

Credit Suisse presentation to Australian Institute of Energy

## NSW and Eastern Australia – Gas in transition

### A penny for a thought and not much more for the investments?

Mark Samter

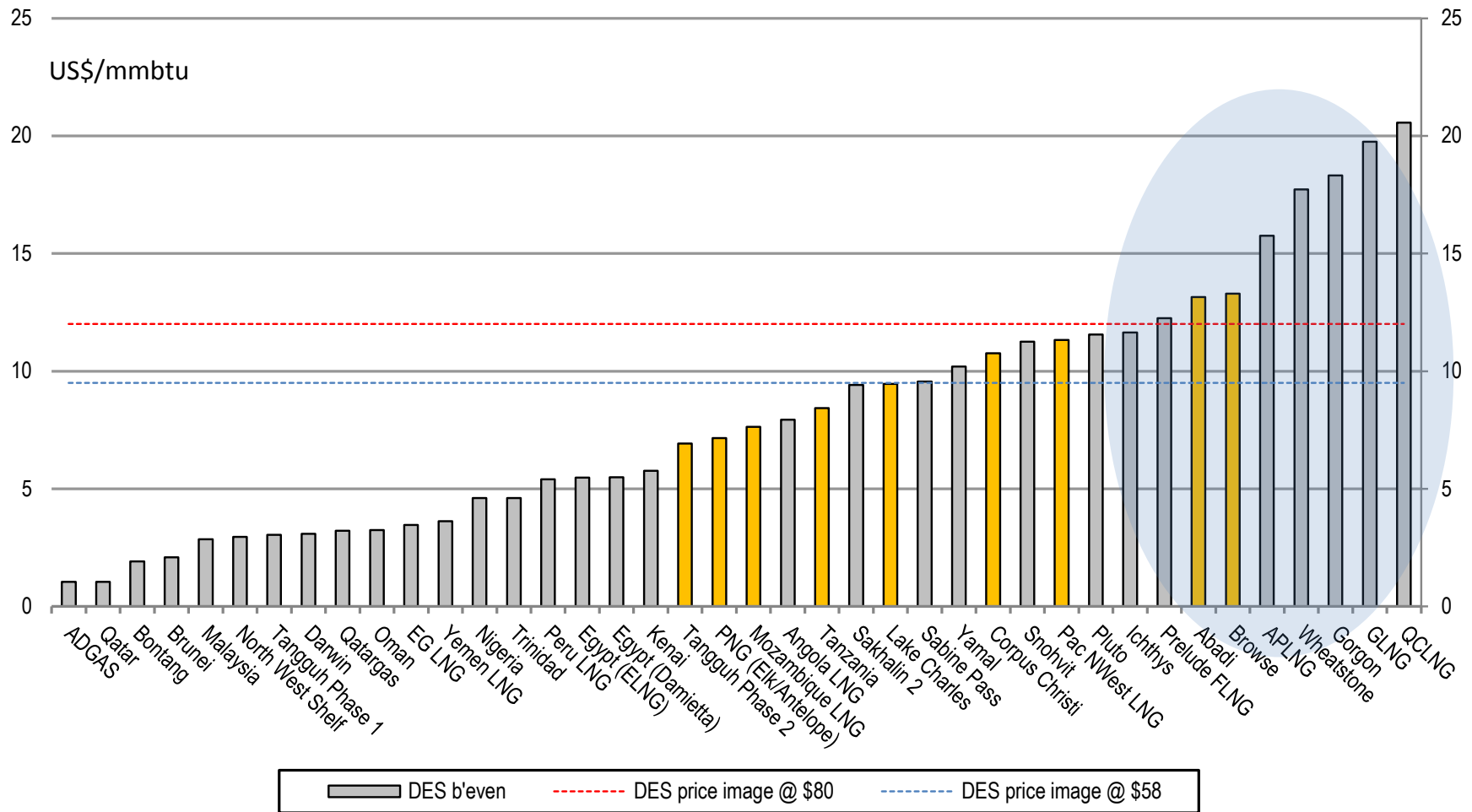
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Credit Suisse, Equity Research

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# Australia in a Global context: less than compelling cost structure vs peers

