





# Disclaimer and forward-looking statements

This report contains forward-looking statements that are subject to risk factors associated with the oil and gas industry. It is believed that the expectations reflected in these statements are reasonable, but they may be affected by a range of variables which could cause actual results or trends to differ materially, including but not limited to: price fluctuations, actual demand, currency fluctuations, geotechnical factors, drilling and production results, gas commercialisation, development progress, operating results, engineering estimates, reserves estimates, loss of market, industry competition, environmental risks, carbon emissions reduction and associated technology risks, physical risks, legislative, fiscal and regulatory developments, economic and financial market conditions in various countries, approvals, conduct of joint venture participants and contractual counterparties and cost estimates. The forward-looking information in this report is based on management's current expectations and reflects judgements, assumptions, estimates and other information available as at the date of this document and/or the date of Santos' planning processes. There are inherent limitations with scenario analysis. Scenarios do not constitute definitive outcomes. Assumptions may or may not be, or prove to be, correct and may or may not eventuate, and scenarios may be impacted by factors other than assumptions made. Except as required by applicable regulations or by law, Santos does not undertake any obligation to publicly update or review any forward-looking statements, whether as a result of new information or future events. Forward-looking statements speak only as of the date of this report or the date planning process assumptions were adopted, as relevant. Our strategies and targets will adapt given the dynamic conditions in which we operate; it should not be assumed that any particular strategies, targets or implementation measures are inflexible or frozen in time. No representation or warranty, express or implied, is

The Climate Transition Action Plan includes forecasts that are necessarily based on assumptions, contingencies and commercial judgement. The estimates included do not take into account customer demand or any future sell-downs, partnering arrangements or infrastructure funding. The Climate Transition Action Plan is over a forward-looking period of approximately 20 years. It is important to recognise that carbon and clean fuels markets are dynamic and still evolving, with high levels of uncertainty, including customer demand.

We will continue to adapt the Climate Transition Action Plan to take account of the evolving transition environment between now and 2040 and apply our disciplined economic and commercial criteria to inform investment decisions which create value for shareholders as we embark upon our decarbonisation and clean fuels journey.

All material investment decisions, including those within the Climate Transition Action Plan, are required to meet a stringent set of investment hurdles, including economic and commercial criteria commensurate with sector benchmarking, to ensure that the company's capital allocation provides a return on investment in line with the company's low-cost, disciplined operating model and our corporate strategy. Carbon market, public policy and regulatory trends inform the company's carbon and clean fuels pricing assumptions and assumptions relating to generation, procurement and trading of carbon credit units. In addition, investments will be demand and customer driven, with offtake or other commercial marketing arrangements a key factor in investment screening.

Free cash flow (operating cash flows, less investing cash flows net of acquisitions and disposals and major growth capex, less lease liability payments) is a non-IFRS measures that are presented to provide an understanding of the performance of Santos' operations.

# Agenda



Kevin Gallagher

Managing Director

and Chief Executive Officer



Strategy



Jane Norman
Vice President Strategy

10:25am

Markets and resilience



Brett Darley
President Upstream
Oil and Gas

10:45am

Upstream



Brett Woods
President Midstream
and Clean Fuels

11:00am

Midstream and clean fuels



Kevin Gallagher

Managing Director

and Chief Executive Officer

11:30am

Question and answer session

12:00pm

Close

# Strategy

Kevin Gallagher

Managing Director and Chief Executive Officer



# **Overview**

We aim to deliver superior shareholder returns whilst being a global leader in the transition providing cleaner energy and clean fuels that are affordable and sustainable

1

Santos has a robust climate transition strategy

2

Our climate transition action plan provides the roadmap for Santos to be net-zero by 2040

3

Our plan is to decarbonise our products and create new revenue streams from carbon offsets and clean fuels

4

We will do
this with
capital discipline
and robust
investment
criteria

5

Transition to net-zero must ensure continued access to reliable and affordable energy supplies for consumers





# **Transform Build Grow strategy**

Consistent and successful strategy supporting our Vision and Purpose



- Grow new revenue from carbon credits for new technologies (eg DAC, post combustion capture (PCC), CCS services) and nature based offset projects
- ▶ Develop clean fuels projects as customer demand evolves



Build

- ▶ Leverage off existing infrastructure to deliver low cost backfill upstream projects
- Develop CCS hubs which leverage existing assets and capabilities to create new sources of revenue from carbon credits and clean fuels



- ▶ Focus on core producing, long-life natural gas assets which deliver low cost production until 2040+
- ▶ Decarbonise our LNG, pipeline gas and liquids products through use of CCS, energy efficiency projects including integration of renewables and carbon offsets



# Strong free cash flows from five core producing assets

Decarbonisation focus and market-led, profitable transition to a lower carbon future

Re-set 2016-2017

- ▶ Transform Build & Grow strategy implemented
- Disciplined low-cost operating model established
- ▶ Free cash flow focus
- Debt repayment prioritised
- Stable base business production

Balance & diversification 2018-2020

- On-strategy acquisitions delivered:
- operatorship and control of high quality, low-cost, long-life assets
- diversified and balanced portfolio
- Committed to net-zero scope 1 and scope 2 emissions by 2040

