

# Santos 2017 Investor Day

9 November 2017

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This presentation 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, reserve estimates, loss of market, industry competition, environmental risks, physical risks, legislative, fiscal and regulatory developments, economic and financial markets conditions in various countries, approvals and cost estimates.

All references to dollars, cents or \$ in this document are to United States currency, unless otherwise stated.

In 2016 and 2017, the results of an exploration and appraisal program on the Barossa field provided additional geological, geophysical and reservoir data. The incorporation of this new data has led to a detailed geological and engineering re-evaluation over the past 2 years including an upgrade of the expected recoverable volumes.

The contingent resource estimates referred to in slides 62 and 63 are as at 9 November 2017. The 2C contingent resource estimates on slides 62 and 63 are based on, and fairly represent, information and supporting documentation prepared by, or under the supervision of, Mr Nick Pink who is a full time employee of Santos Limited and a member of the Society of Petroleum Engineers. Santos prepares and classifies its petroleum reserves and contingent resources estimates in accordance with the Petroleum Resources Management System (PRMS) sponsored by the Society of Petroleum Engineers (SPE). Unless otherwise stated, all references to petroleum contingent resources quantities in this presentation are Santos' net share. Reference points for Santos' petroleum contingent resources and production are defined points within Santos' operations where normal exploration and production business ceases, and quantities of produced product are measured under defined conditions prior to custody transfer. Fuel, flare and vent consumed to the reference points are excluded. Petroleum contingent resources are typically prepared by deterministic methods with support from probabilistic methods.

Conversion factors: 1PJ of sales gas and ethane equals 171,937 boe; 1 tonne of LPG equals 8.458 boe; 1 barrel of condensate equals 0.935 boe; 1 barrel of crude oil equals 1 boe.

Session 1	Topic	Presenter	Title
9:00	Welcome	Andrew Nairn	Head of Investor Relations
9:05	Strategy	Kevin Gallagher	Managing Director & CEO
10:00	Marketing & Trading	Philip Byrne	Executive Vice President Marketing & Trading
10:15	Finance & Capital Management	Anthony Neilson	CFO
10:30	Morning Tea		
<b>Session 2</b>			
10:50	Upstream Onshore Development	Brett Woods	Executive Vice President Onshore Upstream Developments
11:20	Operations	Vince Santostefano	COO Conventional Oil & Gas & LNG Operations
11:40	Exploration & Appraisal	Bill Ovenden	Executive Vice President Exploration & Appraisal
12:00	Close	Kevin Gallagher	Managing Director & CEO
12:05	Q&A	All	
12:35	Lunch		

# Strategy

Kevin Gallagher

Managing Director & CEO

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## Transform, Build & Grow



### Transform

- + Focus on five core, long-life natural gas assets
- + Implement disciplined low-cost operating model to maximise cash flows
- + Maximise production, drive down costs and increase gas supply
- + Implement effective governance and risk management framework to enable new operating model



### Build

- + Identify and develop growth opportunities across the five core long-life natural gas assets
- + Develop the lowest cost onshore drill-complete-connect business
- + Establish facilities and infrastructure operations strategic capability
- + Maximise margin through M&T business



### Grow

- + Execute and bring on-line growth opportunities across the core portfolio
- + Focused exploration strategy to identify new high-value targets and unlock future core assets
- + Generate new revenue through low-carbon Energy Solutions projects

# Driving sustainable shareholder value

Focus on becoming a low-cost, reliable and high performance business

## DISCIPLINED OPERATING MODEL

- + Core portfolio free cash flow breakeven at  $\leq$ \$40/bbl oil price
- + Each core asset free cash flow positive at  $\leq$ \$40/bbl, pre-major growth spend






## FIVE CORE LONG-LIFE GAS ASSET PORTFOLIO

- + Positioned to provide stable production for the next decade, pre-major growth opportunities

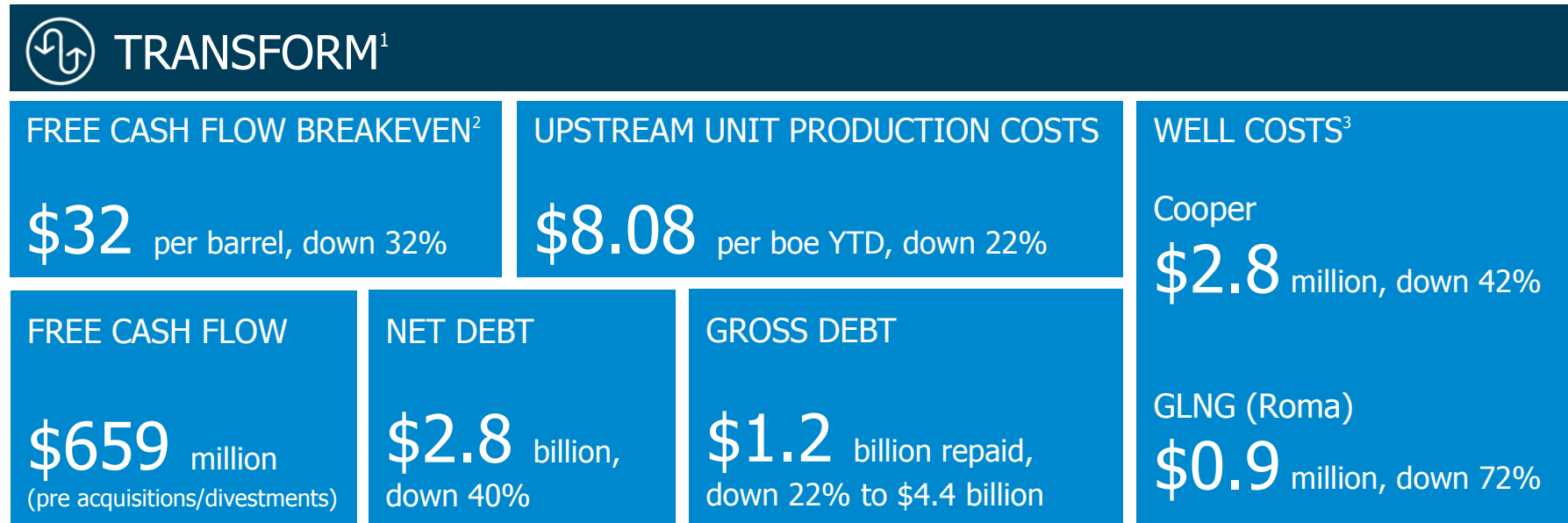
## MAXIMISE FREE CASH FLOW

- + Target \$2 billion in net debt by the end of 2019

In December 2016, we said we would.....

Reduce debt	
Deliver a core portfolio that targets free cash flow breakeven in a US\$35-\$40/bbl oil price range	
Target Australia's lowest-cost onshore operations	
Identify and develop growth opportunities across the 5 core long-life natural gas assets	
Run non-core assets separately for value	

Significant turnaround in business performance ahead of plan



<sup>1</sup> 1 January 2016 – 30 September 2017

<sup>2</sup> Forecast free cash flow breakeven is the average annual oil price at which cash flows from operating activities (including hedging) in 2017 equals cash flows from investing activities. Forecast methodology uses corporate assumptions. Excludes one-off restructuring and redundancy costs, and asset divestitures and acquisitions.

<sup>3</sup> Cooper gas well: drill, stimulate, complete. Roma well: drill, complete, connect



Strategic core asset positions strengthened. Focus on maximising margins



## BUILD

### PAPUA NEW GUINEA

- + **Western Area** farm-in executed
- + **JV alignment** continues to strengthen

### QUEENSLAND

- + Agreements executed to evacuate uncontracted **Eastern Queensland gas**

### NORTHERN AUSTRALIA

- + **Barossa** two-well appraisal campaign supports a significant increase to the resource base

### NARRABRI

- + Enters core portfolio
- + **Drill-complete-connect** business to apply learnings

Execute and bring on-line growth opportunities across the core portfolio

## NORTHERN AUSTRALIA

- + **Barossa** field identified as lead candidate for Darwin LNG backfill. FEED targeted for 2Q 2018
- + Development study of **Petrel-Tern** initiated
- + **Crown-Lasseter** well positioned for backfill or expansion of existing infrastructure

## PNG LNG

- + Further **debottlenecking** of existing plant
- + PNG LNG **expansion**

## NARRABRI

- + **EIS submitted** and approvals process underway
- + Introduced to **core** portfolio

## GLNG

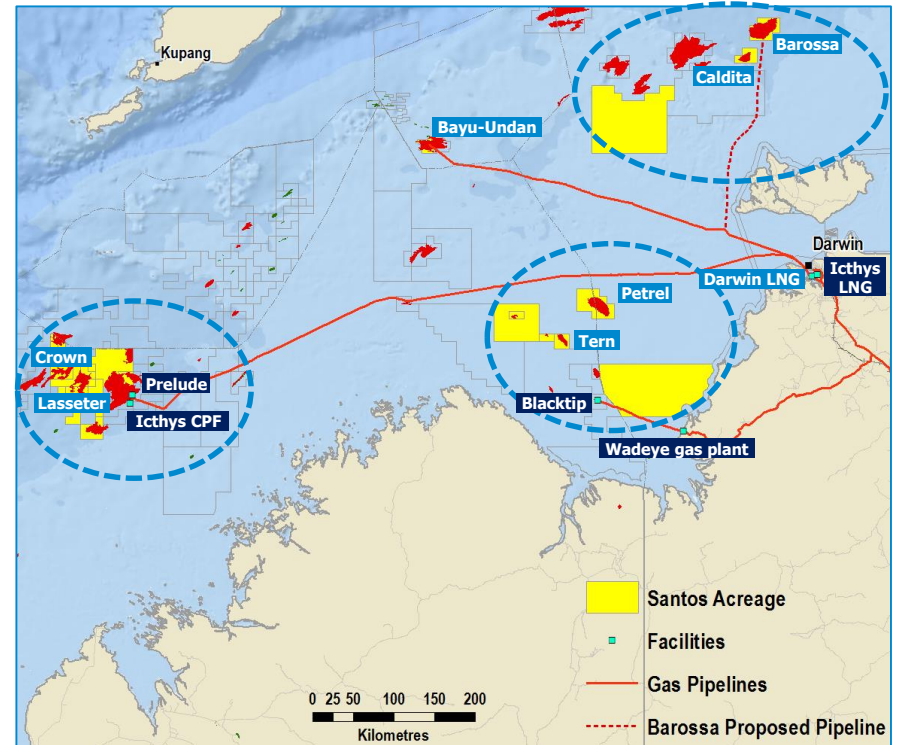
- + Ramp-up to **6 mtpa** by the end of 2019

