# Fourth Quarter Activities Report For period ending 31 December 2012



17 January 2013

# Comparative performance at a glance

Corresponding period	Q4 2012	Q4 2011	Change
Production (mmboe)	13.2	11.7	+13%
Sales (mmboe) <sup>1</sup>	15.5	14.5	+7%
Sales revenue (\$million) <sup>1</sup>	876	810	+8%
Quarterly comparison	Q4 2012	Q3 2012	Change
Production (mmboe)	13.2	13.5	-2%
Sales (mmboe)	15.5	16.6	-7%
Sales revenue (\$million)	876	851	+3%
Full-year comparison	2012	2011	Change
Production (mmboe)	52.1	47.2	+10%
Sales (mmboe) <sup>1</sup>	61.0	58.7	+4%
Sales revenue (\$million) <sup>1</sup>	3,220	2,721	+18%

## 2012 production up 10%, record quarterly and annual sales revenue

- > Santos today announced a 10% lift in annual production to 52.1 million barrels of oil equivalent (mmboe) and record quarterly and annual sales revenue.
- > December quarter production of 13.2 mmboe was 13% higher than the corresponding quarter and sales revenue for the guarter was up 8% to a record \$876 million.
- December quarter natural gas, ethane and LNG production was 18% higher than the corresponding quarter, primarily due to stronger production from the Carnarvon, Cooper and Otway Basins, combined with higher output from Darwin LNG and GLNG.
- > The average gas price of \$5.06/GJ for the December quarter was 9% lower than the corresponding quarter, which included the favourable Maleo gas price review in Indonesia. The average gas price for the year of \$5.14/GJ was 9% higher than the previous year.
- Sales revenue for the year was a record \$3.2 billion, driven by the 33% increase in crude oil production.

#### Key activities during the period

- > Significant gas discovery at the Crown-1 exploration well in WA-274-P, located in the Browse Basin offshore Western Australia. Santos also farmed-in for a 30% interest in the adjacent permit WA-408-P and drilling commenced on the Bassett West-1 exploration well in the permit.
- > PNG LNG capacity increased to 6.9 million tonnes per annum (mtpa) and the operator confirmed the project remains on track for first LNG in 2014. The capital cost estimate was increased to US\$19 billion.
- > GLNG is now 45% complete and remains on track for first LNG in 2015. Significant milestones achieved for the GLNG underground gas transmission pipeline with the arrival of the last shipment of pipe in Queensland and the commencement of pipeline burial.
- > Australia's first commercial shale gas production was achieved from the Moomba-191 well.
- > Farm-in agreement executed with Tamboran Pty Ltd for Santos to earn up to a 75% interest in permits in the McArthur Basin prospective shale gas and oil resource, onshore Northern Territory.

<sup>&</sup>lt;sup>1</sup> Prior period sales volume and revenue has been restated due to the change in accounting treatment of third party crude oil purchases and sales. Refer to footnote on page 4.

Santos Chief Executive Officer David Knox said new producing assets such as Reindeer and Chim Sáo, combined with strong Cooper oil production, drove a 10% lift in Santos' output in 2012.

"Higher oil production allowed us to capitalise on favourable prices this year delivering the highest sales revenue in the company's history," Mr Knox said.

"In 2012 we continued to deliver in our base business as well as laying the foundations for future growth. In Western Australia, we sanctioned the Fletcher Finucane oil project and made a material gas discovery at Crown. In the NT, we farmed-down Caldita Barossa and completed two farm-ins into prospective onshore acreage in the Amadeus/Pedirka and McArthur Basins.

"The Cooper Basin produced its highest oil output in three years and Australia's first commercial shale gas, while we advanced plans for the Moomba infrastructure upgrade.

"In Asia, Chim Sáo delivered a significant boost to our oil production, the Wortel gas project in Indonesia was completed on budget, and we progressed the South Sumatra CSG opportunity.

"Construction progress on our LNG projects is pleasing with PNG LNG more than 70% complete and GLNG 45% complete. The projects remain on track for first LNG in 2014 and 2015 respectively," Mr Knox said.

# 2012 guidance

Production in 2012 was in line with guidance. Production costs for the year are expected to be approximately \$660 million, slightly above the upper end of previous guidance primarily due to higher non-operated production costs. 2012 capital expenditure (excluding capitalised interest) is lower than previous guidance primarily due to timing of expenditures on the PNG LNG, GLNG, Fletcher Finucane and Dua projects.

