

# Second Quarter Activities Report

For period ending 30 June 2014

**Santos**  
We have the energy.

18 July 2014

## PNG LNG start-up drives stronger second quarter production

Santos today announced higher second quarter production and a significant jump in sales revenue following the successful start-up of the PNG LNG project, which commenced production in April of this year ahead of schedule.

The quarter's production of 12.8 mmmboe was an increase of 5% compared to the previous quarter and an increase of 3% compared to the second quarter of 2013. Sales revenue of \$974 million for the quarter and \$1,887 for the first-half increased by 22% and 25% respectively compared to 2013.

Santos Managing Director and Chief Executive Officer David Knox said that the successful start-up of the PNG LNG project, which shipped seven LNG cargoes by the end of the quarter, had driven the sound second quarter result and built momentum for a stronger second half.

"Delivery of the PNG LNG project is an important milestone for Santos in our journey to becoming a major LNG supplier to Asia. This project will significantly lift Santos' LNG production once the project reaches full output, and we are already seeing the contribution it is making."

Santos reported that the GLNG project had recently celebrated many construction milestones, including the handover for commissioning of the first upstream gas hub, completion of the final weld on the gas transmission pipeline, placement of the final train 1 module and the completion of hydro-testing of the first LNG tank.

"GLNG continues to make good progress, it remains on budget and we are on track to deliver first LNG in 2015," Mr Knox said.

### Comparative performance at a glance

Corresponding period	Q2 2014	Q2 2013	Change
Production (mmmboe)	12.8	12.4	+3%
Sales (mmmboe)	15.1	14.4	+5%
Sales revenue (\$million)	974	797	+22%
Quarterly comparison	Q2 2014	Q1 2014	Change
Production (mmmboe)	12.8	12.2	+5%
Sales (mmmboe)	15.1	13.8	+9%
Sales revenue (\$million)	974	913	+7%
Year-to-date comparison	2014	2013	Change
Production (mmmboe)	25.0	24.5	+2%
Sales (mmmboe)	28.9	27.4	+5%
Sales revenue (\$million)	1,887	1,510	+25%

### Key activities for the quarter

- PNG LNG start-up ahead of schedule during the quarter.
- Completion of key construction milestones across the GLNG project, which remains on track for first LNG in 2015.
- The Barossa-2 appraisal well was successfully drilled and intersected 92 metres net gas pay.
- In early July, first oil was achieved from the Dua project in Vietnam.

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Sales gas, ethane and gas to LNG production of 55.7 petajoules for the quarter was 8% higher than the corresponding quarter, with higher production from Darwin LNG and start-up at PNG LNG, offset by lower production from the Carnarvon Basin due to lower customer nominations.

Quarterly crude oil production of 2.1 million barrels was 16% lower than the previous quarter, due to outages at Fletcher Finucane and Chim São, partially offset by higher Cooper Basin production. The average oil price for the quarter was A\$122 per barrel, 5% lower than the corresponding quarter.

## 2014 Guidance

All 2014 guidance is maintained, as shown in the table below.

Item	2014 guidance
Production	52-57 mmboe
Production costs	\$820-880 million
Depreciation, depletion & amortisation (DD&A) expense	\$18.50/boe
Royalty-related taxation expense (after tax) <sup>1</sup>	\$60 million
Capital expenditure (including exploration and evaluation) <sup>2</sup>	\$3.5 billion

<sup>1</sup> Royalty-related taxation expense guidance assumes an average realised oil price of A\$110 per barrel.

<sup>2</sup> Capital expenditure guidance excludes capitalised interest, which is forecast at approximately \$250 million.

Further detail of 2014 year-to-date capital expenditure, including exploration and evaluation expenditure, is reported in the table on page 7 of this report.

## 2014 Half-year results and non-cash impairment charge

Santos will release its results for the half-year ended 30 June 2014 on Friday, 22 August 2014. The half-year report (incorporating Appendix 4D) and associated investor presentation will be available on Santos' website at [www.santos.com](http://www.santos.com). A webcast briefing including investor/analyst questions will also be available on Santos' website from 11:00am AEST on 22 August 2014.

As part of the company's regular impairment testing process, Santos expects to recognise an impairment charge of approximately A\$70 million (pre and post-tax) in its 2014 half-year accounts associated with the company's Indonesian coal seam gas assets. The impairment is non-cash in nature and reflects Santos' decision to withdraw from South Sumatra CSG. The impairment charge is subject to finalisation of the accounts, and audit and Board review.