Scale & decarbonisation 2021-2025

- ▶ Oil Search merger created:
  - size and scale
  - ▶ strengthen balance sheet
  - prioritise shareholder returns
- Disciplined execution of backfill projects leveraging existing infrastructure
- ▶ Three-hub CCS midstream strategy

Market-led, profitable energy transition 2026+

- Upstream: maintain safe, stable, low-emission production to 2040+
- Midstream: toll and tariff, CCS and clean fuels revenue streams
- Low Carbon Solutions: carbon reduction technology and projects, and nature based offsets

# Delivering on our commitments

## Track record of doing what we say

Net-zero Scope 1 and 2 emissions by 2040

Climate Transition
Action Plan and
capital allocation
aligned with
Paris Agreement

2025 emission reduction targets

lacksquare

Accelerated delivery of 2025 targets

**Energy** solutions

Since 2017,
delivered annualised
savings of
~300 ktCO2e pa
(gross) across
our operations

CCS projects

Moomba Phase 1
FID in November 2021
Bayu-Undan
CCS FEED-entry
in March 2022

CO2 storage

**✓** 

100 million tonnes of CO2 storage capacity booked in the Cooper Basin in 2021



# Our goal is to achieve net-zero Scope 1 & 2 emissions by 2040

New 2030 Scope 1 and 2 absolute and emissions intensity reduction targets

2030

2040

## **Absolute**

**Target** 

30% reduction in Scope 1 and 2 absolute emissions by 2030 <sup>1</sup>

## **Intensity**

**Target** 

40% reduction in Scope 1 and 2 emissions intensity by 2030<sup>2</sup>

## **Absolute**

**Target** 

Reduce Scope 3
(customer emissions) by
at least 1.5MtCO2/yr by 2030
from the sale of clean fuels

## **Target**

Net-zero
Scope 1 and 2
emissions

## **New Policy commitments**

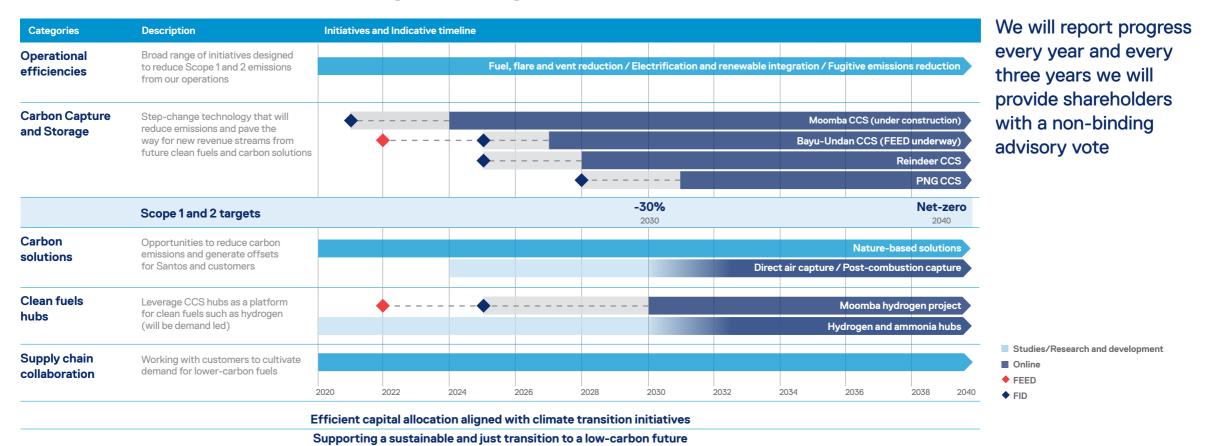
- ▶ A commitment to only selling our products to customers from countries that have a net-zero commitment or that are signatories to the Paris Agreement
- ▶ Final investment decisions on new offshore greenfield projects from 2025 will require abatement or offset of reservoir CO2 emissions

<sup>1.</sup> Baseline: Santos and Oil Search combined 2019/20 of 5.9 MtCO2



# Climate transition action plan

Our Climate Transition Action Plan provides a clear pathway to net-zero scope 1 and 2 emissions with medium and long term targets





# **Evolving to support the transition to clean fuels**

Positioned to decarbonise the base business and develop new revenue streams through clean fuels and carbon solutions

2016 Traditional E&P business

**Exploration** 

**Development** 

**Production** 

Marketing

2022 Delivering CCS, clean fuels and low carbon solutions

## **Upstream**

Five core producing asset hubs Gas, LNG & liquids

## Midstream and Clean Fuels

Existing infrastructure & CCS Electrification and renewables integration Hydrogen and ammonia

## **Low Carbon Solutions**

**Nature** 

based offsets Carbon reduction technology and projects

Centralised functions





# Gas demand remains strong amid supply constraints

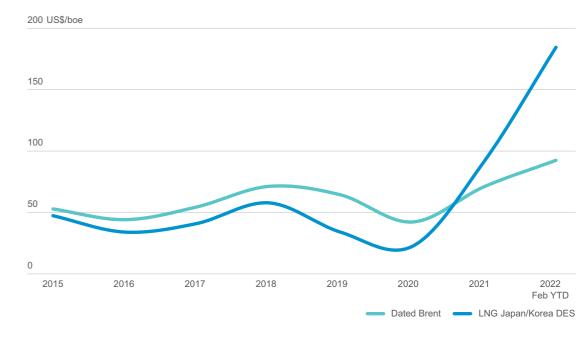
Continued investment required to ensure secure, reliable and affordable supply