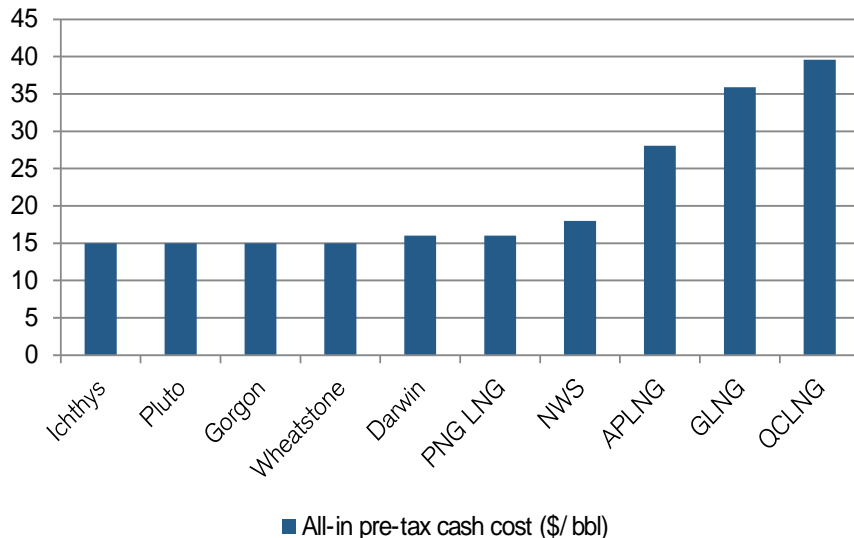


Source: Wood Mackenzie (selected projects), Credit Suisse estimate

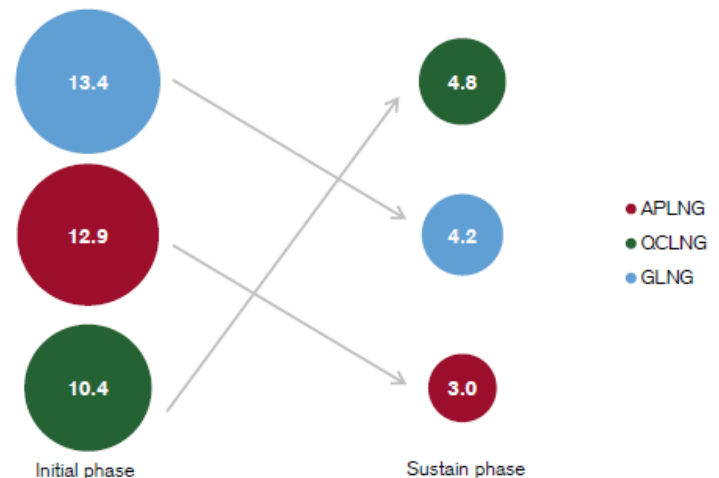
# Cash cost, guidance and expectations(\$US/bbl)

- Most WA fields and PNG relatively cheap. Conventional operations with liquids components (typically 10-20%)
- CSG LNG stays expensive, with \$1-2bn annual capex commitments to drill new wells.
- QCLNG guidance above GLNG and APLNG – why?

**All-in cash-cost(US\$/bbl), at capacity**



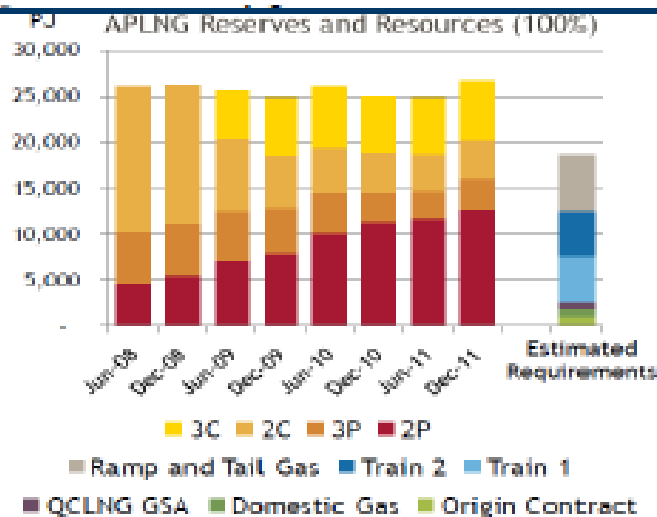
**CSG cost guidance diverging (\$m/well)**