## 1. Production (Santos share)

	Q2 2014	Q2 2013	Q1 2014	2014 YTD	2013 YTD	Full-year 2013
<b>Sales gas and ethane (PJ)</b>						
Cooper	14.5	14.4	14.5	29.0	28.1	61.0
Carnarvon	13.2	15.5	14.6	27.8	32.0	64.9
Indonesia	6.3	6.8	6.2	12.5	13.9	26.9
Otway	4.2	4.1	3.8	8.0	8.9	18.4
Denison/Scotia/Spring Gully	3.0	2.8	3.0	6.0	5.7	12.0
GLNG domestic	1.9	2.7	2.6	4.5	4.9	9.6
Vietnam	0.7	0.4	1.0	1.7	0.9	1.5
Bangladesh	-	0.6	-	-	1.7	1.9
<b>Total production (PJ)</b>	<b>43.8</b>	<b>47.3</b>	<b>45.7</b>	<b>89.5</b>	<b>96.1</b>	<b>196.2</b>
<b>Total production (mmboe)</b>	<b>7.5</b>	<b>8.1</b>	<b>7.9</b>	<b>15.4</b>	<b>16.5</b>	<b>33.7</b>
<b>Sales gas to LNG (PJ)</b>						
Darwin LNG	5.2	4.4	4.7	9.9	8.4	16.7
PNG LNG	6.7	-	0.2	6.9	-	0.1
<b>Total production (PJ)</b>	<b>11.9</b>	<b>4.4</b>	<b>4.9</b>	<b>16.8</b>	<b>8.4</b>	<b>16.8</b>
<b>Total production (mmboe)</b>	<b>2.1</b>	<b>0.8</b>	<b>0.8</b>	<b>2.9</b>	<b>1.5</b>	<b>2.9</b>
<b>Condensate (000 barrels)</b>						
Cooper	222.7	296.0	263.5	486.2	498.7	1,043.0
Bayu-Undan	245.0	255.3	234.4	479.4	550.5	967.5
Carnarvon	135.6	153.8	135.8	271.4	315.8	627.5
PNG LNG	180.5	-	4.7	185.2	-	-
Amadeus	9.6	7.1	9.7	19.3	14.3	28.4
Other <sup>1</sup>	4.7	6.8	4.5	9.2	12.9	25.4
<b>Total production (000 barrels)</b>	<b>798.1</b>	<b>719.0</b>	<b>652.6</b>	<b>1,450.7</b>	<b>1,392.2</b>	<b>2,691.8</b>
<b>Total production (mmboe)</b>	<b>0.8</b>	<b>0.7</b>	<b>0.6</b>	<b>1.4</b>	<b>1.3</b>	<b>2.5</b>
<b>LPG (000 tonnes)</b>						
Cooper	32.3	30.4	29.0	61.3	59.3	125.7
Bayu-Undan	13.7	14.4	12.9	26.6	31.9	55.9
<b>Total production (000 tonnes)</b>	<b>46.0</b>	<b>44.8</b>	<b>41.9</b>	<b>87.9</b>	<b>91.2</b>	<b>181.6</b>
<b>Total production (mmboe)</b>	<b>0.3</b>	<b>0.4</b>	<b>0.4</b>	<b>0.7</b>	<b>0.8</b>	<b>1.6</b>
<b>Crude oil (000 barrels)</b>						
Cooper	811.4	731.3	804.1	1,615.5	1,437.3	3,104.4
Vietnam	566.9	699.7	728.1	1,295.0	1,407.9	2,658.5
Fletcher Finucane/Mutineer-Exeter	243.7	458.3	487.3	731.0	458.3	2,167.9
Stag	240.6	309.4	250.5	491.1	531.0	1,124.3
Barrow/Thevenard	130.4	187.2	150.1	280.5	365.9	740.4
Amadeus	49.3	45.0	44.1	93.4	90.5	173.1
Indonesia	47.2	24.7	33.5	80.7	98.3	203.1
Queensland	13.0	11.7	11.2	24.2	23.3	49.9
PNG	10.3	14.1	13.1	23.4	29.8	49.8
<b>Total production (000 barrels)</b>	<b>2,112.8</b>	<b>2,481.4</b>	<b>2,522.0</b>	<b>4,634.8</b>	<b>4,442.3</b>	<b>10,271.4</b>
<b>Total production (mmboe)</b>	<b>2.1</b>	<b>2.4</b>	<b>2.5</b>	<b>4.6</b>	<b>4.4</b>	<b>10.3</b>
<b>Total</b>						
<b>Production (mmboe)</b>	<b>12.8</b>	<b>12.4</b>	<b>12.2</b>	<b>25.0</b>	<b>24.5</b>	<b>51.0</b>

<sup>1</sup> Other includes production from Otway, Indonesia, Queensland and Bangladesh.