	2012	
Item	Previous guidance	Updated guidance
Production (mmboe)	51 - 55	52.1
Production costs (\$million)	610 - 640	660
Depreciation, depletion & amortisation (DD&A) expense (\$/boe)	15	No change
Royalty-related taxation expense (\$million after tax)	80 - 100	No change
Capital expenditure (including exploration and evaluation) (\$billion) <sup>1</sup>	3.5	3.2

<sup>&</sup>lt;sup>1</sup> Capital expenditure guidance excludes capitalised interest.

Guidance on 2012 financial outcomes above is preliminary and subject to finalisation. As such, the actual results for the year ended 31 December 2012 may differ from the guidance given in this update.

Further detail of 2012 capital expenditure, including exploration and evaluation expenditure, is reported in the table on page 7 of this release.

Santos will announce its results for the year ended 31 December 2012 on Friday 22 February 2013. The full-year report (incorporating Appendix 4E) and associated investor briefing presentation will be available on Santos' website at <a href="https://www.santos.com">www.santos.com</a>. A webcast briefing, including investor/analyst questions, will be available on Santos' website from 11:00am AEDST on 22 February 2013. Santos will also release its annual reserves statement with the full-year results on 22 February.

# 2013 guidance

Santos expects 2013 production to be in the range of 53 to 57 mmboe and capital expenditure (excluding capitalised interest) to be approximately \$4 billion, both unchanged from guidance issued at the investor seminar in November 2012.

Guidance on financial items will be provided with the full-year results on 22 February 2013.

The 2013 first guarter activities report will be released on Friday 19 April.

# I. Production

	Quarter ended			Full year		
	Q4 2012	Q4 2011	Q3 2012	2012 <sup>1</sup>	2011	
Sales gas, ethane and LNG (PJ)						
Cooper	17.3	16.2	17.1	66.6	66.1	
Surat/Bowen/Denison	3.0	3.5	2.1	11.2	14.2	
GLNG	3.1	2.0	2.6	10.8	9.0	
Amadeus	-	-	-	-	0.7	
Otway	5.0	4.1	5.6	19.4	19.0	
Gunnedah	<del>_</del>	0.1		<del>-</del>	0.2	
Carnarvon	15.5	12.2	16.7	65.0	45.5	
Darwin LNG	4.0	3.4	4.3	14.4	14.7	
Indonesia	6.4	5.3	6.9	28.1	33.9	
Vietnam	0.4	-	0.9	2.1	-	
Bangladesh	1.7	0.9	1.8	4.9	3.5	
Total production (PJ)	56.4	47.7	58.0	222.5	206.8	
Total production (mmboe)	9.7	8.2	10.0	38.3	35.6	
Condensate (000 bbls)	251.7	275.0	229.7	1 020 7	1 072 0	
Cooper Surat/Denison	0.1	275.9 0.6	0.9	1,030.7 1.8	1,072.0	
Amadeus	7.3	7.8	7.8	1.8 29.9	2.8 24.1	
	6.0	7.8 3.9	7.8 3.9	29.9 19.7	19.5	
Otway Carnarvon	157.2	138.5	162.3	635.6	502.4	
Bayu-Undan	295.5	314.5	311.2	1,174.1	1,291.9	
Indonesia	1.2	0.9	2.0	5.6	5.2	
Bangladesh	1.2	0.3	2.0	5.0	0.6	
Total production (000 bbls)	719.0	742.3	717.8	2,897.4	2,918.5	
Total production (mmboe)	0.7	0.7	0.6	2.7	2,510.5	
LPG (000 t)	<u> </u>	<b>U</b>	0.0		=.,	
Cooper	30.9	32.7	26.5	125.1	134.4	
Bayu-Undan	17.6	18.4	18.8	69.4	75.2	
Total production (000 t)	48.5	51.1	45.3	194.5	209.6	
Total production (mmboe)	0.4	0.4	0.3	1.6	1.7	
Crude oil (000 bbls)						
Cooper	817.7	712.3	858.8	3,226.1	2,831.4	
Surat/Denison	11.9	19.7	17.4	66.8	89.6	
Amadeus	46.6	40.1	52.3	198.0	112.7	
Thevenard	56.7	61.2	53.6	180.6	235.5	
Barrow	138.6	139.2	141.4	566.6	526.0	
Stag	406.3	433.2	323.9	1,411.6	1,677.2	
Mutineer-Exeter	113.5	244.0	169.4	604.0	669.5	
Indonesia	79.2	42.9	83.5	340.2	269.9	
Vietnam	746.8	680.6	843.1	2,870.2	680.6	
PNG Total production (000 bbls)	14.4	15.8	18.0	73.8	77.5	
Total production (000 bbls)	2,431.7	2,389.0	2,561.4	9,537.9	7,169.9	
Total production (mmboe)  TOTAL	2.4	2.4	2.6	9.5	7.2	
Production (mmboe)	13.2	11 7	13.5	52.1	47.2	
riouucuoii (iiiiiib0e)	15.2	11.7	12.2	52.1	47.2	

