

# Sustainability Report 2013





Key

- Hydrocarbon basin
- LNG project
- Exploration/appraisal/pre-development
- Development
- Operations/production
- Processing and load-out facility

Santos offices

Detailed exploration maps are available on the Santos website [www.santos.com](http://www.santos.com). Percentage interests are provided in the Santos Group interests section of our **Annual Report**.

# The world of Santos

	Site/Asset	Activity	Santos operated	Product
<b>Australia</b>				
① Carnarvon Basin	Mutineer-Exeter	●	Yes	Oil
	Stag, Barrow Island, Thevenard	●	No	Oil
	Spar, John Brookes, Varanus Island, Reindeer, Devil Creek	●	No	Gas, condensate
	Fletcher Finucane	●	Yes	Oil
	Zola, Winchester	●	3 of 9 permits	Oil, gas
② Browse Basin	Crown, Burnside	●	4 of 5 permits	Gas, condensate
③ Bonaparte Basin	Caldita Barossa	●	No	Gas
	Two exploration permits	●	Yes	Gas
④ McArthur Basin	Four exploration permits	●	Yes	Oil, gas, condensate
⑤ Amadeus/Pedirka Basins	Mereenie	● ●	Yes	Oil, gas, condensate
⑥ Cooper/Eromanga Basins	South Australia – Moomba	● ●	Yes	Oil, gas, condensate, LPG
	South-west Queensland – Ballera, Jackson	● ●	Yes	Oil, gas, condensate, LPG
	Other oil assets	● ●	No	Oil
⑦ Surat/Bowen Basins	Mahalo	● ●	Yes	Gas
	Moonie	●	Yes	Oil
	Denison, Combabula, Spring Gully	●	No	Gas
⑧ Gunnedah Basin	Narrabri, Bando	●	Yes	Gas
⑨ Gippsland Basin	Kipper	●	No	Gas, condensate, LPG
	Sole	●	Yes	Gas
⑩ Otway Basin	Casino, Henry, Netherby	●	Yes	Gas, condensate
	Minerva	●	No	Gas, condensate
<b>LNG projects</b>				
⑪ Bonaparte Basin	Bonaparte LNG	●	No	LNG
⑫ Timor Sea and Timor Gap	Bayu-Undan, Darwin LNG	●	No	LNG, condensate, LPG
⑬ Surat/Bowen Basins	GLNG	●	Yes*	LNG
⑭ Papua New Guinea	PNG LNG	●	No	LNG, condensate
<b>Asia</b>				
⑮ Papua New Guinea	SE Gobe	●	No	Oil
	Hides, Barikewa	●	No	Oil, gas, condensate
⑯ Papuan Basin, Indonesia	Warim	●	No	Oil, gas, condensate
⑰ East Java Basin, Indonesia	Maleo, Oyong, Wortel	●	Yes	Oil, gas, condensate
	Peluang	●	Yes	Gas, condensate
⑱ South Sumatra, Indonesia	Four CSG licences	●	No	Gas
⑲ Natuna Basin, Indonesia	Northwest Natuna	● ●	Yes	Oil
⑳ Nam Con Son Basin, Vietnam	Chim Sáo	●	No	Oil, gas
	Dua	●	No	Oil, gas
	Block 13/03	●	Yes	Oil, gas
㉑ Phu Khanh Basin, Vietnam	123 PSC	●	Yes	Oil, gas, condensate
㉒ Bengal Basin, Bangladesh	Sangu/Block 16	●	Yes	Gas, condensate

\* Santos operates the upstream and has a 30% interest in the jointly held project company that operates the downstream.

Santos Limited ABN 80 007 550 923

Cover: Santos proudly contributes to creating vibrant communities in which we live and work by supporting events such as the Adelaide Festival Centre's Oz-Asia Festival, which includes free family experiences such as the Moon Lantern Festival (pictured).

All reasonable effort has been made to provide accurate information in this sustainability report, however, Santos Limited (Santos) does not warrant or represent its accuracy. Anyone seeking to rely on information in this report or draw detailed conclusions from the data should contact Santos via email: [sustainability@santos.com](mailto:sustainability@santos.com).

All data presented are based on Santos operated sites unless otherwise stated.

## Contents

- 2 CEO's message
- 3 Our organisational structure
- 4 Santos' integrated approach to sustainability
- 6 We are listening
- 14 Building a more sustainable future
- 26 A great place to work
- 38 Performance data
- 42 Assurance statement
- 43 Glossary
- 45 Sustainability scorecard

Listening and responding to  
stakeholder feedback and  
supporting communities

p6



The environmental and societal  
advantages of natural gas

p14



Operating sustainably creates long-term shareholder value by delivering our products to markets efficiently while managing social, environmental and commercial risks.



Engaging and developing our diverse and vibrant workforce

p26



Detailed performance data

p38

# CEO's message

Our vision is to be a leading energy company in Australia and Asia and we have the right governance systems in place to achieve this safely and sustainably.

Santos employees can look back on 2013 with a sense of achievement. We have made significant progress on our three key strategic themes: growing our Australian base business, delivering our transformational LNG portfolio and pursuing our exploration-led focused Asian growth strategy.

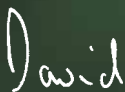
We have achieved this by integrating the principles of sustainability into our day-to-day operations and decision making. For us, the pillars of sustainability are environmental responsibility, positive contribution to the communities in which we operate, value creation for our shareholders, and responsibility to our people.

There is no room for negotiation on our safety performance. We must operate safely. This is one of my core values and I work every day to ensure our employees and our contractors hear this message. We have management systems and procedures in place to assist us – active and passionate safety leadership will deliver the safety improvement we strive for as a company.

Our reputation has been achieved by building relationships, by treating people with respect and by doing the right thing. It is essential that we maintain trusting relationships not only with landholders but with all of our stakeholders.

I encourage the Santos team to join me in the challenge of continuing to raise the bar in all aspects of our sustainability performance in 2014.

I have confidence that we are up to the challenge and I invite you to read this report to find out more about our approach – about how we have performed and how we intend to do better. It is complemented by our Shareholder Review and Annual Report, which provide further detail on our strategic and financial performance in 2013.

A handwritten signature in dark ink, reading "David".

**DAVID KNOX**

Managing Director and Chief Executive Officer



# Our organisational structure and leadership team



**Adjacent:** David Knox  
**Top row:** John Anderson, James Baulderstone, Trevor Brown, Peter Cleary  
**Middle row:** Petrina Coventry, Rod Duke, Martyn Eames, Diana Hoff  
**Bottom row:** David Lim, Bill Ovenden, Christian Paech, Andrew Seaton





# Santos' integrated approach to sustainability

Our vision is to be a leading oil and gas exploration and production company in Australia and Asia. To achieve this we have integrated the principles of sustainability into the way we do business.

## Our values

Our values define how we conduct our business and what we stand for as a company.

**Discovers** – by opening our minds to new possibilities, thinking creatively and having the courage to learn from successes and failures, take on new challenges, capture opportunities and resolve problems.

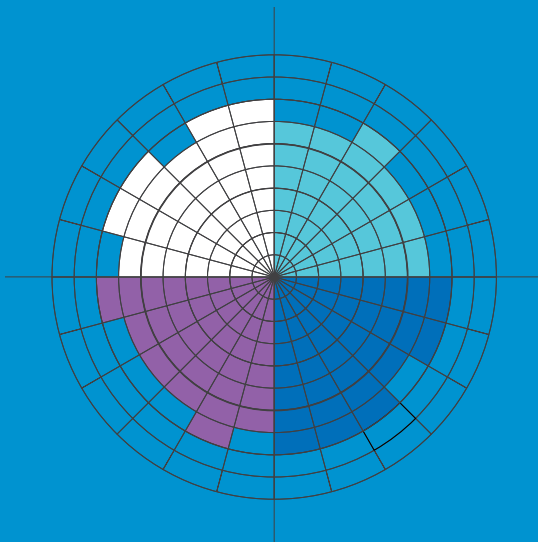
**Delivers** – by taking personal responsibility and pride in our work to deliver timely, quality results that benefit Santos and help achieve our vision and strategy.

**Collaborates** – by recognising the value and power in diversity of thought and communicating openly to understand the perspectives of others; demonstrating leadership by sharing what we know and respectfully challenging each other to achieve the best results for all.

**Cares** – by taking the long-term view to build a sustainable future for our company, our people and the environments and communities in which we operate.

## Measuring our performance

Our sustainability scorecard – through consideration of a broad suite of performance indicators we can make better, more informed business decisions (page 45).



## Our sustainability framework

We integrate the principles of sustainability by:

Living  
**OUR VALUES**

Focusing on  
**MATERIAL ISSUES**

Driving continuous  
improvement through  
performance  
**MEASUREMENT**

Committing  
to responsible  
**OPERATING  
PRINCIPLES**

## Our strategy

We will achieve our vision

Australia



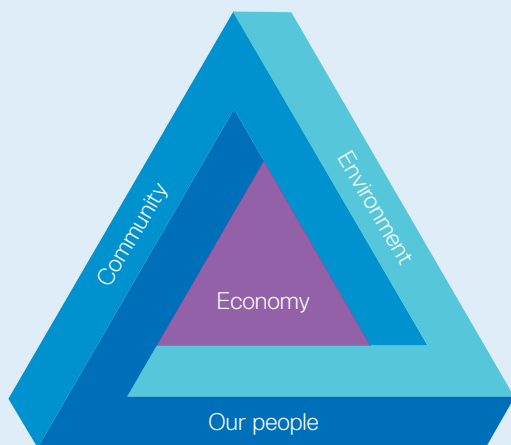
LNG



Asia







With our large infrastructure and resource position in Australia, Santos is poised for significant growth.

Our culture of operational excellence will optimise production from these assets and drive safety and environmental performance.

Our LNG portfolio provides natural gas to our Asian customers, whilst driving investment and creating jobs in Australia. With energy intrinsically linked to economic development, demand for cleaner burning, low emissions fuels such as natural gas is expected to grow.

Successful exploration and development is built on the foundation of our employees' technical expertise and our ability to foster positive long-term relationships with communities and business partners.

## Focusing on what's material

Our materiality assessment identifies what is most important to our stakeholders. We believe management and communication of these issues will lead to a more sustainable business.

- + Water resources
- + External stakeholder engagement
- + Climate change management
- + Indigenous rights and cultural heritage
- + Product responsibility and reputation
- + Safety
- + Workforce capability
- + Risk management

## Principles of responsible operations

By applying our four principles of responsible operations, we will build the confidence and trust of the communities in which we operate.



# We are listening

The cornerstone of our social licence to operate is built on constructively responding to your feedback – this is our recipe for long-term success in the energy industry.

## Your questions answered

Community consultation –  
engage, listen and respond

p8

Supporting the communities  
in which we operate

p12

David Lobb, Senior Landholder Adviser,  
speaks with a landholder in Roma, Queensland





Practising what we preach –  
GLNG Project

p13

# Engaging with our stakeholders

Whether we are drilling a well in the outback of South Australia or producing gas from our offshore platform in Indonesia, the range of people we interact with is broad.

There are farmers on whose land we operate, customers who depend on natural gas to fuel their business, indigenous communities to whom we provide training and employment opportunities, and of course governments who rightly expect responsible resource development.

We have always valued our role in the community and we are committed to continually improving the quality of our engagement. This means listening to what you are telling us.

This ensures that our community engagement programs remain responsive to the needs and priorities of the communities in which we operate. Feedback received from engagement events is captured and recorded in a dedicated stakeholder relationship management system.

## Engaging with indigenous communities

Santos supports the principles of free prior and informed consent. We seek to form mutually beneficial relationships with indigenous communities in our areas of operation both in Australia and south-east Asia.