## 2. Sales volumes and sales revenue (Santos share)

	Q2 2014	Q2 2013	Q1 2014	2014 YTD	2013 YTD	Full-year 2013
<b>Sales gas and ethane<sup>1</sup></b>						
Sales – own product (PJ)	41.7	46.9	39.8	81.5	93.0	182.0
Sales – third party (PJ)	7.9	7.0	7.1	15.0	10.5	28.7
Total sales (PJ)	49.6	53.9	46.9	96.5	103.5	210.7
Average gas price (A\$/GJ)	4.93	4.90	4.89	4.91	4.82	4.87
<b>Total sales revenue (\$million)</b>	<b>244</b>	<b>264</b>	<b>229</b>	<b>473</b>	<b>498</b>	<b>1,025</b>
<b>LNG<sup>2</sup></b>						
Sales volumes (000 tonnes)	139.3	79.8	85.0	224.3	152.5	300.5
Average LNG price (A\$/tonne)	797.22	787.18	745.08	777.47	783.59	853.95
Average LNG price (US\$/tonne)	743.41	776.79	669.68	711.77	786.25	821.93
<b>Total sales revenue (\$million)</b>	<b>111</b>	<b>63</b>	<b>63</b>	<b>174</b>	<b>120</b>	<b>257</b>
<b>Condensate</b>						
Sales – own product (000 barrels)	797.9	589.2	474.2	1,272.1	1,061.2	2,664.8
Sales – third party (000 barrels)	44.0	19.7	27.4	71.4	23.9	155.4
Total sales (000 barrels)	841.9	608.9	501.6	1,343.5	1,085.1	2,820.2
Average condensate price (A\$/bbl)	100.05	98.45	103.29	101.26	97.40	110.09
Average condensate price (US\$/bbl)	93.29	97.15	92.84	92.70	97.74	105.96
<b>Total sales revenue (\$million)</b>	<b>84</b>	<b>60</b>	<b>52</b>	<b>136</b>	<b>106</b>	<b>310</b>
<b>LPG</b>						
Sales – own product (000 tonnes)	53.6	35.1	28.9	82.5	86.1	176.3
Sales – third party (000 tonnes)	3.1	2.4	1.3	4.4	3.1	10.5
Total sales (000 tonnes)	56.7	37.5	30.2	86.9	89.2	186.8
Average LPG price (A\$/tonne)	867.93	815.07	1,054.89	932.91	844.50	939.56
Average LPG price (US\$/tonne)	809.34	804.31	948.14	854.08	847.37	904.33
<b>Total sales revenue (\$million)</b>	<b>49</b>	<b>30</b>	<b>32</b>	<b>81</b>	<b>75</b>	<b>176</b>
<b>Crude oil</b>						
Sales – own product (000 bbls)	2,160.2	2,442.4	2,720.8	4,881.0	4,469.5	9,830.3
Sales – third party (000 bbls)	1,839.0	993.0	1,455.4	3,294.4	1,865.3	5,333.1
Total sales (000 bbls)	3,999.2	3,435.4	4,176.2	8,175.4	6,334.8	15,163.4
Average crude oil price (A\$/bbl)	121.51	110.63	128.51	125.09	112.23	120.96
Average crude oil price (US\$/bbl)	113.31	109.17	115.51	114.52	112.61	116.43
<b>Total sales revenue (\$million)</b>	<b>486</b>	<b>380</b>	<b>537</b>	<b>1,023</b>	<b>711</b>	<b>1,834</b>
<b>Total</b>						
Sales – own product (mmboe)	11.8	12.2	11.1	22.9	23.7	48.0
Sales – third party (mmboe)	3.3	2.2	2.7	6.0	3.7	10.5
<b>Total sales volume (mmboe)</b>	<b>15.1</b>	<b>14.4</b>	<b>13.8</b>	<b>28.9</b>	<b>27.4</b>	<b>58.5</b>
Third party product purchases (\$million)	207	164	180	387	263	745
Sales – own product (\$million)	700	644	682	1,382	1,237	2,772
Sales – third party (\$million)	274	153	231	505	273	830
<b>Total sales revenue (\$million)</b>	<b>974</b>	<b>797</b>	<b>913</b>	<b>1,887</b>	<b>1,510</b>	<b>3,602</b>

<sup>1</sup> Domestic sales gas and ethane. Previously included Darwin LNG which is now reported in LNG sales. Prior periods have been re-stated accordingly.

<sup>2</sup> LNG includes PNG LNG and Darwin LNG.

### 3. Activity by area

Comparisons between periods for gas, condensate and LPG production are made between the current quarter and the same quarter from the previous year, as production is heavily influenced by seasonal factors. Conversely, comparisons for crude oil are made with the immediate previous quarter, as oil production rates are not generally subject to seasonal variations. Both comparisons are available in the table on page 3.

#### Cooper Basin

##### Gas and gas liquids

Sales gas and ethane production of 14.5 PJ was higher than Q2 2013 with higher production capacity partially offset by higher downtime. Planned maintenance and outages to tie-in infrastructure expansions were completed during the quarter at Ballera, Moomba North and Big Lake. Gas production capacity continued to be added during the quarter with 12 new gas wells brought on-line. Condensate production of 222,700 barrels was lower as higher yielding fields were shut-in during the quarter due to the planned shutdown at Ballera.

