

# December 2013 Quarterly Production Report

## Exploration and Production report for Quarter ended 31 December 2013

Comparative performance at a glance - Origin's total proportional interests			
<b>Previous Quarter Comparison</b>	<b>December 2013</b>	<b>September 2013</b>	<b>Change %</b>
Production (PJe)	37.0	37.5	(1)
Sales (PJe)	39.5	41.0	(4)
Revenue (A\$m)	280.6	306.7	(9)
<b>Prior Corresponding Quarter Comparison</b>	<b>December 2013</b>	<b>December 2012</b>	<b>Change %</b>
Production (PJe)	37.0	28.8	28
Sales (PJe)	39.5	30.2	31
Revenue (A\$m)	280.6	201.5	39
<b>Year to Date Comparison</b>	<b>Jul - Dec 2013</b>	<b>Jul - Dec 2012</b>	<b>Change %</b>
Production (PJe)	74.4	62.0	20
Sales (PJe)	80.5	66.4	21
Revenue (A\$m)	587.2	427.4	37

Note: Information presented in the table above and throughout this report relates only to hydrocarbon exploration and production activities undertaken by Origin Energy Limited ("Origin"), its subsidiaries and the incorporated joint ventures in which it has interests. The report does not cover other business activities of Origin such as electricity generation or energy retailing.

### Highlights

- Production 28% higher than the prior corresponding Quarter largely due to increased contribution from Otway
- Revenue 39% higher than the prior corresponding Quarter reflecting an increase in production, higher third party sales volumes and a higher average commodity price
- APLNG drilled 108 Phase 1 development wells during the Quarter, bringing the total to 564
- The Upstream component of the project is 58% complete and the Downstream component 62% complete

### Production and Sales

#### December Quarter 2013 compared with September Quarter 2013

Production of 37.0 PJe in the December Quarter 2013 was 0.5 PJe or 1% lower than the September Quarter 2013. This is primarily attributable to lower production at Kupe (1.5 PJe) due to lower seasonal demand, Perth Basin (0.5 PJe) due to a shutdown to repair a pipeline and BassGas (0.4 PJe) due to Yolla 3 well performance, partly offset by higher production at Otway (2.0 PJe) due to higher plant uptime and an increase in volumes taken by Origin.

Sales revenue decreased 9% from the September Quarter 2013 reflecting lower production and a lower average commodity price.

### December Quarter 2013 compared with December Quarter 2012

Production of 37.0 PJe in the December Quarter 2013 was 8.2 PJe or 28% higher than the comparable Quarter in 2012. The higher production primarily reflects an increase at Otway (6.0 PJe) from Geographe 2 production commencing in July 2013 and production in the comparable Quarter impacted by a 23 day shutdown, an increase at APLNG (1.1 PJe) primarily due to additional Spring Gully wells coming online and an increase at Kupe (0.9 PJe) due to additional gas contracts being in place in the December 2013 Quarter and production in the comparable Quarter impacted by a 25 day shutdown.

Sales revenue increased 39% from the December Quarter 2012 reflecting production increases, a higher average commodity price and higher sales of third party volumes.

### Six Months to 31 December 2013 compared with Six Months to 31 December 2012

Production in the half year to 31 December 2013 of 74.4 PJe was 12.4 PJe or 20% higher than the comparable period in 2012. This result was attributable to increased production from Otway (6.3 PJe) due to higher plant uptime, the Geographe 2 well commencing production in July 2013 and production during the comparable period impacted by a 23 day shutdown; BassGas (3.5 PJe) due to reduced production in the comparable period from the extended shutdown for the Yolla Mid Life Enhancement (MLE) project and Kupe (2.0 PJe) due to additional gas contracts in 2013 and production during the comparable period impacted by a 25 day shutdown.

Sales revenue increased 37% from the comparable period in 2012 reflecting production increases, higher sales of third party volumes and a higher average commodity price.

### **Exploration, Evaluation and Capital Expenditure**

Expenditure on exploration and evaluation activities was \$59 million and capital expenditure on development and production activities was \$57 million (excluding APLNG) for the Quarter, as detailed in Section 5 of this report.

#### **Significant activities during the Quarter included:**

- **APLNG**

On 25 October 2013 APLNG and GLNG signed gas swap and infrastructure connection agreements that provide flexibility and allow both proponents to realise capital and operational efficiencies.

- **TAWN (NZ Onshore) Asset Sale**

The divestment of Origin's interests in the Tariki, Ahuroa, Waihapa and Ngaere licences in New Zealand's Taranaki region, as well as the Waihapa Production Station and associated gathering and sales infrastructure, to New Zealand Energy Corp was completed on 29 October 2013. Origin's sale consideration was CDN\$30 million plus a 9% royalty on all future hydrocarbons from these licences.

<http://www.originenergy.com.au/news/article/asxmedia-releases/1527>

- **Drilling Activities:**

- **APLNG**

APLNG participated in 268 wells during the Quarter, including 11 exploration/ appraisal wells, 20 groundwater monitoring bores and 237 development wells (108 operated Phase 1 wells and 129 non-operated production wells).

- **Cooper Basin**

Origin participated in the drilling of 19 wells during the Quarter, consisting of seven exploration wells and 12 development wells.

## 1. PRODUCTION, SALES AND REVENUE

Note: Current Quarter production figures for some non-operated areas may include preliminary production data for the last month of the Quarter. Where actual production volumes only became available after the report date for that Quarter, previous Quarter figures have been amended to reflect this.

### 1.1 Production by Product and Area (including interest in APLNG)

Natural Gas and Ethane	Unit	This Quarter	Previous Quarter	% Change	December Quarter 2012	YTD 2013/14	YTD 2012/13
<b>Natural Gas</b>	<b>PJ</b>						
APLNG (CSG and Denison Trough) *		11.5	11.5	0	10.4	23.0	21.4
SA Cooper & SWQ		2.9	2.9	1	2.9	5.8	6.1
Otway Basin (offshore)		12.1	10.3	18	7.0	22.4	17.3
Bass Basin		1.9	2.2	(13)	1.6	4.1	1.6
Surat Basin		-	-	-	-	-	-
Perth Basin		0.7	1.2	(46)	0.9	1.9	2.0
Taranaki Basin (onshore)		0.1	0.1	(46)	0.1	0.1	0.2
Taranaki Basin (Kupe)		2.4	3.3	(27)	1.8	5.7	4.3
<b>Ethane</b>	<b>PJ</b>						
SA Cooper & SWQ		0.4	0.4	(3)	0.3	0.8	0.7
<b>Total Production</b>		<b>32.0</b>	<b>31.9</b>	<b>0</b>	<b>25.0</b>	<b>63.8</b>	<b>53.6</b>
<b>Total Sales Volume</b>		<b>32.0</b>	<b>32.9</b>	<b>(3)</b>	<b>24.8</b>	<b>64.8</b>	<b>55.2</b>
<b>Total Sales Revenue</b>	<b>\$M</b>	<b>127.3</b>	<b>140.1</b>	<b>(9)</b>	<b>98.4<sup>#</sup></b>	<b>267.3</b>	<b>222.1<sup>#</sup></b>
<b>Average Gas Price</b>	<b>\$/GJ</b>	<b>3.98</b>	<b>4.26</b>	<b>(7)</b>	<b>3.97</b>	<b>4.12</b>	<b>4.02</b>