- ▶ Geopolitical unrest, recovering economic activity and lower LNG availability due to underinvestment has placed global gas markets under pressure and sent market prices to new highs
- ▶ High natural gas prices have resulted in fuel substitution in electricity markets in favour of coal and oil leading to higher CO2 emissions and local pollution ¹
- ▶ Emerging economies are experiencing power cuts, industrial demand destruction and potential food supply issues in the absence of affordable gas-based fertilisers ¹

"It is not a binary choice. We must both increase reliable supply right now and accelerate our efforts for clean energy"

(US Energy Secretary Jennifer Granholm, 23 March 2022)

## Average annual commodity prices <sup>2</sup>



<sup>1.</sup> IEA Gas Market Report Q4 2021.



# Strong long-term demand for LNG

Historical underinvestment and project delays continue to limit near-term supply growth

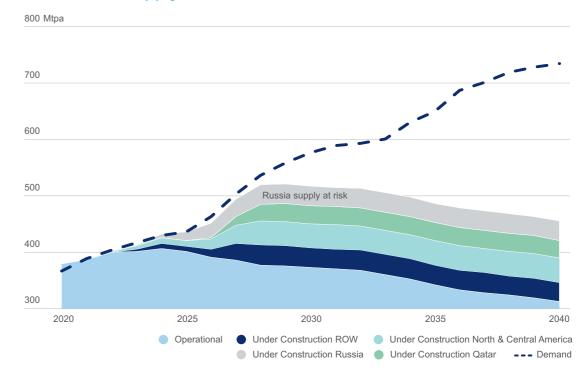
## Historical underinvestment and project delays limit supply growth

- Lack of investment and COVID construction delays have lead to slow supply growth, maintaining todays tight market
- ▶ Limited new supply is expected to reach the market until 2026

## **Energy security firmly in focus**

- ▶ The EU has announced plans to cut Russian gas supply by two-thirds in 2022, achieving independence well before 2030
- ▶ Europe imported ~120mtpa LNG equivalent of Russian pipeline gas in 2021, overshadowing Europe's LNG demand of ~80mtpa
- Increased European LNG demand will pull supply from the US and the Middle East, further tightening APAC supplies

## Global LNG supply and demand 1



1. Wood Mackenzie LNG Data Tool Q4 2021.

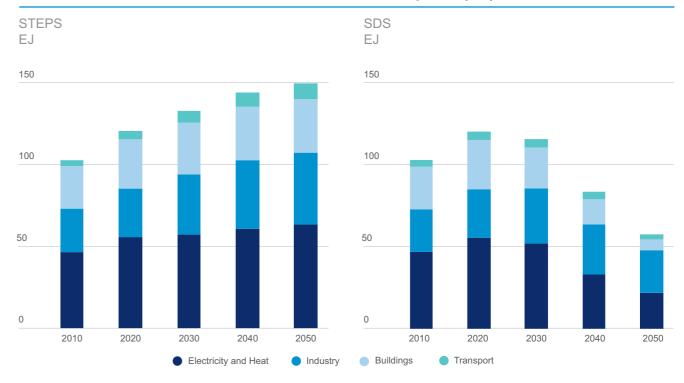


# Natural gas – a future fuel underpinning the energy transition

Natural gas is critical to ensuring energy remains reliable and affordable as economies decarbonise

- More than half the world's natural gas supply is used in sectors other than power generation
- Natural gas consumption is expected to increase by more than 20% to 2050 under the IEA's STEPS scenario
- Natural gas supports the integration of renewables providing grid stability and power reliability. Gas lowers emissions in hard-to-abate sectors including long-distance transport and heavy industry
- Where natural gas replaces higher emissions fuels, it improves air quality in major urban centres reducing pollution and emissions
- Santos is decarbonising its natural gas to support a just energy transition with energy security, reliability and affordability, as well as lower emissions

## World Natural Gas Consumption (EJ)<sup>1</sup>



1. IEA World Energy Outlook 2021.

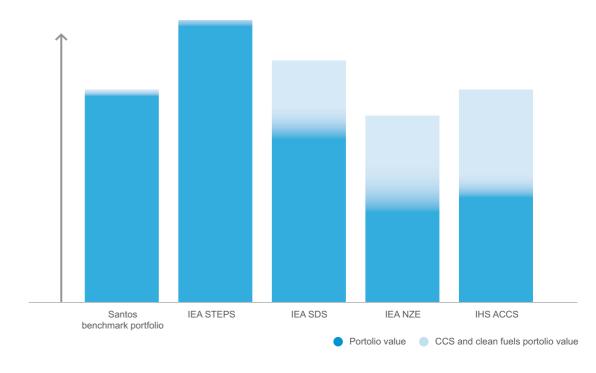


# Santos is resilient and sustainable through the energy transition

Portfolio tested against a range of scenarios including two 1.5 degree scenarios

- ▶ The Stated Policies Scenario (STEPS) is >35% value accretive compared to the benchmark portfolio case
- ▶ In both 1.5 degree Celsius scenarios (NZE & ACCS) carbon is the commodity of focus
- ▶ Significant value created from CCS projects
  - ► CCS enables the production of low-carbon hydrogen from two new facilities adjacent to existing assets
- ▶ Companies that successfully navigate the transition have the potential to trade at higher share price multiples