## COOPER BASIN

- + Expect to drill **70-80 wells** in 2018 with 3 rigs to grow production
- + Strong **inventory build**. >100 opportunities identified

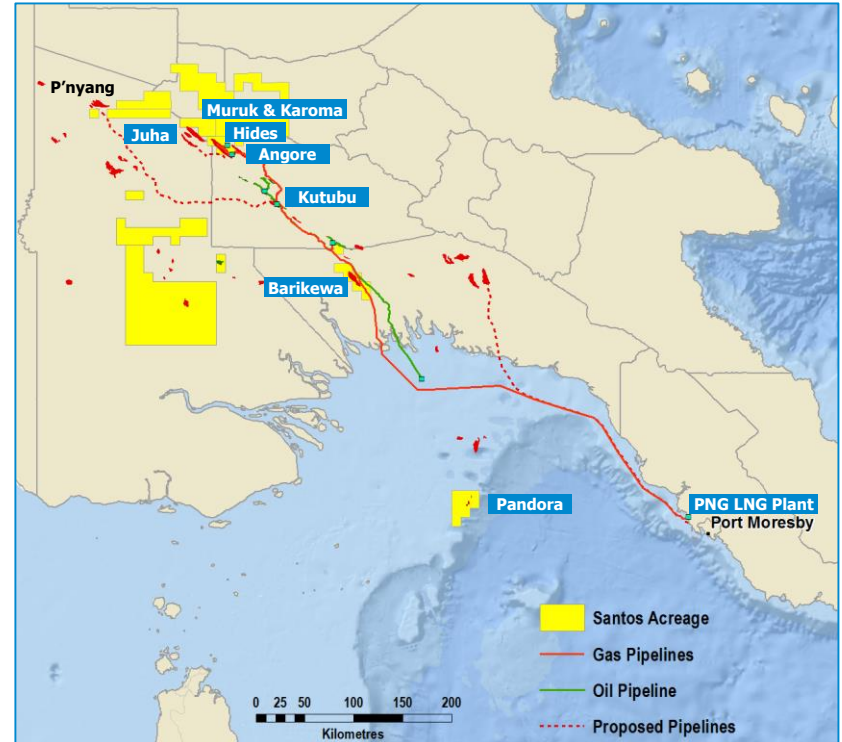
## Significant resource base well positioned for backfill or expansion of existing infrastructure

- + Darwin LNG delivered its 600<sup>th</sup> cargo in September
  - + Excellent reliability and availability
- + Barossa two-well appraisal campaign strengthens position as lead candidate for Darwin LNG backfill
  - + FEED targeted for Q2 2018
- + Multi-tcf discovered resource across Browse and Bonaparte Basins
  - + Development study of Petrel-Tern initiated
  - + Crown-Lasseter well positioned for backfill or expansion of existing infrastructure



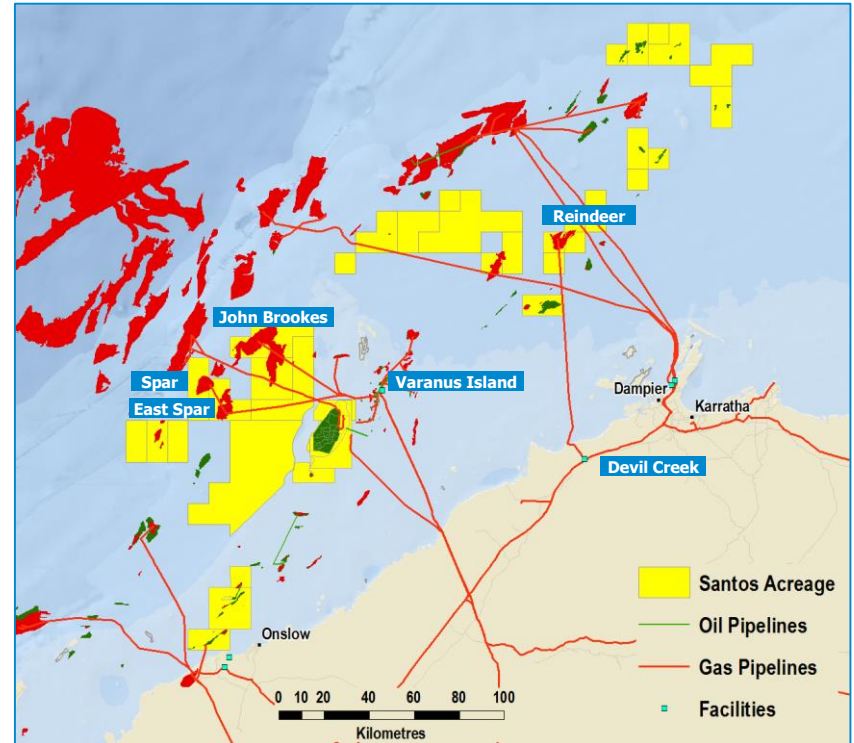
PNG LNG operating well above nameplate. Joint venture alignment continues to strengthen along the Hides-P'nyang trend

- + PNG LNG maximum day rate of 8.9 mtpa achieved (30% above nameplate capacity)
- + Western area farm-in announced
  - + Aligned exploration position along the Hides-P'nyang trend
- + Muruk appraisal ongoing
  - + Muruk 2 appraisal Q1 2018
- + Karoma 1 exploration prospect to spud Q4 2018



## Low cost operations with capacity and reserves to meet short and long-term demand

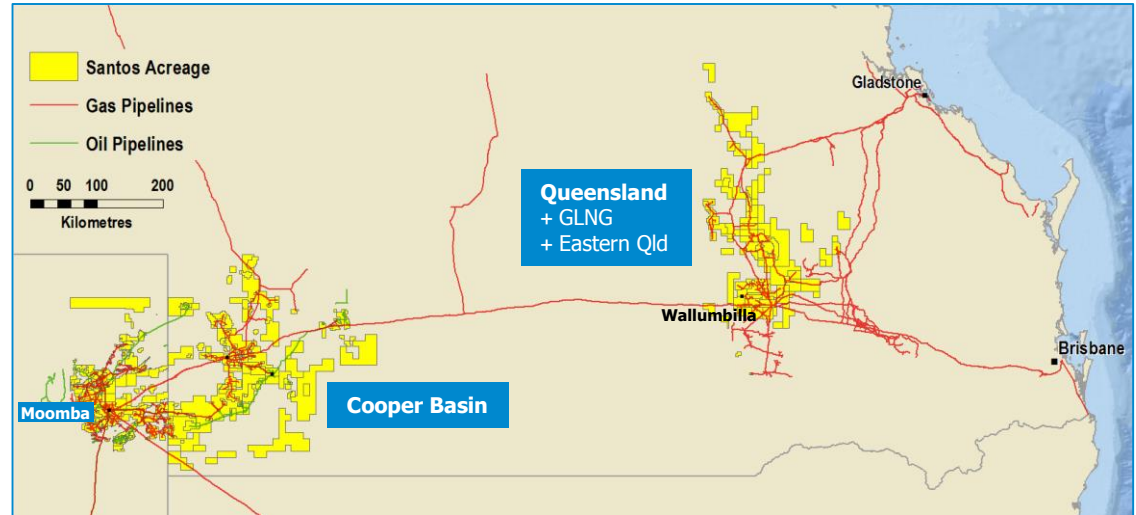
- + Low cost operations well positioned against other suppliers
- + Uncontracted reserves to meet demand
  - + Wesfarmers re-contracted 27 PJ for 3 years
- + Spar-2 tied back to existing infrastructure in 2017 providing additional offshore deliverability
- + Improved alignment with Quadrant Energy
  - + Collaborating on backfill opportunities



## Australia's lowest-cost onshore operations

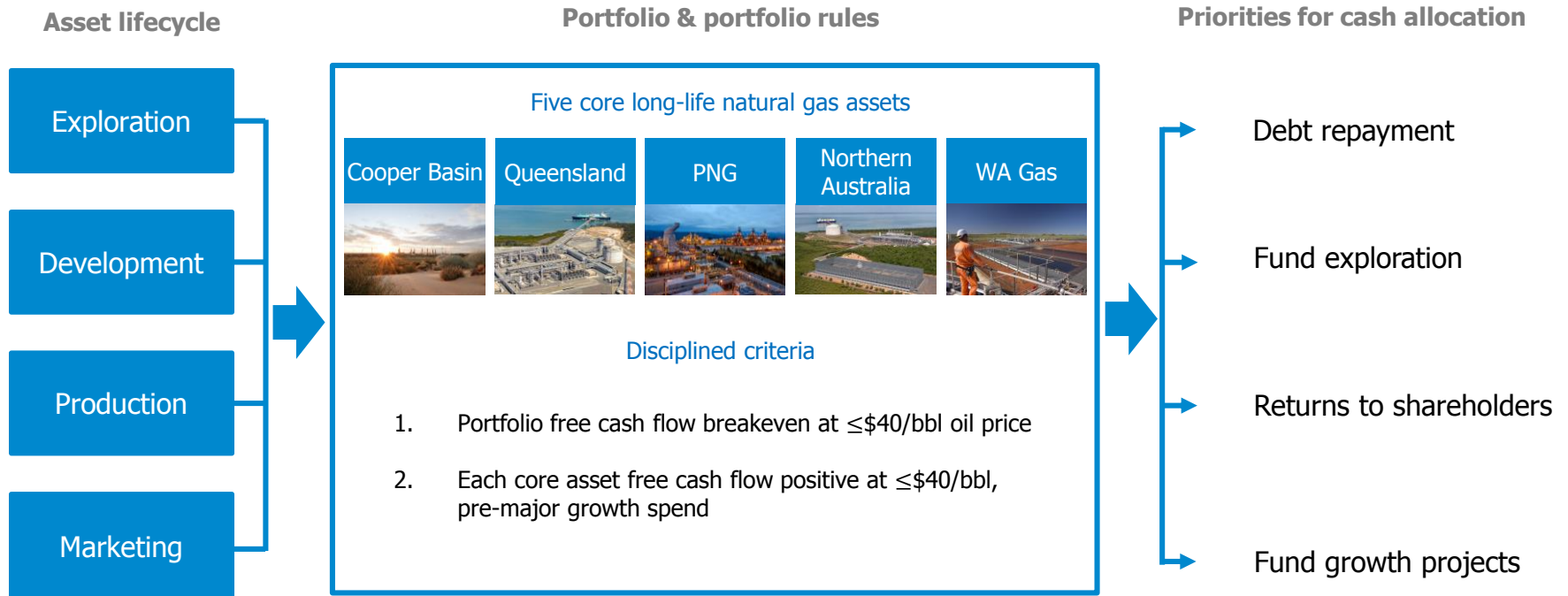
- + Sustainable structural cost reductions now embedded
- + Lower Cooper Basin costs and increased exploration expected to deliver reserves additions over time
- + 2018 drilling activity expected to increase<sup>1</sup>
  - + 70-80 wells in the Cooper Basin
  - + ~250 wells in GLNG
- + Medium-term growth opportunities as a result of large uncontracted Eastern Queensland gas reserves
- + Strategic infrastructure position and gas storage
- + Narrabri introduced to core portfolio