<sup>&</sup>lt;sup>1</sup> Preliminary and subject to audit.

# 2. Sales volumes and sales revenue

	Qu	arter ende	ed	Full y	ear
	Q4 2012	Q4 2011	Q3 2012	2012 <sup>1</sup>	2011
Sales gas, ethane and LNG					
Sales volumes – own product (PJ)	52.5	45.8	61.3	216.7	204.5
Sales volumes – third party (PJ)	7.4	13.8	10.7	40.0	61.3
Total sales volumes (PJ)	59.9	59.6	72.0	256.7	265.8
Total sales volumes (mmboe)	10.3	10.3	12.4	44.1	45.7
Average gas price (A\$/GJ)	5.06	5.55	5.46	5.14	4.71
Total sales revenue (\$million)	303	331	391	1,319	1,252
Condensate					
Sales volumes – own product (000 bbls)	843.5	897.0	874.1	2,982.7	2,712.6
Sales volumes – third party (000 bbls)	51.0	45.2	64.9	197.8	207.0
Total sales volumes (000 bbls)	894.5	942.2	939.0	3,180.5	2,919.6
Total sales volumes (mmboe)	0.9	0.8	0.8	3.0	2.7
Average condensate price (A\$/bbl)	99.77	103.57	100.95	101.04	104.16
Average condensate price (US\$/bbl)	103.63	104.80	104.92	104.64	106.90
Total sales revenue (\$million)	89	97	95	321	304
LPG					
Sales volumes – own product (000 t)	41.5	43.2	44.9	181.7	197.8
Sales volumes – third party (000 t)	0.7	-	8.0	10.0	0.6
Total sales volumes (000 t)	42.2	43.2	52.9	191.7	198.4
Total sales volumes (mmboe)	0.3	0.4	0.5	1.6	1.7
Average LPG price (A\$/t)	1,120.32	801.81	808.97	933.52	861.52
Average LPG price (US\$/t)	1,163.68	811.35	840.76	966.75	884.17
Total sales revenue (\$million)	47	35	43	179	171
Crude oil					
Sales volumes – own product (000 bbls)	3,019.7	2,517.9	2,456.6	9,532.7	6,990.2
Sales volumes – third party (000 bbls) <sup>2</sup>	1,006.4	500.8	404.6	2,776.8	1,625.4
Total sales volumes (000 bbls) <sup>2</sup>	4,026.1	3,018.7	2,861.2	12,309.5	8,615.6
Total sales volumes (mmboe)	4.0	3.0	2.9	12.3	8.6
Average crude oil price (A\$/bbl)	108.46	114.85	112.49	113.78	115.34
Average crude oil price (US\$/bbl)	112.66	116.22	116.91	117.83	118.38
Total sales revenue (\$million) <sup>2</sup>	437	347	322	1,401	994
Total					
Sales volume – own product (mmboe)	13.2	11.6	14.2	51.1	46.4
Sales volume – third party (mmboe)	2.3	2.9	2.4	9.9	12.3
Total sales volume (mmboe) <sup>2</sup>	15.5	14.5	16.6	61.0	58.7
Total sales revenue (\$million) <sup>2</sup>	876	810	851	3,220	2,721

<sup>&</sup>lt;sup>1</sup> Preliminary and subject to audit.

<sup>&</sup>lt;sup>2</sup> As previously advised, Santos changed its accounting treatment of certain Cooper Basin arrangements relating to crude oil purchases and sales that it had previously recorded as trading income. Effective 1 January 2012, these arrangements have been recorded as product sales and third party product purchases. Prior period sales volume and revenue comparatives in the table above have been restated accordingly.