In Australia this is managed through our Australian Aboriginal engagement policy and in south-east Asia through our structured approach to community development. Through these community programs Santos has been able to make valuable, lasting contributions to local communities. Projects have included:

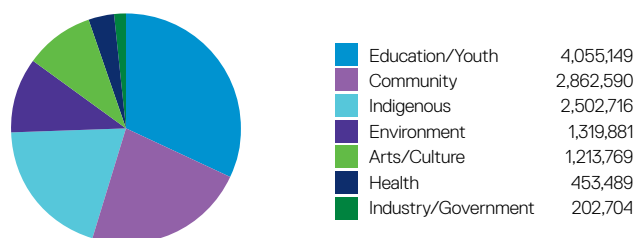
- + Planting 55,000 mangroves along the Indonesian Camplong coast
- + Supporting Sight For All's continuing childhood blindness prevention initiative in Vietnam and Bangladesh.

## Implementing our Australian Aboriginal engagement policy

Santos meets regularly with representatives from local communities to make sure policies on Aboriginal engagement are effectively implemented. Santos takes cultural heritage obligations very seriously and works closely with traditional owners to undertake cultural heritage surveys and implement agreed management measures in accordance with Cultural Heritage Management Plans and Agreements.

## Community investment by type

2013 sponsorship (\$)



Commitment to community investment – 2013 sponsorship

**\$12.6**million

## Our commitments:

- + Genuinely seek to understand stakeholder concerns and interests and address them in our project design and implementation.
- + Take care to provide clear, accessible, relevant and timely information.
- + Earn stakeholders' trust and confidence in Santos and our processes, decisions and activities.



Our objective is to engage, listen and respond in an open, honest and collaborative manner.

### Our approach to stakeholder consultation

Land access		Indigenous communities
Recognise and respect landholders' connection to their property, including their activities, history and aspirations	Identify	Recognise and respect indigenous peoples' attachment to their country and the importance of their cultural heritage
Inform landholders and consult with them on proposed activities and impacts prior to negotiating formal agreements	Inform	Inform indigenous communities and consult with them on potential impacts and opportunities arising from our activities
Negotiate in good faith and where practicable locate infrastructure and time activities to suit the landholder	Negotiate	Negotiate in good faith and provide opportunity to reach mutually beneficial agreements
Agree formal contracts in a respectful, timely and reasonable manner	Agree	Agree formal contracts in a respectful, timely and reasonable manner
Monitor our activities and track compliance of all employees and contractors with these formal agreements	Act	Drive implementation of agreed commitments and monitor employee and contractor compliance



Roma site office launches Virtual Field Explorer

Now you can explore our GLNG gas fields via our state-of-the-art mega touch screen and interactive table.

We want to respond to your questions. This report will provide you with more information on our management approach to these four common themes.

## Protecting water resources

1



### What you are asking us

- + Will groundwater aquifers that support rural communities be protected?
- + Does hydraulic fracturing contaminate water?

### What we are doing

- + Our wells are designed to protect groundwater for the life of the well.
- + Our wells have layers of steel casing and cement, which form a continuous barrier between the well and the surrounding formations.
- + We run pressure tests to ensure well integrity and we conduct a combination of tests over the life of the well to verify long-term integrity.
- + We are transparently monitoring our performance and will provide you with up-to-date results of our extensive surface and groundwater monitoring programs via [www.santoswaterportal.com.au](http://www.santoswaterportal.com.au)
- + Our objective is to meet or exceed state and federal legislative requirements to protect water resources – our operating procedures are designed to achieve this objective.

## Negotiating land access

2



### What you are asking us

- + Can you come on our land to drill a well without our permission?
- + Will you cause damage to our property?
- + Will I be financially reimbursed?

### What we are doing

- + We will not drill a well on your land without your permission.
- + We inform you about activities and maintain open and honest dialogue at all times.
- + Our employees and contractors respect your family, property, stock and equipment.
- + We will pay fair and reasonable compensation for land access.

## Reducing our carbon emissions

# 3



### What you are asking us

- + Are you measuring your emissions?
- + Is gas better than coal, we have heard that some gas is about the same if not worse?
- + Shouldn't we switch immediately to 100% renewable energy?

### What we are doing

- + We measure our emissions – and we have our reports checked by independent auditors to confirm their validity.
- + Gas-fired plants emit significantly fewer emissions (50%) than coal-fired plants (page 19).
- + Switching from coal to gas provides the lowest cost emissions reduction.
- + We support scientific research to verify emissions reporting methodologies, such as the CSIRO study on methane emissions.

## Engaging Aboriginal communities

# 4



### What you are asking us

- + Are you providing suitable opportunities for indigenous training and employment?
- + Are you protecting heritage sites?
- + Do you adhere to the principles of free, prior and informed consent?

### What we are doing

- + As a result of Santos' programs, over 500 education, training and employment opportunities have been provided since 2011.
- + Santos has a standard for managing cultural heritage for all operating areas and requires all employees and contractors to use the system and its processes that ensure compliance with cultural heritage plans and agreements.
- + Our approach to indigenous engagement is consistent with the principles of free, prior and informed consent.

# It is important to Santos that we make positive and meaningful contributions to the communities in which we operate.

Our aim is to deliver tangible benefits to the communities in which we operate. We can do this by using local suppliers, creating employment and training opportunities, and investing in local infrastructure, health programs and education. In 2013, Santos contributed over \$12 million to a range of projects in Australia and overseas.

## Contributing to education

Santos has contributed \$100,000 to the Queensland Department of Education, Training and Employment's Industry Schools Program. The program aims to raise the profile and interest in science, mathematics, engineering and technology in schools throughout the region.

In addition, Santos continued its ongoing commitment to university education, including through significant partnerships with UCL Australia and the Australian School of Petroleum. Other educational investments include support to The Smith Family, as well as a range of education programs for Aboriginal young people and young people in regional areas.

## Positive health outcomes

In 2013, Santos invested in a range of community health initiatives including sponsorship of the regional Rescue Helicopter Service in NSW and major support for Australia's Royal Flying Doctor Service. Santos also provided funding to the Asthma Foundation in South Australia, delivering asthma awareness and education training, as well as support to Sight For All to fight preventable or treatable blindness in Vietnam and Bangladesh.



### Santos Tour Down Under reaches new heights

- + 270 employees rode in Bupa challenge tour
- + 757,000 fans attended the tour
- + Ride for a Reason raised \$29,000 for the Cancer Council

Santos GLNG's integrated project housing strategy was awarded the 'Plan to Place' award by the Planning Institute of Australia. Our housing solution aims to improve housing availability and affordability in the region.



## Creating employment opportunities

Since the Santos GLNG Project was sanctioned in January 2011, more than \$58 million has been invested (on average) every week. The investment has supported thousands of new jobs and the unemployment rate in the Maranoa region has fallen to two per cent – one of the lowest in Australia. By mid-2013 6,800 jobs had been created.

## Providing affordable housing

The large industrial projects under construction in Queensland have increased pressure on the regional housing market. To address this, Santos has been working with the Maranoa Regional Council to deliver appropriate housing solutions.

Santos, through the Horizon Housing initiative, recently opened a \$1 million affordable housing project in Roma. The project will provide accommodation for apprentices, trainees and customer service staff who want to live and work locally.

We have also contributed \$4 million towards other regional affordable housing initiatives.

## Supporting vibrant communities

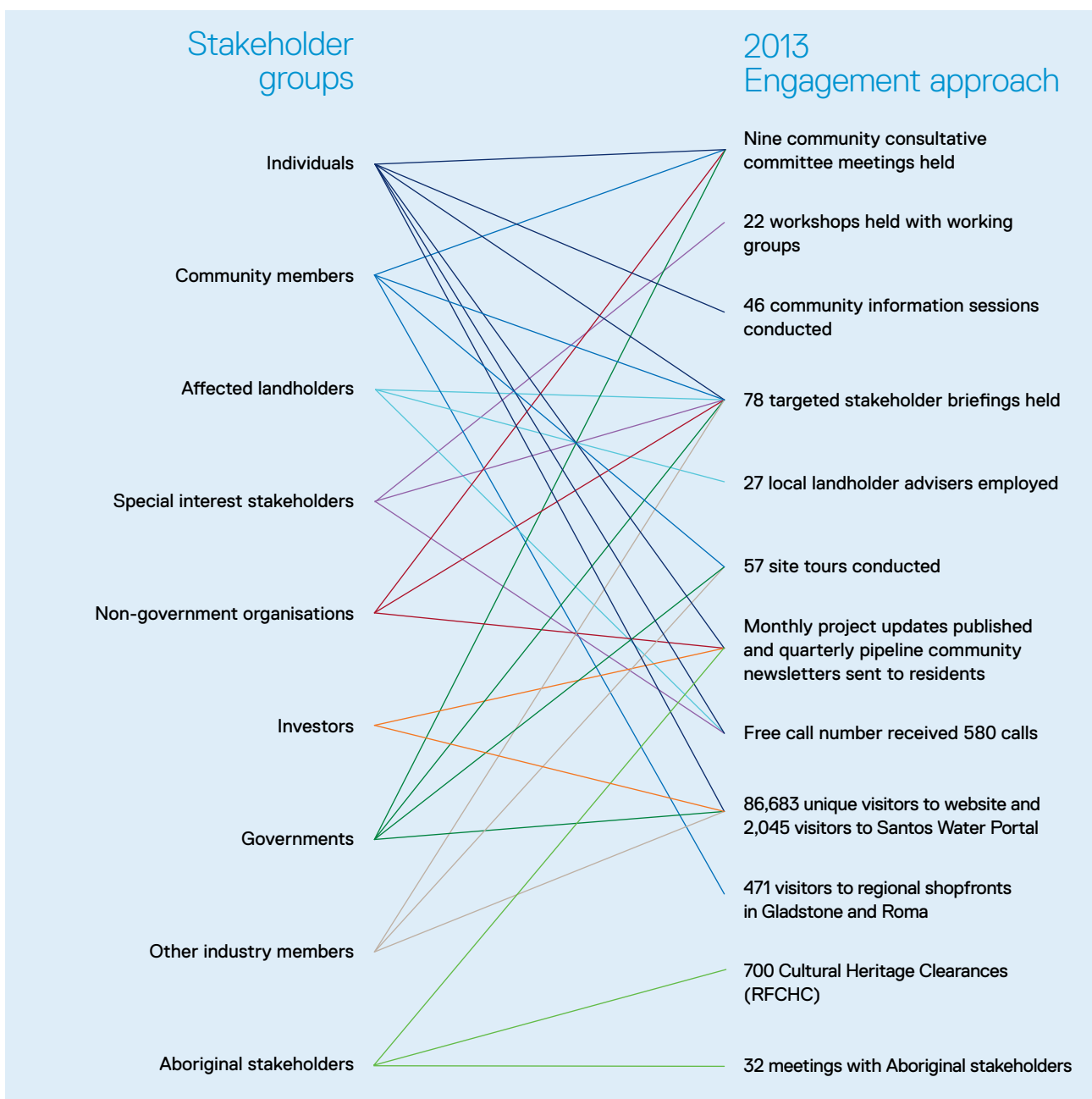
In 2013, Santos made a range of investments to artistic and cultural organisations in the communities within which we live and work. In particular, we have been proud to support free, large-scale artistic events including the Santos Opening Concert as part of the Darwin Festival, Santos GLNG City of Lights in Brisbane, Santos Symphony Under the Stars with the Adelaide Symphony Orchestra, and the OzAsia Festival.

## Economic benefits

In 2012, oil and gas exploration and production contributed \$29.4 billion into the economy including approximately \$8.8 billion in income tax, corporate tax and resources royalties. The industry has committed \$200 billion in project investment out to 2017, currently accounting for one third of Australian business investment. This is expected to create an additional 100,000 jobs in the broader oil and gas sector (APPEA 2013).



Santos has developed a multifaceted approach to stakeholder engagement. For example, for the GLNG project we have encouraged wide participation through a range of activities:



# Building a more sustainable future

Access to clean, reliable energy is integral to almost every facet of our lives. We all use energy.

Your questions answered

How energy impacts our lives

p16

A cleaner economy –  
the role of natural gas

p18



A smiling man with dark hair, wearing a light blue button-down shirt over a white t-shirt, is grilling food outdoors. He is using long-handled metal tongs to turn a piece of food on a black grill. In the foreground, a white plate with several pieces of red meat is visible. The background shows lush green trees and a wooden fence with horizontal slats in various colors (brown, green, blue, orange).