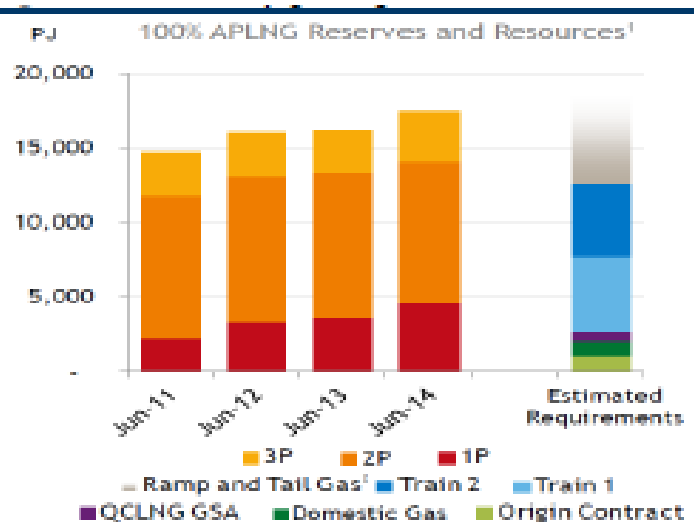
Source: Woodmac, Company Data, Credit Suisse estimates

# Demand from LNG - Changing expectations...

## That was then



## This is now



## With BG first to downgrade reserves, shortfall becomes more obvious

	2P reserves	EQUITY export reserve requirement	Domestic + sales to other projects	3rd party in	ramp + tail est	2P shortage	
						Total low	Total high
APLNG	14,091	10,201	2,500	0	2,000-4,000	-610	-2,610
QCLNG	9,200	10,199	575	-720	1,000-3,000	-1,854	-3,854
GLNG	5,406	8,541	75	-1,800	650-900	-2,060	-2,310
<b>Total LNG</b>	<b>30,497</b>	<b>28,941</b>	<b>3,150</b>	<b>-2,520</b>	<b>4,650-8,900</b>	<b>-4,524</b>	<b>-8,774</b>