Crude Oil	Unit	This Quarter	Previous Quarter	% Change	December Quarter 2012	YTD 2013/14	YTD 2012/13
<b>Crude Oil</b>	<b>kbbbls</b>						
SA Cooper & SWQ		73.6	77.8	(5)	101.0	151.4	205.0
Surat Basin		4.0	3.9	2	4.3	7.9	8.8
Perth Basin		-	-	-	6.6	-	15.1
Taranaki Basin (onshore)		18.3	34.0	(46)	42.1	52.2	82.3
<b>Total Production</b>		<b>95.8</b>	<b>115.7</b>	<b>(17)</b>	<b>154.0</b>	<b>211.5</b>	<b>311.2</b>
<b>Total Sales Volume</b>		<b>556.4</b>	<b>508.8</b>	<b>9</b>	<b>455.7</b>	<b>1,065.2</b>	<b>773.8</b>
<b>Total Sales Revenue</b>	<b>\$M</b>	<b>71.4</b>	<b>66.8</b>	<b>7</b>	<b>51.7</b>	<b>138.3</b>	<b>87.7</b>
<b>Average Crude Price</b>	<b>\$/bbl</b>	<b>128</b>	<b>131</b>	<b>(2)</b>	<b>113</b>	<b>130</b>	<b>113</b>

\* Origin's share in APLNG was diluted from 50% to 42.5% on 9 August 2011 and to 37.5% on 12 July 2012.

# Adjusted to include APLNG carbon related revenue.

Condensate/Naphtha	Unit	This Quarter	Previous Quarter	% Change	December	YTD 2013/14	YTD 2012/13
					Quarter 2012		
Condensate/Naphtha	kbbls						
APLNG (Denison Trough) *		0.2	0.3	(8)	0.3	0.5	0.5
SA Cooper & SWQ		54.0	58.2	(7)	54.9	112.2	112.3
Otway Basin (offshore)		132.0	122.4	8	63.7	254.4	170.5
Bass Basin		72.6	87.2	(17)	59.7	159.8	59.7
Surat Basin		-	-	-	-	-	-
Perth Basin		0.8	1.0	(25)	0.3	1.8	0.6
Taranaki Basin (onshore)		-	-	-	-	-	-
Taranaki Basin (Kupe)		181.7	256.5	(29)	153.5	437.1	375.0
<b>Total Production</b>		<b>441.3</b>	<b>525.6</b>	<b>(16)</b>	<b>332.4</b>	<b>965.7</b>	<b>718.6</b>
<b>Total Sales Volume</b>		<b>404.5</b>	<b>549.9</b>	<b>(26)</b>	<b>304.5</b>	<b>954.4</b>	<b>752.1</b>
<b>Total Sales Revenue</b>	<b>\$M</b>	<b>43.7</b>	<b>62.9</b>	<b>(31)</b>	<b>30.4</b>	<b>106.7</b>	<b>75.6</b>
<b>Average Condensate Price</b>	<b>\$/bbl</b>	<b>108</b>	<b>114</b>	<b>(6)</b>	<b>100</b>	<b>112</b>	<b>101</b>

LPG	Unit	This Quarter	Previous Quarter	% Change	December	YTD 2013/14	YTD 2012/13
					Quarter 2012		
LPG	Kt						
SA Cooper & SWQ		6.8	7.2	(5)	6.6	14.0	14.0
Otway Basin (offshore)		17.5	15.6	12	6.7	33.1	19.1
Bass Basin		6.1	7.3	(17)	3.2	13.3	3.2
Surat Basin		-	-	-	-	-	-
Taranaki Basin (onshore)		0.2	0.2	(23)	0.2	0.3	0.5
Taranaki Basin (Kupe)		10.3	14.1	(27)	7.3	24.5	17.7
<b>Total Production</b>		<b>40.9</b>	<b>44.4</b>	<b>(8)</b>	<b>24.0</b>	<b>85.2</b>	<b>54.5</b>
<b>Total Sales Volume</b>		<b>41.7</b>	<b>44.7</b>	<b>(7)</b>	<b>22.4</b>	<b>86.4</b>	<b>53.2</b>
<b>Total Sales Revenue</b>	<b>\$M</b>	<b>38.2</b>	<b>36.8</b>	<b>4</b>	<b>21.0</b>	<b>74.9</b>	<b>42.0</b>
<b>Average LPG Price</b>	<b>\$/t</b>	<b>915</b>	<b>823</b>	<b>11</b>	<b>938</b>	<b>867</b>	<b>789</b>

## 1.2 Production by Basin (including APLNG production)

Production by Basin (All products, PJe)	Unit	This Quarter	Previous Quarter	% Change	December	YTD 2013/14	YTD 2012/13
					Quarter 2012		
Production by Basin	PJe						
APLNG (CSG and Denison Trough) *		11.5	11.5	0	10.4	23.0	21.4
SA Cooper & SWQ		4.4	4.4	(0)	4.4	8.8	9.4
Otway Basin (offshore)		13.7	11.7	17	7.7	25.4	19.1
Bass Basin		2.6	3.0	(13)	2.1	5.6	2.1
Surat Basin		0.0	-	-	-	0.0	0.1
Perth Basin		0.7	1.2	(45)	0.9	1.9	2.0
Taranaki Basin (onshore)		0.2	0.3	(44)	0.3	0.4	0.7
Taranaki Basin (Kupe)		3.9	5.4	(28)	3.0	9.2	7.2
<b>Total Production Volume</b>	<b>PJe</b>	<b>37.0</b>	<b>37.5</b>	<b>(1)</b>	<b>28.8</b>	<b>74.4</b>	<b>62.0</b>
<b>Total Sales Volume</b>	<b>PJe</b>	<b>39.5</b>	<b>41.0</b>	<b>(4)</b>	<b>30.2</b>	<b>80.5</b>	<b>66.4</b>
<b>Total Sales Revenue</b>	<b>\$M</b>	<b>280.6</b>	<b>306.7</b>	<b>(9)</b>	<b>201.5<sup>#</sup></b>	<b>587.2</b>	<b>427.4<sup>#</sup></b>
<b>Average Commodity Price</b>	<b>\$/GJe</b>	<b>7.11</b>	<b>7.48</b>	<b>(5)</b>	<b>6.67</b>	<b>7.30</b>	<b>6.44</b>

\* Origin's share in APLNG was diluted from 50% to 42.5% on 9 August 2011 and to 37.5% on 12 July 2012.