# 3. Production 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

Crude oil production in 2012 of 3.2 mmboe was the highest in three years, and 14% above 2011. For the fourth quarter, crude oil production of 817,700 barrels was 5% below the previous quarter primarily due to decline from initial high-rate Charo wells, partially offset by eight new oil wells brought on line in the Cook, Cuisinier and Munro fields.

Total gas production of 66.6 PJ during 2012 was 1% higher than 2011, with improvements in field and plant downtime partially offset by lower upstream capacity due to the project backlog caused by wet weather impacting the 2010-11 drilling campaigns. Gas production of 17.3 PJ during the quarter was 7% higher than Q4 2011, due to downtime improvements. Six gas development wells were drilled during the quarter and all were cased and suspended as future producers.

The Moomba-191 shale well was commissioned on 28 September 2012, with a first month average flow rate of 2.7 mmscf/day. At the end of the fourth quarter, the well was flowing at 2.5 mmscf/day.

Condensate and LPG production in 2012 were both slightly lower than 2011 due to leaner gas wells brought on line in 2012.

#### Surat/Bowen/Denison

Sales gas production of 3.0 PJ was lower than Q4 2011 due to the shut-in at the non-operated Northern Denison field. Planning and design for Northern Denison field infrastructure upgrades continues, with the field targeted to return to production in late-2013.

#### **GLNG**

Sales gas production of 3.1 PJ was higher than Q4 2011, as lower customer nominations were offset by higher volumes of gas injected into Roma underground storage.

## Otway

Sales gas production of 5.0 PJ was 22% higher than Q4 2011, due to customer contractual commitments from Casino and Henry being met ahead of schedule in 2011 and the fields shut in. Production from the Casino hub was 4.4 PJ of sales gas and 4,400 barrels of condensate. Minerva production was 0.6 PJ and 1,600 barrels of condensate.

#### Carnarvon

Gas production in 2012 was up 43% to a record 65 PJ. Production in the fourth quarter of 15.5 PJ was 27% higher than Q4 2011, primarily due to the commencement of production from Reindeer in December 2011.

Condensate production of 157,200 barrels was 14% higher than Q4 2011 due to commencement of production from Reindeer.

Total oil production in the quarter from the Carnarvon was 715,100 barrels, 4% higher than the previous quarter. Stag oil production for the quarter was up 25% to 406,300 barrels due to two new production wells online and the third quarter being impacted by downtime due to heavy-lift and workover activities. Production from Mutineer-Exeter was 33% lower as production was shut-in from 1 December 2012 and the FPSO sailed to Singapore for planned maintenance. The FPSO is due back to the field in early March.

In December 2012, Santos acquired Woodside's 8.2% interest in Mutineer-Exeter. The transaction is subject to customary approvals and will result in the same joint-venture parties (Santos, Kufpec Australia and JX Nippon) having interests in both the Mutineer-Exeter and Fletcher Finucane projects. Santos has also identified a number of follow-up opportunities in the Mutineer-Exeter area.

## Bayu-Undan/Darwin LNG

Gross Bayu-Undan gas production of 54.4 PJ was 16% higher than Q4 2011, due to improvements in Darwin LNG plant efficiency following the shutdown completed in the second quarter. Santos' net entitlement to production was 4.0 PJ.

Gross Bayu-Undan condensate production of 4.5 mmbbl was 10% lower than Q4 2011. Santos' net entitlement to production was 0.3 mmbbl.

Gross Bayu-Undan LPG production of 234,600 tonnes was 7% lower than Q4 2011. Santos' net entitlement to production was 17,600 tonnes.

#### Indonesia

Santos' net entitlement to gas production of 6.4 PJ was 21% higher than the corresponding period primarily due to production from Wortel which was brought on line in January 2012.

Oil production from Oyong was 5% lower than Q3 2012 due to natural field decline. Total 2012 production was up 26% on 2011, reflecting production from the infill well drilled in the first quarter.

#### Vietnam Block 12W

Gross average oil production from Chim Sáo during the December quarter was 27,800 barrels per day. Santos' net entitlement to production of 746,800 barrels for the quarter was 11% lower than Q3 2012, primarily due to power constraints on the FPSO. Santos' share of gas production during the December quarter was 0.4 PJ.

