Bruce Robertson – Energy Finance Analyst Gas/LNG
Tom Lawson – Research Assistant
19 February 2020

Santos Racked Up Nearly $7bn in Unconventional Gas and LNG Losses in 5 Years

Santos's Record of Large Write-offs Likely to Remain Unblemished in Latest Annual Reporting

Executive Summary

Santos has taken a series of write-offs on its wealth-destroying investments in the coal seam gas to liquefied natural gas industry since its inception in 2014. All up, its investments in the CSG to LNG industry have been a financial failure.

Its forthcoming annual company results should see further asset write-offs as the long-term outlook for oil, and therefore gas, prices weaken.

Santos has been unable to fulfil its contractual obligations at its Gladstone (GLNG) joint venture.

The directors and management of Santos are promoting their Narrabri gas project as a way to bring down gas prices domestically. Narrabri will not bring down gas prices for consumers. The continued propagation of false hope by Santos will erode its social licence to operate.

Globally, some oil and gas companies are starting to make serious plans to operate in a carbon constrained world and are transforming their businesses.

To date Santos has only paid lip service to environmental and social governance (ESG) principles. It will be interesting to see if its 2019 annual report ushers in a change.

Santos' Extraordinary Record of Write-offs

Santos is set to report its calendar 2019 annual results on 20th February 2020.

It is timely to look at its record of losses in the unconventional gas (both shale and coal seam gas) and its troubled coal seam gas (CSG) to liquefied natural gas (LNG) project at Gladstone.

Santos has racked up over $6.9 bn in write-offs on Australian coal seam gas, shale gas and its ill-fated CSG to LNG project at Gladstone, in just five years (2014-18). The vast bulk of the write-offs were in CSG and the CSG to LNG export facility at Gladstone.

It has recorded a further $58m in write-offs on its Indonesian CSG project.

The write offs have become so regular that to term them "extraordinary" or "abnormal" would be a misnomer.

The CSG to LNG industry on the east coast of Australia has been a financial failure.

The Economics of the Australian Coal Seam Gas Industry

The economics of the Gladstone CSG to LNG plants were explored in the IEEFA study Australia's Export LNG Plants at Gladstone: The Risks Mount published in June 2017.

Essentially that report details how the plants at Gladstone were delivered late and over budget. The fields that supplied the plants were also delivered at costs well above original budgets. The combination of the two factors has put the three plants at Gladstone at the very top of the global cost curve, a place no resource company wants to be.

Production Down at Gladstone

LNG facilities are by their very nature capital intensive.

According to the 2014 Santos annual report, the GLNG facility has a capital cost of \$21.3bn.[1] As a capital intensive business, the plant's economic capacity utilisation rates should be very high, typically above 90%, but Santos has been unable to achieve such levels.

The GLNG plant has two production trains with a combined capacity of 7.8MT (million tonnes). Production from Train 1 commenced in September 2015 and Train 2 in May 2016.[2] The LNG plant produced just 4.8MT of LNG in 2018, utilising just 62% of capacity. Santos said that as a result it needed to divert gas originally slated for export to the domestic market.

In the first half of 2019, GLNG produced 2.6MT of gas, indicating that it is still not achieving an economic return. On announcing its half year result Santos stated that: "GLNG remains on track to meet the six million tonne annualised LNG sales run-rate (including LNG volumes redirected to the domestic market) by the end of 2019." Despite its volumes increasing, GLNG continues to underperform.

Will Narrabri be Different?

In January 2020 the Federal Government struck a deal with the NSW government to unlock 70 petajoules of gas in return for \$960m in federal funding to upgrade its energy grid and invest in emissions reductions initiatives, such as methane capture from landfill and land-based carbon farming projects such as agriculture or

[1]Santos. Annual Report 2014. Page 43.
[2] Santos. Annual Report 2018. Page 19.

forestry.[3] Co-incidentally Santos's proposed Narrabri gas project will produce 70 petajoules of gas.

The NSW government has recently reformed the planning body, the Independent Planning Commission (IPC), that looks at such state significant developments ensuring a smoother approvals process.[4]

Every year in the period 2014-18 Santos has written down the value of its troubled Narrabri CSG field in NSW. Write-offs to date total $1.5 billion for a project yet to receive approval to move to the production phase.