Source: Origin Energy, BG, Company Data, Credit Suisse

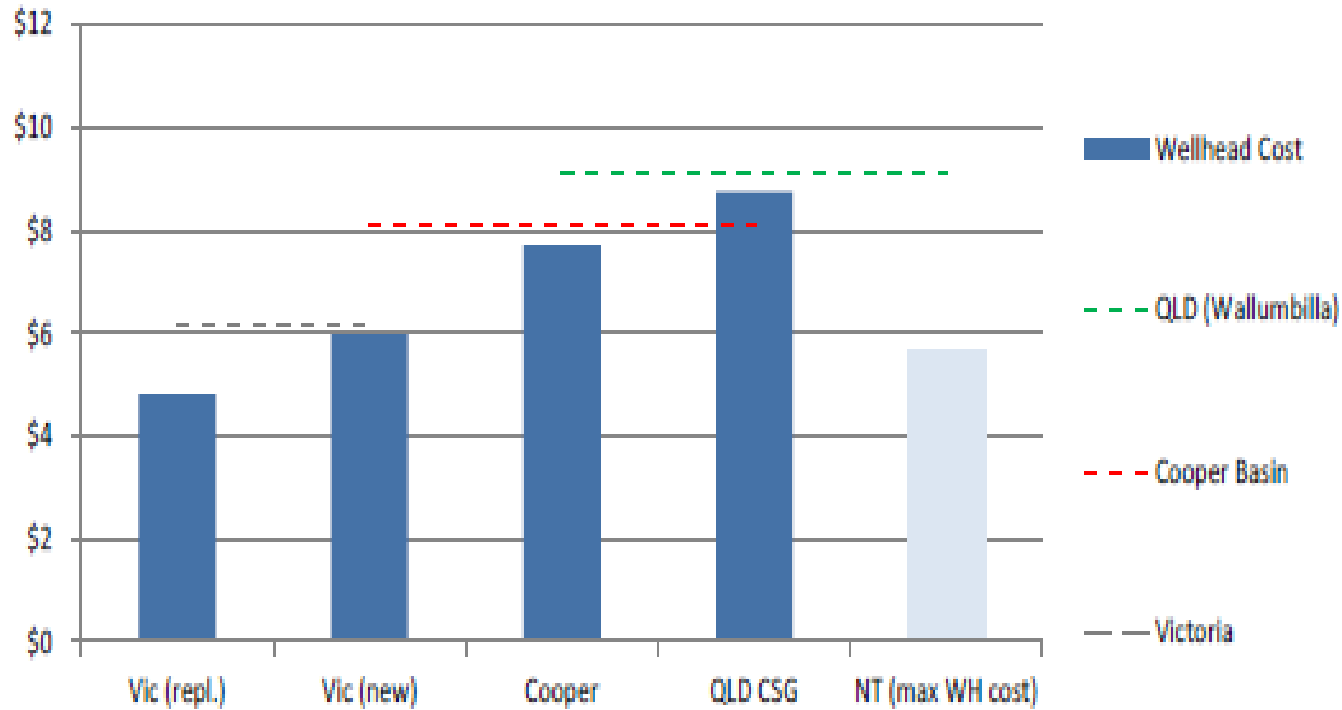
# Reserves – I really missed you

Project	Target reserves (PJ)	Current reserves (PJ)	Shortfall (PJ)	Upfront cost @ \$1.5/ GJ(\$m)	Production shortage (PJ/a)
GLNG	7500	5603	-1897	2,846	100-160
SACB JV	~2650	1495	-1155	1,733	20-50*
<b>Unsanctioned</b>					
Ironbark (3P)	1150	714	-436	654	20-40
Narrabri	1520	1064	-456	684	35-70
Gloucester	669	527	-142	213	20-30
<b>Total shortfall</b>			<b>-4086</b>		<b>195-350</b>
<b>If NSW never goes ahead</b>			<b>-6275</b>		