Work is underway on the Dua field development, with the project over 30% complete and on track for first oil in the first half of 2014.

## **Bangladesh**

Sales gas production of 1.7 PJ was higher than Q4 2011 due to production from Sangu-11 which was brought on line in mid-June 2012.

# 4. Capital expenditure

Total exploration, evaluation and development expenditure is summarised in the table below. Numbers for 2012 are preliminary and subject to audit.

	Qu	arter ende	d	Full Year		
	Q4 2012	Q4 2011	Q3 2012	2012	2011	
Capital expenditure summary (\$million)						
Exploration	71	50	37	162	151	
Evaluation including CSG	53	31	37	161	131	
Development and other PP&E	862	786	690	2,850	2,651	
Capitalised interest	49	40	48	183	136	
Total capital expenditure	1,035	907	812	3,356	3,069	

Exploration and evaluation expensed summary (\$million)					
From current year expenditure:					
Exploration	19	59	15	77	111
Evaluation	24	14	25	90	53
Total current year expenditure	43	73	40	167	164
Write-off of amounts capitalised in prior years	-	0	-	2	3
Total expensed	43	73	40	169	167

# 4.1 Exploration activity

Well name	Basin/area	Target	Santos %	Well status
Crown-1	Browse – WA	Gas	30.00	P&A, successful gas discovery
Jalfrezi-1	Carnarvon – WA	Oil	22.56	P&A
Bassett West-1	Browse – WA	Gas	30.00	Drilling
Roswell-1	Cooper/Eromanga – SA	Gas	66.60	Drilling
Gaschnitz-1	Cooper/Eromanga – SA	Gas	66.60	Drilling

The Crown-1 exploration well in the Browse Basin tested a large independent structure between the Poseidon and Ichthys fields in WA-274-P and resulted in a significant gas discovery. The well was drilled to a total depth of 5,301 metres and intersected 61 metres of net gas pay in the Jurassic-aged Montara, Plover and Malita reservoirs between 4,873 and 4,998 metres. The well did not intersect a gas-water contact. Pressure data was acquired from multiple points indicating that gas would be expected to flow at a high rate and multiple condensate-bearing gas samples were recovered to surface. The preliminary contingent recoverable resource estimate range for the discovery is 0.5 to 5 trillion cubic feet. Success at Crown-1 de-risks multiple additional high quality prospects mapped within WA-274-P and establishes the permit as a cornerstone asset for Santos in the Browse. Discussions are underway with partners for follow-up drilling.

Jalfrezi-1 spudded 5 December 2012 and was drilled to a total depth of 1,513 metres. The primary reservoir section was interpreted as being hydrocarbon bearing and this was confirmed with samples of both gas and oil being recovered. At the end of the year technical analysis of the well result was underway and the well was plugged and abandoned as per the program.

The Bassett West-1 wildcat, located in WA-408-P in the Browse Basin, was spudded on 17 December 2012 and is currently drilling towards a total depth of 5,275 metres. The current drilling program in WA-408-P targets a number of large attractive structures adjacent to WA-274-P and offers Santos further exposure to material resource adds in this exciting emerging gas province.

Roswell 1, the vertical well of a combined vertical / horizontal shale gas pair drill program, spudded 11 December 2012. Coring operations are currently underway within the mid-Patchawarra formation.

Gaschnitz-1 spudded 3 November 2012 to test the basin centred gas accumulation and unconventional shale gas resources within the Nappamerri Trough region of the Cooper Basin. Intermediate casing has been set through the Toolachee formation and rig repairs are underway before drilling ahead to test the primary Permian Patchawarra objective.

# 4.2 Seismic activity

Permit	Basin/area	Survey	Туре	km/km <sup>2</sup>	Status
ATP752P	Cooper/Eromanga – QLD	Cuisinier North 3D	Onshore 3D	224 km <sup>2</sup>	Complete
ATP259P	Cooper/Eromanga – QLD	Arglett 3D	Onshore 3D	108 km²	Complete

# 5. Development projects

Development expenditure during the fourth quarter of 2012 was \$862 million. The status of development projects during the fourth quarter is as follows.

