited. Mr McArdle is a full-time employee of Horizon Oil Limited and is a member of the Society of Petroleum Engineers. Mr McArdle's qualifications include a Master of Engineering from the University of Western Australia, Australia and more than 15 years of relevant experience. Mr McArdle consents to the use of the petroleum reserves and resources estimates in the form and context in which they appear in this statement.
- 15 Some totals in the tables may not add due to rounding.