In South Australia, work continued on the Big Lake 30-well infill drilling program during the quarter with two drilling rigs in operation. The drilling of two four-well pads was completed during the quarter, with the remaining five wells (Big Lake 104-105 and 107-109) all successfully cased and suspended as future gas producers. Drilling has now commenced on two five-well pads, with four wells cased and suspended (Big Lake 110-111 and 115-116) and drilling currently underway on Big Lake 112 and 117.

Drilling was also underway at a two-well pad in the Tirrawarra North field, with Tirrawarra-82 successfully cased and suspended and Tirrawarra-83 drilling underway. Non-pad development drilling also continued with the successful drilling of Moorari-13, Moorari-14, Broлга-5 and Moolion North-2. The Gooranie-6 infill well was also cased and suspended.

In south-west Queensland, drilling was completed at the Baryulah field with Baryulah-17 cased and suspended as a future producer. The rig then moved to the Vega field, where the Vega-4 and Vega-5 development wells were successfully drilled. Drilling is now underway at Hera-4, part of a two-well pad in the Hera field.

##### Crude oil

Crude oil production of 811,400 barrels was higher than the previous quarter, with the connection of seven new wells offsetting natural well decline.

Drilling continued in PL 303, with three wells (Cusinier-13 and 15-16) cased and suspended as future oil producers. The Cook-29 appraisal well was also successfully drilled, which forms part of a horizontal drilling pilot program aimed at proving up the application of horizontal drilling technology to improve recovery from the Cook oil field.

#### Carnarvon

Gas production of 13.2 PJ was 15% lower than Q2 2013, due to lower customer nominations and a planned 10-day shutdown at a customer's facility. Condensate production of 135,600 barrels reflected the lower gas production.

Total oil production for the quarter of 614,700 barrels was lower than the previous quarter, primarily due to lower production at Fletcher Finucane. While Fletcher Finucane reservoir performance has exceeded expectations, production in the second quarter was lower due to outages on the FPSO which resulted in the facility being offline for approximately half of the quarter. Santos is actively working with the FPSO owner to rectify the facility performance. Production from Stag was lower due to a planned two-week shutdown in April, with Barrow production slightly lower due to planned workover activities.

#### PNG LNG

Following the successful start-up of PNG LNG in April, gross gas production for the quarter was 50 PJ. Santos' share of gas production for the quarter was 6.7 PJ, representing the gas measured at the inlet to the LNG plant. Seven LNG cargoes had been shipped by the end of the quarter, of which five had been delivered to customers. Gross condensate production for the quarter was 1.34 mmbbls (180,500 barrels Santos share), measured at the Kutubu entry point.

## Bayu-Undan/Darwin LNG

Gross Bayu-Undan gas production of 58.9 PJ was higher than Q2 2013 due to better DLNG uptime and production capacity. A total of 28 LNG cargoes were shipped in the first-half, including 17 cargoes in the second quarter. Gross Bayu-Undan condensate and LPG production was lower than Q2 2013, due to decline in condensate yield. Santos' net entitlement to production was 5.2 PJ of gas, 245,000 barrels of condensate and 13,700 tonnes of LPG.

Work continued on the Bayu-Undan Phase 3 project during the quarter, and is now over 50% complete. This project will deliver incremental liquids recovery and higher offshore well capacity through the development of two subsea wells tied back into the existing platform, with first gas targeted for 2015.

## Indonesia

Santos' net entitlement to gas production of 6.3 PJ was lower than the corresponding period with new production from Peluang offset by lower gross production and net entitlement at Oyong and Maleo. Combined Wortel and Oyong gross gas production for the quarter averaged 81 TJ/day, with gross production from Maleo and Peluang averaged 86 TJ/day.

## Otway

Sales gas production of 4.2 PJ was in line with Q2 2013. Production from the Casino hub was 3.6 PJ of sales gas and 2,500 barrels of condensate. Minerva production was 0.6 PJ of sales gas and 1,200 barrels of condensate.

## Vietnam

Chim Sáo production benefited from improved FPSO operating efficiency and the field was producing more than 25,000 barrels per day at the end of the quarter. A planned 10 day shutdown was successfully completed in June ahead of first production from the Dua field, which came on-stream in early July. Santos' net entitlement to production in the June quarter was 566,900 barrels of oil and 0.7 PJ of gas.

## Denison/Scotia/Spring Gully

Sales gas production of 3.0 PJ was higher than Q2 2013, with higher production from the Scotia and Spring Gully fields.

## GLNG

Sales gas production of 1.9 PJ was lower than Q2 2013 due to lower domestic gas nominations. Gross average daily production from the Fairview field during the quarter was 109 TJ/day.