## Fletcher Finucane (Santos 44%, operator)

The Fletcher Finucane oil project is located in permit WA-191-P in the Carnarvon Basin, offshore Western Australia. Fletcher Finucane was sanctioned in January 2012 and involves the development of a three-well subsea tie-back to the existing Santos-operated FPSO facility at Mutineer-Exeter. The project is 79% complete and on track for first oil in second half 2013, at an average gross production rate of 15,000 barrels per day for the initial 12 months of production.

Drilling of the three development wells is complete and the installation of well completion equipment, including downhole electrical submersible pumps, is underway. Manufacturing of the majority of the subsea facilities including pipelines, umbilicals and manifolds, is complete. Offshore installation of the subsea facilities, including tie-in of the three development wells to the Mutineer-Exeter facilities, is due to commence in Q1 2013.

# PNG LNG (Santos 13.5%, ExxonMobil operator)

Sanctioned in December 2009, the PNG LNG project will develop 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 will be transported by pipeline to a gas liquefaction plant 25 kilometres north-west of Port Moresby with a capacity of 6.9 mtpa. PNG LNG has binding LNG sales agreements with four Asian buyers.

During the quarter, the operator completed a cost and schedule review for the project and advised it was 70% complete and on track for first LNG in 2014. In addition, the project's estimated gross final capital cost had increased to US\$19 billion. This was primarily due to foreign exchange impacts, delays from work stoppages due to community disruptions and land access, and logistics and weather challenges. The operator also advised that the LNG plant capacity had increased from 6.6 mtpa to 6.9 mtpa, with discussions underway with potential parties for sales of additional volumes.

Construction continues to progress at the LNG plant and upstream locations and the labour force has completed over 105 million work hours to date.

At the Hides gas conditioning plant, the major foundations and earthworks are complete and construction activity is now focused on structural steel, piping and cabling installation. The first wells of the Hides drilling program are underway.

At the Komo airfield, runway pavement is now well progressed and site utility buildings and facilities are nearing completion ahead of first cargo flights.

The onshore pipeline construction is progressing towards Hides with over 200 kilometres of the 292 kilometre right-of-way cleared and the pipeline welded out. The offshore pipeline is being prepared for final testing.

The major items of processing equipment are in place at the LNG plant and installation of piping is being progressed. The load-out jetty, LNG tanks and flare system are nearing completion.

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



Komo airfield, December 2012



Hides gas conditioning plant, December 2012

## 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. GLNG has binding LNG sales agreements with PETRONAS and KOGAS for 7.0 mtpa in aggregate. The project has an estimated gross capital cost of US\$18.5 billion from final investment decision to the end of 2015, 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 45% complete and remains on track for first LNG in 2015.

#### **Upstream**

Thirty-nine wells were spudded in the GLNG acreage during the fourth quarter. The 2012 drilling campaign focused on building gas deliverability rather than reserves and totalled 143 wells. This comprised 122 development wells (including six injector wells) and 21 appraisal wells. Land access is currently in place for over 200 wells for the 2013 drilling program.

During the quarter, eighteen development wells and five appraisal wells were drilled in the Fairview and Arcadia fields. Twelve development wells and three appraisal coreholes were drilled in the Roma field during the fourth quarter. In addition, one appraisal well was drilled in the Scotia field.

Site preparations including bulk earthworks and foundations continue at the three upstream gas hub sites at Fairview and Roma. At Fairview Hub 4, all compressor foundations and shelter columns have been completed and underground service conduit installation in the gas turbine alternator area has also been completed. At Fairview Hub 5, foundation work continues for the gas turbine alternators and compressor foundations. At Roma Hub 2, works continued with foundation concrete pours, screw piling and underground water pipework.

Materials and equipment continued to arrive from local and overseas suppliers, with the fourth shipment of well-pad separator skids and the final shipment of gas turbine compressors for the three hubs loaded for transportation.

## **Gas transmission pipeline**

All 420 kilometres of pipe for the gas transmission pipeline has been delivered to the pipe-yards in Gladstone and Port Alma. 108 kilometres of the mainland pipeline right-of-way has been cleared and graded, with 94 kilometres of pipe strung and 35 kilometres of pipe welded. In December, pipeline burial in the Arcadia Valley commenced, which is the final step before rehabilitation works are carried out.

For the marine crossing, sealing of the access track commenced, and site pad and launch shaft preparation is continuing. The tunnelling machine is being commissioned in Brisbane. The tunnel concrete segment moulds have been prepared and segment fabrication commenced in early January.