<sup>1</sup> Preliminary and subject to joint venture approval



# New operating model embedded

Santos Operating Model sets a disciplined framework to drive value



## SAFETY & ENVIRONMENT

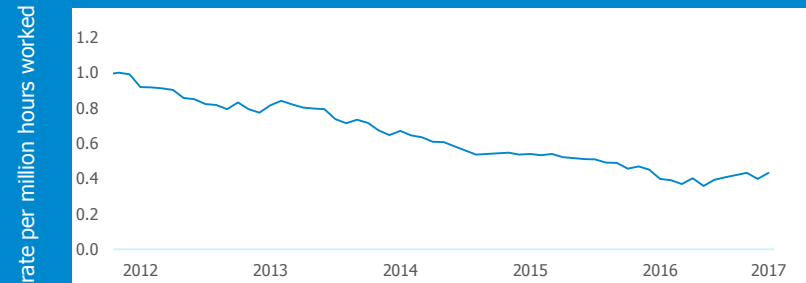
- + Aspiration: “We all go home without injuries or illness”
- + Increased focus on process safety and incidents with potential for significant harm
- + Continued focus on compliance to safety critical maintenance activities
- + Energy Solutions group evaluating and selecting new technologies to reduce emissions and increase gas supply

## GOVERNANCE, SYSTEMS AND PROCESSES

- + Strong and streamlined governance structures and processes developed in 2017
- + Strengthened risk management processes
- + Increased focus on organisational capability development

## LOST TIME INJURY FREQUENCY RATE

Three year rolling average (2012 – October 2017)



## EXTERNAL REPORTING

- + Consistently reported our greenhouse gas emissions and sustainability data since 2004
- + Inaugural Climate Change Report consistent with TCFD Guidelines, planned for early 2018



Driving sustainable shareholder value by becoming a low-cost, reliable and high performance business

## DISCIPLINED OPERATING MODEL

- + Core portfolio free cash flow breakeven at  $\leq$ \$40/bbl oil price
- + Each core asset free cash flow positive at  $\leq$ \$40/bbl, pre-major growth spend

## FIVE CORE LONG-LIFE GAS ASSETS

- + Positioned to provide stable production for the next decade, pre major growth opportunities

## MAXIMISE FREE CASH FLOW

- + Target \$2 billion in net debt by the end of 2019

# Marketing and Trading

Philip Byrne

Executive Vice President Marketing & Trading

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- ✓ Executed agreements to deliver over 125 PJ of gas to southern markets over 2H17-2020
- ✓ Executed a multi-year agreement to deliver a third party's Wallumbilla gas to southern delivery points for on-sale
- ✓ Agreed to supply 27 PJs of ethane to Qenos until the end of 2019
- ✓ ~16 PJ (YTD) sold through short-term markets and hubs
- ✓ Re-contracted Wesfarmers for 3 years and 27PJ

- ✓ Positive buyer response to marketing of mid-term PNG LNG volumes (~1.3 mtpa)
- ✓ Commenced marketing effort for Barossa-Caldita project
- ✓ Agreed pricing for 2018 Cooper Crude and Naphtha term contracts
- ✓ ~5 mboe pa of third party liquids processed and sold through Santos operated Moomba and Port Bonython infrastructure

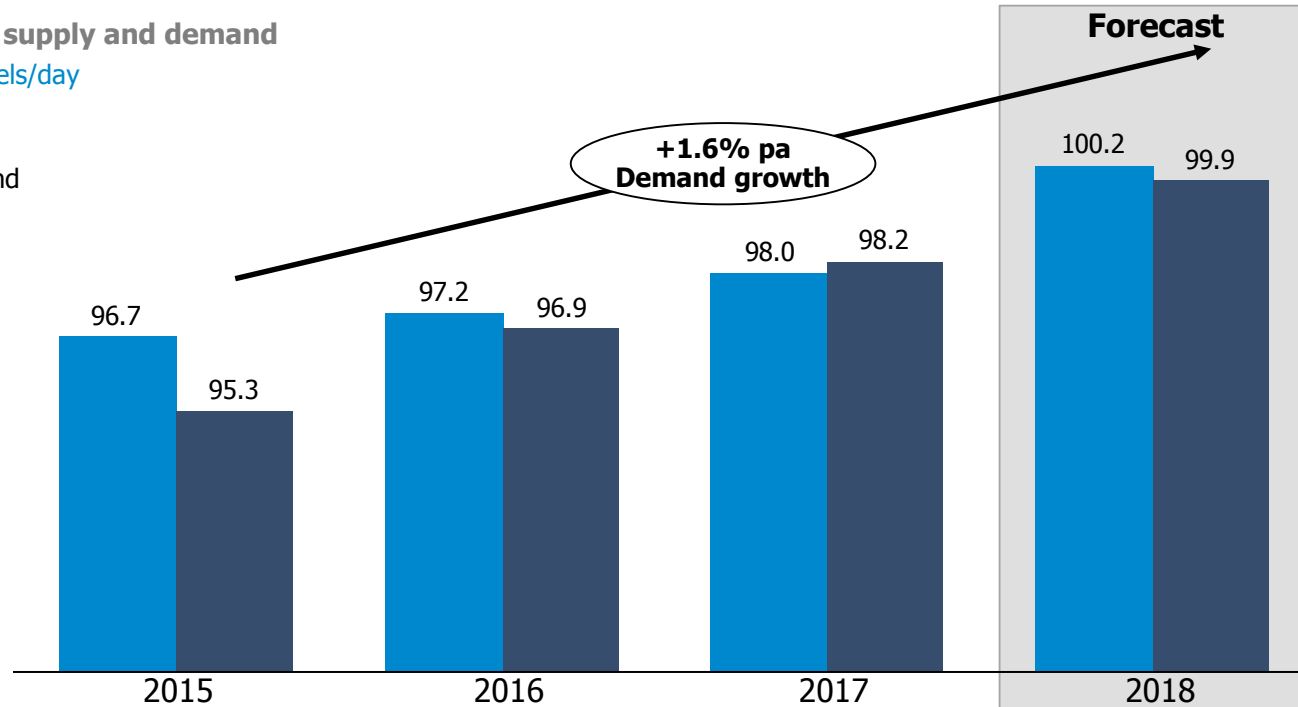
- ✓ Agreements executed to evacuate uncontracted Combabula gas
  - + Unlocking additional volumes to flow to domestic market
  - + Provides further flexibility in Santos portfolio/substitute into Horizon contract

# Global oil – supply and demand outlook

Global oil demand growth continues to strengthen, the market is expected to remain tightly balanced

Global oil supply and demand  
million barrels/day

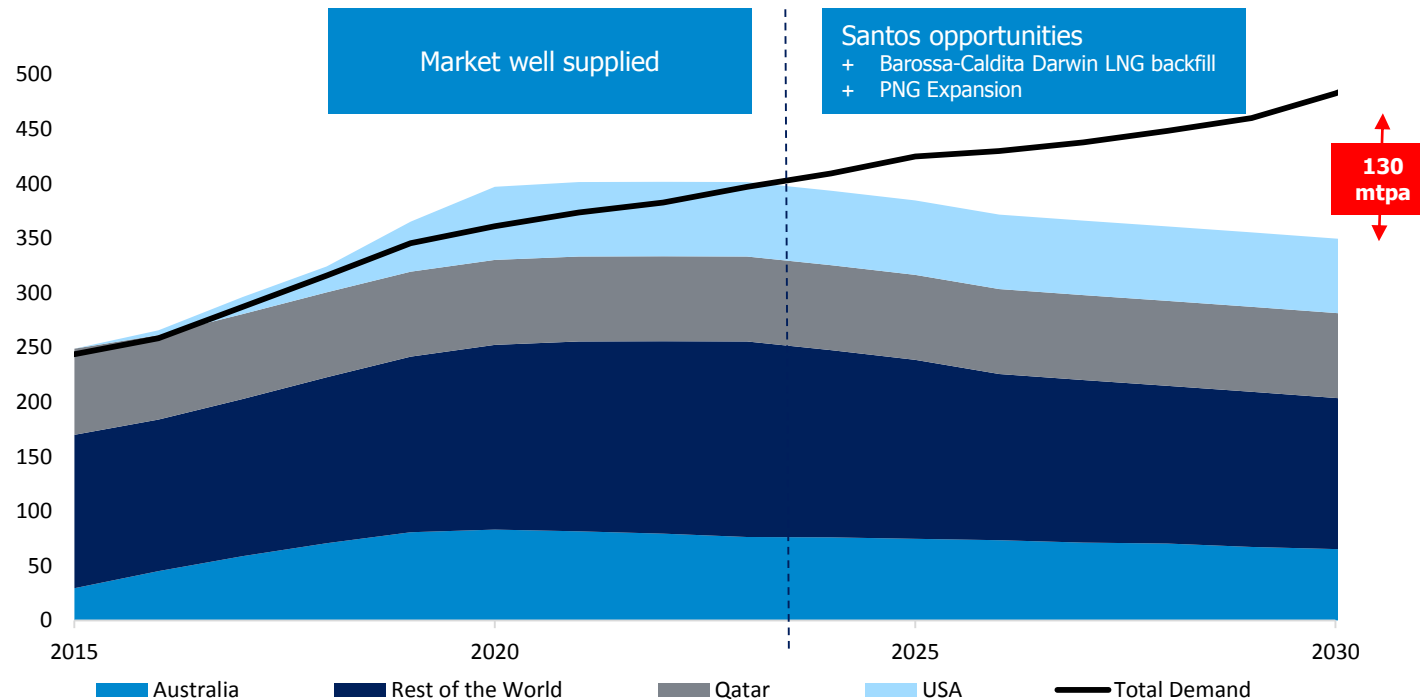
- Supply
- Demand



Source: EIA, Short-term Energy Outlook, November 2017

Opportunities exist for new LNG supply as the market tightens in the early-to-mid-2020s