The Narrabri (Stated as Gunnedah in the Table below) gas project suffers from very high production costs.

Table 1: Production Costs of Australian East Coast Gas Fields ($/GJ)

Basin	Project	2P Developed	2P Undeveloped	2C
Bass	Bass	2.85		5.92
Bonaparte	Blacktip	3.07		
Sydney	Camden	2.40		
Otway	Casino Henry Netherby	2.30	4.50	4.00
Clarence Moreton	Clarence Moreton			9.00
Cooper Eromanga	Cooper Eromanga	2.95	6.25	7.00
Galilee	Galilee			9.70
Gippsland	GBJV & Turrum & Kipper	2.50	5.15	7.30
Gippsland	Gippsland - Non GBJV			8.00
Gunnedah	Gunnedah			7.40
Otway	Halladale/Black Watch/Speculant	4.90		
Ironbark	Ironbark		6.50	8.00
Gippsland	Longtom & Sole	3.20	5.60	5.70
Amadeus	Mereenie	2.99	4.88	7.40
Otway	Minerva	2.10		
Moranbah	Moranbah	3.10	6.66	5.15
Otway	Otway Gas Project	2.65		7.40
Surat & Bowen	QLD CSG - APLNG	2.16	4.42	7.34
Surat & Bowen	QLD CSG - Arrow	3.31	5.33	7.42
Surat & Bowen	QLD CSG - GLNG	2.88	6.67	9.28
Surat & Bowen	QLD CSG - Other	3.74	6.34	8.71
Surat & Bowen	QLD CSG - QCLNG	2.54	4.77	7.26
Surat & Bowen	Surat-Bowen-Denison	2.80	5.85	7.00

Table Source: 2019 AEMO Gas Statement of Opportunities Reserve Cost Assumptions

It is interesting to note that politicians of all persuasions are often quoted as saying it is not their job to pick winners in industry policy. While this is certainly a truism,

[3] SMH. Morrison government strikes major energy deal with NSW. 31 January 2020.
[4] SMH. Independent Planning Commission to be final arbiter only on state's most contentious projects. 1 February 2020.

it is also not a politician's job to back industries that have a sustained record of wealth destruction. The CSG to LNG industry in Australia has such a record.

The stated purpose of the deal between the NSW and Federal governments was to bring down the price of gas for consumers in NSW. Santos has committed to supplying the 70PJ from Narrabri to NSW. The 70 PJ of gas is equivalent to 60% of the NSW market.

While it may be true that Santos will supply gas from its Narrabri project to NSW consumers, it will not bring down the price of gas for four reasons:

1. Narrabri (Gunnedah) gas is nearly twice the cost of the most expensive developed gas field on the east coast of Australia. Producing high cost gas is no way to bring down the cost of gas.

2. Santos will be able to divert cheaper gas to exports while supplying Australian consumers with expensive Narrabri gas.

3. There is a cartel of producers on the east coast of Australia that controls the price of gas and ensures that Australians pay well above global parity prices.

4. Santos remains significantly short of gas at its export terminals. Santos needs approximately an additional 100PJ of gas to supply its terminals to ensure full production.

Spot prices for LNG in Asia have collapsed to US$3/MMBtu (A$4.20/GJ) as demand is weak and supply abundant.[5] Australians should be paying less than the Asian price according to the ACCC as domestic consumers are spared liquefaction and shipping costs. The equivalent price in Australia should be around A$3/GJ. Narrabri gas is $7.40 at the well head. To get it to Sydney will cost a further estimated $1.50/GJ making it approximately A$9/GJ before allowing for a profit margin. This is simply uncompetitive in an A$3/GJ world.

Oil Price Assumptions

Asset values in oil and gas companies rely on forecasts for future oil and gas prices. The higher the future oil price assumptions the higher the asset values are on the balance sheet. The oil price is what determines the valuation on the LNG facilities at Gladstone. The export gas sales are sold on contracts with price linkages to the oil price.