## Bonaparte

During the quarter, Santos and GDF SUEZ announced that the Bonaparte floating LNG project will not move into the detailed design phase. GDF is examining all alternative development options, including a pipeline connection to Darwin.

The three-well Barossa-Caldita appraisal drilling campaign commenced during the quarter. The Barossa-2 well was successfully drilled and intersected 92 metres net gas pay across Upper Elang, Lower Elang and Plover reservoirs. An extensive geoscientific dataset was acquired, including 103 metres of core and four wireline logging runs. Good log correlation was observed between Barossa-2 and Barossa-1 ST1 (circa 10-km apart), with comparable reservoir quality and pressures on a common gas gradient. The second well in the campaign is expected to spud in Q4 2014.

## Narrabri

The 9-well appraisal program was completed during the quarter with the results currently being reviewed in the context of developing the work program for the proposed Narrabri Gas Project. In addition, a workover rig is currently completing surface facilities and carrying out maintenance work on existing wells. The transfer of water from the Biblewindi pond to the new Leewood facility is underway, with work continuing on the construction of the remaining facilities at Leewood.

## 4. Capital expenditure

Total exploration, evaluation and development expenditure is summarised in the table below.

	Q2 2014	Q2 2013	Q1 2014	2014 YTD	2013 YTD	Full-year 2013
<b>Capital expenditure (\$million)</b>						
Exploration	130	136	63	193	189	391
Evaluation	63	68	56	119	89	227
Development and other PP&E	806	784	758	1,564	1,583	3,523
Capitalised interest	57	37	67	124	101	228
<b>Total capital expenditure</b>	<b>1,056</b>	<b>1,025</b>	<b>944</b>	<b>2,000</b>	<b>1,962</b>	<b>4,369</b>
<b>Exploration and evaluation expensed (\$million)</b>						
From current year expenditure:						
Exploration	60	9	27	87	19	135
Evaluation	6	15	14	20	29	62
Total current year expenditure	66	24	41	107	48	197
Write-off of amounts capitalised in prior years	9	-	-	9	3	3
<b>Total expensed</b>	<b>75</b>	<b>24</b>	<b>41</b>	<b>116</b>	<b>51</b>	<b>200</b>

### 4.1 Exploration activity

Well name	Basin/area	Target	Santos %	Well status
Mt Kitty-1	Amadeus – NT	Gas	70 <sup>^</sup>	Gas discovery, evaluation operations suspended
Tanumbirini-1	McArthur – NT	Gas	50 <sup>^</sup>	Drilling
Lasseter-1	Browse – WA	Gas	30	Drilling
Hon Khoai-1	Nam Con Son - Vietnam	Oil	65	P&A, dry hole
Gaschnitz-4	Cooper – SA	Gas	66.6	Drilling
Cocinero-1	Cooper – QLD	Oil NFE	55	C&S, successful oil
Koki-1	Cooper – QLD	Oil	54.64	P&A, dry hole
NW Koko-1	Papuan – PNG	Gas	30 <sup>#</sup>	C&S, successful gas & oil shows
OIG-5	Sumatra – Indonesia	CSG	10	P&A, core obtained
OIG-3	Sumatra – Indonesia	CSG	10	P&A, core obtained

<sup>^</sup>Current equity, Santos funding 100% of well cost as part of farm-in obligations.

<sup>#</sup>Santos' acquisition of a 30% interest is subject to certain conditions precedent and on obtaining PNG Government approval.

#### Western Australia

In the WA-274-P permit in the Browse Basin, drilling operations for the Lasseter-1 exploration well are continuing. The well had been drilled to a depth of 4,433 metres in 12¼ inch hole at the end of the quarter. Lasseter-1 is testing a large, independent trap between the Ichthys field to the east and the Crown discovery to the west.

## Northern Territory

In the southern Amadeus Basin, the evaluation of the Mt Kitty-1 gas discovery located in EP 125 was suspended for operational reasons. Santos is currently pursuing options to progress evaluation. Regional seismic processing is complete and interpretation on-going.

The Tanumbirini-1 exploration well, located in EP 161 within the McArthur Basin, was spudded on 12 June 2014. The well is currently drilling ahead after setting surface casing.

## Cooper Basin unconventional gas

Santos' program to assess the commercial viability of the Cooper Basin's significant shale gas potential continued with the successful execution of a 1,000 metre, 10 fracture stage horizontal well with Moomba-193.

This well continued the learning curve from the recently drilled 500 metre Roswell-2 horizontal shale well. Down hole micro-seismic showed that the full length of the horizontal lateral section was stimulated and that the fractures were contained within the target REM (Roseneath/Epsilon/Murteree) shale interval. Following stimulation, a 28-day flow test was commenced at Moomba-193, with the well flowing at an average rate of 1.5mmscf/day, measuring a stable 270 psi on a 44/64 inch choke. The improved rate over Roswell-2 is a positive indication that flow rates can be increased through fracture design, placement and increased horizontal length.