**Global LNG supply and demand**  
mtpa

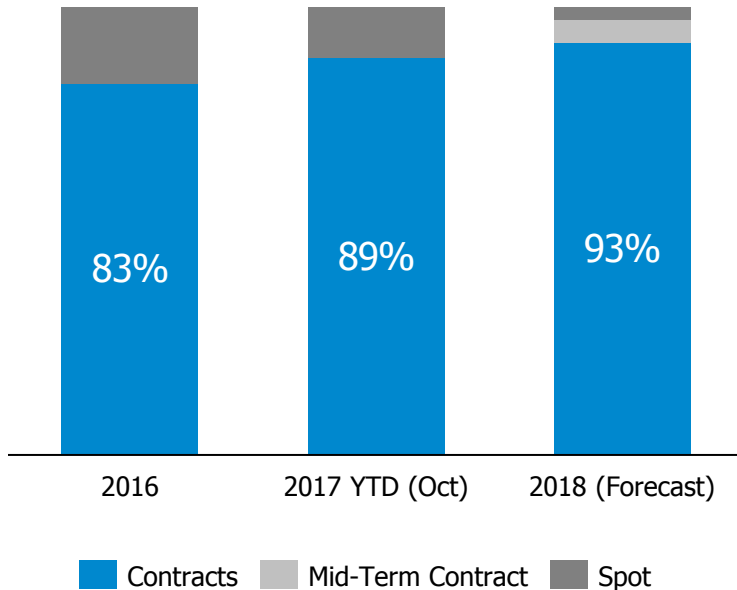


Source: Wood Mackenzie LNG tool Q3 2017 dataset, LNG Supply effective capacity (contracted and uncontracted) from existing and under construction plants.  
Santos 2017 Investor Day

# Secured value through strong contracted LNG position

Underpinned by long-term high-value contracts with quality Asian buyers

Santos LNG cargoes by type  
percent



- + Santos' portfolio has a strong weighting to long-term, oil indexed contracts
- + LNG contracts have no price caps
- + PNG LNG operating above its nameplate capacity of 6.9 mtpa (annualised rate 8.6 mtpa 2017)
  - + Mid-term contract volumes of 1.3 mtpa available
- + Decreasing spot volumes over time

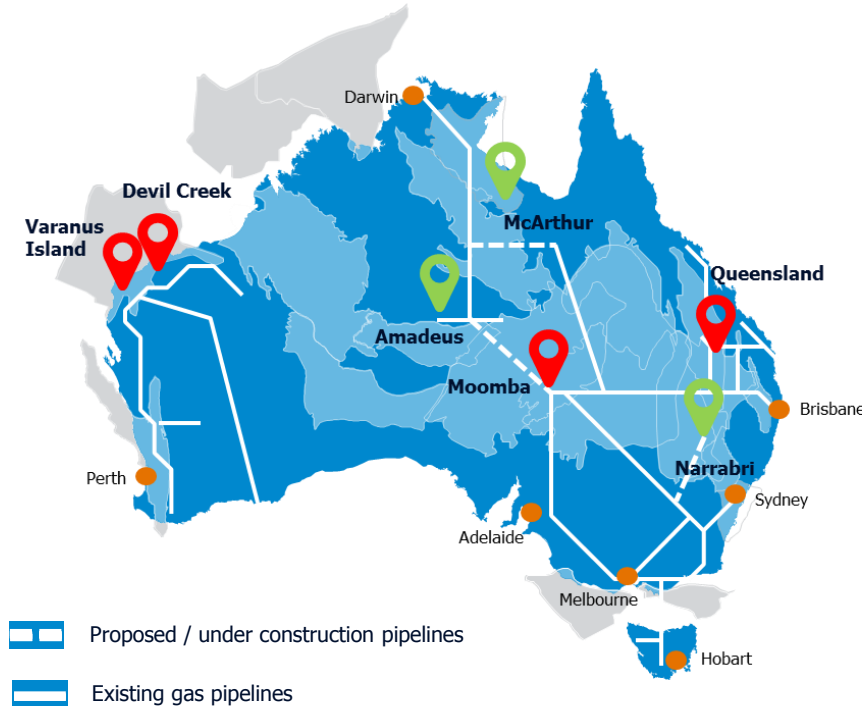
# Well positioned in both Eastern and Western Australia

One of the largest suppliers of domestic gas and ethane, supplying ~120PJ into the domestic market in 2017

## Western Australia

- + Supply deficit emerging from early 2020s
- + Expected that ~50% (1,000 PJ) of forecast market demand needs to be re-contracted during 2019-24
- + Santos has ~94 PJ of developed uncontracted gas (1P) during the same period

- Capital cities
- Santos gas resources / opportunities
- Santos domestic gas infrastructure



## Eastern Australia

- + Santos is committed to delivering increased gas supply to the domestic market
- + Secured commercialisation path to evacuate uncontracted Comabula volumes
- + Strong infrastructure and resource position provides future optionality
- + New sources of indigenous supply (Narrabri, Amadeus) may play a role in addressing forecast supply/demand gas in the mid term

Not shown on map: Santos' interest in producing assets GLNG and DLNG

# Moomba can provide strategic gas storage

Santos operated Moomba strategic storage is well placed to provide security of supply to support emergencies and peak gas or power requirements

- + Centrally located with access to major transmission pipelines connected to all east coast capital cities
- + Proven storage asset servicing seasonal peak demand since 1981
- + 70 PJ storage capacity
- + ~120 TJ/d maximum withdrawal capacity
- + Between 30 TJ/d and 120 TJ/d available capacity<sup>1</sup>



<sup>1</sup> Available capacity dependent on inventory levels. 120 TJ/d assume maximum storage of 70 PJ

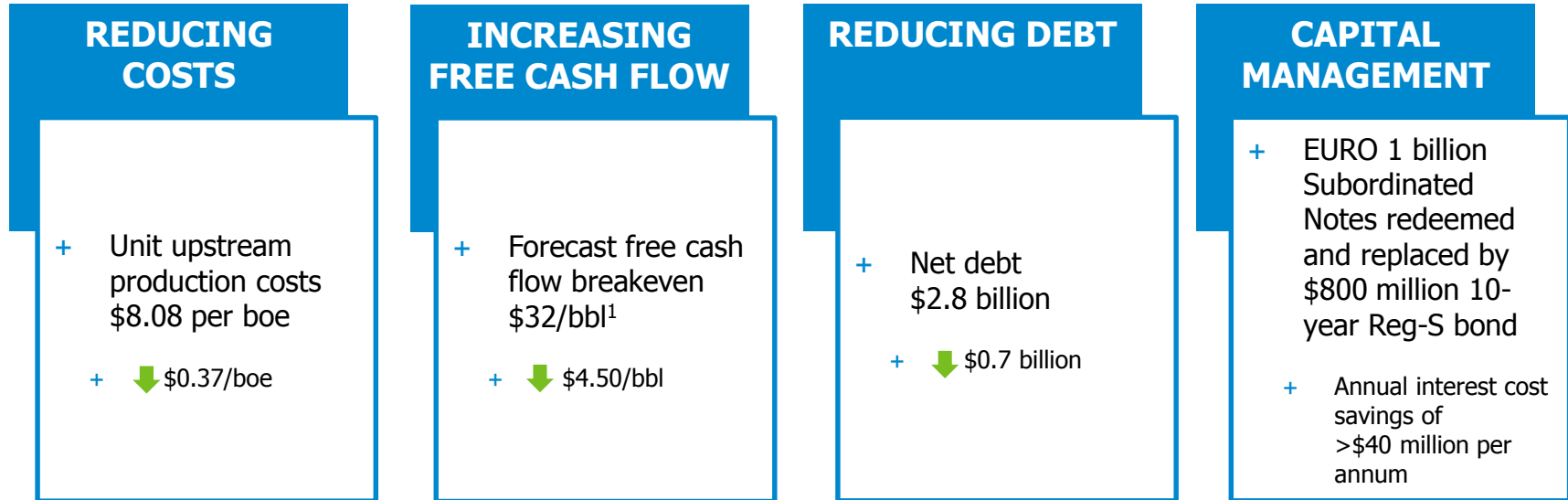


# Finance & Capital Management

Anthony Neilson  
CFO

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## Significant progress in 2017 on our financial priorities



As at 30 September 2017 compared to 2016 full year outcomes

<sup>1</sup> Free cash flow breakeven is the average annual oil price in 2017 at which cash flows from operating activities (including hedging) equals cash flows from investing activities. Forecast methodology uses corporate assumptions. Excludes one-off restructuring and redundancy costs, and asset divestitures and acquisitions.

# Production and sales volumes

2017 production and sales volumes expected to be toward the upper end of guidance.