Understanding our  
emissions profile

p20

Protecting water resources

p24

# Our lives are full of energy

There are seven billion people on earth who use energy each day to make their own lives more productive, safer and healthier.

It is difficult to comprehend that 1.3 billion people in the world are without access to electricity

IEA – World Energy Outlook 2012



## Energy enriches our lives

We want to be part of creating a better world to live in.

Access to reliable energy is integral to almost every facet of our lives. We all use energy – from our hot water; to the fridge keeping our food fresh; to the air conditioner; and the gas we use for cooking. When the alarm goes off in the morning we expect the light to come on at the flick of a switch – it is all so easy to take for granted.

Energy underpins our standard of living as well as our health and education systems and the services and activities we depend on for our daily activities. Agriculture, manufacturing, transportation and social services all depend on access to energy.

## Increasing demand for energy

As developing nations strive to improve standards of living, the demand for global energy will continue to increase. Reducing global greenhouse gas emissions, whilst managing growth in energy demand, will require a shift to less carbon-intensive fuels such as natural gas and renewables.



Projected energy consumption by 2030 – the majority of this growth is from low and medium income countries (IEA 2012)

# +29%



Vital services require  
reliable power

24/7

Natural gas connections  
in Australia

4.45million



Oil and gas products are widely  
used in modern life. In 2013  
Santos produced 51mmboe:

### Natural gas

Summer wouldn't be the same without natural gas. In our backyard, in a park or at the beach we are never too far away from the sizzle of the barbeque. Natural gas is widely used for residential heating and cooking.

### Liquefied Natural Gas (LNG)

LNG is created by cooling natural gas to approximately -162°C, which transforms it from a gas into a liquid. Liquefied natural gas can be transported and stored more easily because it takes up to 600 times less space. This enables us to transport our natural gas from remote gas fields to customers worldwide.

### Ethane

Ethane, a hydrocarbon gas, is used to make the world's most highly used plastic products.

### Liquefied Petroleum Gas (LPG)

From large trucks to light commercial vehicles to city buses, Australia now has 500,000 LPG and natural gas vehicles.

### Condensate and crude

Condensates are lighter than crude, but heavy enough to remain liquid at normal temperature and pressure.

Crude oil and condensates are refined to produce a wide array of petroleum products including heating oils, petrol, diesel and jet fuels, lubricants, asphalt, ethane, propane and butane.

Number of natural gas  
and LPG vehicles



500,000

# Fuelling a cleaner economy

Greater use of natural gas can reduce global greenhouse gas emissions.

There needs to be a broad national approach across all emission sources to reduce Australia's (and global) emissions. We acknowledge that our industry needs to be vigilant, but we can't solve the greenhouse challenge on our own.

Greater use of natural gas can significantly reduce global greenhouse gas emissions by replacing higher emitting fossil fuels such as coal.

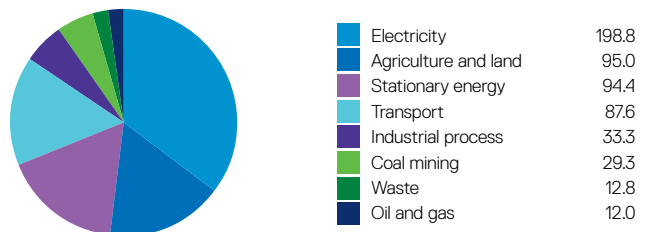
**Did you know that even on a lifecycle basis, natural gas has approximately 50% fewer emissions than coal?**

This is not just a theory. This has been demonstrated in the United States, where greenhouse gas emissions were reduced by over 200 million tonnes through fuel switching from coal to gas. As a consequence the greenhouse gas emissions from electricity have reduced by 13% (EIA 2013).

Production of LNG in Australia will not only fuel Australia's economy but will result in global emissions savings. By replacing a coal-fired electricity generation plant in China with a gas-fired plant, between 2.5 and 9.5 tonnes of carbon dioxide are being saved globally for every tonne of carbon dioxide emitted in Australia (Worley Parsons 2008 & 2011).

## Australian emissions by sector

MtCO<sub>2</sub>-e



The Australian National Greenhouse Gas Inventory categorises emissions by sectors, for example:

- + Oil and gas includes flaring, venting and fugitive emissions from production, processing and distribution activities.
- + Stationary energy includes emissions from fuel use for manufacturing, mining and households, but excludes electricity.
- + Coal mining includes flaring and venting, but excludes electricity and fuel use.
- + Industrial process includes emissions from the production of chemical, metal and minerals products.

Source: Australian Government, Australia's National Inventory Report 2011, 2013.

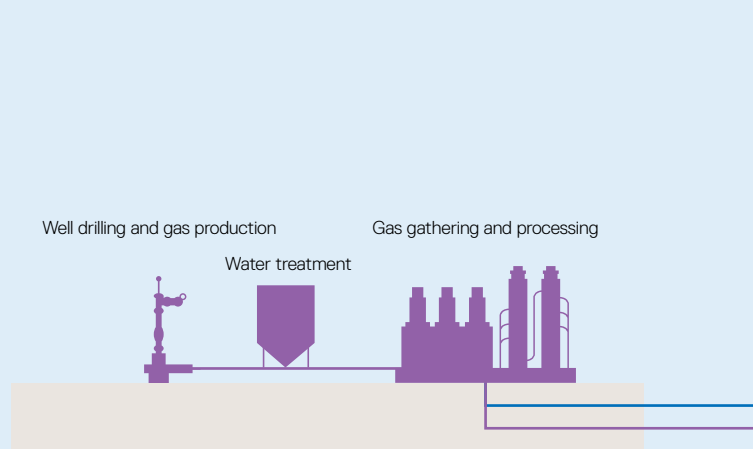
## Lifecycle emissions of natural gas

To compare the emissions from various fuel sources a lifecycle assessment can be conducted. This simply means making sure all the emissions sources are included. Typically, for electricity this includes three steps:

- + extraction of fuel source from the ground
- + transport of fuel to electricity generation plant
- + conversion of fuel into electricity by burning (combustion) at the power plant.

Data sourced from Greenhouse Gas Emissions: Study of Australian CSG to LNG, WorleyParsons, April 2011

## GAS PRODUCTION AND PROCESSING



## Creating cleaner cities

Increases in greenhouse gases are just part of the challenge. There are health concerns regarding air pollution from smog, particularly in the world's larger cities (World Health Organization, 2011).

China is actively tackling air pollution in Beijing by replacing coal-fired power plants with natural gas plants.

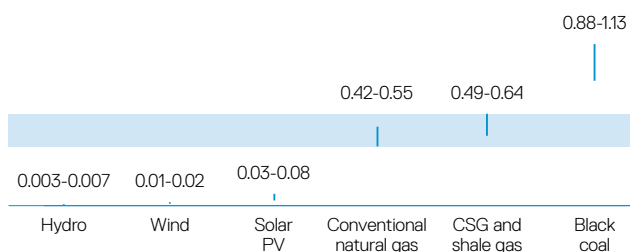
In addition, they plan to fuel more cars and buses using natural gas. The initiatives in Beijing are expected to significantly reduce sulphur dioxide emissions.

Significant emissions savings can be achieved in China and the wider Asian market alone where 7.7 billion tonnes of carbon dioxide are emitted annually from the burning of coal.

We all want to live in cleaner cities. At Santos, we are proud to be part of the solution by producing natural gas, a cleaner alternative to coal, which will enable our economy to continue to grow and transition to a lower pollution and lower carbon future.

## Gas is more efficient than coal

Electricity generation lifecycle analysis, tonnes CO<sub>2</sub>-e/MWh



All data extracted from IPCC (2011) includes 25th to 75th percentile range, except CSG from Hardisty et al (2012) and shale gas from Cook et al (2013), which includes full range of data. Gas refers to combined cycle gas turbine technology, black coal includes a broad range of technologies.

## Global warming potentials (GWPs)

Greenhouse gases are reported in units known as carbon dioxide equivalents (CO<sub>2</sub>-e). This is a measure that scientists have calculated to convert the various different gases into a common unit.

1 tonne methane (CH<sub>4</sub>) = 25 tonnes CO<sub>2</sub>-e

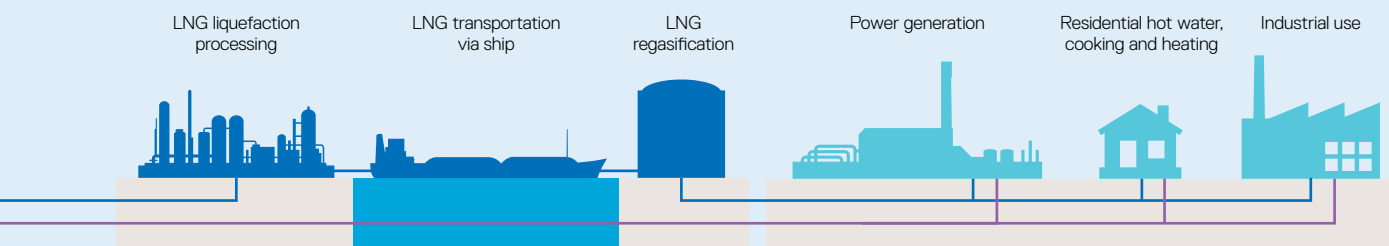
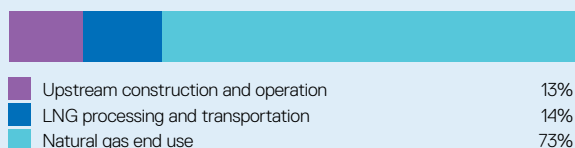
1 tonne nitrous oxide (N<sub>2</sub>O) = 298 tonnes CO<sub>2</sub>-e

For example: if we emitted one tonne of CO<sub>2</sub>, one tonne of CH<sub>4</sub> and one tonne of N<sub>2</sub>O, we report this as 324 tonnes of CO<sub>2</sub>-e (i.e. 1 + 25 + 298).

Based on most recent UNFCCC GWP values.

## LNG PROCESSING AND TRANSPORTATION

## NATURAL GAS END USE





# Measuring our emissions

We understand that measuring emissions is important to you – it is important to us too.

There has been a lot of discussion recently about greenhouse gas emissions from the natural gas industry and in particular from operations in Queensland and New South Wales coal-seam gas fields.

We have invested millions of dollars into the measurement, management and reporting of our greenhouse gas emissions.

We actively report and disclose our climate change performance and meet numerous reporting commitments including:

- + quarterly reports to our Environment, Health, Safety and Sustainability Committee of the Board
- + Santos' website and annual and sustainability report disclosures
- + National Greenhouse and Energy Reporting (NGER)
- + Carbon Disclosure Project (CDP)
- + annual reporting of air emissions to the National Pollution Inventory (NPI)
- + periodic review by external audit of Santos climate change management.

## Doing more with less

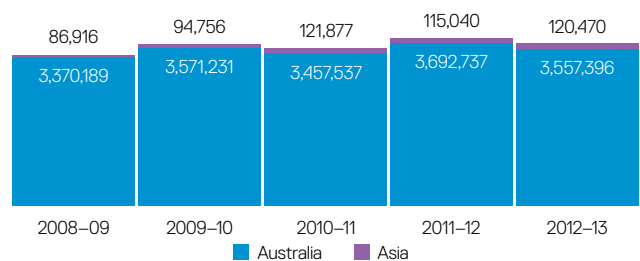
For Santos, energy efficiency is a win-win concept, it reduces our emissions and conserves our product. Our energy efficiency program is now delivering energy savings of approximately 4.8 PJ per year (250,000 tCO<sub>2</sub>-e).