# Adjusted to include APLNG carbon related revenue.

### 1.3 Production, Sales Volumes and Revenue Summaries

#### 1.3.1 Origin excluding interest in APLNG

Total All Products	Unit	This Quarter	Previous Quarter	% Change	December	YTD 2013/14	YTD 2012/13
					Quarter 2012		
Total Production Volume	PJe	25.4	26.0	(2)	18.4	51.4	40.6
Total Sales Volume	PJe	26.9	28.4	(5)	19.5	55.3	43.9
Total Sales Revenue	\$M	236.2	262.2	(10)	166.1	498.4	353.7
Average Commodity Price	\$/GJe	8.8	9.2	(5)	8.5	9.0	8.1

#### 1.3.2 Origin's interest in APLNG\*

Total All Products	Unit	This Quarter	Previous Quarter	% Change	December	YTD 2013/14	YTD 2012/13
					Quarter 2012		
Production APLNG 100%	PJe	30.8	30.7	0	27.9	61.4	57.0
<u>Origin's interest:</u>							
Production (all products)	PJe	11.5	11.5	0	10.4	23.0	21.4
Sales (all products)	PJe	12.6	12.6	0	10.7	25.2	22.5
Total Sales Revenue	\$M	44.4	44.5	(0)	35.3 <sup>#</sup>	88.8	73.7 <sup>#</sup>

### 1.4 Internal and External Purchase and Sales Summary

#### 1.4.1 Internal and External Sales (Origin excluding interest in APLNG)

Internal & External Sales Volumes	Unit	This Quarter	Previous Quarter	% Change	December	YTD 2013/14	YTD 2012/13
					Quarter 2012		
Total Sales Volume	PJe						
Internal		13.4	11.2	19	8.3	24.5	16.1
External		13.5	17.3	(22)	11.2	30.8	27.9
Total		26.9	28.4	(5)	19.5	55.3	44.0

#### 1.4.2 External Purchases

Product Purchases included in above sales	Unit	This Quarter	Previous Quarter	% Change	December	YTD 2013/14	YTD 2012/13
					Quarter 2012		
Origin (excluding interest in APLNG)	PJe	2.4	2.5	(3)	1.2	4.9	2.6
Origin's interest in APLNG *	PJe	0.9	1.1	(13)	0.8	2.0	2.1
Total	PJe	3.3	3.6	(6)	2.0	6.9	4.7

\* Origin's share in APLNG was diluted from 50% to 42.5% on 9 August 2011 and to 37.5% on 12 July 2012.

# Adjusted to include APLNG carbon related revenue.

## 2 DEVELOPMENT AND EXPLORATION OPERATIONS

### 2.1 Origin's interests held through Australia Pacific LNG (APLNG)

#### 2.1.1 Upstream Operations

APLNG production (100%) was 30.8 PJe during the Quarter, an increase of 0.3% compared to the September Quarter 2013 (30.7 PJe) primarily due to Spring Gully optimisation of new and existing wells, recovery from Field Compressor Station issues at Kenya (QGC), partially offset by lower Talinga production as a result of adverse (high temperature) weather conditions. Average production from operated assets decreased from 255 TJ/d in the September Quarter 2013 to 252 TJ/d (APLNG share) and increased from 79 TJ/d to 82 TJ/d from non-operated assets (APLNG share).

APLNG participated in 268 wells during the Quarter, including 11 exploration / appraisal wells, 20 groundwater monitoring bores and 237 development wells (108 operated Phase 1 wells and 129 non-operated production wells).

#### APLNG Operated Production Wells

The Phase 1 drilling program continued, with 108 operated production wells drilled during the Quarter. Of these, 32 were drilled in Condabri, 10 in Spring Gully, 34 in Combabula and 32 in Orana. A total of 564 Phase 1 wells have been spudded to 31 December 2013.

			Pre-Phase 1 <sup>1</sup>	Phase 1 <sup>2</sup>	
			Development wells commissioned	Development wells drilled	Development wells commissioned
Bowen	Spring Gully	This Quarter	4	10	17
		YTD 2013/14	6	26	29
		Total to Date	181	67	40 <sup>5</sup>
		Max. Avg Well Deliverability <sup>3</sup>	1.2 TJ/d		
Surat	Talinga	This Quarter	-	-	-
		YTD 2013/14	-	-	-
		Total to Date	101	-	-
		Max. Avg Well Deliverability <sup>3</sup>	2.2 TJ/d		
	Orana	This Quarter	-	32	-
		YTD 2013/14	-	40	-
		Total to Date	-	40	-
		Max. Avg Well Deliverability <sup>3</sup>	-	-	-
	Condabri	This Quarter	-	32	39
		YTD 2013/14	-	56	51
		Total to Date	-	299	51
		Max. Avg Well Deliverability <sup>3</sup>	-	-	-
	Combabula	This Quarter	-	34	-
		YTD 2013/14	-	103	-
		Total to Date	-	158	-
		Max. Avg Well Deliverability <sup>3</sup>	-	-	-
Total	This Quarter	4	108	56	
	YTD 2013/14	6	225	80	
	Total to Date	282 <sup>4</sup>	564 <sup>4/6</sup>	91	

<sup>1</sup> APLNG operated wells designated to deliver gas to its domestic operations

<sup>2</sup> APLNG operated wells designated to deliver first gas to both trains of the CSG to LNG project

<sup>3</sup> Maximum average observable rate sustained over a week, throughout the year, from wells that have been online for more than six months

<sup>4</sup> Excludes 25 conventional wells in the Denison Trough and 23 CSG wells in the Peat Project Area not targeted for any Phase 1 development.

<sup>5</sup> 30 September 2013 Spring Gully Phase 1 wells commissioned revised from 20 to 23

<sup>6</sup> 30 September 2013 Phase 1 wells revised from 448 to 456

## **Bowen Basin (CSG)**

### *Spring Gully Project area (Operated)*

The gas plants achieved gross average production of 133 TJ/d (APLNG share 131 TJ/d) during the Quarter.

During December, the 3<sup>rd</sup> stage of the gas reinjection trial commenced, where up to 30 TJ/d was reinjected.

Of the wells that form part of the Spring Gully Phase 6 project, 3 wells were commissioned and are now online. In addition, 17 APLNG Phase 1 wells were commissioned during the quarter.