# Relative value of current portfolio and CCS and clean fuels opportunities under modelled scenarios <sup>1</sup>

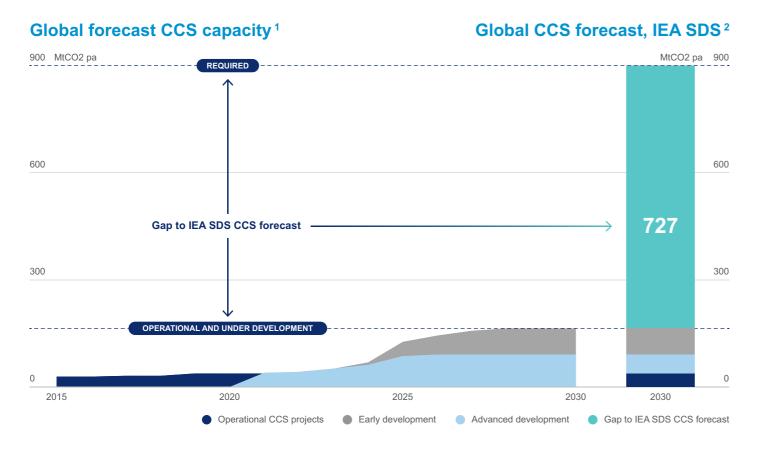


<sup>1.</sup> Limitations on analysis: Scenario analysis allows a company to understand how it might perform under a range of hypothetical situations. Scenarios are not probabilities but are useful to provide guide rails for investment planning and to test the sensitivity of investments to various assumptions. They are not suitable for use to make forecasts or predictions about the future outlook.



# Large scale-up of CCS required to meet climate objectives

Oil and gas industry is best placed to deliver CCS leveraging existing capability



## Total CCS capacity required per annum by 2050<sup>3</sup>



- 1. Global CCS Institute, Global Status of CCS 2021. Estimates are based on maximum project capacity. Includes Santos analysis.
- 2. International Energy Agency, World Energy Outlook 2021.
- 3. IEA World Energy Outlooks 2019, 2020, 2021



# CCS is a key enabler for Santos' energy transition strategy

Santos has a competitive advantage to deliver value through the transition with Moomba CCS project sanctioned, Bayu-Undan CCS in FEED and Offshore WA in concept stage

Electrification and integration of renewables

Carbon capture and storage projects

CCS hubs enable clean fuels including hydrogen and ammonia

Energy solutions capability (including CCS services to third parties)

Carbon solutions (including nature-based and emission removal technologies)

Mature

Investing across a range of solutions

# Upstream

**Brett Darley** 

President Upstream Oil and Gas



# Diversified portfolio with strong cashflows

Five core producing gas assets



1. Includes Oil Search assets from 11 December 2021.



# Maximise value of five core long-life producing assets

Disciplined and phased investment to backfill core producing gas assets beyond 2040

## **Cooper Basin**



- Low cost development plan to convert large resource base
- ▶ Emerging resource plays including Granite Wash & Deep Source opportunities

#### Queensland and **New South Wales**



▶ Low cost development plan for the GLNG acreage across Roma, Arcadia and Scotia

### Western Australia



▶ Bedout basin to provide long term gas backfill to Varanus Island

#### Northern Australia and Timor-Leste



- First gas from the Barossa project expected in 1H 2025
- ▶ Barossa 30% complete

## **Papua New Guinea**



- Strong development pipeline to backfill PNG LNG including Angore, associated gas project and P'nyang
- ▶ Transition of operated assets from oil to gas

## Growth

**Backfill** 

- Develop large gas resource plays
- Narrabri
  - ▶ Low CO2 asset. Further emissions reduction Scope 1 via electrification Scope 2 via renewable integration
- Dorado liquids
- Pavo discovery tieback to Dorado
- ▶ Low CO2 asset
- ▶ Energy efficiency projects
- ▶ Gas re-injection on liquids projects

- Beetaloo
- Petrel
- ▶ Barossa project CO2 export ready
- CCS via Bayu-Undan / Petrel Sub-basin

- ▶ Papua LNG
- Low CO2 asset
- Potential for CCS and nature-based opportunities

## Decarbonisation

- ▶ Field compression electrification and rationalisation
- Moomba CCS will transform the emissions intensity of the asset

\$80/bbl



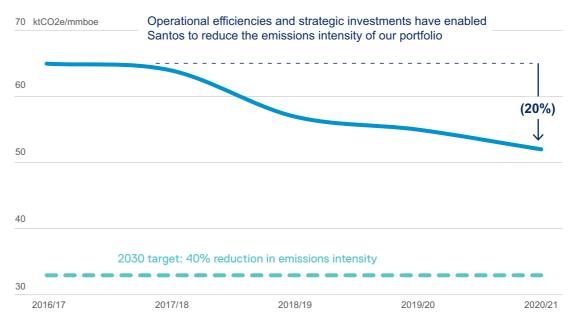
# Five core producing assets generating strong free cash flow