\* SACB JV production may be lower due to capex cuts by operator Santos

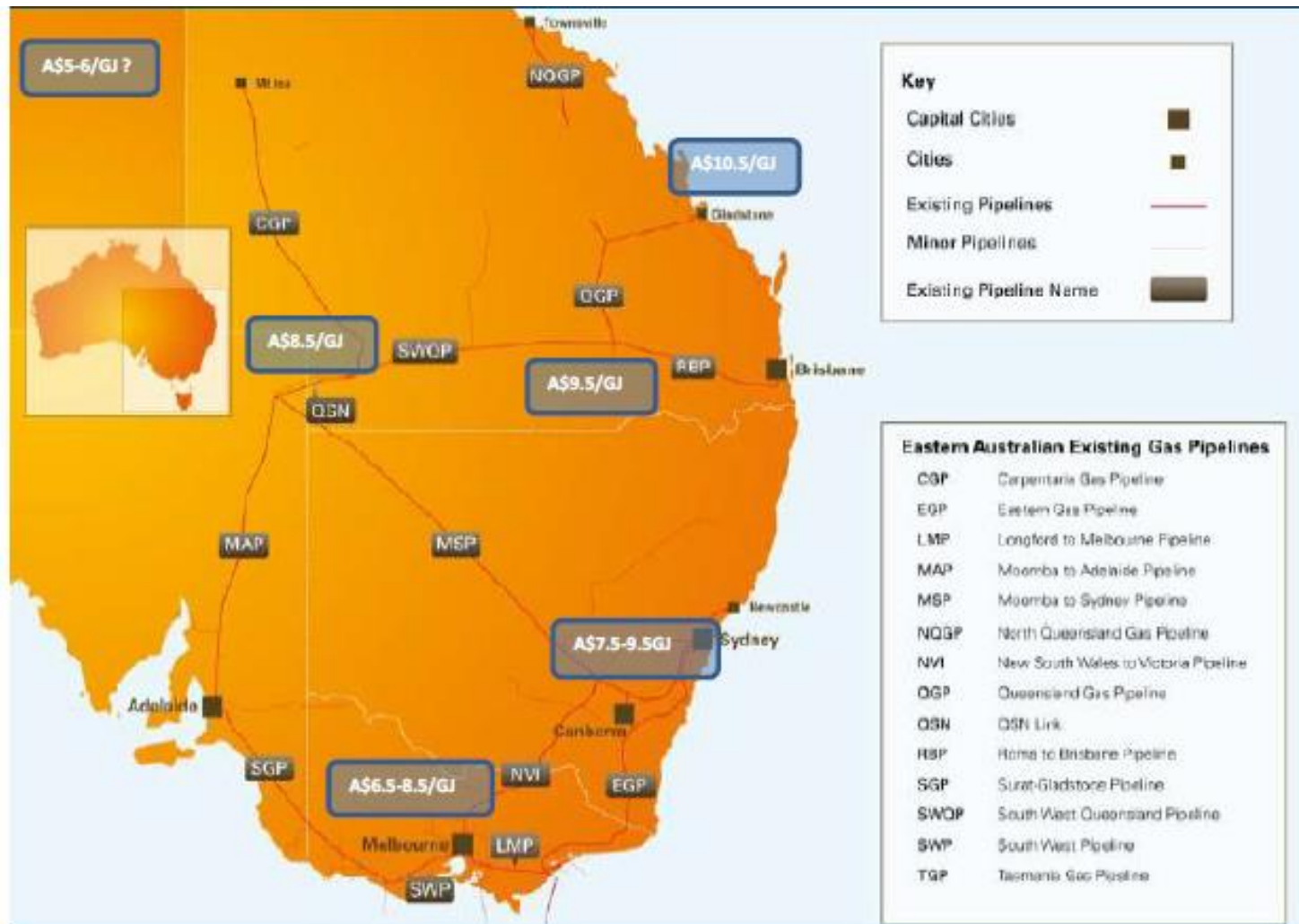
Source: Company Data, Credit Suisse

# No Cheap Gas left on the East Coast?



Source: Company Data, Credit Suisse

# Prices likely to more than double (if gas is even available)



Source: AEMO, Credit Suisse

## Who will develop the required projects?

- Major resource owners Santos and Origin have enormous balance sheet pressures that would likely prohibit any growth capital (indeed, in the Cooper Basin, they are scaling back production)
- Shell/BG deal will likely see Arrow gas go through QCLNG. Given high cost nature of much of Arrow and QCLNG gas, far more likely to be replacement gas, rather than additive to the domestic market, at first
- Esso/BHP the wildcard, but ability to cost effectively supply the Queensland market is relatively limited
- Capital scarcity for other small cap companies will make funding hard



## When is it needed?

- Huge uncertainty over contractual ramp profile of LNG contracts. Major call on market will be when all 3 plants are running at capacity
- Very clear that buyers will want to lift at contractual minimum – demand is very weak and spot prices are trading \$2-3/mmbtu below contract
- Are actions of Santos/Origin on Cooper, Ironbark etc telling us that they expect delays in ramping up to capacity?
- Policy setters must remember lead times to get gas to market. If it is needed in 2017 then we are already too late
- Capital clearly needed in the hands of those who own the resource

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Companies mentioned (Price as of 12-Aug-2015)

**BG Group plc** (BG.L, 1100.0p)  
**Origin Energy** (ORG.AX, A\$9.84)  
**Royal Dutch Shell plc** (RDSA.L, 1877.5p)  
**Santos Ltd** (STO.AX, A\$6.47)

Disclosure Appendix

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BG.L	Closing Price	Target Price		Rating
Date	(p)	(p)		
15-Oct-12	1321.00	1450.00		N
01-Nov-12	1102.00	1300.00		
07-Jan-13	1032.00	1215.00		
11-Feb-13	1114.50	1150.00		
16-May-13	1209.00	1190.00		
10-Sep-13	1205.00	1190.00		U
04-Oct-13	1170.00	1170.00		
21-Jan-14	1342.00	1200.00		
28-Jan-14	1053.50	1115.00		N
06-Feb-14	1086.50	1100.00		
19-Jun-14	1260.00	1100.00		U
16-Sep-14	1161.50	1115.00		
01-Oct-14	1093.00	1050.00		
03-Dec-14	936.40	940.00		
10-Dec-14	872.40	960.00		
06-Jan-15	848.50	945.00		
27-Jan-15	919.50	880.00		
04-Feb-15	932.00	840.00		
11-Mar-15	840.00	815.00		
09-Apr-15	1160.00	1350.00		N
31-Jul-15	1092.50	1350.00		O

\* Asterisk signifies initiation or assumption of coverage.