#### **LNG plant**

On Curtis Island, construction of the two LNG trains and supporting infrastructure continues to progress. On the Train-1 site, the first mechanical equipment was installed (lean amine pumps), the regenerator reflux pumps were installed onto concrete pedestals and foundations for the compressor control building commenced, while the gas turbine generator drivers were delivered to site. On the Train-2 site, concrete foundations for the propane condenser and methane compressor were completed.

Concrete wall lifts are underway for both LNG tanks, erection and welding of the temporary outer support brackets for the steel roof of LNG tank B has been completed and installation of roof plates has commenced.

Installation of two test piles was completed at the LNG jetty prior to commencement of jetty platform production piling.

At the module yard in Batangas, assembly of 44 of the 82 Train-1 modules has commenced including assembly of the cryogenic modules. The first pneumatic test on pipe for a jetty module was completed and the installation of insulation of piping commenced.

# GLNG project (Santos 30%, operator) continued



GLNG plant site, 4 January 2013.



LNG tank construction, 4 January 2013

# 6. Business development

#### Western Australia & Northern Territory

During the fourth quarter, Santos executed a farm-in agreement with Tamboran Resources Pty Ltd relating to four permits in the shale oil and gas prospective onshore McArthur Basin in the Northern Territory. Under the terms of the farm-in, Santos will immediately earn a 50% operated interest in Exploration Permits 161, 162 and 189 and 299 (A), by funding a \$41 million phase one work program within three years. Upon completion of that program, Santos will have the option to earn a further 25% interest in the permits by funding a \$30 million phase two work program including the drilling and testing of two wells. The agreement is subject to standard regulatory approvals. Santos also agreed to acquire a 14% interest in Tamboran Resources Pty Ltd for \$10 million.

Santos executed a farm-in agreement with Total E&P Australia Pty Ltd, earning a 30% interest in the exploration permit, WA-408-P in the Browse Basin, offshore Western Australia. The agreement is subject to customary conditions. The permit is operated by Total and is adjacent to the Santos-operated WA-274-P permit in which the Crown discovery was recently made. The WA-408-P joint venture has committed to an initial drilling program in the permit, including Dufresne-1 and Bassett West-1. Drilling is currently underway at Bassett West-1.

Santos sold its entire 50% interest in WA-41-R and its entire 45% interest in WA-38-R in the Carnarvon Basin to Hydra Energy (WA) Pty Ltd, subject to customary approvals expected in early 2013.

#### Asia-Pacific

Santos has decided not to proceed with its proposed farm-in to two exploration licences in Tajikistan and in December 2012, notified both DWM Petroleum AG and the Government of the Republic of Tajikistan of its intentions. Santos is also progressing its exit from the Republic of Kyrgyzstan.

# 7. Drilling summary

# 7.1 Appraisal/evaluation wells

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

Well name	Basin/area	Target	Santos %	Well status
Irtalie East 3	Cooper/Eromanga – QLD	Oil	55.50	C&S, successful oil
Zeus-4	Cooper/Eromanga – QLD	Oil	70.00	C&S, successful oil
Zeus-5	Cooper/Eromanga – QLD	Oil	70.00	C&S, successful oil
Zeus-6	Cooper/Eromanga – QLD	Oil	70.00	C&S, successful oil
Zeus-7	Cooper/Eromanga – QLD	Oil	70.00	C&S, successful oil
Paspa 1	Cooper/Eromanga – QLD	Oil	70.00	P&A
Cudgel 1	Cooper/Eromanga – QLD	Oil	70.00	Drilling
Hurricane 3	Carnarvon – WA	Gas	37.31	P&A
Wangalee 1	Arcadia – QLD	CSG	23.85	P&A, CSG core hole
Mount Sunlight 1	Arcadia – QLD	CSG	21.21	P&A, CSG core hole
Basalt Creek East 1	Fairview – QLD	CSG	23.85	C&S, successful CSG
Bungawarra South 1	Fairview – QLD	CSG	23.85	C&S, successful CSG
Bungawarra East 1	Fairview – QLD	CSG	23.85	C&S, successful CSG
Stakeyard East 4*	Roma – QLD	CSG	30.00	C&S, successful CSG
Stakeyard East 5	Roma – QLD	CSG	30.00	C&S, successful CSG
Emu Park 1	Roma – QLD	CSG water injector	30.00	C&S, water injector
Speculation 2*	Scotia – QLD	CSG	30.00	C&S, successful CSG
Speculation 3	Scotia – QLD	CSG	30.00	C&S, successful CSG
Mira 3 <sup>#</sup>	Denison – QLD	CSG	30.00	C&S, successful CSG