# 7% annual CO<sub>2</sub>-e savings



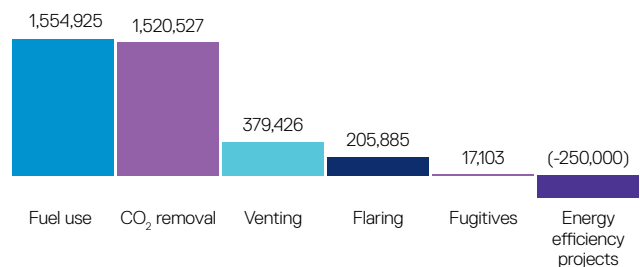
## Santos' greenhouse gas emissions

Operated sites tCO<sub>2</sub>-e (Scope 1)



## Santos' emissions profile in context

Greenhouse gas emissions 2012-13, operated sites tCO<sub>2</sub>-e



At the UNFCCC meeting in 2011, it was agreed to adopt updated GWPs of 25 for methane and 298 for nitrous oxide from 2015 onwards. The Australian Government announced it will update GWPs in domestic legislation in the 2017-18 financial year. Santos will update calculation methodologies in accordance with legislation. Currently, Australian NGER GWP for methane is 21 and for nitrous oxide 310.

## Target achieved

Our commitment to energy efficiency helped us to achieve our emissions intensity target of less than 70kt CO<sub>2</sub>-e/mmboe.

# 68kt CO<sub>2</sub>-e/mmboe

## What's all the fuss about fugitive emissions?

Technically speaking, fugitive emissions are minor losses from oil and gas equipment, for example, from valves on pipelines and within gas plants. Essentially these are minute leaks that may be barely detectable.

The term '*fugitive emissions*' is sometimes also used to include both these minor losses, and flaring and venting activities. It is probably not well known that we calculate them differently and report them separately.

We directly measure emissions from flaring and venting activities using metered data, whereas, fugitive emissions (minor losses) are calculated by applying legislated emission factors to the volume of gas produced. The factors are applied to all systems, regardless of whether leaks actually occur.

Every year our energy efficiency projects alone save the equivalent of 14 years' worth of our fugitive emissions.

**Fugitive emissions are a very small component of our direct emissions. To put it into perspective:**

Imagine you were to drink one cup of coffee per day. Over 40 years, that would amount to around 15,000 cups. The volume of our fugitives (minor losses) would be equivalent to missing out on just one cup of coffee in 40 years.



## Integrating renewables

Santos uses photovoltaic electricity at many of our remote well sites to operate our data gathering system (well telemetry). We have also recently installed photovoltaic panels at our new administration office in Scotia, Queensland. The solar power produced there will reduce the volume of diesel fuel required to power our off-grid generators, reducing emissions and eventually saving us and our shareholders money.

## Supporting science

Robust, peer reviewed science can better inform public debate on important social and environmental issues.

Independent studies can provide evidence to validate emissions measurement and reporting methodology for the oil and gas industry.

Santos is taking a lead role to ensure research-based science continues to form the basis of discussions concerning its greenhouse emissions.

- + Santos is collaborating with the CSIRO in a study to measure fugitive emissions from wells in Queensland.
- + Santos is partnering with The University of Adelaide to conduct baseline methane measurements and develop a standardised methodology.

In a separate study, the CSIRO is measuring seepage of natural gas from disbanded coal exploration wells, water bores, landfill and seeps that may occur naturally in Queensland.

## Methane

Methane is natural gas. It is colourless, odourless and non-toxic. It is present all around us in very small quantities, and it occurs naturally. Without it the earth would be uninhabitable, as a small amount of methane in the atmosphere is required to trap heat and help the planet remain warm.

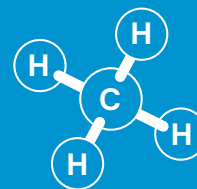
Methane forms when organic matter decomposes in oxygen-poor environments and from the combustion of carbon-based fuels. For example:

### Natural sources of methane

- + Decomposition of organic matter (e.g. in wetlands, compost, etc)
- + Animals
- + Volcanic activity

### Human activities releasing methane

- + Agriculture and livestock
- + Landfill waste
- + Combustion of coal, natural gas, timber
- + Mining

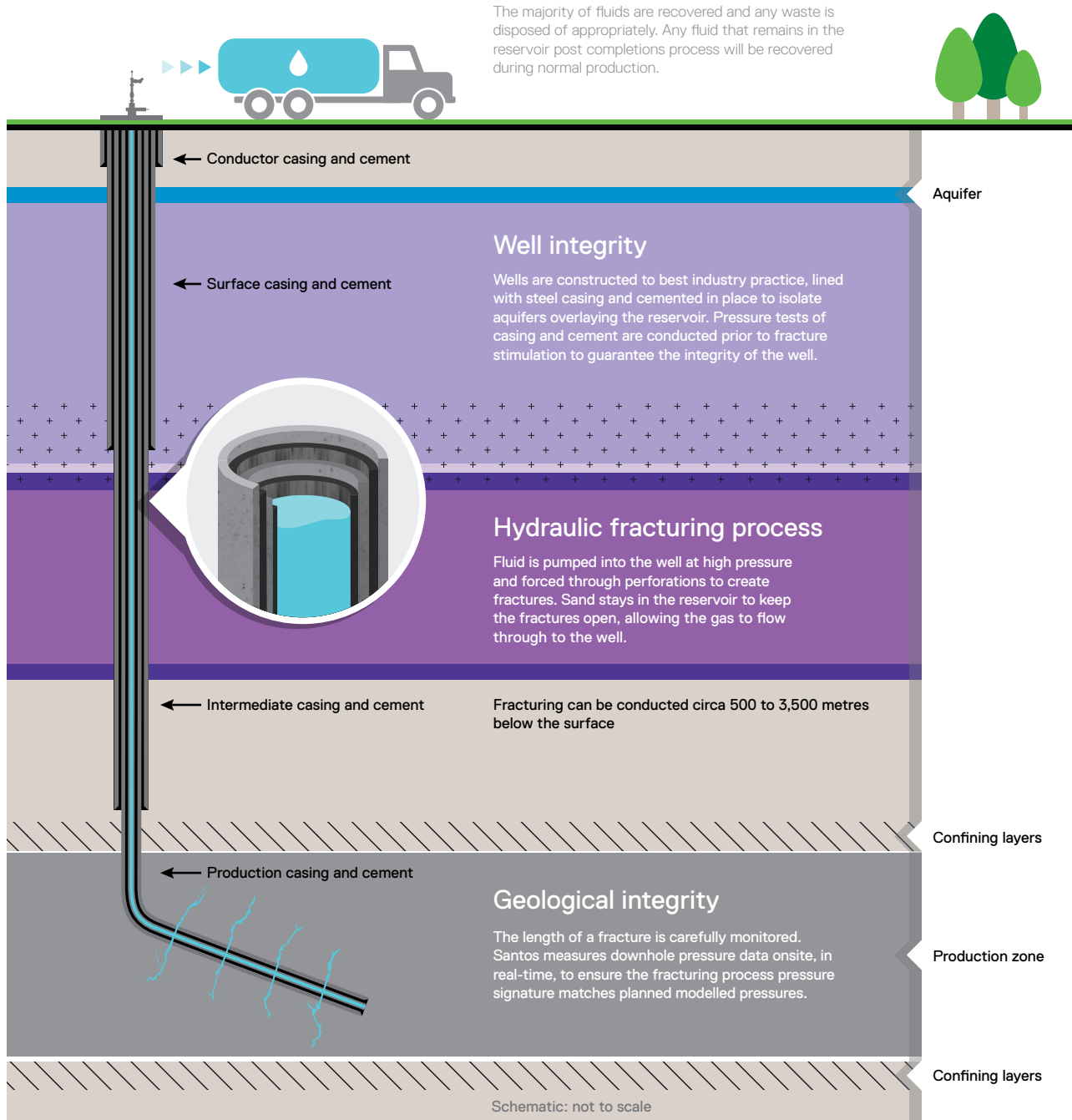


# Understanding hydraulic fracturing

Hydraulic fracturing has been used since 1947 to enhance the permeability of hydrocarbon reservoirs. We have used fracture technology in the Cooper Basin for nearly 50 years without incident.

## Waste water treatment and recovery

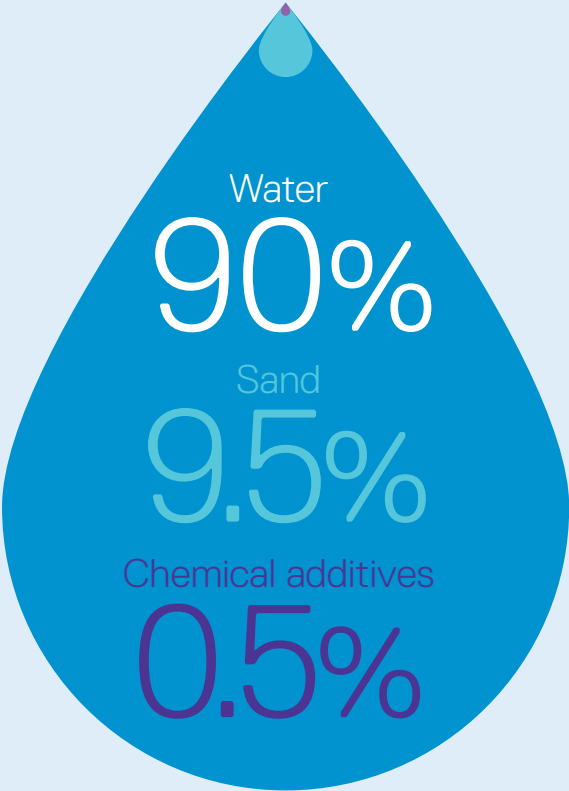
The majority of fluids are recovered and any waste is disposed of appropriately. Any fluid that remains in the reservoir post completions process will be recovered during normal production.





Using hydraulic fracturing enables us to extract more natural gas or oil from a single well – reducing land disturbance and enabling efficient resource extraction from our reservoirs.

### Understanding fracturing fluid



To ensure our water management programs are working effectively, we are implementing one of the most significant groundwater monitoring programs in Australia.

Santos monitors all its CSG fields and water treatment facilities using sophisticated tools that allow remote data collection 24 hours a day.

Santos does not use benzene, toluene ethylene or xylene in its fracturing fluids.

### Examples of other common uses of hydraulic fracturing fluid additives

Sodium hypochlorite and hydrochloric acid	Ethylene glycol	Sodium chloride	Potassium carbonate	Sodium persulfate	Acetic acid	Guar gum
Pool additive	Household cleansers	Table salt	Soap, wine, glass, dyes	Bleach, detergents	Vinegar	Cosmetics, baked goods, ice cream

See [www.santos.com/coal-seam-gas/hydraulic-fracturing.aspx](http://www.santos.com/coal-seam-gas/hydraulic-fracturing.aspx) for a complete list of possible additives.

# Protecting water resources

We are committed to water strategies that focus on long-term opportunities to benefit local communities and the environment.

We recognise that water is a precious resource that needs to be protected and conserved.

We conduct extensive research in areas of planned development. We know from experience and research that our operations have a minimal but manageable impact. Importantly, we share our information with landholders, local communities and government.

## Managing our interaction

For all our operations or activities which have the potential to interact with water resources, we develop, implement and maintain a water resource plan:

- + controlling all releases into water resource bodies
- + avoiding any extraction from or impact to community or agricultural water resources
- + minimising the overall water consumption where practicable, and minimising effluent discharges into the environment by recycling water wherever possible.

Identify environmental risks

Develop a Water Resource Plan (WRP)

Obtain required approvals, licences, permits and certificates

Implement and maintain the WRP

Monitor quantity and quality of water resources as required by WRP

Review controls and update WRP as required

Santos water resource management



Water bore testing, Gunnedah Basin

The Santos GLNG Project, has a team of more than 35 hydrogeologists and water experts dedicated to researching and monitoring surface and groundwater.



Coxon Creek, eastern Queensland

## Protecting groundwater aquifers

We design and construct our wells to protect groundwater for the life of the well. Our wells have layers of steel casing and cement, which form a continuous barrier between the well and the surrounding formations.

We are committed to monitoring our performance, meeting our reporting requirements and identifying any issues early so they can be managed.

## What is produced water?

Produced water (also known as produced formation water or associated water) is water that has accumulated underground with oil and/or gas deposits and is brought to the surface from our wells, where it is separated from our products.

The quality of produced water varies from well to well. It can contain naturally occurring suspended solids, salts and hydrocarbons and must be processed prior to disposal.

We are continuing to consider innovative options for beneficial use of our waste streams such as produced water and salt.