When Santos last took write-offs on its GLNG investment in 2017**,** it quoted an oil price assumption as follows**:**

---

[5] WSJ. Shale Gas Swamps Asia, Pushing LNG Prices to Record Lows. 6 February 2020.

Table 2: Oil price assumptions and the Current Futures prices

Brent Crude Oil Price Assumptions USD/bbl										
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
2014 Annual Report	55	70	80	90	90					
2015 Annual Report		40	60	70	80.77	82.79	84.86			
2016 Annual Report			60	70	80.77	82.79	84.86	86.98		
2017 Annual Report				55	60	65	70	77.29	78.83	
2018 Annual Report					65	66.3	67.63	74.28	75.77	77.29
Current Futures Price						56.78	55.74	55.4	55.58	56.08

Table Source: Page 79 Santos Annual Report 2017 and CME Group futures

The current futures price for oil[6] are significantly below the price assumptions outlined in the 2017 and 2018 annual reports. The oil price assumptions used in the 2019 annual report will most likely be nearer US$55.50 in 2023 rather than the US$78 stated for 2023 in the 2017 Santos Annual Report.

The effect of lower oil prices, both now and into the future, will see asset values fall. Santos should be taking further sizeable write-offs on its wealth destroying CSG assets and the Gladstone LNG plants.

It will be interesting to see if the directors and auditors take a conservative, market-based view on the valuation of their assets or a more aggressive approach, given that company accounts are supposed to reflect a 'true and fair view' of a business's financial situation.

Santos' Contracts at Gladstone

Santos has two long term contracts to fulfil out of its GLNG joint venture totalling 7.6MT.[7] Each contract is for 3.8MTPA over 20 years with Petronas and Kogas. The contracts start in 2015 and 2016 respectively. Santos has not been able to fulfil these obligations as yet.

Net Zero by 2050 – How Other Big Oil Companies are Moving

Globally, oil and gas companies are beginning to take responsibility for their products. Product stewardship is a fundamental concept in capitalism. Car companies, for example, are responsible for their products years after they have sold them. The Takata air bag recalls are a great example of how, even though the cars were sold many years before, car companies took responsibility for fixing the faults.

---

[6] CME Group.

[7] GIIGNL. Annual Report 2019. Page 10.

Oil and gas companies are similarly liable for the emissions that their products cause. This is just beginning to sink in with oil and gas company managements and directors.

In December 2019, Repsol the Spanish oil and gas producer, pledged to become net zero carbon emitter by 2050.[8] It has written off of $5.3bn after using a new climate change scenario. Repsol's directors clearly recognise that some of their assets may become stranded in future, prohibited to produce in a carbon constrained world.

In February BP plc pledged to become a net zero carbon emitter by 2050.[9] BP's pledge not only encompasses emissions from direct activities but the emissions from the burning of its oil in vehicles and its gas in electricity production. For those with long memories, BP has been here before with its "Beyond Petroleum" slogan, and was a global leader in solar for example. Unfortunately this vision faded and BP went back to be an oil and gas company. While details on how BP will achieve its transformed "Beyond Petroleum" position are scarce, the intention has clearly been set at the highest levels in the company.

The big question for investors is whether Santos is moving with the times or whether it is resolutely stuck in the past. Not recognising that the social environment in which they operate has changed poses a big risk for investors.

[8] Washington Post. Spanish oil and gas company vows to become a net-zero emitter of carbon. 4 December 2019.

[9] Forbes. For Shareholders, BP's Net Zero Emissions Pledge Is A Bet On An Uncertain Future. 13 February 2020.

About IEEFA

The Institute for Energy Economics and Financial Analysis conducts research and analyses on financial and economic issues related to energy and the environment. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. www.ieefa.org

About the Authors

Bruce Robertson

Energy Finance Analyst Bruce Robertson has been a fund manager and professional investor for 34 years. He has worked with Perpetual Trustees, UBS, Nippon Life Insurance and BT and is an active participant in the national debate on energy issues in Australia.

Tom Lawson

Research Assistant Tom Lawson is a graduate with a Bachelor of Commerce from the University of NSW.