# 7.2 Development wells

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

Well name	Basin/area	Target	Santos %	Well status
Waukatanna 3	Cooper/Eromanga – SA	Gas	86.81	C&S, successful gas
Waukatanna 5	Cooper/Eromanga – SA	Gas	66.60	C&S, successful gas
Moolion 5	Cooper/Eromanga – SA	Gas	72.32	C&S, successful gas
Moolion 6	Cooper/Eromanga – SA	Gas	72.32	C&S, successful gas
Cooba 4	Cooper/Eromanga – SA	Gas	66.60	C&S, successful gas
Baryulah 15	Cooper/Eromanga – QLD	Gas	60.06	C&S, successful gas
Baryulah 16	Cooper/Eromanga – QLD	Gas	60.06	Drilling
Hides B1*#	Papuan – PNG	Gas	13.50	Drilling
Hides B2*#	Papuan – PNG	Gas	13.50	Drilling
Finucane South 2H	Carnarvon – WA	Oil	41.60	Drilling
Finucane South 3H	Carnarvon – WA	Oil	41.60	C&C, successful oil
Stag 44H*#	Carnarvon – WA	Oil	37.30	C&C, successful oil
Stag 45H <sup>#</sup>	Carnarvon – WA	Oil	37.30	C&C, successful oil
FV06-42 1*	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV11-02 1	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV11-02 2	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV11-35 2*	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV11-40-2	Fairview – QLD	CSG	23.85	Drilling
FV12-05 2	Fairview – QLD	CSG	23.85	C&S, successful CSG

Well name	Basin/area	Target	Santos %	Well status
FV12-11 1	Fairview – QLD	CSG	23.85	Drilling
FV12-14 1	Fairview – QLD	CSG	23.85	C&C, successful CSG
FV12-14 2	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV12-24 1	Fairview – QLD	CSG	23.85	C&C, successful CSG
FV12-24 2	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV12-24 3	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV12-25 1	Fairview – QLD	CSG	23.85	Suspended for further deepening
FV12-25 2	Fairview – QLD	CSG	23.85	Suspended for further deepening
FV12-25 3	Fairview – QLD	CSG	23.85	Drilling
FV18-06 1	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV18-06 2	Fairview – QLD	CSG	23.85	C&S, successful CSG
FV18-06 3	Fairview – QLD	CSG	23.85	C&S, successful CSG
RM07-11 1ST1	Roma – QLD	CSG	30.00	C&S, successful CSG
RM07-11 2	Roma – QLD	CSG	30.00	Drilling
RM08-19 1	Roma – QLD	CSG	30.00	Drilling
RM13-02 1	Roma – QLD	CSG	30.00	C&S, successful CSG
RM13-02 2	Roma – QLD	CSG	30.00	C&S, successful CSG
RM13-02 3	Roma – QLD	CSG	30.00	C&S, successful CSG
RM13-02 4	Roma – QLD	CSG	30.00	C&S, successful CSG
RM13-03 1	Roma – QLD	CSG	30.00	C&S, successful CSG
RM13-03 2	Roma – QLD	CSG	30.00	C&S, successful CSG
RM13-11 1	Roma – QLD	CSG	30.00	C&S, successful CSG
Grafton Range 32I	Roma – QLD	CSG	30.00	C&S, future injector
Grafton Range 33I	Roma – QLD	CSG	30.00	C&S, future injector
Grafton Range 34I	Roma – QLD	CSG	30.00	C&S, future injector
Grafton Range 35I	Roma – QLD	CSG	30.00	C&S, future injector
Southleigh 1	Roma – QLD		30.00	C&S, successful CSG

<sup>\*</sup>Spudded during third quarter 2012. \* Not operated by Santos.

# 8. Abbreviations and conversion factors

Abbreviat	ions	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
mmboe	million barrels of oil equivalent	LNG, 1 PJ	18,040 t
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		
P&S	plugged and suspended		
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		