Core asset portfolio focused on generating strong free cash flow, maintaining production and reducing emissions intensity. Targeting 40% reduction in emissions intensity by 2030

# Forecast 2022 free cash flow 1 \$million ~3.375 ~2.925 ~2,475

\$90/bbl





\$100/bbl

<sup>1.</sup> Forecast free cash flow based on sensitivity of ~\$450 million for each \$10/bbl above forecast free cash flow breakeven of <\$25/bbl in 2022. Excludes hedging.

<sup>2.</sup> Equity share. Santos' 2019-20 emissions include post-ConocoPhillips ABU West asset acquisition equity of the Bayu-Undan asset for the full financial year.





# Midstream and clean fuels portfolio

Three hubs delivering safe, reliable, low-cost operations enabling clean fuels via CCS

#### **Eastern Australia**



#### Moomba

▶ Port Bonython

# Midstream infrastructure assets

**Decarbonisation** focus

- Moomba CCS
- Upstream electrification
- ▶ Renewable integration

#### **Northern Australia and Timor-Leste**



Darwin LNG

- ▶ Bayu-Undan CCS
- Exploring opportunities for CCS in the Petrel Sub-basin

#### Western Australia



- Varanus Island
- Devil Creek
- WA CCS hub
- ▶ Power optimisation at Devil Creek

2021 EBITDA<sup>1</sup>

▶ ~US\$370 million



# Midstream strategic priorities

Building a business with multiple revenue streams from Midstream Infrastructure, CCS and cleans fuels

2019

## 2021-2025

## 2025+

## **Midstream Separation**

- Separating Midstream from Upstream Joint Ventures
- Establish tolls and tariffs
- Centralised maintenance and engineering
- Established Energy Solutions

# **Establish three Midstream and Clean Fuels Hubs**

- Apply cost reduction learnings across asset portfolio
- ▶ Achieve 2025 emission reduction targets
- Establish CCS projects within each hub
- ▶ Moomba CCS
- ▶ Bayu-Undan CCS
- ▶ Reindeer CCS
- DAC and PCC technology competition using Moomba reservoirs
- ▶ Establish the foundations to support clean fuels in the future

# Deliver new revenues from carbon credits and clean fuels

- ▶ Three CCS projects online or under construction
- Market-led clean fuels projects from gas or renewables entering FEED/FID
  - ▶ Hydrogen
  - Ammonia
- Deploying DAC and PCC at Moomba
- Utilise CCS capacity to maximise carbon credit generation



# Operationalising the climate transition action plan

Categories	Description	Progress	
Operational efficiency	Broad range of initiatives designed to reduce Scope 1 and 2 emissions from our operations	<ul> <li>✓ Since 2017, delivered annualised savings of ~300 ktCO2e pa (gross) across our operations</li> <li>✓ Moomba CCS FID. Phase 1 of 1.7 MtCO2e pa</li> <li>✓ Bayu Undan CCS FEED entry</li> <li>✓ Industry partnerships investigating new carbon reduction technologies</li> </ul>	
Carbon Capture and Storage	Step-change technology that will reduce emissions and pave the way for new revenue streams from carbon credits generated and future clean fuels and carbon services		
Carbon solutions	Opportunities to reduce carbon emissions and generate offsets for Santos and customers		
Clean fuels hubs	Leverage CCS hubs as platform for clean fuels such as hydrogen	✔ Progressing hydrogen studies across three	
Supply chain collaboration	Working with customers to cultivate demand for lower-carbon fuels	operated hubs in line with achieving Australian Government target of \$2/kg of hydrogen	

Efficient capital allocation aligned with climate transition initiatives

Supporting a sustainable and just transition to a low-carbon future



# Operational efficiency initiatives

Since 2017, energy solutions has delivered emission reduction of ~300 ktCO2e per annum

# **Cooper Basin Renewable Integration Projects**



 Installation and integration of microgrids and solar oil beam pumps in the Cooper Basin

Forecast emission reduction, ktCO2e pa	13.4
Gross capex, US\$	\$25 million
Timing	Online
Credit compliant	<b>✓</b>

# Power Optimisation, Western Australia



- Replacement of alternators at the Devil Creek gas processing facility
- Project registered with the Emissions Reduction Fund

Credit compliant	<b>✓</b>
Timing	Online
Gross capex, US\$	\$2 million
Forecast emission reduction, ktCO2e pa	14.5

# Port Bonython Solar Farm



▶ Installation of a solar PV system to help power the Port Bonython plant

Forecast emission reduction, ktCO2e pa	1.4
Gross capex, US\$	\$3 million
Timing	Online
Credit compliant	V

#### Moomba Heat Recovery Steam Generator



- Installation of a heat recovery steam generator in Moomba Gas Plant
- Increases sales gas production by utilising waste heat to generate steam