10 APLNG Phase 1 wells and two ground water monitoring bores were drilled during the Quarter.

### *Fairview Project area (Non-operated)*

Average Fairview gas production during the Quarter was 98 TJ/d (APLNG share 23 TJ/d).

23 development wells and five exploration / appraisal wells were drilled in the non-operated Fairview project area and other participating GLNG-operated tenements in the region during the Quarter.

### *Peat Project Area (Operated)*

Average gas production for the Quarter was 9.4 TJ/d (100% owned by APLNG).

## **Surat Basin (CSG)**

### *Talinga/Orana Project Area (Operated)*

Average production for the Quarter was 109 TJ/d (100% owned by APLNG). Starting in the month of September 2013 and extending into October 2013, rig workovers were performed on seven Talinga wells. 101 wells are currently producing in the field with the North Talinga field fully commissioned.

32 Orana Phase 1 wells and five ground water monitoring bores were drilled in the Quarter.

### *Argyle/Kenya/Lauren/Bellevue Project Area (Non-operated)*

ATP 620 JV (Kenya) production averaged 132 TJ/d during the Quarter (APLNG share 54 TJ/d) and PL 247 (Bellevue) production averaged 17 TJ/d during the Quarter (APLNG share 5 TJ/d), with APLNG receiving a further 1 TJ/d of Bellevue gas under gas banking repayment arrangements with QGC.

Across total participating QGC tenements, 106 development wells and two appraisal wells were drilled during the Quarter.

### *Condabri Project Area (Operated)*

Development of the Condabri project area has progressed, with 32 development wells drilled and 13 completed during the Quarter. A total of 299 wells have been drilled of which 51 have been commissioned.

### *Combabula Project Area (Operated)*

Development of the Combabula project area continues with 34 development wells and seven groundwater monitoring bores drilled during the Quarter.

### *Other Areas (Operated)*

Six groundwater monitoring bores were drilled in other operated areas this Quarter.

## Denison Trough (including Conventional)

Average gas production for the Quarter was 6.8 TJ/d (APLNG share 3.4 TJ/d). During the Quarter, four non-operated exploration and appraisal wells were drilled in the Denison Trough, with one cased and suspended and three plugged and abandoned.

### *Other Areas*

No new pilot wells were brought online in this Quarter.

### 2.1.2 Upstream Project Update

The Upstream Operated project was 58% complete at 31 December 2013.

108 development wells were drilled in the Quarter with a total of 564 Phase 1 wells drilled to date.

356 diameter kilometres (603 wells equivalent) of gathering lines were constructed. Water and gas production from the Condabri resource area commenced during the Quarter.

At 31 December the pipeline was 91% complete. Mainline welding is complete through to Curtis Island with a number of tie-ins remaining.

Condabri Central Train 1 commissioning activities were underway in December while construction work on Condabri South, Orana, Reedy Creek gas plants and the Talinga Pipeline Compression facility is progressing.



*Reedy Creek*

### 2.1.3 Downstream Project Update

The Downstream project is 62% complete at the end of December 2013.

The tenth, eleventh and twelfth shipments of modules were delivered to Curtis Island during the Quarter.

A number of key equipment packages were delivered including the second shipment of pre-fabricated substation buildings, the boil-off gas compressors, LNG loading arms, Train 1 molecular sieve dehydrators and propane storage drums. Further, items in transit included the three Train 1 cold boxes, the last two Train 2 refrigeration compressors and the final shipment of structural steel.

Construction activities during the Quarter included setting the remaining Train 1 propane condenser modules on their foundations, installing the Train 1 molecular sieves, mercury removal beds and compressor substation, completing the Train 2 compressor table tops and commencing setting of the Train 2 refrigeration compressors. Subsequent to the end of the Quarter, the first Train 1 methane and ethylene cold boxes were delivered and set in



January 2014.

On the first LNG tank, the outer wall concrete pour was completed and the roof concrete pour was completed. On the second LNG tank, the first half of the final segment concrete pour of the outer wall was completed.

For the LNG jetty, deck panel installation was completed on the loading platform and concrete pours commenced. All modules were placed on the jetty trestle.



LNG Tank A

## 2.2 Cooper / Eromanga Basin (South Australia / Queensland)

Cooper Basin production of 4.4 PJe was in line with the previous Quarter and the December Quarter 2012 due to additional wells coming online offsetting natural field decline.

A total of 19 wells were drilled in the Quarter, consisting of seven exploration locations and 12 development locations.

Five of the exploration wells were cased and suspended with the remaining two running production casing for completion and drilling ahead.

Eight of the development wells were cased and suspended with four continuing operations towards completion at the end of the Quarter.

Exploration activity was highlighted by the results of the Moomba 194 (Fortuna 1Vt well) fracture stimulation and production test that recorded an average flow rate of 3 MMcf/d from commingled conventional and unconventional reservoirs. A follow up programme of additional wells and fracture stimulations is planned for execution in the March 2014 Quarter and June 2014 Quarter.

### **2.3 Otway Basin (Victoria / Tasmania)**

Otway Basin production of 13.7 PJe (Origin share) has increased by 17% from the previous Quarter due to higher plant uptime, optimised Geographe 2 well production and an increase in volumes taken by Origin.

The Astrolabe 3D seismic survey was successfully completed in the offshore Otway Basin permit of Vic/P43 during the Quarter with final processing results available in August 2014.

Planning for the Halladale and Black Watch field development and Speculant exploration well continued in the Quarter.

### **2.4 Bass Basin (Tasmania)**

Bass Basin production of 2.6 PJe has decreased by 13% from the previous Quarter due to Yolla 3 experiencing increasing water production. Well intervention to shut off the water production was unsuccessful. Y3 is shut-in pending further monitoring and assessment.

### **2.5 Surat Basin (Queensland)**

Operations at the Kincora gas processing plant remained suspended during the Quarter pending the completion of an asset review. Oil production continued from the Emu Apple Field. Oil production was 4 kbbls for the Quarter, an increase of 2% from the previous Quarter.

Pilot testing continues at Duke 2 and Duke 3 pilots at the Ironbark ATP 788 CSG tenement.

Progress towards a development plan and investment decision for the Ironbark field continues.

### **2.6 Perth Basin (Western Australia)**

Perth Basin production of 0.7 PJe has decreased by 45% from the previous Quarter with the Beharra Springs plant shutdown to undertake pipeline repairs.

### **2.7 Bonaparte Basin (Western Australia/Northern Territory)**

#### *Petrel Field (WA6R & NT/RL1)*

The Operator, GDF Suez, continues to work up the development concept for the upstream development of the Petrel gas field.