## Using our produced water for benefit

We use a sustainable approach to produced water management. This approach employs a preferred hierarchy to manage water.

For example, in Queensland we are spending hundreds of millions of dollars on purifying water from coal seams, due to its natural salinity, so that it can be used by landholders and the community for a range of purposes including irrigation, stock watering and recharging aquifers.

More information on our water management approach is available on our website.



Water produced during natural gas extraction is treated and reused in several ways, including irrigation in the Fairview region

Number of unique visitors to the Santos Water Portal in 2013  
[www.santoswaterportal.com](http://www.santoswaterportal.com)



2,045

1.6 million m<sup>3</sup> water for beneficial use applications, equivalent to 640 Olympic-sized swimming pools



640



# A great place to work

We aim to provide a supportive and challenging environment in which everyone has the opportunity to develop their full potential while pursuing a balanced life.

## Your questions answered

Attracting, developing  
and retaining talent

p28

Building relationships with  
Aboriginal communities

p30

Mike Flynn, Manager EA Gas Marketing with Kosta Sotiropoulos,  
Business Analyst in the Santos Centre, Adelaide



A photograph of two men in a modern office hallway. The man on the left, with blonde hair and a light blue checkered shirt, is smiling and looking towards the man on the right. The man on the right, with dark hair and a light blue checkered shirt, is looking back at him. They are standing in a hallway with glass walls and a white ceiling with recessed lights. In the background, there is a glass display case filled with various items, including books and small objects. An 'EXIT' sign is visible in the distance.

Going home from work without  
injury or illness

p32

Applying the highest standards  
of ethical conduct

p34

# Developing a sustainable workforce

Our people and their skills and ideas are fundamental to our ability to prosper and grow.

We recognise that our future success depends upon our ability to harness the right people with the skills and experience needed for success now and in the future.

With this in mind, we invest in our own workforce and the broader community to create education partnerships, employment pathways, development opportunities and leadership pipelines for a sustainable, future focused workforce. This includes providing the right leadership, culture and recognition for a supportive and challenging work environment.

## Creating the right environment

Our people are clear about the minimum standards required through our Code of Conduct and associated training. This Code provides the basis for how we work, and paves the way for a flexible approach that recognises that people are motivated in different ways; there is no one-size-fits-all.

Collaboration and communication is critical and we use multiple pathways to deliver information about the company's strategic focus so that people can keep abreast of issues affecting our business and have clarity about their priorities.

Our leaders are key to creating the right environment and have opportunities to hone their skills in engaging, motivating and optimising performance.

## Embracing diversity

Santos is committed to providing an inclusive workplace and organisational culture that embraces diversity and support for indigenous education and employment; equal opportunity programs; multicultural awareness and representation; and a focus on women in leadership.

We partner with Melbourne University to assist with their national Gender Equity Project as well as other organisations working to improve gender balance and equity in our industry and society in general. We report annually to the Board's People and Remuneration Committee on our diversity program objectives and progress.

We are focused on improving representation of women through a number of different channels including graduate programs, leadership development, generous parental leave and flexible work practices for all employees. We believe that our investment in this area and in relation to improving indigenous participation is important for future success.



### EDUCATION PARTNERSHIPS

- + Collaboration
- + Research
- + Keynote presentations
- + Knowledge sharing

### EMPLOYMENT OPPORTUNITIES

- + Apprenticeships
- + Graduate program
- + Indigenous program
- + Recruitment

### DEVELOPMENT PLANNING

- + Coaching and mentoring
- + Performance discussions
- + Training opportunities
- + Job rotation

### LEADERSHIP PIPELINE

- + People planning framework
- + Leadership training
- + Master of Business Administration





## Open communication forums

Town hall style meetings are held where all employees are invited to listen to presentations from Santos' leadership team. These meetings are webcast to our offices and employees are encouraged to participate in question and answer sessions.

## Employment opportunities and development planning

Availability of skilled operators, leaders and technical experts is critical for current and future effectiveness. Our approach to resourcing and development is multifaceted and recognises the importance of investment in the development of human capital, both inside and outside of the organisation.

We continue to invest in important programs such as school based traineeships, apprenticeships, graduate programs, indigenous employment pathways and leadership development. Additionally, we build partnerships with universities and technical education institutions to ensure ongoing availability of skilled professionals and leaders.

Other strategies used include agile, pro-active, strategic sourcing responses to staffing needs, management of succession for critical roles and development of operational, technical and leadership pipelines to support future staffing requirements.

Our approach deliberately recognises the importance of these programs for Santos and the community in general.



## Better leaders, brighter future

Santos has established partnerships with leading tertiary institutions to address skills shortages in the resources sector.

- + Collaboration with the University of Sydney to advise the John Grill Centre for Project Leadership.
- + Contributing \$10 million to help establish programs at University College London's Australian campus.
- + Committed \$25 million to Adelaide University's Australian School of Petroleum Engineering.
- + Collaboration with the University of Melbourne's Centre for Ethical Leadership and Workplace Leadership.
- + Supports an energy focused Master of Business Administration program for employees. This is a collaboration between Santos, University College London and University of South Australia.
- + 12 employees have graduated with an MBA and there are currently 25 employees enrolled in the program.
- + Support for several apprenticeship programs: Certificate III Engineering – Mechanical trade, Electro technology electrician, Automotive specialist, Instrumentation and control.

# Indigenous engagement

We strive to achieve enduring and mutually beneficial relationships with indigenous communities.

In Australia, indigenous engagement is managed through our Australian Aboriginal engagement policy and in south-east Asia through our structured approach to community development.

We aim to build genuine relationships with indigenous communities. For Santos, this is not just about compliance. Santos is committed to working with communities in a way that respects cultures and supports their development.

## Building partnerships

Our Australian Aboriginal engagement policy focuses on a number of key elements:

- + We aim to increase the number of Santos Aboriginal employees
- + We are developing partnerships with Aboriginal communities, government and community organisations in the delivery of employment, education and training outcomes
- + Santos supports enterprise development and procurement opportunities for Aboriginal companies
- + We support initiatives to facilitate development of the community to build capacity which is aligned with Santos operations and activities.

Santos provides employees and contractors with systems, training and practical information about how to avoid damage to cultural heritage, recording cultural heritage information to meet company and project obligations and required actions if cultural heritage is discovered.

Number of additional opportunities created as a result of Santos' programs (including our GLNG Project) since 2011

549

Note: Opportunities include employment, training and education opportunities for Aboriginal and Torres Strait Islander peoples.



## Facilitating Aboriginal participation

Santos awarded Intract Indigenous Contractors with the contract to complete all civil works at Mereenie (Northern Territory) as part of Santos' investment in an eight-well drilling campaign.

Intract Indigenous Contractors has been working with Santos and the Central Land Council to deliver employment to Aboriginal people.

Santos is committed to Aboriginal participation as the project moves forward, and is working with contractors to identify long-term opportunities for local workers and local business procurement.

# Encouraging a healthy workforce

We recognise the benefits a healthy workforce can offer in terms of productivity and innovation.

The health and wellbeing of our employees and contractors is fundamental to maintaining a sustainable workforce.

We offer a number of programs to encourage employees to make adjustments that lead to a healthier lifestyle:

- + Voluntary biennial health checks offered to all employees
- + Gym facilities accessible for all employees, including classes and coaching with professionally trained instructors
- + Regular lunch time seminars held to discuss lifestyle related issues such as nutrition, stress and exercise
- + A resilience program providing strategies to maximise personal resilience and productivity is offered
- + Mandatory illicit drug and alcohol screening program is conducted
- + Participation in community exercise programs such as Corporate Cup events is encouraged.

Many Santos employees take advantage of Santos' free health check programs. 2013 participation:

43%



## Strong cycling culture

Santos provides bike parks, lockers and change rooms and encourages participation in events such as the Santos Tour Down Under.



## Providing flexibility and balance

At Santos, we understand the increasing importance of flexible work options in maintaining a diverse, adaptable and high performing workforce.

We have many options that enable employees to achieve greater flexibility in effectively managing their work and personal commitments:

- + generous parental leave packages
- + flexible hours and work arrangements
- + purchased additional leave
- + special leave for volunteering, cultural, military and emergency services.

# Safety first

There is no job so important that it cannot be done safely.

## A focus on safety

A focus on safety is at the heart of Santos' work practices. Every day our objective is that everyone goes home from work without injury.

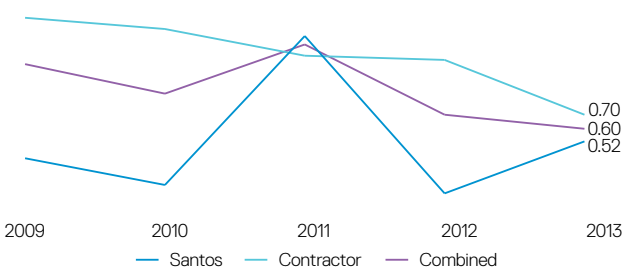
Given the nature of our work and our major development projects, keeping our employees and contractors safe in the workplace can be challenging. Safety at Santos is a joint responsibility of line management and all workers. Our activities are governed by a central safety management system which defines the standards and performance expectations and provides systems and support to achieve them.

Santos employs a strict pre-qualification process for our contractors to ensure their systems, performance and safety philosophies are equivalent to or better than our own.

Challenging targets are set for process safety and personnel safety. Performance against these targets is regularly reported to the Santos Leadership Team and Santos Board.

## Personnel safety

Lost time injury frequency rate  
(lost time injuries per million hours worked)



Santos employs a strict pre-qualification process for our contractors, involving an assessment of their safety performance and safety systems. We work with contractors who share our vision for safety and the standards we all strive to achieve every day.

## Keeping hydrocarbons contained

Process safety is all about keeping hydrocarbons in the pipes and process equipment. Our clear objective is to avoid the unplanned release of hydrocarbons. Performance in this area is reported in accordance with API standard 754, which sets out indicators for driving improvement in process safety. Santos has stringent practices in place at every level of operations to meet and exceed our regulatory requirements.

Ongoing maintenance and assessment of equipment and wells enables us to identify and mitigate safety risks. We carry out regular preventive maintenance on equipment that is assessed as critical to safety, such as pressure vessels and safety valves. This safety maintenance system, which allows risk-based scheduling, operates at almost 100% effectiveness.

Process safety exceptions, which could be precursors to an incident with greater consequences, are identified and recorded.

All exceptions are reported each year, providing a rigorous feedback mechanism for continuous improvement.

PROCESS SAFETY (API 754)	2013
Tier 1 gas releases (500kg/hr)	
Occupied areas	3
Unoccupied areas	6
Tier 2 gas releases (>50kg/hr)	
Occupied areas	9
Unoccupied areas	16



## Learning from incidents

Tragically, a rig floor incident on Saxon Rig 185 resulted in a contractor fatality on 23 June 2013. All drilling operations by Saxon Energy Services Australia Pty Ltd (Saxon) were suspended while internal and external investigations were conducted.

Following the fatality, Santos held a stand down of its entire fleet of rigs for personnel to discuss fatal risks and the mitigations and controls to eliminate or reduce those risks. Other rig contractors with rigs with similar equipment involved in the Saxon fatality also went through a thorough risk assessment prior to restarting.

Santos has the experience to develop and produce energy safely. Our employees have consistently told us that our safety culture ranks highly as a reason to work for Santos.

## Drive to survive

Driving is one of the biggest safety risks most of us face in our daily lives. Our driver management framework, which applies to all vehicles operating within field locations and site support areas used by Santos employees and contractors, is designed to help reduce driving related risks.

Through Santos in-vehicle monitoring systems we will continue to monitor compliance for the use of seatbelts, driving within a set speed limit, use of 4WD on unsealed roads and other driving rules such as use of approved routes.



## Working in hot environments

With some of our operations located in the harshest desert environments, heat stress poses a serious health risk for many Santos employees and contractors. Heat stress awareness training is mandatory for anyone working in these field locations.

## Innovative approach to equipment inspection

A remotely operated drone at Port Bonython has been deployed to enable us to monitor difficult to access equipment such as pipes on jetties, or equipment at height.