Five core assets expected to deliver higher production in 2018 and stable production for the next decade

## Production volume

mmboe



■ Core ■ Non-core

## 2018 guidance

- + Core assets +1.1 mmboe
- + Higher production expected from all five core assets, partially offset by
  - + 10 day PNG LNG full plant shut-down for Angore wells tie-in
  - + Moomba plant maintenance
- + Non-core assets -2.5 mmboe
- + Cessation of oil production (Indonesia, ME/FF)
- + Natural field decline (Indonesia, Vietnam)

## Sales volume

mmboe



■ Own product ■ Third party

## 2018 guidance

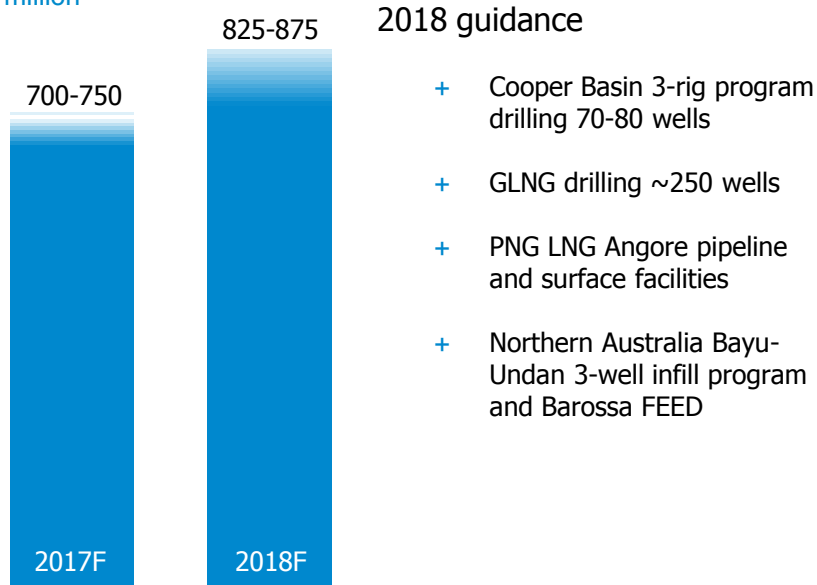
- + Sales volumes lower
- + Lower third party volumes predominantly due to cessation of contracts
- + Natural field decline from the non-core assets

# Capital expenditure and production cost guidance

## Increased activity driven by cost efficiencies

### Capital expenditure guidance<sup>1</sup>

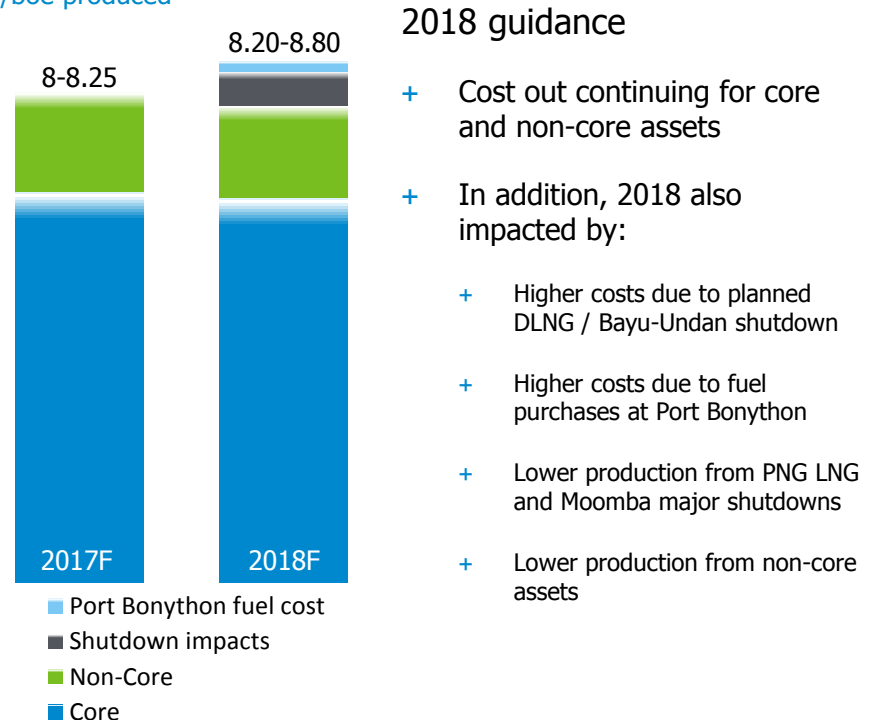
\$ million



## Sustainable cost out now embedded in our operations

### Upstream unit production cost guidance<sup>1</sup>

\$/boe produced



<sup>1</sup> 2018 guidance assumes AUD/USD exchange rate of 0.75

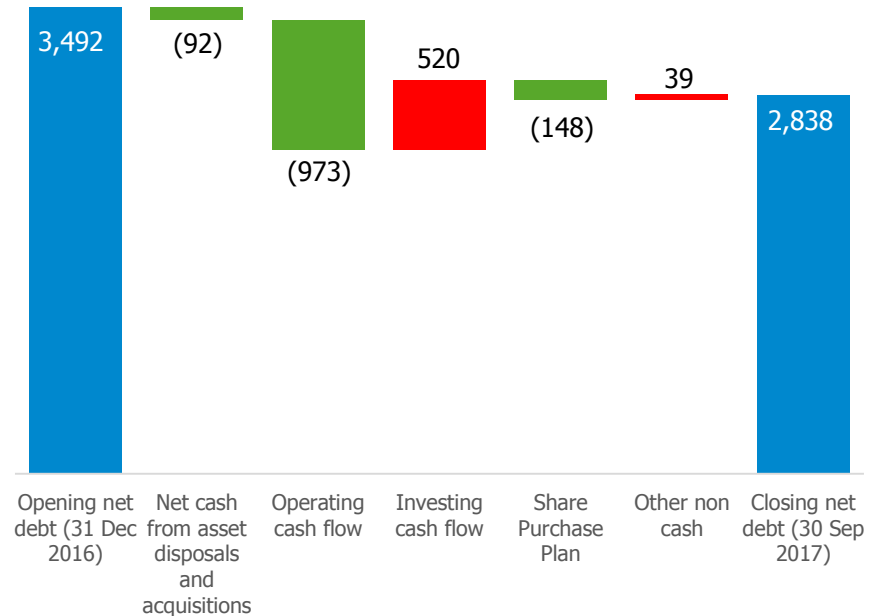
# Net debt reduced to \$2.8 billion

Target \$2 billion in net debt by the end of 2019

- + Net debt reduced to \$2.8 billion<sup>1</sup> through a combination of free cash flow, previously announced asset sales and proceeds from the Share Purchase Plan
- + Focus remains on debt reduction target of \$2 billion in net debt by the end of 2019
- + S&P BBB- (stable) credit rating
- + Liquidity of \$3.5 billion<sup>1</sup>
  - + Cash balance of \$1.5 billion
  - + Undrawn bi-lateral bank debt facilities of \$2 billion

## 2017 movement in net debt to 30 September 2017

\$ million

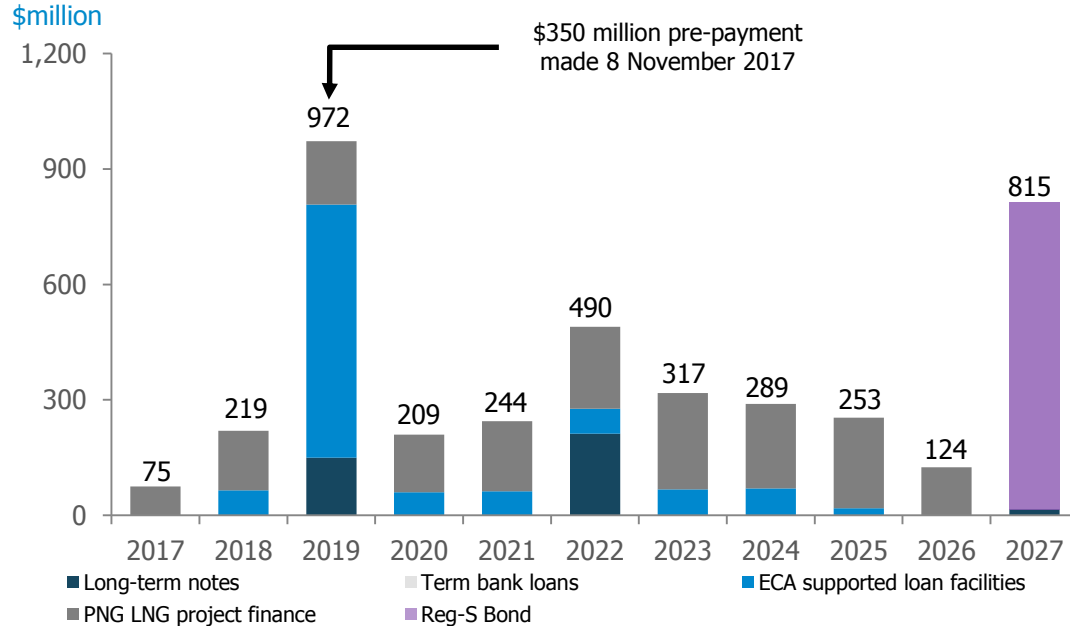


<sup>1</sup> As at 30 September 2017

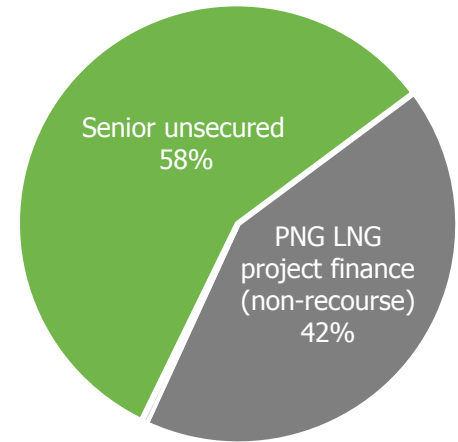
# Drawn debt maturity profile

Euro hybrid redeemed and replaced with more efficient long-term debt funding.  
 \$600 million of 2019 ECA supported loan facility prepaid in 2017