### **2.8 Taranaki Basin (New Zealand)**

#### *Kupe (offshore Taranaki)*

Kupe production of 3.9 PJe (Origin share) was 28% lower than the previous Quarter due to the summer seasonal market nominations.

#### *Rimu/Kauri/Manutahi*

Total onshore production of 0.2 PJe was 44% lower than the previous Quarter due to well deliverability restrictions.

The Manutahi-D pilot was only partly operational during the December Quarter due to ongoing sand production issues. An improved filter system had the producing well back on line in late December. A workover successfully cleaned out the central production well during the quarter and returned it to production.

Kauri E11 fracture stimulation operations commenced in December 2013 and are planned to be completed in January 2014.

## **2.9 Canterbury Basin (New Zealand)**

The operator, Anadarko, continued preparations during the Quarter to drill the Caravel-1 well. The well is scheduled to commence drilling in February 2014 using the Noble Bob Douglas drillship. It is expected that the well will commence drilling upon completion of Anadarko's Romney-1 well currently being drilled in the Taranaki Basin.

## **2.10 Lamu Basin (Kenya)**

Technical assessment of the prospectivity of the L8 PSC area continued during the Quarter.

## **2.11 Song Hong Basin (Vietnam)**

The results of the 121-CV-1X well continue to be evaluated and incorporated into forward exploration plans. Discussion has commenced with potential contractors in regard to acquiring additional 2D seismic in Block 121 in 2014.

## **2.12 Botswana**

Results from the phase 1 exploration project incorporating nine coreholes have been reviewed. The next phase of work will consider further appraisal activity and assess commercial potential of the project.

## **3. ACQUISITIONS/DIVESTMENTS**

### **DIVESTMENT**

- **TAWN (NZ Onshore) Asset Sale**

The divestment of Origin's interests in the Tariki, Ahuroa, Waihapa and Ngaere licences in New Zealand's Taranaki region, as well as the Waihapa Production Station and associated gathering and sales infrastructure, to New Zealand Energy Corp was completed on 29 October 2013.

#### 4. DRILLING ACTIVITY

##### 4.1 Exploration/Appraisal

The table below summarises the exploration and appraisal drilling in which Origin had an interest during the Quarter:

Exploration/Appraisal Wells	Basin / Area	Target	Origin Effective Interest %	Well Status
Bolah 1	Cooper Basin - SWQ	Gas	16.74%	C&S
Kaiden 1	Cooper Basin - SWQ	Gas	16.74%	C&S
Marama West 1	Cooper Basin - SWQ	Gas	16.74%	Drilling Ahead
Moomba 193 (Aurora 2 Hz)	Cooper Basin - SA	Gas	13.19%	Drilling Ahead
Moomba 194 (Fortuna 1 Vt)	Cooper Basin - SA	Gas	13.19%	C&S
Moomba 199 (MN 45)	Cooper Basin - SA	Gas	13.19%	C&S
Roswell 2 (hz)	Cooper Basin - SA	Gas	13.19%	C&S
Fairview 3-15-3	Bowen	CSG	7.69%	In Progress
Kullanda 2	Bowen	CSG	10.99%	P&A
Springwater 10	Bowen	CSG	7.69%	C&S
Springwater 9	Bowen	CSG	7.69%	C&S
Yebna North 4	Bowen	CSG	7.69%	C&S
Corella Creek 1	Denison Trough	CSG	18.75%	C&S
Cotton Gin 1	Denison Trough	CSG	18.75%	P&A
Garlands 1	Denison Trough	CSG	18.75%	P&A
Rewan 1	Denison Trough	CSG	18.75%	P&A
David 7M	Surat	CSG	11.72%	Monitoring
Sean 18M	Surat	CSG	11.72%	Monitoring

\* Denotes Origin Operatorship

## 4.2 Development

The table below summarises the development drilling in which Origin had an interest during the Quarter. Origin participated in 247 CSG development wells (including groundwater monitoring wells) across the Bowen and Surat Basins and 14 conventional gas/oil development wells in the Cooper Basin during the Quarter.

Basin / Area Development Wells	Origin Effective Interest %	Well Status
<i>Cooper Basin - SA</i>		
<i>Target - Gas</i>		
Big Lake 95	13.2%	C&S
Big Lake 96	13.2%	C&S
Kurunda 6	13.2%	C&S
Moomba 196 (MN 30)	13.2%	C&S
Moomba 197 (MN 44)	13.2%	C&S
Moomba 198 (MN 46)	13.2%	C&S
Moomba 200 (MN 47)	13.2%	C&S
Moomba 201 (MN 48)	13.2%	Drilling Ahead
<i>Cooper Basin - SWQ</i>		
<i>Target - Gas</i>		
Barrolka 11	16.7%	Drilling Ahead
Barrolka 12	16.7%	Drilling Ahead
Barrolka 13	16.7%	Drilling Ahead
Munkah 13	16.7%	C&S
<i>Bowen Basin</i>		
<i>Target - CSG</i>		
Durham Ranch 104	35.44%*	Development
Durham Ranch 105	35.44%*	Development
Durham Ranch 270	35.44%*	Development
Durham Ranch 347	35.44%*	Development
Durham Ranch 358	35.44%*	Development
Durham Ranch Precipice WI 2	35.44%*	GWM
Durham Ranch Precipice WI-3	35.44%*	GWM
Fairview 11-31-5	7.69%	Development
Fairview 12-02-3	7.69%	Development
Fairview 13-09-2	7.69%	Development
Fairview 13-09-3	7.69%	Development
Fairview 18-15-1	7.69%	Development
Fairview 18-15-2	7.69%	Development
Fairview 18-15-4	7.69%	Development
Fairview 12-01-2	7.69%	Development
Fairview 12-01-3	7.69%	Development
Fairview 12-01-4	7.69%	Development
Fairview 13-09-1	7.69%	Development
Fairview 13-09-5	7.69%	Development
Fairview 13-09-6	7.69%	Development
Fairview 13-09-7	7.69%	Development
Fairview 13-09-8	7.69%	Development
Fairview 13-14-1	7.69%	Development
Fairview 13-14-2	7.69%	Development