Testing and analysis of Moomba-193 is continuing with the view to understand flow distribution along the horizontal section of the well which will be critical for further optimisation of future wells via targeting of the most productive intervals of the circa 1000 metres of gross pay.

In April, Moomba-194 was also successfully connected via a short tie back into Santos' existing production infrastructure and brought online with a first month average rate of 1.5 mmscf/day at 400 psi WHP on a 24/64 inch choke. This is the second successful unconventional well to be connected after Moomba-191.

During the second quarter, drilling commenced in the Nappamerri Trough Gaschnitz region with the spudding of Gaschnitz-4 within PPL-101. Drilling is progressing with the well currently at 2,478 metres. Gaschnitz-4 is the first of three planned new wells in the Gaschnitz area.

## Cooper Basin oil

The Cocinero-1 near field exploration well was spudded on 16 May 2014, approximately 3 kilometres west of the Cook oil field in ATP259P of south-west Queensland. The well successfully discovered commercial oil accumulations in the Murta and Basal Birkhead reservoirs and was subsequently cased and suspended as a future oil producer.

The Koki-1 exploration well was spudded on 29 May 2014, approximately 5 kilometres north of the Cuisinier Field in south-west Queensland. The well failed to intersect hydrocarbons in the Murta and Basal Birkhead reservoir targets and was subsequently plugged and abandoned.

## Western Province of Papua New Guinea

A three-well campaign, operated by Talisman, was completed in the first quarter and two of the wells were tested during the second quarter. Manta-1 in PPL 436, tested the Elevala sand at 42.2 mmscf/day through a 96/64 inch choke. Following this, the NW Koko-1 well in PPL 261 tested the Elevala sand at 48.3 mmscf/day through a 76/64 inch choke and the Kimu sand recorded a small flow of oil to surface. Both wells have been suspended.

## Vietnam

The Hon Khoai well, located in Block 13/03 of the Nam Con Son Basin offshore Vietnam, was spudded on 27 April 2014 and reached a total depth of 2,135 metres. The well did not encounter economic hydrocarbons and was plugged and abandoned.



## 4.2 Seismic activity

Permit	Basin/area	Survey	Type	km/km <sup>2</sup>	Status
ATP 661P	Cooper – QLD	Betoota 2D	Onshore 2D	203 km	Complete
PL 176	Scotia - QLD	North Scotia 2D	Onshore 2D	12.84 km	Complete
PL 176	Scotia - QLD	North Scotia 3D	Onshore 3D	61.69 km <sup>2</sup>	In progress

## 5. Development projects

Development expenditure during the second quarter of 2014 was \$806 million. The status of development projects during the second quarter is as follows.

### Dua (Santos 31.875%, Premier Oil operator)

The Dua oil project is located in Block 12W in the Nam Con Son Basin, offshore Vietnam. The project was sanctioned in August 2012 and involved the development of a three-well subsea tie-back to the existing Chim Sáo facilities.

Oil production from the first Dua well commenced in July 2014. For further information, refer to the ASX release of 11 July 2014.

### PNG LNG (Santos 13.5%, ExxonMobil operator)

Sanctioned in December 2009, the PNG LNG project included the development of gas and condensate resources in the Hides, Angore and Juha fields and associated gas resources in the operating oil fields of Kutubu, Agogo, Gobe and Moran in the Southern Highlands, Hela and Western Provinces of Papua New Guinea. The gas is transported by pipeline to a gas liquefaction plant 25 kilometres north-west of Port Moresby with a capacity of 6.9 mtpa. The project has an estimated gross capital cost of US\$19 billion.

Project construction began in 2010 and took 194 million work hours to complete. LNG production commenced ahead of schedule from the first LNG train in April and the second train in May, and production continues to ramp-up. The first LNG cargo left PNG in May and seven cargoes had been shipped by the end of the quarter. For further information, refer to the ASX releases of 29 April and 26 May 2014. Six Hides production wells are now on-line. Drilling continues on the Hides G-pad wells and the produced water disposal well.

### GLNG project (Santos 30%, operator)

Sanctioned in January 2011, GLNG includes the development of CSG resources in the Bowen and Surat Basins in south-east Queensland, construction of a 420-kilometre underground gas transmission pipeline to Gladstone, and two LNG trains with a combined nameplate capacity of 7.8 mtpa on Curtis Island. The project has an estimated gross capital cost of US\$18.5 billion from the final investment decision to the end of 2015 when the second train is expected to be ready for start-up, based on foreign exchange rates which are consistent with the assumptions used at FID (A\$/US\$ 0.87 average over 2011-15).

The project is over 80% complete and remains on track for first LNG in 2015, within the current budget.