Drawn debt maturity profile as at 8 November 2017<sup>1</sup>



Breakdown of drawn debt facilities as at 8 November 2017<sup>1</sup>

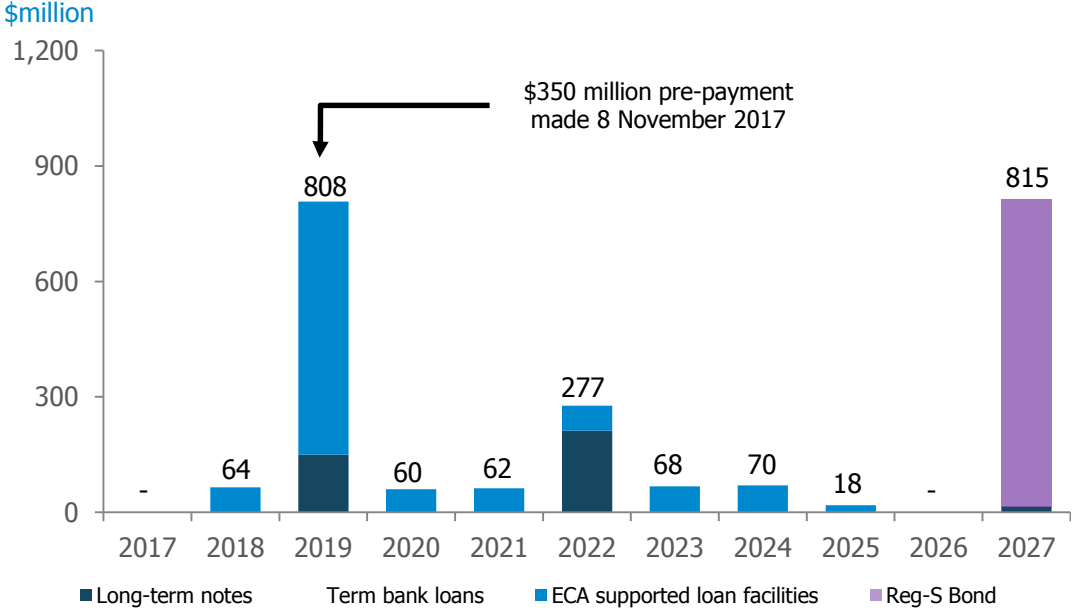


+ Weighted average term to maturity ~5 years

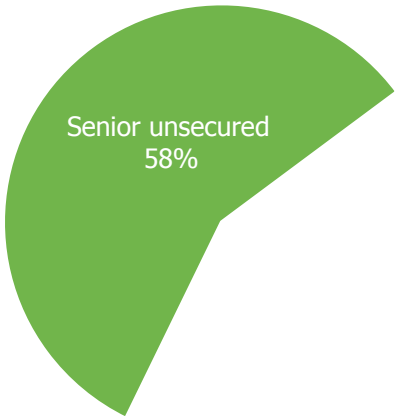
# Drawn debt maturity profile excluding PNG LNG

Senior debt profile \$2.2 billion ex PNG LNG non-recourse project finance

Drawn debt maturity profile as at 8 November 2017<sup>1</sup>



Breakdown of drawn debt facilities as at 8 November 2017<sup>1</sup>



<sup>1</sup> Excludes finance leases and derivatives.

In 2018 the focus remains on reducing costs, increasing free cash flow, reducing debt and disciplined capital management

## REDUCING COSTS

- + Cost out continuing in 2018 for core and non-core assets
- + Lower cost base allows increase in activity to build and grow the business

## INCREASING FREE CASH FLOW

- + Forecast 2018 group free cash flow breakeven expected to be at  $\leq \$40/\text{bbl}$  oil price
- + Disciplined model, all core assets free cash flow breakeven  $\leq \$40/\text{bbl}$  oil price

## REDUCING DEBT

- + Target \$2 billion in net debt by the end of 2019
- + Further gross debt reduction through free cash flow

## CAPITAL MANAGEMENT

- + Capital management strategy in place and continues to target efficient debt funding
- + Prudent oil price hedging



# Morning Tea

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# Onshore upstream development

Brett Woods

Executive Vice President Onshore Upstream Developments

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## STABILISE ONSHORE OPERATED ASSETS

### **Set-up assets to be cash generating throughout the oil price cycle**

- + Reset cost base
- + Stabilise production

## DEVELOP AND APPRAISE

### **Build inventory and execute efficiently**

- + Increase drilling activity
- + Appraise new plays
- + Set foundation for reserves growth

## EXPLORE AND GROW FOOTPRINT

### **Invest in high graded growth options**

- + Leverage the free cash flow generated by the assets
- + Increase exploration program mix
- + Develop new plays
- + Grow reserves base
- + Leverage infrastructure footprint and position as lowest cost operator to grow acreage position

Cooper & GLNG transformed to low cost, efficient drill-complete-connect-operate businesses

## Organisational focus

- + Engaged with North American operators to understand various operating models
- + Established standalone upstream onshore division with focus on cost and efficiency
- + Shared learnings across Santos onshore teams

## Disciplined operating model

- + Disciplined approach to budget allocation
- + Core assets must be free cash flow positive at  $\leq \$40/\text{bbl}$ , pre-major growth spend
- + Fit for purpose Management Systems

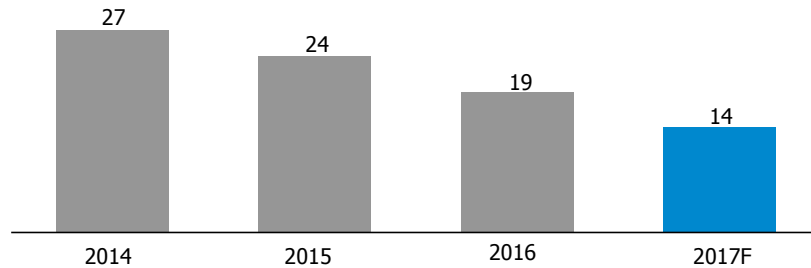
## Relentless drive for cost and efficiency

- + Focus on design-to-cost, lean operations, eliminating waste
- + Measure performance and adopt fast learning cycles
- + Best performance achieved resets the benchmark

Improved cycle time performance has led to embedded and sustainable cost reductions

## Cooper Basin drilling cycle times

Average days (rig release to rig release)



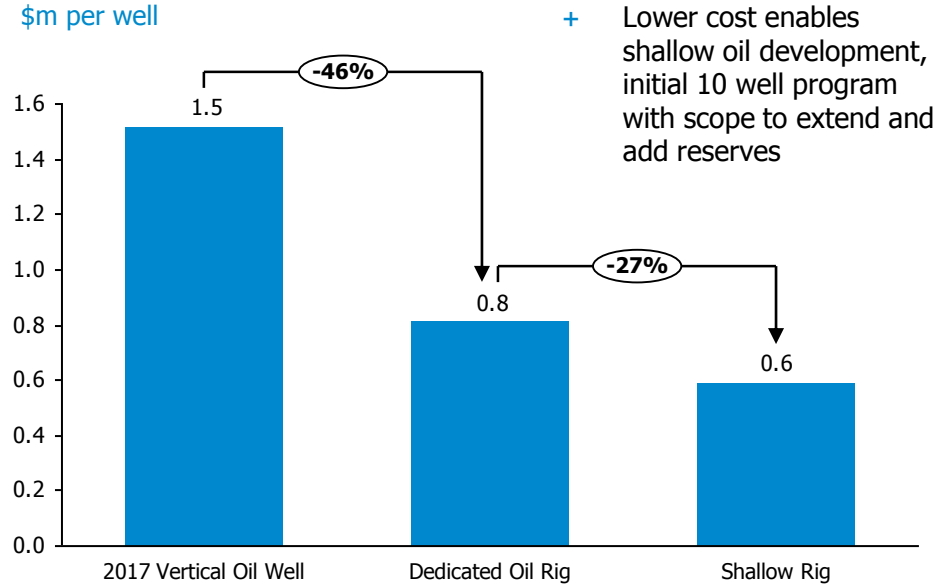
*Cost effective increased use of logging while drilling (LWD) and rotary steerable technologies in onshore operations has reduced time and risks associated with wireline logging after reaching final depth*

- + Cooper Basin drilling cycle times halved
  - + Rig move efficiencies
  - + Skidding between slots for pad wells
  - + Well evaluation
  - + Eliminating work deemed unnecessary on certain well types
- + Drilling crews sharing learnings between rigs and crews. Workforce striving to achieve new technical limits

# Cooper Basin oil development

Lean well design and disciplined operating model has lowered the minimum economic pool size from 100 kbbbl to <40kbbbl/well

Oil well capex<sup>1,2</sup>  
\$m per well



Ensign 950 - Shallow wells rig



<sup>1</sup> Excludes connection costs. These are variable depending on the distance to gathering network

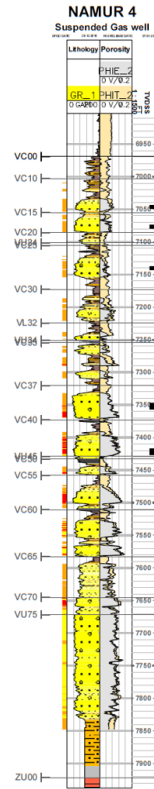
<sup>2</sup> Assumes no fracture stimulation in all cases. Consistent with majority of oil program

The Cooper Basin continues to generate new gas reserves. Renewed focus in exploration to target further growth

- + Cooper Gas Reserves Replacement Ratio (RRR) has averaged 82% since 2006
- + Santos now refocusing on Cooper Basin exploration
  - + 2013-2016 averaged <5 gas exploration wells per year, dominated by low risk Near Field Exploration
  - + 2017+ planning ~9 gas exploration wells per year, more wildcats
- + With lower costs and increased exploration investment, we anticipate reserves additions over time
- + Step change growth potential with new plays such as deep coal and adoption of new technologies

Appraisal drilling in the Namur Field proved a significant gas resource in the previously un-proven Patchawarra sands

- + Namur field discovered 1976, originally produced from Namur sandstone. Ceased production in 1984
- + Drill Stem Test from original development identified tight gas in Patchawarra Sands, but not completed as flow was considered unattractive at the time
- + Patchawarra Fm and Coorikiana potential unlocked by recent re-mapping of 3D seismic and new thinking
- + Large potential field volume, ~2,000 acres with multiple follow-ups
- + Namur 4 Appraisal well drilled late 2016. A 3 stage fracture stimulation of the Patchawarra and flowback proved deliverability @ **10.1mmscf/d** @ 2150psi wellhead pressure, ~500psi drawdown
- + Multiple gas saturated Patchawarra reservoirs
- + Appraisal of the Coorikiana reservoirs provides further potential