The drone sends back live video feed and high resolution photographs.

This innovative application of technology has the potential for use at other Santos facilities, reducing risk to employees and improving the frequency and quality of our inspection data.



# Robust governance systems

The Santos Board has a unitary structure with an independent Chairman.

Each committee is chaired by and comprises only non-executive, independent directors except for the Environment, Health, Safety and Sustainability Committee which includes the CEO.



## Corporate governance guidelines

The Board has established a set of corporate governance policies and charters that meet the requirements of:

- + The *Corporations Act 2001* (Cth)
- + ASX Rules
- + The ASX Corporate Governance Principles and Recommendations with 2010 Amendments (ASX Principles)
- + Extractive Industries Transparency Initiative (EITI).

These are regularly reviewed and updated to meet changing regulatory requirements and community expectations. The composition is determined in accordance with the constitution and Board guidelines.

The corporate governance statement available in the corporate governance section of the Santos Annual Report 2013 and on our website provides more information on these policies.



<sup>1</sup> The definition of independence as prescribed by the ASX Principles has been adopted, and all board members except the CEO are independent.

As a leading energy company, we consistently strive to meet the highest standards of governance and business conduct across our operations.

## Auditing

Santos ensures conflicts of interest are avoided via our external auditor. We ensure the independence and impartiality of our external auditor. We require that services that are considered to be in conflict with the role of the statutory auditor are not performed by our external auditor.

To answer shareholder questions relevant to the conduct of the audit, the external auditor attends Santos' Annual General Meetings.

## Working responsibly

Santos employees care. Whether it is for the communities we engage with or the environment we are working in, we all share the responsibility for the course of our actions.

Almost everyone strives to do the right thing and behave in a responsible manner. However, for those rare occasions when indiscretions occur, we have a process in place to appropriately address the situation.

Employees are encouraged to raise concerns and Santos leaders are required to be receptive to such concerns and take follow-up action.

Reports can also be made confidentially to the independent Reporting Misconduct Hotline.

To outline expectations for Santos employees, we have a Code of Conduct which provides a framework for sound business behaviour and interactions.

## Transparency and disclosure

We place a high priority on our reputation.

To maintain our reputation as a good corporate citizen we must operate responsibly and sustain good relationships with our stakeholders.

We are committed to open and timely disclosure of information to enable our stakeholders to make informed decisions about our company. This means being transparent about our financial performance, business activities and risks.

To reach a wide audience, we have a multifaceted approach to communications. Our communications include company updates via our website, publication of annual financial and sustainability reports, regular investor briefings, community newsletters, face-to-face stakeholder meetings and of course new price sensitive information is disclosed via the Australian Stock Exchange and on our company website.

## Robust management systems

All Santos' employees and contractors are required to comply with our environmental, health and safety management system. The system has been designed to manage environment and safety risks and is consistent with the principles of Australian Standard 4801 2000 and AS/NZS ISO 14001:2004.

The system comprises management standards and hazard standards, which respectively outline our management approach and controls required to manage risks.

A detailed list of the 19 management standards and 32 hazard standards is provided on page 41.

We also have a compliance database to monitor and track relevant Australian Commonwealth, State and Territory legislative obligations. We monitor our compliance through regular reviews.

# Managing risk

Our aim is to prevent spills from occurring by adopting strategies that address the root cause of unintentional releases.

There are sound business justifications for a focus on sustainability within our long-term corporate strategy. It is through consideration of a broader suite of performance indicators that we can make better, more informed business decisions.

At Santos, we integrate risk management into all areas of our business. It is part of our culture, how we work, and how we make decisions. The approach we have adopted to risk management is encapsulated in a risk management approach framework which complies with ISO 31000: Risk Management – Principles and Guidelines.

Performance against these plans is monitored and reported to the Board.

## Security conscious

Our approach to managing security risks is outlined in our Security Health and Safety Hazard Standard.

This approach complies with the Voluntary Principles on Security and Human Rights – a guideline for extractive companies on maintaining the security of their operations in a manner that respects human rights and freedoms.

All Santos sites comply with domestic and international regulations for maritime, aviation and land transport security and we maintain active engagement with the relevant government and industry bodies.

Our internal online security portal provides information on site security, travel assistance and safety, human rights and protecting our physical assets.

## Remediating and prevention of spills

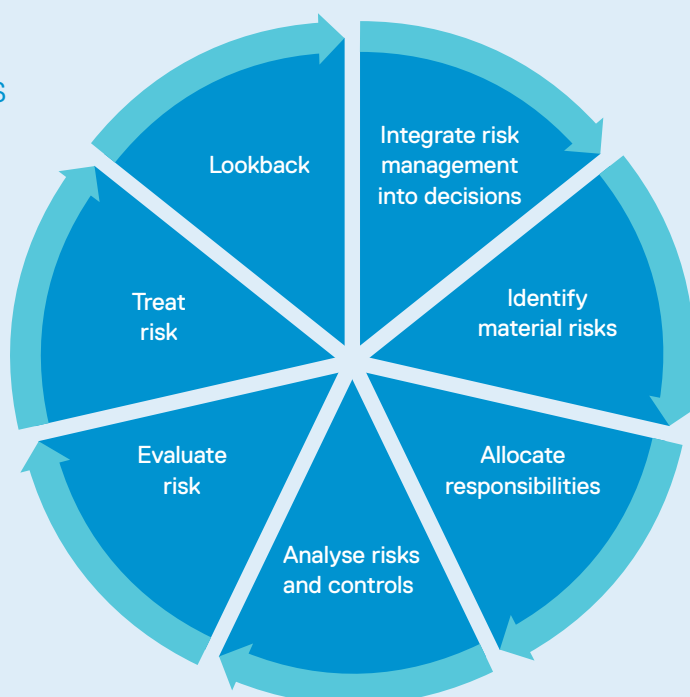
We report transparently and disclose spill volumes to relevant authorities and in our annual sustainability reports, including disclosures for fines received in the reporting year (i.e. 2013).

To minimise spills, we are adopting strategies that address equipment failure and maintenance of our infrastructure. These include our suspend, mothball and abandonment program, surface laid pipeline “lift and support” program and condition review of buried pipeline coating.

Santos has robust systems in place to investigate and respond to incidents. This generates learning opportunities for continuous improvement and reduces the risk of recurrence. All incidents,

A continuous improvement cycle drives our risk management framework, ensuring we manage our commitment to our stakeholders

## Our management framework





near misses and hazards are required to be reported and risks are incorporated into hazard registers.

Where facilities do not meet Santos' high operating standards, we will make the necessary investment to improve our operating facilities. For example, since the acquisition of Eastern Star Gas (ESG), we have invested approximately \$17 million in remediation and rehabilitation works and are currently constructing new water handling facilities.

In February, we reported a 550m<sup>3</sup> spill (produced water 80% and hydrocarbon 20%) from a buried pipeline at Naccowlah in south west Queensland. Clean-up and remediation activities were commenced immediately and environmental impact was minimal.

In May, an incident occurred in south west Queensland at a well in the Zeus oil field. The hydrocarbon spill (250m<sup>3</sup>) was contained within the well operational area. The impacted area was less than one hectare and was immediately remediated and an ecological assessment completed.

## Infringement notices

In 2013, Santos received \$34,800 in fines relating to 17 Infringement Notices issued for minor breaches of conditions of approval. These events occurred in Santos' eastern Queensland operations:

- + \$2,200 x 12 for events involving the release of sewage, produced water or sediment into the surroundings
- + \$2,200 for the death of fauna at an unfenced well site
- + One \$2,200 fine and one \$2,000 fine for unauthorised land or vegetation clearing
- + \$2,000 for failing to implement an erosion and sediment control plan at a construction camp
- + One notice, no fine, for failure to handle fish in accordance with procedures.

## Our commitment to our stakeholders

Employees	We all go home from work without injury or illness.
Communities	Our operations will not impact the health and safety of the communities in which we operate. We will continuously seek to find new ways to minimise our environmental impact across the lifecycle of our activities.
Government	We will continue to be a trusted and reliable operator.
Customers	We will responsibly and reliably deliver our product.
Shareholders	Our vision is to be a leading energy company in Australia and Asia.

# Performance data

## 2013 SPONSORSHIP (\$)

	Arts/ Culture	Community <sup>1</sup>	Education/ Youth	Environment	Health	Indigenous	Industry/ Government <sup>2</sup>	Total
ACT	0	20,000	0	0	0	0	0	20,000
New South Wales	50,000	237,046	50,640	0	35,700	26,250	3,100	402,736
Northern Territory	60,000	57,200	25,300	0	0	5,000	1,100	148,600
Queensland	272,700	364,948	117,933	213,754	3,495	352,800	61,461	1,387,091
South Australia	698,570	1,711,248	3,783,177	859,148	337,786	2,094,566 <sup>3</sup>	81,784	9,566,279
Victoria	0	21,952	6,000	30,000	9,446	0	10,000	77,398
Western Australia	132,499	113,000	1,200	200,000	0	24,100	4,200	474,999
Indonesia	0	259,974	43,590	16,979	2,210	0	22,400	345,154
Bangladesh	0	9,633	27,309	0	0	0	0	36,942
Philippines	0	37,538	0	0	0	0	0	37,538
PNG	0	0	0	0	0	0	4,659	4,659
Singapore	0	0	0	0	0	0	14,000	14,000
Vietnam	0	30,000	0	0	64,851	0	0	94,851
<b>Total</b>	<b>1,213,769</b>	<b>2,862,540</b>	<b>4,055,149</b>	<b>1,319,881</b>	<b>453,489</b>	<b>2,502,716</b>	<b>202,704</b>	<b>12,610,247</b>

1 Commercial sponsorships are included in this figure.

2 Total of \$202,704 is comprised of \$185,767 industry and \$16,937 government (provision of catering and venue for six political functions).

3 This figure is inclusive of costs of education, training and wages incurred through delivery of our partnerships agreements.

## ENERGY CONSUMPTION AND GREENHOUSE GAS EMISSIONS 2012-13

Energy consumption (PJ)	29.3
Direct greenhouse gas emissions, Santos liable equity share (scope 1 tCO <sub>2</sub> -e)	2,485,285
Total direct greenhouse gas emissions, operated sites (scope 1 tCO <sub>2</sub> -e)	3,677,867
Indirect greenhouse gas emissions, operated sites (scope 2 tCO <sub>2</sub> -e)	36,409

## EMISSIONS INVENTORY 2012<sup>4</sup> – AUSTRALIAN OPERATIONS (TONNES)

	Air	Land	Water
Benzene	21	0	0
Lead and compounds	0.002	0.024	0.085
Oxides of nitrogen	20,188	0	0
Particulate matter < 2.5 um	257	0	0
Sulphur dioxide	22	0	0
Total Volatile Organic Compounds	9,956	0	0

4 These data are reported mid-year to the National Pollutant Inventory; 2013 data will be published in the 2014 Sustainability Report.

## WASTE MANAGEMENT 2013

Waste stream	Solid waste (tonnes)					Liquid waste	Transported waste
	Reuse and recycle <sup>5</sup>	Energy recovery	Incineration	Landfill <sup>5</sup>	Other	(m <sup>3</sup> )	(tonnes)
Unregulated waste	4,637	4,208	116	34,303	701	0	0
Regulated waste	236	182	1.84	1,200	779	0	5,856
Hydrocarbon waste	0	0	0	240	0	838	0
Drill mud and cuttings (aqueous)	0	0	0	18,270	0	7,307	0

5 The large year-on-year increase in the amount of waste recycled, reused and sent to landfill is mainly attributed to an improvement in data collection.