Basin / Area Development Wells	Origin Effective Interest %	Well Status
Fairview 13-14-3	7.69%	Development
Fairview 13-14-4	7.69%	Development
Fairview 18-15-3	7.69%	Development
Fairview 18-15-5	7.69%	Development
Fairview 18-15-6	7.69%	Development
Fairview 18-15-7	7.69%	Development
Spring Gully 101	37.40%*	Development
Spring Gully 102	37.40%*	Development
Spring Gully 103	37.40%*	Development
Spring Gully 117	37.40%*	Development
Spring Gully 143	37.40%*	Development
<i>Surat Basin</i>		
<i>Target - CSG</i>		
Carinya MB5-H	37.50%*	GWM
Celeste 191	11.72%	Development
Combabula 109	34.77%*	Development
Combabula 123	34.77%*	Development
Combabula 124	34.77%*	Development
Combabula 125	34.77%*	Development
Combabula 126	34.77%*	Development
Combabula 127	34.77%*	Development
Combabula 302	34.77%*	Development
Combabula 303	34.77%*	Development
Combabula 304	34.77%*	Development
Combabula 324	34.77%*	Development
Combabula 330 INJ-P	34.77%*	GWM
Combabula 332	34.77%*	Development
Combabula 352 MON-P	34.77%*	GWM
Combabula 373 INJ-P	34.77%*	GWM
Combabula 64	34.77%*	Development
Combabula 65	34.77%*	Development
Combabula 82	34.77%*	Development
Combabula 83	34.77%*	Development
Combabula 92	34.77%*	Development
Combabula 93	34.77%*	Development
Combabula 94	34.77%*	Development
Combabula 28	34.77%	Development
Combabula 42	34.77%	Development
Combabula North 318	34.77%	Development
Combabula North 319	34.77%	Development
Combabula North 336	34.77%	Development
Combabula North 372	34.77%	Development

Basin / Area Development Wells	Origin Effective Interest %	Well Status
Combabula North 311	34.77%*	Development
Combabula North 316	34.77%*	Development
Combabula North 317	34.77%*	Development
Combabula North 330	34.77%*	Development
Combabula North 334	34.77%*	Development
Combabula North 335	34.77%*	Development
Combabula North 368	34.77%*	Development
Combabula North 369	34.77%*	Development
Combabula North 382	34.77%*	Development
Combabula North 383	34.77%*	Development
Combabula Pond MB2	34.77%*	GWM
Combabula Pond MB4	34.77%*	GWM
Condabri 164	37.50%*	Development
Condabri 185	37.50%*	Development
Condabri 188	37.50%*	Development
Condabri 190	37.50%*	Development
Condabri 208	37.50%*	Development
Condabri 209	37.50%*	Development
Condabri 210	37.50%*	Development
Condabri 211	37.50%*	Development
Condabri 221	37.50%*	Development
Condabri 222	37.50%*	Development
Condabri 223	37.50%*	Development
Condabri 224	37.50%*	Development
Condabri 225	37.50%*	Development
Condabri 226	37.50%*	Development
Condabri 227	37.50%*	Development
Condabri 228	37.50%*	Development
Condabri North 189	37.50%*	Development
Condabri North 190	37.50%*	Development
Condabri North 193	37.50%*	Development
Condabri North 194	37.50%*	Development
Condabri North 196	37.50%*	Development
Condabri South 11	37.50%*	Development
Condabri South 12	37.50%*	Development
Condabri South 13	37.50%*	Development
Condabri South 14	37.50%*	Development
Condabri South 19	37.50%*	Development
Condabri South 25	37.50%*	Development
Condabri South 26	37.50%*	Development
Condabri South 27	37.50%*	Development
Condabri South 28	37.50%*	Development
Condabri South 33	37.50%*	Development
Condabri South 34	37.50%*	Development
Dalwogan MB5-H	37.50%*	GWM
Dalwogan MB6-W	37.50%*	GWM
David 143	11.72%	Development
Gilbert Gully MB2-S	37.50%*	GWM
Glendower 151	11.72%	Development

Basin / Area Development Wells	Origin Effective Interest %	Well Status
Harry 145	11.72%	Development
Harry 146	11.72%	Development
Harry 162	11.72%	Development
Harry 163	11.72%	Development
Harry 164	11.72%	Development
Harry 165	11.72%	Development
Harry 166	11.72%	Development
Harry 167	11.72%	Development
Harry 176	11.72%	Development
Harry 177	11.72%	Development
Harry 178	11.72%	Development
Harry 183	11.72%	Development
Harry 184	11.72%	Development
Harry 185	11.72%	Development
Harry 187	11.72%	Development
Harry 196	11.72%	Development
Harry 197	11.72%	Development
Harry 206	11.72%	Development
Harry 207	11.72%	Development
Harry 212	11.72%	Development
Harry 214	11.72%	Development
Harry 217	11.72%	Development
Isabella 129	11.72%	Development
Isabella 138	11.72%	Development
Isabella 192	11.72%	Development
Isabella 205	11.72%	Development
Isabella 215	11.72%	Development
Isabella 216	11.72%	Development
Isabella 217	11.72%	Development
Isabella 218	11.72%	Development
Isabella 221	11.72%	Development
Jammat 137	11.72%	Development
Jammat 148	11.72%	Development
Jammat 149	11.72%	Development
Jammat 159	11.72%	Development
Jammat 160	11.72%	Development
Jammat 190	11.72%	Development
Jen 101	11.72%	Development
Jen 103	11.72%	Development
Jen 104	11.72%	Development
Jen 105	11.72%	Development
Jen 106	11.72%	Development
Jen 107	11.72%	Development
Jen 110	11.72%	Development
Jen 111	11.72%	Development
Jen 114	11.72%	Development
Jen 115	11.72%	Development
Jen 116	11.72%	Development
Jen 117	11.72%	Development

Basin / Area Development Wells	Origin Effective Interest %	Well Status
Jen 118	11.72%	Development
Jen 119	11.72%	Development
Jen 124	11.72%	Development
Jen 125	11.72%	Development
Jen 126	11.72%	Development
Jen 127	11.72%	Development
Jen 128	11.72%	Development
Jen 129	11.72%	Development
Jen 130	11.72%	Development
Jen 215	11.72%	Development
Kenya East GW32	11.72%	Development
Orana 100	37.50%*	Development
Orana 101	37.50%*	Development
Orana 102	37.50%*	Development
Orana 104	37.50%*	Development
Orana 105	37.50%*	Development
Orana 106	37.50%*	Development
Orana 107	37.50%*	Development
Orana 108	37.50%*	Development
Orana 25	37.50%*	Development
Orana 26	37.50%*	Development
Orana 27	37.50%*	Development
Orana 28	37.50%*	Development
Orana 29	37.50%*	Development
Orana 30	37.50%*	Development
Orana 31	37.50%*	Development
Orana 32	37.50%*	Development
Orana 33	37.50%*	Development
Orana 34	37.50%*	Development
Orana 35	37.50%*	Development
Orana 36	37.50%*	Development
Orana 43	37.50%*	Development
Orana 83	37.50%*	Development
Orana 84	37.50%*	Development
Orana 85	37.50%*	Development
Orana 86	37.50%*	Development
Orana 88	37.50%*	Development
Orana 89	37.50%*	Development
Orana 98	37.50%*	Development
Orana 99	37.50%*	Development
Orana MB10-S	37.50%*	GWM
Orana MB11-W	37.50%*	GWM
Orana MB12-S	37.50%*	GWM
Orana MB5-W	37.50%*	GWM
Orana MB9-W	37.50%*	GWM
Orana North 19	37.50%*	Development
Orana North 2	37.50%*	Development
Orana North 3	37.50%*	Development
Poppy 101	11.72%	Development