**Namur 4 stimulation flowback @ 10.1mmscf/d**

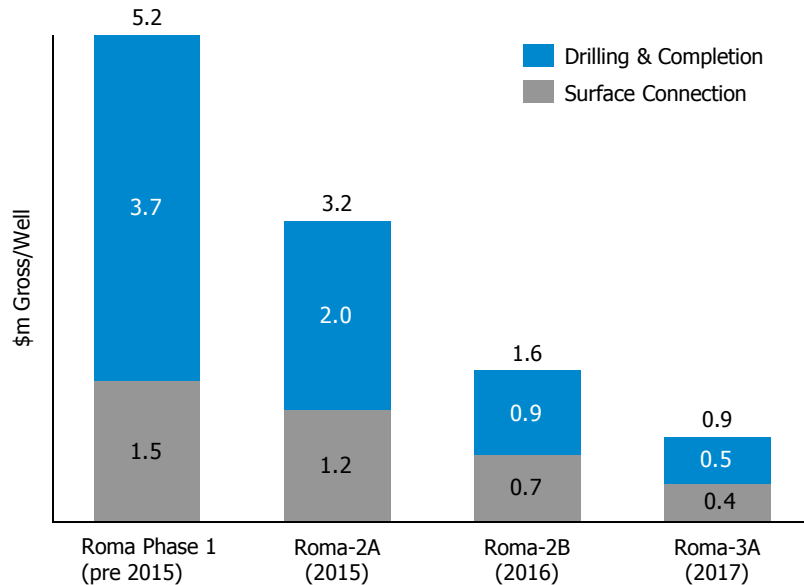




# GLNG upstream onshore transformation

Proven cost performance now allows GLNG to increase drill, complete and connect activities

**Roma drill, complete, connect**  
\$ million per well

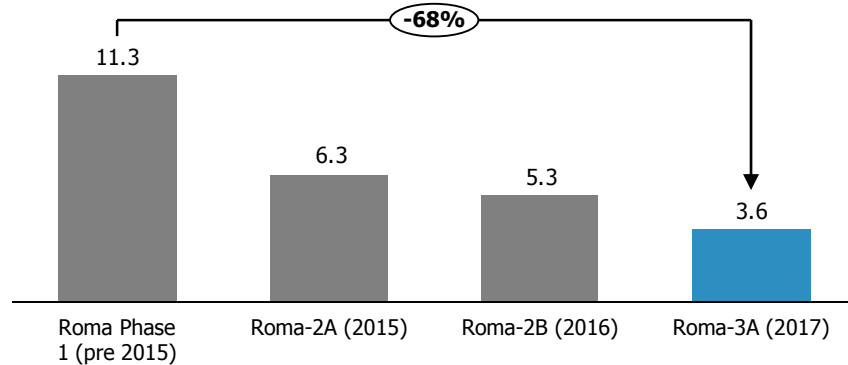


- + Now lowest cost operator in Queensland
- + Plan to ramp up drilling while maintaining cost discipline
  - + Increasing to ~250 wells in 2018
- + 4Q17 drilling pace is already at rate required to meet 2018 target
- + Growing production while ensuring GLNG is free cash flow positive in every year at  $\leq \$40/\text{bbl}$

Improved cycle time performance has led to embedded and sustainable cost reductions

## Roma drilling cycle times

Average days (rig release to rig release)



*Savanna 407 coil tubing drilling rig executing Roma 3A drilling scope*

- + Roma drilling cycle times reduced by more than 50%
- + Change in rig execution strategy to lightweight hybrid coil halving rig move durations and reducing \$/ft. performance by 15% relative to 2016
- + Project optimisation workshops involving field and office based team members leading to implementation of initiatives such as night rig moves
- + Continued optimisation of BHAs & bits to reduce drilling time
- + Application of technical limit principles to identify trends and high-grade focus areas
- + High volume, sequential, repeatable scope
- + Unlocked potential to drill in excess of 100 wells in Roma with a single drilling rig in a given year
- + Continual review and optimisation of both surface and subsurface designs has led to 83% reduction in Roma drill, complete, connect costs since FID

# GLNG upstream onshore transformation

Well leases before and after transformation



← BEFORE



AFTER →

# GLNG upstream onshore transformation

Surface kit before and after transformation



← BEFORE



AFTER →

# GLNG upstream onshore transformation

Drilling footprint before and after transformation



← BEFORE



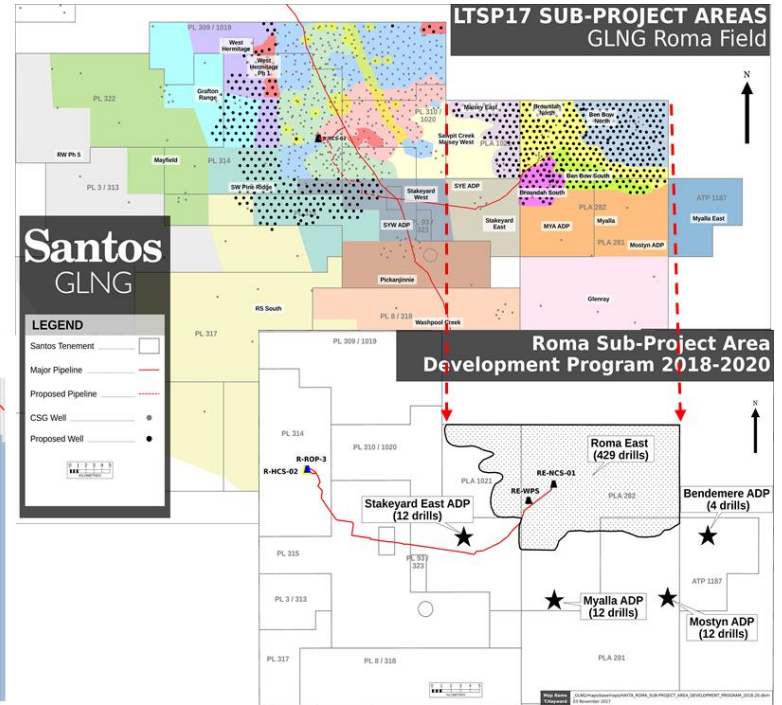
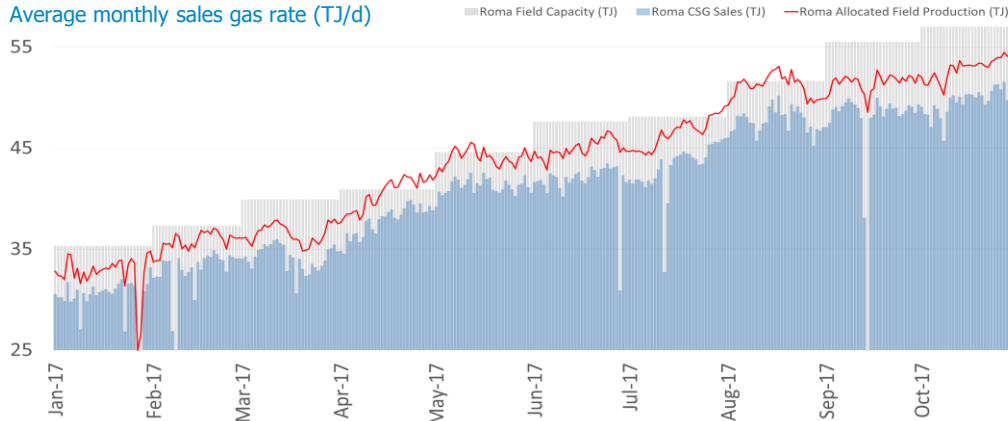
AFTER →

## Moving to the high graded Roma acreage in the next phase of development

- + Cost base reset ready for development (down 83% on 2014 costs)
- + Solids management and pump reliability issues mitigated through modified completion design
- + Subsurface led optimisation of reservoir development plan
- + Commence development of the >75% undeveloped 2P reserves in Roma
- + Focus on minimising spud to online time

### Roma production

Average monthly sales gas rate (TJ/d)

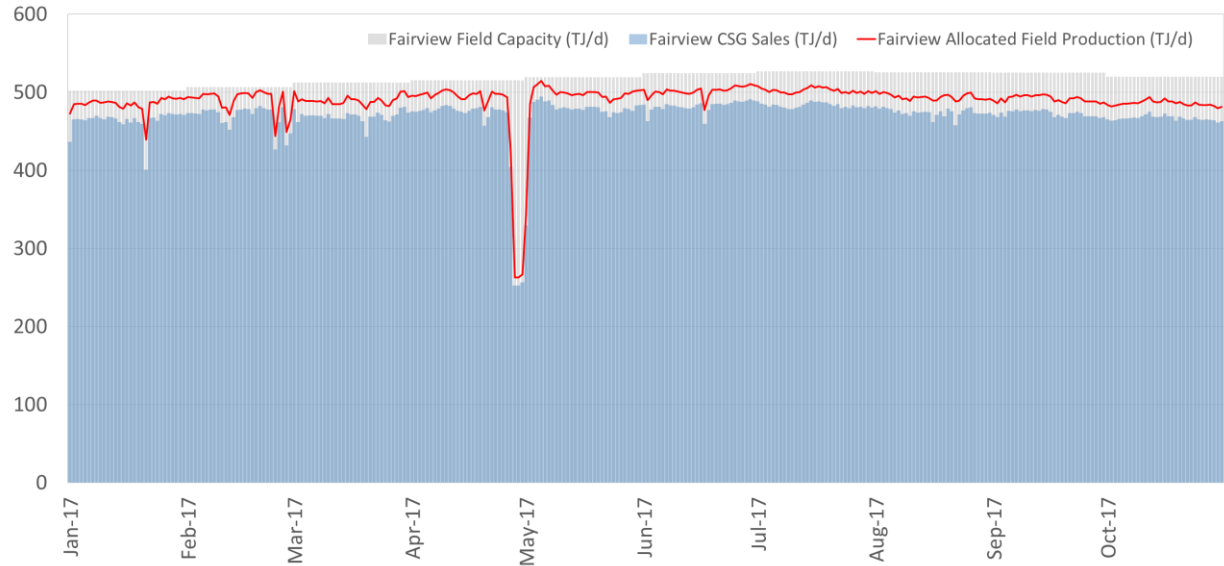


## Fairview continues to perform

- + Ongoing programme of production optimisation activity to maximise production from existing wells
- + Programme of fill clean outs, liner installs and artificial lift system (ALS) re-installs being executed with positive results
- + Deeper seam dewatering and gas rates inclining