3-Year Price and Rating History for Origin Energy (ORG.AX)

ORG.AX	Closing Price	Target Price		Rating
Date	(A\$)	(A\$)		
23-Aug-12	12.24	16.00		O
04-Oct-12	11.58	13.61		
13-Nov-12	10.11	13.10		
31-Jan-13	12.59	13.10		N
21-Feb-13	11.33	12.20		
05-Jun-13	13.10	13.85		
19-Jun-13	12.92	13.85		*
09-Jul-13	12.62	13.70		
28-Jan-14	13.74	15.30		
20-Feb-14	14.55	15.20		
31-Mar-14	14.29	15.50		
15-Aug-14	14.06	14.55		
18-Aug-14	14.13			*
21-Aug-14	14.78	14.55		N
22-Oct-14	14.36	15.00		
06-Nov-14	14.13	13.50		U
02-Dec-14	11.76	12.00		
02-Feb-15	11.05	11.20		
19-Feb-15	12.75	11.00		
02-Jul-15	12.17	10.70		
04-Aug-15	11.01	10.00		

\* Asterisk signifies initiation or assumption of coverage.



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RDSA.L	Closing Price	Target Price		Rating
Date	(p)	(p)		
15-Oct-12	2143.50	2400.00		N
14-Dec-12	2127.00	2525.00		O
12-Apr-13	2123.50	2500.00		
07-Aug-13	2064.50	2320.00		
06-Sep-13	2078.50			NR
14-Nov-13	2052.00	2350.00		O *
17-Mar-14	2151.50	2450.00		
02-May-14	2354.00	2550.00		
11-Jul-14	2389.50	2600.00		
04-Aug-14	2414.00	2700.00		
22-Oct-14	2185.50	2625.00		
07-Nov-14	2230.50	2660.00		
05-Dec-14	2149.00	2500.00		
27-Jan-15	2191.00	2380.00		
30-Jan-15	2018.00	2350.00		
09-Apr-15	2004.00	2250.00		
21-Apr-15	2100.00	2310.00		
30-Apr-15	2059.50	2325.00		
31-Jul-15	1840.00	2400.00		

\* Asterisk signifies initiation or assumption of coverage.

3-Year Price and Rating History for Santos Ltd (STO.AX)

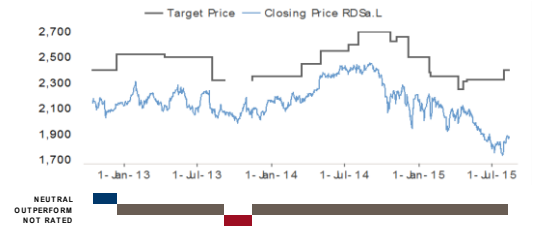
STO.AX	Closing Price	Target Price		Rating
Date	(A\$)	(A\$)		
17-Aug-12	11.78	12.65		N
15-Oct-12	11.59	13.15		O
22-Nov-12	11.05	12.60		
07-Jan-13	11.24	12.50		
22-Feb-13	12.05	13.25		N
05-Jun-13	12.74	14.00		
19-Jul-13	13.74	14.00		U
09-Sep-13	14.99			*
07-Oct-13	14.94	15.00		U *
04-Dec-13	14.41	14.60		
07-Jan-14	14.35	14.20		
12-Jan-14	14.37	13.40		
21-Feb-14	13.59	12.95		
31-Mar-14	13.50	13.00		
17-Apr-14	13.42	12.90		
19-Jun-14	14.49	12.60		
23-Jun-14	14.28	12.70		
03-Jul-14	14.38	12.40		
22-Aug-14	15.16	11.50		
17-Sep-14	14.34	12.10		
30-Sep-14	13.67	11.10		
16-Oct-14	12.64	10.80		
05-Nov-14	12.51	11.40		
26-Nov-14	11.98	10.80		
02-Dec-14	9.19	9.10		
16-Dec-14	7.27	7.45		
13-Jan-15	7.21	7.45		N
27-Jan-15	7.56	8.20		
10-Feb-15	7.97	8.20		U
20-Feb-15	8.03	7.90		
19-Mar-15	7.15	7.30		
24-Apr-15	8.00	7.50		

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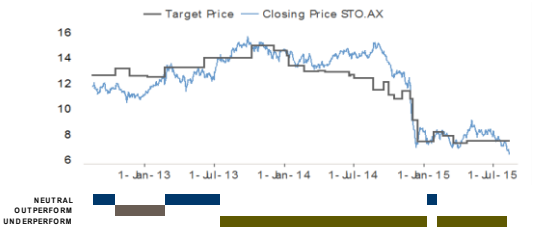
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