Basin / Area Development Wells	Origin Effective Interest %	Well Status
Poppy 103	11.72%	Development
Poppy 112	11.72%	Development
Poppy 113	11.72%	Development
Poppy 114	11.72%	Development
Poppy 115	11.72%	Development
Poppy 124	11.72%	Development
Poppy 125	11.72%	Development
Poppy 129	11.72%	Development
Poppy 135	11.72%	Development
Poppy 136	11.72%	Development
Poppy 137	11.72%	Development
Poppy 140	11.72%	Development
Poppy 146	11.72%	Development
Poppy 147	11.72%	Development
Poppy 148	11.72%	Development
Poppy 157	11.72%	Development
Poppy 158	11.72%	Development
Poppy 167	11.72%	Development
Poppy 168	11.72%	Development
Poppy 178	11.72%	Development
Poppy 189	11.72%	Development
Reedy Creek 47 INJ-P	34.77%*	GWM
Reedy Creek 50 INJ-P	34.77%*	GWM
RubyJo 166	11.72%	Development
RubyJo 177	11.72%	Development
RubyJo 178	11.72%	Development
RubyJo 185	11.72%	Development
RubyJo 187	11.72%	Development
RubyJo 188	11.72%	Development
RubyJo 195	11.72%	Development
RubyJo 196	11.72%	Development
RubyJo 197	11.72%	Development
Sean 143	11.72%	Development
Sean 144	11.72%	Development
Sean 150	11.72%	Development
Sean 151	11.72%	Development
Sean 152	11.72%	Development
Sean 153	11.72%	Development
Sean 154	11.72%	Development
Sean 155	11.72%	Development
Sean 156	11.72%	Development
Sean 158	11.72%	Development
Sean 159	11.72%	Development
Sean 160	11.72%	Development
Waar Waar MB3-H	37.50%*	GWM
Waar Waar MB4-W	37.50%*	GWM

Notes:

\* Denotes Origin Operatorship

GWM - Ground Water Monitoring

## 5. EXPLORATION, EVALUATION AND CAPITAL EXPENDITURE

The tables below include total expenditure on exploration and evaluation activities and capital expenditure on development and production activities. They include capitalised interest and exclude expenditure on acquisitions. Expenditure in the current financial year is preliminary and is subject to audit review. Note: Numbers may not add due to rounding.

### Australian Operations

A\$m	This Quarter	Previous Quarter	December		
			Quarter 2012	YTD 2013/14	YTD 2012/13
Exploration / Evaluation	45	17	4	62	16
Development / PP&E	58	47	135	105	267
<b>Total</b>	<b>102</b>	<b>64</b>	<b>139</b>	<b>167</b>	<b>283</b>

### New Zealand Operations

NZ\$m	This Quarter	Previous Quarter	December		
			Quarter 2012	YTD 2013/14	YTD 2012/13
Exploration / Evaluation	13	1	0	14	2
Development / PP&E	0	3	7	3	9
<b>Total</b>	<b>12</b>	<b>4</b>	<b>8</b>	<b>16</b>	<b>11</b>

### International Operations

A\$m	This Quarter	Previous Quarter	December		
			Quarter 2012	YTD 2013/14	YTD 2012/13
Exploration / Evaluation	2	19	-2	21	17
Development / PP&E	0	0	0	0	0
<b>Total</b>	<b>2</b>	<b>19</b>	<b>-2</b>	<b>21</b>	<b>17</b>

### Total

#### (excluding APLNG)

A\$m	This Quarter	Previous Quarter	December		
			Quarter 2012	YTD 2013/14	YTD 2012/13
Exploration / Evaluation	59	38	3	97	35
Development / PP&E	57	50	141	107	275
<b>Total</b>	<b>116</b>	<b>88</b>	<b>144</b>	<b>204</b>	<b>310</b>

## APLNG

Origin is required to contribute cash to APLNG (in proportion to its equity holding) where APLNG has insufficient cash from other sources to fund its activities. Origin began making cash contributions in the December Quarter 2011.

### Origin's contribution to APLNG

A\$m	This Quarter	Previous Quarter	December		
			Quarter 2012	YTD 2013/14	YTD 2012/13
Contribution	695	742	0	1,437	119

\* Origin's share in APLNG was diluted from 42.5% to 37.5% on 12 July 2012.