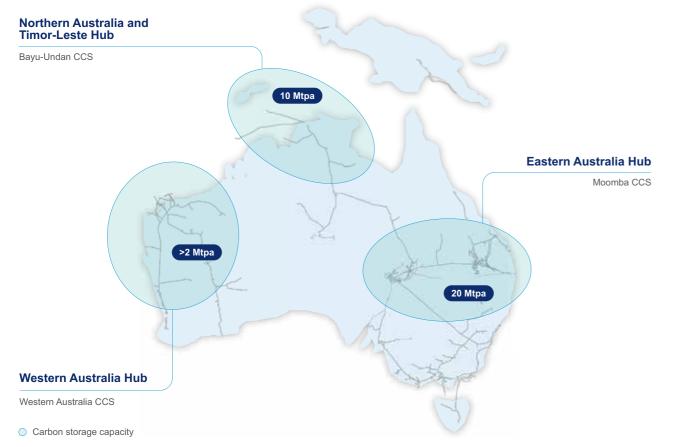
Credit compliant	<b>✓</b>
Timing	Online
Gross capex, US\$	\$14 million
Forecast emission reduction, ktCO2e pa	16.9

## Projects delivered at >10% rate of return



# Three Santos-operated CCS and clean fuels hubs

Three CCS hubs enable generation of carbon credits, provision of carbon services, clean fuel production and potential for direct air capture



	Eastern Australia Hub	Northern Australia & Timor-Leste Hub	Western Australia Hub
Annual injection capacity, MtCO	2e ~20	~10	>2
Reservoir type	Depleted gas	Depleted gas	Depleted gas
First injection timing estimate	2024	2027	2028
Net capex, US\$m	~US\$110m	Subject to FEED	Subject to FEED
Santos CO2 storage	<b>V</b>	<b>~</b>	<b>V</b>
Third party CO2 storage	<b>V</b>	<b>~</b>	<b>V</b>
Repurpose existing infrastructure	e 🗸	<b>~</b>	<b>V</b>
Enabling hydrogen and ammonia	a 🗸	<b>✓</b>	<b>~</b>



# Competitive advantage enables low-cost CCS hubs

Ability to leverage infrastructure and depleted reservoirs across our three operated CCS hubs

### **Proven capture technology**



- Existing capture facilities used for decades
- New facilities are similar to those used for natural gas

#### **Transported using pipelines**



- Transportation of CO2 is similar to moving natural gas
- Potential for CCS services to existing and new customers

#### Storage in depleted gas reservoirs



- Access to depleted gas reservoirs at scale
- Minimal surface footprint
- ▶ Regulated injection wells



# CCS is proven technology

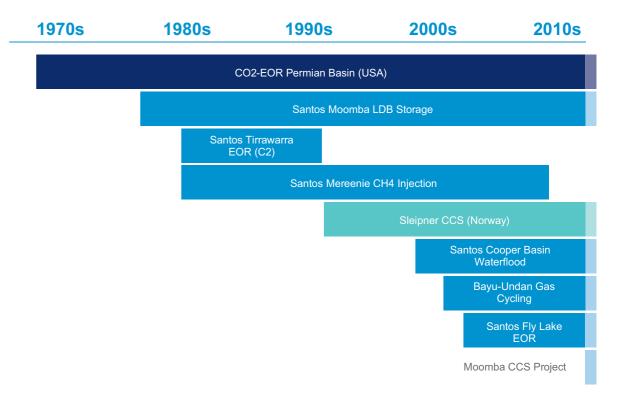
Decades of experience injecting gas into reservoirs at rates required to deliver Moomba CCS

### Santos' extensive gas production and storage capability

- ▶ Santos has experience producing gas from the Cooper Basin for over 50 years
- ▶ Cooper Basin reservoirs have been used for gas storage since the 1980s
  - ▶ Gas injected into Lower Daralingie Beds storage and used to supply increased domestic gas volumes to meet winter demand since 1981

## Gas has been safely injected globally for decades

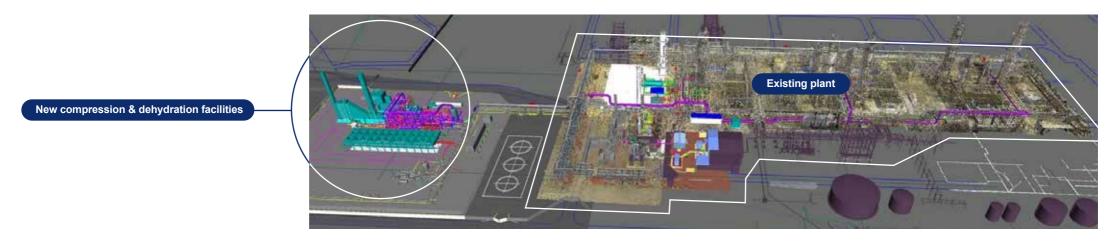
- ▶ Early examples of injection in depleted reservoirs date to 1940s
- ▶ Hydrocarbons have been injected in the Permian Basin since the 1970s for commercial purposes





# Moomba CCS provides step change in emission reduction

FID taken in November on one of the largest and lowest-cost CCS projects, with first injection expected in 2024