## WATER RESOURCES 2013

	Water withdrawal (m³)					Water discharge (m³)			
	Formation	Surface water <sup>6</sup>	Ground water	Rainwater	Municipal supply or other	Evaporation ponds	Surface	Beneficial use	Aquifer injection
New South Wales	0	0	135	0	0	0	0	0	0
Northern Territory	8,902	0	82,700	0	323	7,500	1,377	0	0
Queensland	6,487,647	5,194	298,703	592,277	29,905	2,552,604	2,216,709	1,376,000	342,360
South Australia	5,397,545	0	1,567,459	0	155,682	5,326,000	0	71,220	0
Victoria	7,761	0	0	0	0	0	0	7,000	0
Western Australia	434,975	1,020,425	0	0	0	0	1,483,667	0	0
Indonesia	440,699	12,076,609	0	0	0	0	12,517,308	0	0
Bangladesh	11,366	0	0	0	7,034	0	28,253	0	0
<b>Total</b>	<b>12,788,895</b>	<b>13,102,228</b>	<b>1,948,997</b>	<b>592,277</b>	<b>192,944</b>	<b>7,886,104</b>	<b>16,247,314</b>	<b>1,454,220</b>	<b>342,360</b>

<sup>6</sup> Includes wetlands, rivers, lakes and oceans; note Indonesia and Western Australia water withdrawal is seawater and is used offshore.

## FOOTPRINT OF OPERATIONS (ha)

	Tenements	Area of land disturbance	Rehabilitated sites	Protected areas within tenements <sup>7</sup>	Operations within protected areas
New South Wales	5,523,257	591	0	324,888	0
Northern Territory	10,050,800	799	8	325,576	18
Queensland	4,467,881	9,233	324	164,592	321
South Australia	942,605	10,519	2,072	837,837	4,618
Victoria	147,620	11	0	0	0
Western Australia	1,233,674	5	0	0	0
Indonesia	185,201	121	0	0	0
Bangladesh	93,471	0	0	0	0
Papua New Guinea	84,796	0	0	0	0
Vietnam	1,015,189	0	0	0	0
India	1,653,606	0	0	0	0
<b>Total</b>	<b>25,398,100</b>	<b>21,279</b>	<b>2,404</b>	<b>1,652,893</b>	<b>4,957</b>

<sup>7</sup> Protected areas within tenements refer to land included on the Australian Government Protected Areas Network, for its natural, ecological and/or cultural values RAMSAR sites and Important Bird Areas within tenements operated by Santos. There are no UNESCO World Heritage Sites and United Nations Biosphere Reserves within Santos tenements.

## INCIDENTS AND SPILLS 2013

Uncontained hydrocarbon volume (m³)	386
Total number of hydrocarbon spills (>10L)	30
Uncontained non-hydrocarbon volume (m³)	1,426
Total number of non-hydrocarbon spills (>10L)	47
Number of fines for non-compliance with environmental regulations	17
Value of fines for non-compliance with environmental regulations (\$)	34,800

## SAFETY PERFORMANCE DATA 2013

Fatalities (employee and contractor)	1
Employee LTIFR	0.52
Contractor LTIFR	0.70
High potential incidents	12
Tier 1 process safety events	9
Tier 2 process safety events	25

## Performance data continued

### WORKFORCE BY LOCATION AND TYPE (HEADCOUNT)

	Full-time		Part-time		Graduate/ trainee		Santos employee total	Seconded		Contractors (onsite)		External service providers (onsite)		Contractor workforce total
	M	F	M	F	M	F		M	F	M	F	M	F	
New South Wales	37	10	0	0	0	0	47	0	0	2	1	15	1	19
Northern Territory	26	0	0	0	0	0	26	0	0	4	0	10	4	18
Queensland	991	326	48	46	42	38	1,491	37	5	200	40	772	235	1,289
South Australia	954	267	165	89	69	42	1,586	0	0	159	35	2,110	270	2,574
Western Australia	50	23	2	8	5	1	89	0	0	39	18	21	4	82
Victoria	13	2	0	0	1	0	16	0	0	0	1	27	3	31
Bangladesh	31	4	0	0	0	0	35	0	0	8	0	8	0	16
Indonesia	108	63	0	0	0	0	171	0	0	35	13	114	14	176
Other	24	7	0	0	0	2	33	1	0	9	2	19	15	46
<b>Total</b>	2,234	702	215	143	117	83	3,494	38	5	456	110	3,096	546	4,251

### WORKFORCE COMPOSITION AND TRAINING

	< 30yrs		% > 30 < 50yrs		> 50yrs		Total number of employees		Total training hours		Average number of training hours	
	M	F	M	F	M	F	M	F	M	F	M	F
Strategic Leader	0	0	25	17	50	8	9	3	6	82	1	27
Functional Leader / Manager	0	0	53	15	31	1	200	40	2,169	392	11	10
Team Leader/ Supervisor	2	1	59	11	26	1	420	63	6,617	910	16	14
Technical Specialist	3	0	50	20	26	2	310	86	3,987	1,687	13	20
Team Member	13	9	39	20	17	3	1,627	736	29,674	11,710	18	16
<b>Total</b>	9	6	44	18	20	2	2,566	928	42,452	14,780	17	16
Non-Executive Director	0	0	0	0	87	13	7	1				
Total employee turnover (%)	9.6											

### SOCIOECONOMIC CONTRIBUTION 2013

Net profit after tax (\$million)	516
Production volume (mmboe)	51
2P reserves (mmboe)	1,368
2P three-year reserves replacement ratio (%)	159
Number of shareholders	112,397
Wages and salaries (\$million)	613
Materials, goods and services (\$million) <sup>8</sup>	7,904
Royalties and taxes (\$million)	315
Sponsorship (\$million)	13
Payments to providers of capital (excluding capital repayment)	375

<sup>8</sup> Materials, goods and services covers total spend for Santos' operated sites.



# Santos policies and EHSMS standards

## Santos policies include

### ETHICAL BUSINESS CONDUCT

- + Anti-Corruption
- + Compliance
- + Confidentiality
- + Conflict of Interest
- + Corporate Identity
- + Enterprise-wide Risk Management
- + Financial Governance
- + Government Engagement and Political Donations
- + Local Industry Participation
- + Privacy
- + Procurement and Logistics
- + Reporting Misconduct
- + Securities Trading
- + Shareholder Communication and Market Disclosure
- + Sponsorship and Donations

### ENVIRONMENT AND COMMUNITY

- + Aboriginal Engagement
- + Climate Change
- + Community
- + Environmental
- + Health and Safety
- + Human Rights

### WORKPLACE AND EMPLOYMENT

- + Conditions of Employment
- + Diversity
- + Employee Assistance
- + Equal Opportunity
- + Information Systems
- + Issue Resolution
- + Performance Management
- + Recruitment and Selection
- + Remuneration, Superannuation and Benefits
- + Training, Development and Study Assistance

## Santos EHSMS standards

### MANAGEMENT STANDARDS (19)

- + Environment, health and safety policies
- + Legal and other obligations
- + Objectives and targets
- + Improvement plans
- + Responsibility and accountability
- + Training and competency
- + Consultation and communication
- + Document and record management
- + Hazard identification, risk assessment and control
- + Contractor and supplier management
- + Operations integrity
- + Management of change
- + Emergency preparedness
- + Monitoring, measurement and reporting
- + Incident investigation and response
- + Management system audit and assessment
- + Management review
- + Sustainability
- + Climate change

### HEALTH AND SAFETY HAZARD STANDARDS (20)

- + Hand safety
- + Land transportation
- + Air transportation
- + Health and wellbeing
- + Working in hot environments
- + Electrical safety
- + Working at heights
- + Chemical management and dangerous goods
- + Radiation
- + Food safety
- + Manual handling and ergonomics
- + Occupational noise
- + Working alone in remote locations
- + Legionella
- + Security
- + Lifting equipment
- + Personal protective equipment
- + Entry to confined spaces
- + Excavations
- + Hand and power tools

### ENVIRONMENTAL HAZARD STANDARDS (12)

- + Land disturbance and biodiversity
- + Underground storage tanks and bunds
- + Produced water
- + Waste
- + Air emissions
- + Energy efficiency
- + Contaminated site management
- + Weed and pest animal control
- + Water resource
- + Aboriginal and non-Aboriginal cultural heritage management (for Australian operations)
- + Noise emissions
- + Environmental Impact Assessment and Approvals

# Independent assurance statement



To the Board of Directors, Executive and stakeholders of Santos Limited:

Santos Limited (Santos) commissioned Net Balance Management Group Pty Ltd (Net Balance) to provide independent assurance of its 2013 Sustainability Report (the 'Report'). The Report presents Santos' sustainability performance during the period 1 January 2013 to 31 December 2013. This statement provides a brief summary of the assurance outcomes. A full copy of the assurance statement is provided at [www.santos.com/sustainability](http://www.santos.com/sustainability).

## ASSURANCE STANDARDS AND SCOPE

Net Balance provided Type 2 moderate level assurance in accordance with the AA1000 Assurance Standard (2008) (AA1000AS). This involved assessing the organisation's adherence to the AA1000 AccountAbility Principles (2008) of Inclusivity, Materiality and Responsiveness, and assessing the reliability and quality of disclosed sustainability performance information contained within the Report.

Net Balance also assured selected performance data in accordance with Australian Standards on Assurance Engagements ASAE 3000 Assurance Engagements other than Audits or Review of Historical Financial Information ("ASAE 3000") to a limited level.

Net Balance undertook a review of the sustainability scores assigned to the indicators which make up Santos' Sustainability Scorecard on page 45.

Net Balance undertook a Global Reporting Initiative (GRI) G4 in accordance assessment.

## FINDINGS AND CONCLUSIONS

### Adherence to AA1000 Principles

**Inclusivity:** Santos was found to have a variety of formal and informal processes in place to assist the business with collecting stakeholder feedback. Net Balance notes that while these processes have been effective in developing strong stakeholder relationships for GLNG in Queensland, reflected through large numbers of agreements with local landholders, Santos (and the Coal Seam Gas sector more broadly) still face significant opposition in New South Wales. In this location, we recommend that Santos focusses on further building the capacity of all

personnel responsible for day-to-day interactions with local stakeholders. We also recommend that Santos looks to build relationships with issues based NGOs, where appropriate, to enable the organisation to take a more proactive approach to emerging issues. Within the report, key questions raised by stakeholders are identified, together with a summary of what Santos is doing to address these questions. We commend Santos for inclusion of this information, and note that these responses address issues that received media attention during the year.

**Materiality:** In 2013, Santos revised its formal materiality process used to define environmental, social and economic material issues for reporting. The criteria used to assess materiality to Santos and its stakeholders were updated to reflect Santos' shift to the Global Reporting Initiative G4 Framework. The assessment of materiality was conducted by an internal working group and involved assigning scores to each of the materiality criteria. Notwithstanding Santos' shift this year to a more concise report format, the issues identified through this formal process were found to be addressed in a fair and balanced way within the Report. To ensure that the process is replicable and delivers consistent results in future years, Net Balance recommends that Santos develops a rating scale specific to each materiality criteria.

**Responsiveness:** Over recent years, Santos has taken significant steps to respond to the key stakeholder issue of water resources, in part through the Santos Water Portal which provides groundwater monitoring data within operational regions to local agricultural and community stakeholders. In 2013, strengthened stakeholder focus was placed on climate change management, product responsibility and hydraulic fracturing. Santos has continued to respond to these concerns, for example, through collaboration with research partners to improve measurement of fugitive emissions. In the future, we recommend that Santos continues to look for opportunities to respond to stakeholder concerns through improved disclosure. Possible opportunities include roll out of the Water Portal to other regions, making publicly available detailed biodiversity and land disturbance information, and possibly, results of monitoring carried out during

hydraulic fracturing. The above responses, and other stakeholder communications, reflect complaints and response mechanisms that are formalised for key projects such as GLNG. In contrast, group response mechanisms are currently informal, but effective. To ensure that these processes are equipped to deal with Santos expanding operations, particularly into more populated areas, it is recommended these group complaints and response mechanisms be formalised.

## OPINION

Overall, it is Net Balance's opinion that the information presented within the Report is fair in all material respects, and the Report was found to present a reliable account of Santos' sustainability performance during the reporting period. Based on the ASAE 3000 procedures performed, nothing has come to our attention that would cause us to believe, that the selected performance data contained on pages 38–40 of the Report has not prepared and presented in all material respects in accordance with relevant criteria. A review of the adherence to GRI G4 reporting framework found that Santos satisfies the in accordance 'core' requirements and incorporates indicators from the GRI Oil and Gas Sector Supplement.

