

Meeting future energy demand will require the balancing of a number of challenges. Energy demand is growing through increasing global population and urbanisation. In parallel is the increasing demand for cleaner energy as governments, businesses and individuals seek to lessen their greenhouse gas emissions.

There is no one single solution to these challenges. The world has to balance the twin objectives of limiting climate change and providing affordable energy.

We believe that natural gas has a key role to play in providing the energy for a low carbon future. Natural gas is the perfect partner for renewables. Gas fired power generation is flexible and available and our natural gas portfolio places us in an enviable position to supply our customers in Australia and the Asia-Pacific region.

For over 10 years Santos has used a price on carbon in its portfolio economics. Santos tests existing and new projects against a low, base and high carbon price assumption. These carbon price assumptions are refreshed on an annual basis along with other corporate economic assumptions. Santos' investment screening and investment decisions take into account the carbon emissions from a particular project and the impact a carbon price would have on the economics of a particular project.

Santos' corporate strategy team uses scenario analysis to consider a range of future energy mixes and climate policies. These scenarios are used to understand the demand for Santos' products and how this changes under different climate change policies. These scenarios are discussed annually with the Santos Board.

Risks and opportunities arising from climate change are assessed as part of our enterprise-wide risk management program and incorporated into our business strategy. Santos' senior leadership team and Board are briefed regularly and in late 2016, endorsed the establishment of an **Energy Solutions** business to focus on three key areas:

- Opportunities to lower emissions from upstream oil & gas operations
- Opportunities to displace diesel and coal with cleaner burning natural gas
- New products and services integrating renewable energy, energy efficiency and energy storage

In March 2017 the **Energy Solutions** business announced a partnership with ZEN Energy to provide clean, reliable and affordable energy to South Australia's largest power users by integrating large-scale solar and battery storage with natural gas-based generation. Natural gas is the most flexible fuel for baseload power, filling current gaps in renewable power generation. By backing up solar and battery power with natural gas, we will seek to provide South Australia's largest energy users with reliable, cost-effective and secure energy, while at the same time reducing carbon emissions. The partnership has also opened up opportunities for Santos to introduce solar energy into our gas processing and transport operations in South Australia and Queensland, lowering our production costs and freeing up gas for release into the domestic Australian market.

Santos' approach to managing risks and opportunities from climate change

As a global stakeholder in the energy business we recognise our social and environmental responsibility to pursue strategies that address the issue of climate change. We are responding to this challenge in variety of ways including the following:

- **Dedicated carbon team:** Santos has had a dedicated carbon team since early 2000s, reporting into corporate strategy and planning and EVP Strategy & Corporate Services. This team is responsible for all aspects of carbon, ranging from carbon policy, pricing, abatement, adaptation, and compliance reporting.
- **Informed by science:** we recognise the global two degree Celsius target and the scale of the global transition required. We recognise the consensus from international climate scientists that the global climate is changing and that human activity contributes significantly to this trend.

In Paris, all countries agreed to limit temperature increases to well below 2 degrees (and pursue efforts to limit temperature increases to 1.5 degrees) and achieve net zero greenhouse gas emissions in the second half of this century.

- **Align business strategy with Paris Climate Change Agreement:** our natural gas portfolio strategically aligns with the transition to a low carbon economy. Global greenhouse gas emissions are around 50 billion tonnes per year, about half of which come from Asia. A large portion of this is from coal-fired power generation. Natural gas, when used for power generation, is 50% less emissions intensive than coal. If all of Australia's forecast 85 million tonnes of LNG in 2020 were to replace current coal power generation, then the use of Australian LNG can save 300 million tonnes of global GHG emissions. This saving is over half of Australia's current annual emissions of 535 million tonnes.

Globally with the increase in population, the demand for energy continues to grow. To meet this demand a suite of energy options will be required to balance reliability, cost, and environmental factors. There is no one single solution to this challenge, a range of fuel sources will be required to ensure the lights stay on and individuals are able to afford a better standard of living.

According to the International Energy Agency's World Energy Outlook 2016, based on current government policies, global gas demand is forecast to grow by 50% by 2040. Even under a scenario consistent with 2 degrees (450 Scenario) global gas demand grows 14% by 2040 compared to 2014, achieving a 22% market share of primary energy.

- **Understand national greenhouse gas targets:** we support government commitments as part of harmonised international action. We recognise that Australia must do its fair share, and support durable, stable federal government policy as part of an international agreement.
- **Integrate a price on carbon:** we model a range of internal carbon prices (including a price consistent with the Paris Climate Change Agreement). For over a decade we have been modelling GHG emissions for all assets in our portfolio, covering emissions from fuel use, flaring, venting and

fugitive emissions. Similar to other economic assumptions such as oil price and exchange rates, we model a carbon price in the portfolio, with a range of scenarios, representing potential policy response. Our base price is consistent with Australian carbon policy, which is currently the Safeguard Mechanism.

- **Engage in policy:** we actively contribute to climate change policy, advocating for environmentally effective and economically efficient action to facilitate long-term investment. We believe a level playing field delivers the best outcomes. We have been actively engaged in policy, and believe in a broad-based federal carbon scheme that delivers lowest cost of abatement, providing permit coverage to trade-exposed industries.
- **Identify risks:** we have integrated regulatory and physical risks from climate change into our company-wide risk management framework.
- **Deliver lowest cost abatement:** we believe in a global carbon price across all sectors of the economy to efficiently and effectively meet greenhouse gas targets.

Broad coverage and a price signal for consumers is important to achieve lowest cost of abatement. Australia's current carbon policy, the Safeguard Mechanism, applies a cost to emissions above a baseline for select industries. Australia's emissions are currently 535 million tonnes, roughly broken down as electricity (1/3); stationary energy (1/6); transport (1/6); agriculture (1/6) and the remaining 1/6 from waste, fugitives and industrial process. The majority of these sectors, including the largest (electricity), is effectively exempt from this policy.

- **Reduce emissions:** our low carbon strategy identifies opportunities to reduce or offset our emissions. Our energy efficiency program is delivering annual energy savings of approximately 4.6 petajoules.

We are constantly looking at ways to reduce emissions. This is not something specifically driven by the carbon team – it is integrated into standard business operations. Every molecule of gas that is not consumed through fuel, flaring or venting can potentially be sold so there is a very strong incentive to reduce energy use and therefore reduce emissions. Our approach is to reduce emissions through energy efficiency projects, integrate renewables into our upstream operations and look at opportunities for sequestration.

- **Measure, report and verify emissions:** we have publically reported our audited greenhouse gas emissions since 2004. We have been publically reporting our emissions, broken down by scope 1, 2, 3 and into fuel, flare, vent and fugitive emissions for the past decade and these have been audited by Ernst & Young. The latest dataset was updated on Santos' website in April 2017.
- **Set targets:** we set emissions intensity targets to reduce the footprint of our products. We have a 2020 emissions intensity target of 70kt CO₂e/mmbœ. We have been meeting this target but it continues to be challenging due to the natural variability of CO₂ levels in oil and gas reservoirs.

Santos' ongoing disclosure commitments

Santos recognises the importance of climate related disclosure to ensure shareholders and stakeholders alike are in a position to adequately assess the risks and opportunities identified by the company in response to climate change. To this end we have committed to review the Financial Stability Board's Task Force for Climate-related Financial Disclosures for future reporting and will look to ensure that the following reporting requirements are met:

- Santos will introduce a Climate Change report which explores and assesses the impact of climate change on our business;
- Santos will continue to measure and collate our Sustainability Performance Data and make it available on our website;
- Santos will participate in select carbon disclosure and sustainability surveys.

Ends.