## **US\$24/tonne CO2 lifecycle breakeven cost**

- Existing separation equipment delivering high purity CO2
- Existing wells which can be repurposed
- ▶ Depleted reservoirs with proven seal and potential to scale-up to ~20 MtCO2e<sup>1</sup>

#### 2021 milestones achieved

- ▶ ACCU registration obtained
- ▶ FID November 2021
- ▶ Equipment orders placed for compressor, facilities equipment and pipeline
- ▶ Booked 100 MtCO2 storage capacity

## 2022 key milestones

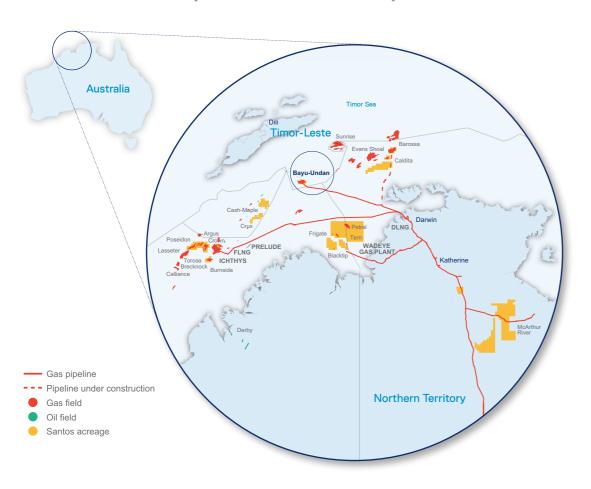
- ▶ Facilities construction starting in 3Q 2022
- ▶ Four injector wells expected to commence drilling in 4Q 2022
- Project progressing on time and to budget

1. Across the Cooper Basin. Investor Briefing



# Bayu-Undan CCS offers a regional carbon solution

Potential for up to 10 MtCO2e per annum of Santos and third party carbon services



#### **FEED commenced March 2022**

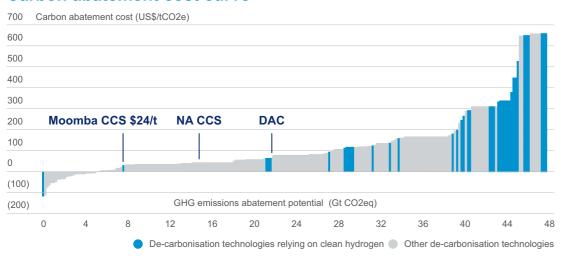
- ► Facilities, pipeline, wells and reservoir injection history to capture all reservoir emissions from Barossa
- Potential to repurpose existing infrastructure
- ▶ Targeting FID in 2025
- ▶ Regional hub with potential for several feedstock sources
  - ▶ Enabler to unlock stranded offshore discovered resource
  - ▶ Significant interest in importing CO2 import from Asia to the Bayu-Undan facility
- Working with Australian and Timor-Leste governments to establish regulatory framework and carbon credit methodology
- ▶ Exploring CCS opportunities in the Petrel Sub-basin



# Santos' low cost CCS represents natural advantage

## Low cost CCS value accretive through project lifecycle

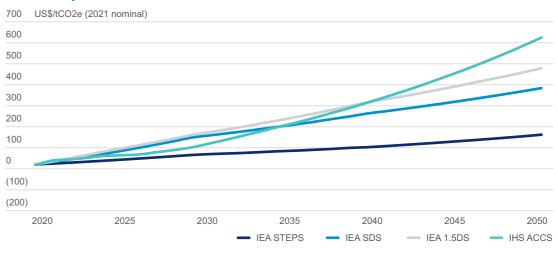
#### Carbon abatement cost curve 1



# Low cost CCS projects represent economically attractive emissions reduction

- ▶ Highly cost competitive Moomba CCS at the low end of the cost curve
- ▶ Low cost CCS projects reach economic thresholds earlier than higher cost emissions reduction projects

## Carbon price<sup>2</sup>



## Carbon credit generation through CCS creates value

- Global carbon credit price and demand forecast to grow under IEA modelled scenarios, creating opportunities to maximise margins
- ▶ Low cost CCS projects value accreting, enabling hydrogen projects

<sup>1.</sup> Goldman Sachs Research and Santos analysis



# Phased investment in market-led transition to clean fuels

Significant clean fuels value generation potential based on low cost CCS

## Domestic hydrogen demand forecast at 1-4 Mtpa by 2040

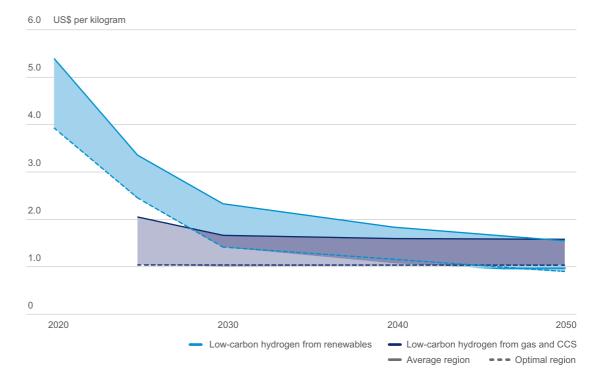
- Driven by conversion of hard to electrify sectors
- Largest growth potential in displacing diesel
- ▶ Santos has strong relationships with buyers and east coast gas market