## THE WAY FORWARD

To ensure continued improvement of Santos' sustainability performance reporting, Net Balance has provided recommendations for improvement in a more detailed report presented to Santos' management.

On behalf of the assurance team

13 March 2014  
Melbourne, Australia

### KIM FARRANT

Associate Director, Net Balance,  
Lead CSAP



**AA1000**  
Licensed Assurance Provider  
000-1

# Glossary

## Aboriginal

Refers to both Aboriginal and Torres Strait Islander people.

## barrel/bbl

The standard unit of measurement for all oil and condensate production. One barrel = 159 litres or 35 imperial gallons.

## boe

Barrels of oil equivalent.

## carbon dioxide equivalent (CO<sub>2</sub>-e)

A measure of greenhouse gases (e.g. carbon dioxide, methane, nitrous oxide) with the equivalent global warming potential as carbon dioxide when measured over a specific time.

## the company

Santos Ltd and its subsidiaries.

## condensate

A natural gas liquid that occurs in association with natural gas and is mainly composed of pentane and heavier hydrocarbon fractions.

## crude oil

A general term for unrefined liquid petroleum or hydrocarbons.

## CSG

Coal seam gas. Predominantly methane gas stored within coal deposits or seams.

## cultural heritage

Cultural heritage includes items of physical, spiritual, intellectual and cultural significance. It includes Aboriginal and non-Aboriginal cultural heritage and sacred sites.

## exploration

Drilling, seismic or technical studies undertaken to identify and evaluate regions or prospects with the potential to contain hydrocarbons.

## greenhouse gas

A gas that contributes to the greenhouse effect by absorbing infrared radiation.

- + Scope 1 – direct greenhouse emissions.
- + Scope 2 – indirect greenhouse emissions.

## hydrocarbon

Compounds containing only the elements hydrogen and carbon, which may exist as solids, liquids or gases.

## joules

Joules are the metric measurement unit for energy.

- + A gigajoule (GJ) is equal to 1 joule  $\times 10^9$
- + A terajoule (TJ) is equal to 1 joule  $\times 10^{12}$
- + A petajoule (PJ) is equal to 1 joule  $\times 10^{15}$

## LNG

Liquefied natural gas. Natural gas that has been liquefied by refrigeration to store or transport it. Generally, LNG comprises mainly methane.

## lost time injury frequency rate (LTIFR)

A statistical measure of health and safety performance. A lost time injury is a work-related injury or illness that results in a permanent disability or time lost of one complete shift or day or more any time after the injury or illness. LTIFR is calculated as the number of lost time injuries per million hours worked.

## LPG

Liquefied petroleum gas. A mixture of light hydrocarbons derived from oil-bearing strata which is gaseous at normal temperatures but which has been liquefied by refrigeration or pressure to store or transport it. Generally, LPG comprises mainly propane and butane.

## medical treatment injury

A medical treatment injury is a work-related injury or illness, other than a lost-time injury, where the injury is serious enough to require more than minor first aid treatment. Santos classifies injuries that result in modified duties as medical treatment injuries.

## mmboe

Million barrels of oil equivalent.

## oil

A mixture of liquid hydrocarbons of different molecular weights.

## personnel safety

Preventing incidents that are typically more frequent but have less widespread consequences.

## process safety

Preventing rare but high consequence incidents such as fire and explosion.

## proven reserves (1P)

Reserves that, to a high degree of certainty (90% confidence), are recoverable. There is relatively little risk associated with these reserves. Proven developed reserves are reserves that can be recovered from existing wells with existing infrastructure and operating methods. Proven undeveloped reserves require development.

## proven plus probable reserves (2P)

Reserves that analysis of geological and engineering data suggests are more likely than not to be recoverable. There is at least a 50% probability that reserves recovered will exceed proven plus probable reserves.

## proven, probable plus possible reserves (3P)

Reserves that, to a low degree of certainty (10% confidence), are recoverable. There is relatively high risk associated with these reserves.

## sales gas

Natural gas that has been processed by gas plant facilities and meets the required specifications under gas sales agreements.

## Santos

Santos Limited and its subsidiaries.

## seismic survey

Data used to gain an understanding of rock formations beneath the earth's surface using reflected sound waves.

## total recordable case frequency rate (TRCFR)

A statistical measure of health and safety performance. Total recordable case frequency rate is calculated as the total number of recordable cases (medical treatment injuries and lost-time injuries) per million hours worked.

## unitary

A unitary board includes both executive and non-executive directors and makes decisions as a unified group.

## Conversion

Crude oil	1 barrel = 1 boe
Sales gas	1 petajoule = 171,937 boe
Condensate/ naphtha	1 barrel = 0.935 boe
LPG	1 tonne = 8,458 boe

For a comprehensive online conversion calculator tool, visit the Santos website at [www.santos.com](http://www.santos.com)

# Integrated approach to sustainability

By evaluating criteria beyond traditional economic measures, we can assess the full impact of our activities and make better business decisions.

## Driving improvement through performance measurement

Santos' sustainability scorecard is the principal tool that we use to measure our sustainability performance. A company-wide assessment is conducted annually on a calendar year basis.

The indicators are based on the GRI G4 Guidelines and have been tailored to address sustainability issues that are material to Santos and our stakeholders.

The scorecard is used to assess the status of systems and performance for each indicator according to a challenging and consistent self-assessed 10-point rating system. Annual targets and improvement plans are developed for each indicator to drive improvements in our sustainability performance.

## A focus on material indicators

To guide the content of this report, a materiality assessment of all 24 of our sustainability indicators was conducted by an internal working group. The assessment rated: stakeholder dialogue; regulations; scientific research; opportunities and risks; alignment with our values; and contribution to our business strategy.

Although we focused on material indicators, we understand that all indicators are important and we are committed to continuous improvement across each of them.

## Our values drive the way we do business

Everyone at Santos shares responsibility for practising high standards of ethical conduct and full compliance with our legal obligations in all our operations. Our company values (discovers, delivers, collaborates and cares) are the guiding principles that inform our decision-making and define not only the way our business is conducted, but also what we stand for as a company.

## Committing to principles of responsible operation

Santos has identified four aspirational operating principles that provide standards to ensure we protect the environment, operate safely, treat people with respect and make a positive difference to the communities in which we operate.

We want to share our commitment to these principles with you – we believe we can explore, develop and produce oil and natural gas resources safely and responsibly.

Over time these simple principles will work to encourage our partners, governments, communities and even our opponents that the oil and gas industry is taking a responsible approach to the development of this country's resources. They will see that in every instance and across every issue, we are doing our utmost to achieve the highest standards of operations, and in some cases we will go beyond even their expectations.



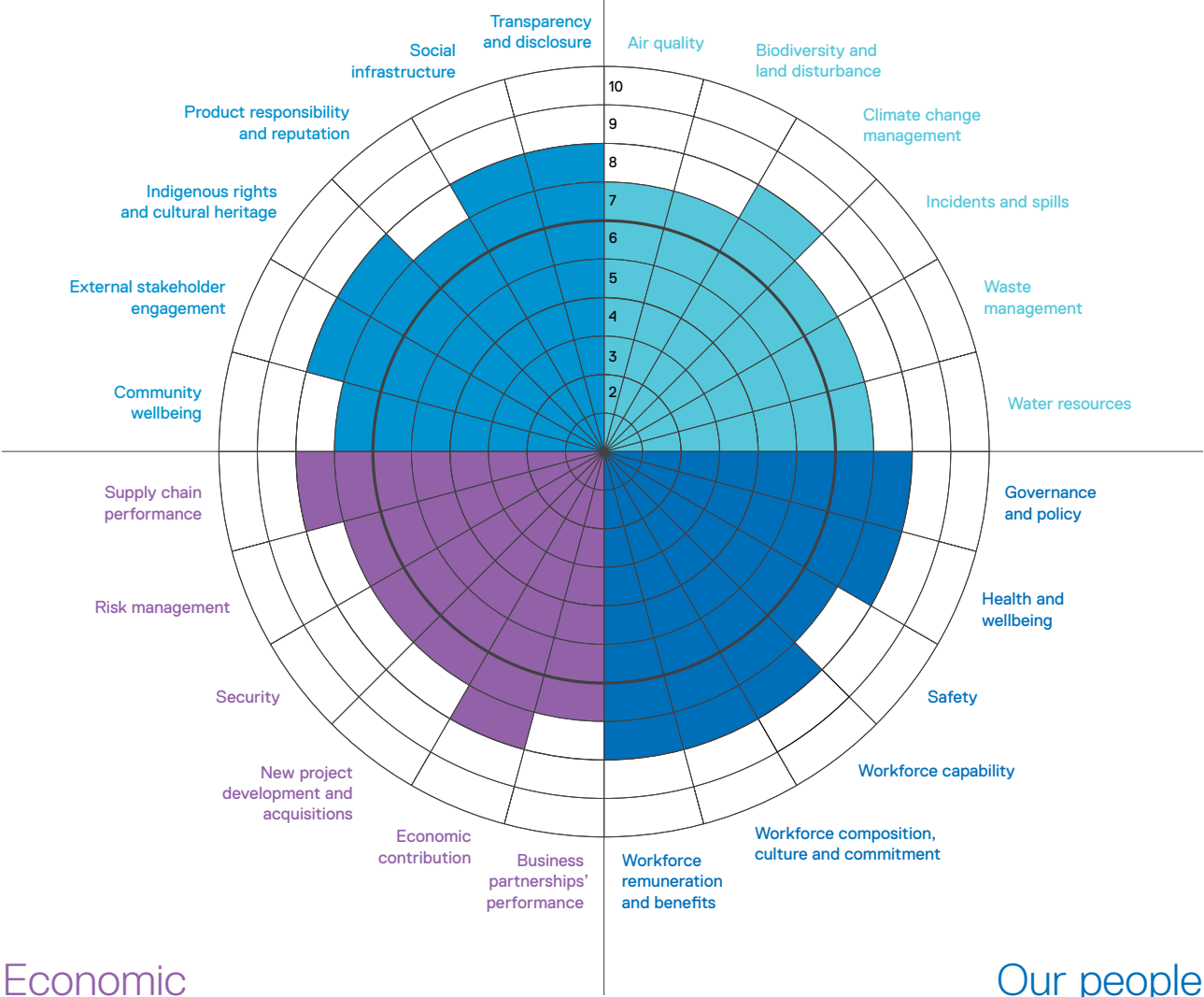
Remediated oil spill site in the Brisbane suburb of Algester, Queensland



# 2013 sustainability scorecard

Community

Environment



## SUSTAINABILITY SCORE

1–2	No procedure in place, poor performance
3–4	Developing policy/systems
5–6	Implementation and compliance focus
7–8	High performance
9–10	Recognised leader

Santos Limited  
ABN 80 007 550 923

## Registered and head office

Ground Floor Santos Centre  
60 Flinders St  
Adelaide SA 5000  
GPO Box 2455  
Adelaide SA 5001

Telephone: +61 8 8116 5000  
Facsimile: +61 8 8116 5050  
Website: [www.santos.com](http://www.santos.com)

## Share register

Computershare Investor Services Pty Ltd  
Yarra Falls, 452 Johnson Street  
Abbotsford VIC 3067  
GPO Box 2975  
Melbourne VIC 3001

Online enquiries: [www.investorcentre.com/contact](http://www.investorcentre.com/contact)  
Website: [www.investorcentre.com](http://www.investorcentre.com)

Telephone: 1300 017 716 (within Australia)  
+61 3 9938 4343 (international)

## PAPER AND PRINTING OF THE SUSTAINABILITY REPORT

Both the printer and the paper used to produce this document have Forest Stewardship Council® (FSC®) and ISO 14001 environmental certification. FSC® is a Chain of Custody (COC) process.

ISO 14001 is the international standard of Environmental Management Systems (EMS) designed to ensure the continuous measurement and reduction of environmental impacts.

This publication is printed using vegetable based soy inks.

## HELP SAVE PAPER BY READING THIS REPORT ONLINE

An electronic version of this report is available on our website at [www.santos.com/sustainability](http://www.santos.com/sustainability).



Designed and produced by Twelve Creative