### Upstream

In line with the 2014 drilling plan, forty-two wells were spudded in the GLNG acreage during the second quarter, which included 27 development wells (all in the Fairview field) and 15 appraisal wells. In total, 77 wells were spudded in the first half of 2014, which included 51 development wells (46 at Fairview, 5 at Roma).

The deliverability of existing wells in Fairview continues to exceed expectations, with a current average optimum gas rate of 2.2 TJ/day per well from the 183 connected wells, with a total gross field well capacity of 400 TJ/day at the end of May 2014. The Roma field continues to perform in line with expectations, with 52 development wells on-line and an additional 23 pilot wells on-line to assess coal productivity in potential future development areas.

Commissioning of the first upstream hub (Fairview 05) is underway. Construction of the Fairview 04 hub was completed during the quarter and the Roma 02 hub is substantially complete. Commissioning of the pipeline compressor station has commenced and construction of the 120-kilometre Comet Ridge to Wallumbilla pipeline loop is now more than 50% complete.

During the quarter, GLNG executed two third-party gas supply agreements for an aggregate quantity of 85 PJ.

### **Gas transmission pipeline**

Pre-commissioning activities for the entire 420-kilometre gas transmission pipeline are drawing to completion, with hydro-testing and dewatering complete and final drying in progress. Commissioning of the pipeline is planned to commence in the third quarter of 2014.

Good progress was made on the QGC pipeline interconnections during the quarter, with the Mt Larcom interconnect complete and pre-commissioned and construction complete on the Curtis Island interconnect.

### **LNG plant**

Construction on Curtis Island continues to progress well. All of the 82 Train 1 modules have now been set, and work continues on cable pulling and piping hook-up. Of the 29 Train 2 modules, 11 have been set, nine modules are on site or in transit and the final nine modules are under assembly in Batangas. In total, the module yard has shipped 102 of the 111 modules required for the project.

The Train 1 utilities area is substantially complete and work continues on the Train 2 utilities. Hydrostatic testing of the first LNG tank is complete and construction continues to progress well on the second tank. The LNG loading jetty is more than 95% complete, with the installation of quick release mooring hooks, capstans, vessel access gangway tower and loading arms all completed.

The integrated Bechtel/GLNG commissioning and start-up team is mobilising to site. First commissioning gas is expected to be delivered to the LNG plant in the fourth quarter of 2014.



*LNG trains, Curtis Island, July 2014.*

## 7. Drilling summary

### 7.1 Appraisal/evaluation wells

The table below details wells drilled during the second quarter and their status.

Well name	Basin/area	Target	Santos %	Well status
Mt Kingsley-7	Arcadia – QLD	CSG	23.87	C&S, successful CSG
Mt Kingsley-8	Arcadia – QLD	CSG	23.87	C&S, successful CSG
Mt Kingsley-9	Arcadia – QLD	CSG	23.87	C&S, successful CSG
Sunnyholt-10	Arcadia – QLD	CSG	23.87	C&S, successful CSG
Sunnyholt-11	Arcadia – QLD	CSG	23.87	C&S, successful CSG
Sunnyholt-14	Arcadia – QLD	CSG	23.87	C&S, successful CSG
Barossa-2	Bonaparte – NT	Gas	25	C&S, successful gas
Cook-29	Cooper – QLD	Oil	55	Drilling
FV15-23-1	Fairview – QLD	CSG water injector	23.85	Drilling
Dewhurst-29	Gunnedah – NSW	CSG	80	C&S, successful CSG
Ben Bow-7	Roma – QLD	CSG	24.57	Drilling
Ben Bow-8	Roma – QLD	CSG	24.57	C&S, successful CSG
Broandah-1	Roma – QLD	CSG	24.57	C&S, successful CSG
Broandah-2	Roma – QLD	CSG	24.57	C&S, successful CSG
Broandah-3	Roma – QLD	CSG	24.57	C&S, successful CSG
Broandah-4	Roma – QLD	CSG	24.57	C&S, successful CSG
Broandah-5	Roma – QLD	CSG	24.57	C&S, successful CSG
Broandah-6	Roma – QLD	CSG	24.57	C&S, successful CSG

### 7.2 Development wells

The table below details development wells drilled during the second quarter and their status.