## **Target hydrogen export markets**

- ▶ Japan and South Korea targeting net-zero by 2050
- ▶ China targeting net-zero by 2060
- ▶ Regional gas importing countries have set ambitious targets for hydrogen

Santos aims to deliver lowest cost hydrogen to the market, agnostic of technology

## Production cost of hydrogen 1



1. Hydrogen Council, Hydrogen Insights, February 2021.



# **Carbon solutions**

## Generating new revenue streams from carbon credits

### **CCS** expansion opportunities



- ▶ Third party CCS services
- Proximity to major resource and industrial centres across WA, NT and SA
- Emissions reduction option for hard to abate sectors

#### **Direct air capture (DAC)**



- ▶ Cooper Basin Direct Air Capture
- Trials underway with CSIRO to store carbon extracted from atmosphere, leveraging Moomba CCS infrastructure and storage reservoirs

## Carbon offsets portfolio



- Use our land positions across
   Queensland, SA and NSW
- Investigating opportunities for soil carbon farming, regeneration and reforestation
- Feasibility study in PNG to define potential for afforestation, reforestation and biomass

## **New technology**



- Santos undertaking R&D on a post-combustion capture trial in the Cooper Basin
- Industry partnerships to develop new technologies for carbon reduction



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Our plan is to decarbonise our products and create new revenue streams from carbon offsets and clean fuels

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Transition to net-zero must ensure continued access to reliable and affordable energy supplies for consumers







# **Definitions and abbreviations**

Absolute	When used in reference to emissions reduction targets means reduction against the total emissions at the relevant point in time, rather than a relative or fixed amount
ACCU	Australian Carbon Credit Unit
Carbon Capture and Storage (CCS)	Carbon Capture and Storage (CCS) is a process in which carbon dioxide (CO2) from industrial and energy-related sources is separated (captured), conditioned, compressed, transported and injected into a geological formation that provides safe and permanent storage deep underground
Clean fuels	Clean fuels refer to fuels which have the potential to materially reduce Scope 1, 2 and/or 3 greenhouse gas emissions. Hydrogen is an example of a clean fuel with no end-use combustion emissions and the potential for low Scope 1 and 2 emissions when produced from natural gas combined with CCS or when produced from renewable sources
Clean hydrogen	Hydrogen with low Scope 1 and 2 emissions when produced from natural gas combined with CCS or when produced from renewable sources
Cleaner energy	Cleaner energy refers to energy sources that are used for power generation, transport, industrial processes or heating which have lower emissions of greenhouse gases or air pollutants (NOx, SOx and particulates) than other fuel sources. Natural gas is an example of a cleaner energy source, as it has lower greenhouse gas emissions than coal when used in power generation.
CO2	Carbon dioxide
CO2e	Carbon dioxide equivalent, being 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
Critical fuels	Oil and natural gas, being hydrocarbon fuels that supply 80 per cent of the world's primary energy supply. Hydrocarbon fuels are critical to meet current and forecast energy demand and to the manufacturing of everyday product.
Decarbonise	To decarbonise is the process of avoiding, reducing or offsetting anthropogenic greenhouse gas emissions through operational activities or efficiencies, technology deployment and/or use of generated or acquired carbon credit units
Emissions	Greenhouse gas emissions, unless otherwise specified
FEED	Front-end engineering and design
FID	Final investment decision
Gas	Natural gas
IEA	International Energy Agency

IHS ACCS	The IHS Markit Accelerated Carbon Capture and Storage scenario
Liquid hydrocarbon (liquids)	A sales product in liquid form for example, condensate and LPG
LNG	Liquified natural gas, being natural gas that has been liquified by refrigeration or pressure to store or transport it
mmboe	Million barrels of oil equivalent
MtCO2e	Million tonnes of carbon dioxide equivalent
Mtpa	Million tonnes per annum
Net Zero	Also referred to as carbon neutral, is achieved when anthropogenic emissions of greenhouse gases are balanced by anthropogenic removal of greenhouse gases through means such as operational activities or efficiencies, technology (e.g, CCS) or offset through the use of carbon credit units
Net-zero emissions	Net Zero Scope 1 and Scope 2 greenhouse gas emissions; when referring to Santos, meaning net-zero equity share of these emissions
Net-zero Scope 1 and 2 emissions	Santos' equity share of net-zero Scope 1 and 2 greenhouse gas emissions
NZE	The IEA's Net Zero by 2050 scenario
Oil	A mixture of liquid hydrocarbons of different molecular weights
Residual emissions	Any greenhouse gas emissions which remain after an organisation has implemented all technically and economically feasible emission reduction opportunities
Sustainable / Sustainably	At Santos, sustainability is about ensuring safe operations, minimising environmental harm and creating long term value for our stakeholders including our customers, community, employees, partners and shareholders. Balancing the needs of today without undermining the ability to meet the demands of tomorrow
SDS	The Sustainable Development Scenario from the IEA's 2021 World Energy Outlook
STEPS	The Stated Policies Scenario from the IEA's 2021 World Energy Outlook
TCFD	Task Force on Climate-related Financial Disclosures