## 6. ORIGIN'S INTERESTS

### 6.1 Origin held interests in the following permits during the Quarter:

Basin/Project Area	Interest	Basin/Project Area	Interest	Basin/Project Area	Interest
<b>AUSTRALIA</b>		<b>AUSTRALIA</b>		<b>AUSTRALIA</b>	
<b>COOPER BASIN (South Australia)</b>		<b>CSG (Queensland)</b>		<b>OFFSHORE OTWAY BASIN</b>	
Patchawarra East Block PPLs	10.54%	<b>Fairview</b>		<b>Victoria</b>	
SA Unit PPLs	13.19%	ATP 526P and PLS 90, 91, 92, 99, 100, 232, 233, 234, 235 and 236	8.97%	Vic/P42 (V)	100.00% *
Reg Sprigg West Unit (PPL 194/PPL 211 )	7.90%			Vic/P43	67.23% *
<b>COOPER BASIN (Queensland)</b>		<b>Spring Gully</b>		Vic/L23	67.23% *
SWQ Unit Subleases	16.74%	ATP 592P and PLS 195, 203, 268(A), 414(A), 415(A), 416(A), 417, 418(A) and 419(A)	35.44%	Vic/RL2(V)	100.00% *
Aquitaine A * B Blocks of ATP 259P and associated PLS	25.00%			<b>Tasmania</b>	
Aquitaine C Block of ATP 259P and associated PLS	27.00%	PL 204	37.40%	T/L2, T/L3 and T/30P	67.23% *
Wareena Block of ATP 259P and associated PLS	10.00%	PL 200	35.89%	T/34P	82.30% *
<b>GALILEE BASIN (Queensland)</b>		<b>Talinga/ Orana</b>		<b>Bass Basin (Tasmania)</b>	
ATP 666P	37.50% * <sup>1</sup>	ATP 692P, PLS 209, 215, 216(A), 225(A), 226, 272, 289(A), 445(A) and 481(A)	37.50%	T/L1	42.50% *
ATP 667P	37.50% * <sup>1</sup>			T/18P	39.00% *
ATP 668P	37.50% * <sup>1</sup>	<b>Kenya/ Argyle/Lauren/Bellevue</b>		<b>PERTH BASIN (Western Australia)</b>	
<b>SURAT BASIN (Queensland)</b>		PLs 179, 180, 228, 229 and 263		EP320 and L11	67.00% *
PL 14	100.00% *	PL 247	11.02%	L 14	49.19% *
PL 74	69.00% *	ATP 648P Shallows, PLS 257, 273, 274, 275, 278, 279, 442, 466 and 474	11.72%	L1/L2 (Excluding Dongara, Mondarra and Yardarino)	50.00%
PL 30	75.00% *	<b>Peat</b>		<b>BONAPARTE BASIN (Western Australia &amp; Northern Territory)</b>	
PLs 21, 22, 27 and 64	87.50% *	PL 101	37.50%	WA 454P	50.00% *
PLs 53, 174 and 227	100.00% *	<b>Other Bowen Basin</b>		NT/RL1 and WA6R	5.00%
ATP 470P Redcap	90.00% *	ATP 804P	10.99%	<b>NEW ZEALAND</b>	
PL 264	90.00% *	ATPs 653P and 745P and PLS 420(A), 421(A) and 440(A)	8.94%	<b>TARANAKI BASIN</b>	
ATP 470P Formosa Downs	42.72% *	PLs 219 and 220	37.50%	PML 38146	50.00% *
PL 71 (Exploration)	72.00% *	<b>Other Surat Basin</b>		PMP 38151	100.00% *
PL 71 (Production)	90.00% *	ATP 606P and PLS 297, 404, 408, 403(A), 405(A), 406(A), 407(A), 412(A), 413(A) and 444(A)	34.77%	PMP 38155	100.00% *
PL 70	100.00% *	ATP 631P, PLS 281(A) and 282(A)	6.79%	<b>CANTERBURY BASIN</b>	
ATP 471P Weribone Pooling Area	50.64% *	ATP 663P and PLS 434(A), 435(A), 436(A), 437(A), 438(A) and 439(A)	37.50%	PEP 38264	45.00%
ATP 336P and PLS 10W, 11W, 12W, 28, 69 and 89	46.25%	973P, and PLS 265, 266 and 267	37.50%	<b>KENYA</b>	
PL 11 Snake Creek East 1 Exclusion Zone	25.00%	ATP 972P, and PLS 469(A), 470(A) and 471(A)	34.77%	<b>LAMU BASIN</b>	
ATP 647P (Block 2656 only)	50.00% *	ATP 1178P	37.50%	L8	20.00%
ATP 754P	50.00% *	<b>ONSHORE OTWAY BASIN</b>		<b>VIETNAM</b>	
ATP 788P Shallows	100.00% *	<b>Victoria</b>		<b>SONG HONG BASIN</b>	
ATP 471P Bainbilla	24.75%	PPLs 6,9 and PRL1	90.00%	Block 121	45.00% *
<b>DENISON TROUGH (Queensland)</b>		PPLs 4, 5, 7, 10 and 12	100.00%	<b>BOTSWANA</b>	
PLs 41, 42, 43, 44, 45, 54, 67, 173, 183 and 218	18.75% * <sup>1</sup>	PPL 2 Ex (Iona Exclusion)	100.00%	PL134/2010, PL135/2010, PL136/2010	50.00% <sup>2</sup>
ATP 337P (Denison Trough) - Production	18.75% * <sup>1</sup>	PPL 8	100.00%	<b>Notes:</b>	
ATP 337P (Denison Trough) - Exploration, PLS 449(A), 450(A), 451(A), 454(A) and 457(A)	18.75%			* Operatorship	
ATP 337P Mahalo and PL448(A)	11.25%			# Replacement tenure for ATP 553	
ATP 1177	18.75% <sup>1#</sup>			<sup>1</sup> Interest held through 37.5% ownership of APLNG Joint Venture	

<sup>2</sup> Interest held though 50% ownership of Kubu Energy Resources (Pty) Ltd (a Botswana company)

## 7. CONVERSION FACTORS AND ABBREVIATIONS

### 7.1 Conversion Factors

Crude oil	0.00583	PJ/kbbls
Condensate	0.00541	PJ/kbbls
LPG	0.0493	PJ/ktonnes
Ethane	0.0517	PJ/ktonnes

### 7.2 Abbreviations

<b>APLNG</b>	Australia Pacific LNG - an incorporated Joint Venture between Origin, ConocoPhillips and Sinopec
<b>barrels</b>	an international measure of oil production. 1 barrel = 159 litres
<b>Bopd</b>	barrels of oil per day
<b>BTEX</b>	benzene, toluene, ethylbenzene, xylene
<b>bwpd</b>	barrels of water per day
<b>C&amp;C</b>	cased and completed
<b>C&amp;S</b>	cased and suspended
<b>CSG</b>	coal seam gas
<b>CTU</b>	coiled tubing unit
<b>DA</b>	designated authority
<b>DERM</b>	Department of Environmental and Resource Management
<b>EA</b>	environmental authority
<b>FEED</b>	front end engineering & design
<b>FID</b>	final investment decision
<b>GJ</b>	gigajoule = $10^9$ joules
<b>joule</b>	a measure of energy
<b>Kbbls</b>	Kilo barrels = 1,000 barrels
<b>Ktonnes</b>	Kilo tonnes = 1,000 tonnes
<b>LNG</b>	liquefied natural gas
<b>LPG</b>	liquid petroleum gas
<b>MDRT</b>	measured depth from rotary table
<b>mmscfd</b>	million standard cubic feet per day
<b>mtpa</b>	million tonnes per annum
<b>P&amp;A</b>	plugged and abandoned
<b>P&amp;S</b>	plugged and suspended
<b>PCA</b>	potential commercial area
<b>PSC</b>	production sharing contract
<b>PSDM</b>	post stack depth migration (seismic processing)
<b>PJ</b>	petajoule = $10^{15}$ joules
<b>PJe</b>	petajoule equivalent, a measure used to express the volume of different petroleum products on the basis of the energy contained in the product
<b>Pigging</b>	pipeline examination and maintenance
<b>QGC</b>	Queensland Gas Company
<b>Spudding</b>	to commence drilling a well
<b>SWQ</b>	South West Queensland
<b>TD</b>	total depth
<b>TJ</b>	terajoule = $10^{12}$ joules
<b>TJ/d</b>	terajoules per day
<b>TVDSS</b>	Total Vertical Depth Subsea
<b>Water Inj</b>	water injection well