Well name	Basin/area	Target	Santos %	Well status
Big Lake-104	Cooper – SA	Gas	66.6	C&S, successful gas
Big Lake-105	Cooper – SA	Gas	66.6	C&S, successful gas
Big Lake-107*	Cooper – SA	Gas	66.6	C&S, successful gas
Big Lake-108	Cooper – SA	Gas	66.6	C&S, successful gas
Big Lake-109	Cooper – SA	Gas	66.6	C&S, successful gas
Big Lake-110	Cooper – SA	Gas	66.6	C&S, successful gas
Big Lake-111	Cooper – SA	Gas	66.6	Suspended for further deepening
Big Lake-112	Cooper – SA	Gas	66.6	Drilling

Well name	Basin/area	Target	Santos %	Well status
Big Lake-115	Cooper – SA	Gas	66.6	C&S, successful gas
Big Lake-116	Cooper – SA	Gas	66.6	C&S, successful gas
Big Lake-117	Cooper – SA	Gas	66.6	Drilling
Brolga-5*	Cooper – SA	Gas	66.6	C&S, successful gas
Gooranie-5	Cooper – SA	Gas	66.6	C&S, successful gas
Moolion North-2	Cooper – SA	Gas	72.32	Drilling
Moorari-13	Cooper – SA	Gas	66.6	C&S, successful gas
Moorari-14	Cooper – SA	Gas	66.6	C&S, successful gas
Tirrawarra-82	Cooper – SA	Gas	66.6	C&S, successful gas
Tirrawarra-83	Cooper – SA	Gas	66.6	Drilling
Baryulah-17	Cooper – QLD	Gas	60.06	C&S, successful gas
Hera-3	Cooper – QLD	Gas	60.06	Drilling
Vega-4	Cooper – QLD	Gas	60.06	C&S, successful gas
Vega-5	Cooper – QLD	Gas	60.06	C&S, successful gas
Cuisinier-13	Cooper – QLD	Oil	54.64	C&S, successful oil
Cuisinier-15	Cooper – QLD	Oil	54.64	C&S, successful oil
Cuisinier-16	Cooper – QLD	Oil	54.64	C&S, successful oil
Fairview-530	Fairview – QLD	CSG	23.85	C&S, successful CSG
Fairview-531	Fairview – QLD	CSG	23.85	C&S, successful CSG
Fairview-532	Fairview – QLD	CSG	23.85	Drilling
FV10-26-1	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV10-26-2	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV10-26-3	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV10-26-4	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV10-27-1	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV10-29-1	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV10-29-2	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV10-29-3	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV11-43-1	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV11-43-2	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV11-44-1	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV13-09-1^	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV13-09-2^	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV13-09-3STI^	Fairview – QLD	CSG	23.85	C&S, successful CSG

Well name	Basin/area	Target	Santos %	Well status
FV13-09-5 <sup>^</sup>	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV13-09-6 <sup>^</sup>	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV13-20-6	Fairview – QLD	CSG	23.85	Drilling
FV13-20-7	Fairview – QLD	CSG	23.85	Suspended for further deepening
FV18-02-1	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV18-02-2	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV18-02-3*	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV18-02-4*	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV18-02-5*	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV18-02-6*	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV18-02-8	Fairview – QLD	CSG	23.85	Drilling
FV18-03-6	Fairview – QLD	CSG	23.85	Drilling
FV18-03-7	Fairview – QLD	CSG	23.85	Suspended for further deepening
FV18-03-8	Fairview – QLD	CSG	23.85	Suspended for further deepening
FV18-16-2	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV18-16-3	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV18-16-4	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV18-16-5	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV18-16-6	Fairview – QLD	CSG	23.85	C&S, successful CSG
12W-Dua – N1P* <sup>#</sup>	Nam Con Son - Vietnam	Oil	31.875	Drilling
12W-Dua – N2P* <sup>#</sup>	Nam Con Son - Vietnam	Oil	31.875	Suspended for further deepening
12W-Dua – S3P <sup>#</sup>	Nam Con Son - Vietnam	Oil	31.875	C&C, successful oil
Hides G1* <sup>#</sup>	Papuan – PNG	Gas	13.5	Drilling
Hides G2 <sup>#</sup>	Papuan – PNG	Gas	13.5	Drilling
Hides PWD-1 <sup>#</sup>	Papuan – PNG	Water injector	13.5	Drilling

\* Spudded during first quarter 2014; <sup>^</sup> Spudded during fourth quarter 2013

<sup>#</sup> Not operated by Santos

## 8. Abbreviations and conversion factors

Abbreviations		Conversion factors	
PJ	petajoules	Sales gas and ethane, 1 PJ	171.937 boe x 10 <sup>3</sup>
TJ	terajoules	Crude oil, 1 barrel	1 boe
GJ	gigajoules	Condensate, 1 barrel	0.935 boe
mmbbl	million barrels	LPG, 1 tonne	8.458 boe
mmboc	million barrels of oil equivalent	LNG, 1 PJ	18,040 tonnes
mmbtu	million British thermal units		
mmscf	million standard cubic feet		
mtpa	million tonnes per annum		
t	tonnes		
P&A	plugged and abandoned		
C&S	cased and suspended		
C&C	cased and completed		
NFE	Near-field exploration		
WI	water injector		
ST	side track		
CSG	coal seam gas		
LNG	liquefied natural gas		
pa	per annum		
PSC	production sharing contract		
FPSO	floating production, storage & offloading		