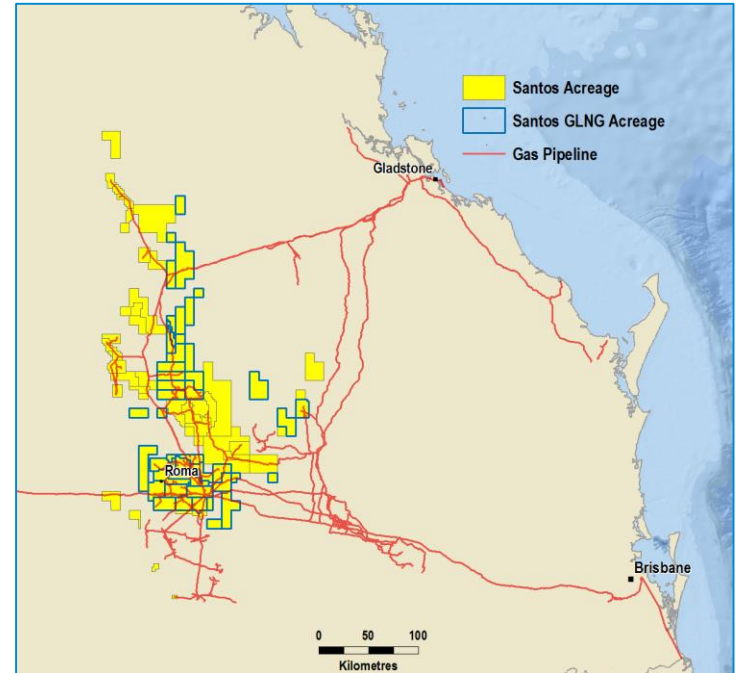
### Fairview production

Average monthly sales gas rate (TJ/d)



Eastern Queensland portfolio to capture domestic gas opportunities while maintaining gas supply to GLNG

- + Santos has delivered cost reductions more rapidly in operated assets than observed in non-operated assets
  - + Opportunity to deliver additional value into these assets with the application of the Santos operating model
  - + Significant point of leverage
  - + Santos aims to be the operator of choice
- + Exploration (GLNG & Eastern Queensland)
  - + Domestic gas gazettal blocks providing additional growth opportunities



Santos holds a strong acreage footprint in Eastern Queensland in addition to the GLNG acreage. Approximately 20% of Santos' Queensland 2P Reserves are held in non-GLNG acreage.



# Operations

Vince Santostefano

COO Conventional Oil & Gas and LNG Operations

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**Santos**

Discipline, Cost and Volume remain the strategic focus for operations

## DISCIPLINE

- + Fit for purpose standards to enable low cost operations and maintenance
- + Operational excellence program to embed best practice and continuous improvement
- + Building a culture of compliance to ensure process discipline

## COST

- + \$52 million (21%) reduction in Cooper Basin total production costs<sup>1</sup>
- + \$7 million (7%) reduction in GLNG conversion costs<sup>1</sup>
- + Sustainable cost reductions delivered through contracting, engineering & process improvements

## VOLUME

- + Excellent continued operations at Curtis Island
- + 7% increased utilisation of Moomba Plant<sup>1</sup>
- + Increased 3rd party activity in Cooper Basin enabled by incentivised tolling and processing agreements

<sup>1</sup> 2016A vs. 2018F

153 LNG cargoes delivered as at end of October 2017



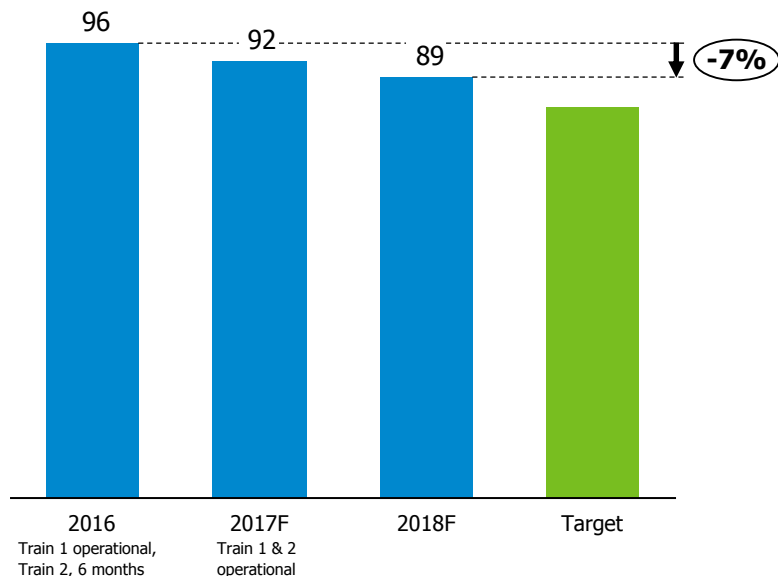
- + 8.9 mtpa maximum day rate achieved cf. 7.8mtpa nameplate capacity
- + 99% production reliability across the plant
- + Train 1 and 2 shutdowns completed successfully
- + Collaboration with other LNG plants
  - + New Marine Operations Terminal shared with QGC
  - + Formal program for assessing collaboration opportunities underway
  - + Opportunistic gas purchases during outages realising higher sales volumes

# Curtis Island conversion cost reductions

On track to deliver disciplined, sustainable and best in class cost performance

## GLNG conversion costs<sup>1</sup>

\$m gross (real)



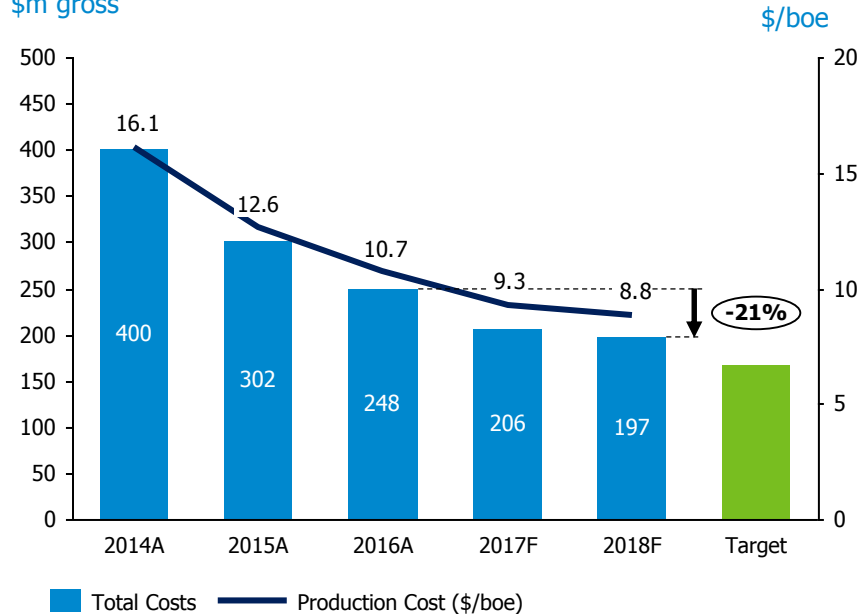
- + Two trains fully operational in 2017
- + Lean operations delivering cost performance
  - + Optimisation and consolidation of site workforce
  - + Engineering scope reviews
- + Curtis Island Collaboration Room
  - + Technology linking engineers from Brisbane
  - + Vision to remotely operate LNG plant
- + Operations excellence to continue cost challenge

<sup>1</sup> Operational cost of converting gas to LNG

Sustainable cost out being delivered whilst maintaining exemplary Process Safety performance

## Total production costs

\$m gross



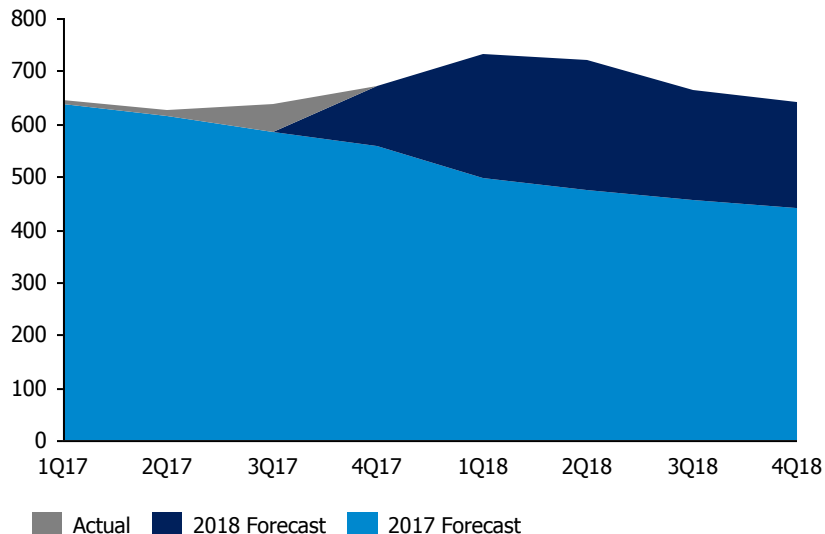
- + 21% cost reduction in Cooper production costs
- + Cooper Basin operating philosophy rollout
  - + Employee support for EBA renegotiations
  - + Integrated scheduling
- + Continued challenge of costs to achieve future target
  - + Multiple initiatives to achieve these cost reductions
  - + Relentless discipline and cost focus
  - + Moomba rejuvenation project

# Moomba plant third party oil

Increased third party throughput enabled by competitive access agreements

## Forecast third party oil – Moomba Plant<sup>1</sup>

kbbbl/month



- + Increased third party throughput incentivised by competitive access agreements
- + Pass through pricing mechanism
- + Incremental volume tolling structure
- + Continue to work with Third Party Operators in the Cooper Basin
- + Reduced plant operating costs further improves margin
- + Increased focus to maximise our infrastructure position

<sup>1</sup> SPA's signed and forecasted for 2018

# Moomba re-set initiative

Rejuvenate and re-life the core hub of Moomba

- + Moomba town plan - minimise footprint and maximise efficiency
- + Project commenced and is a key focus for 2017/18
  - + 24% annual cost reduction from camp tender
  - + 43% reduction in light vehicle fleet
  - + Warehouse consolidation ongoing
  - + Removing underutilised buildings
- + Set standards and establish new ways of working



Operations Excellence is core to our operating philosophy



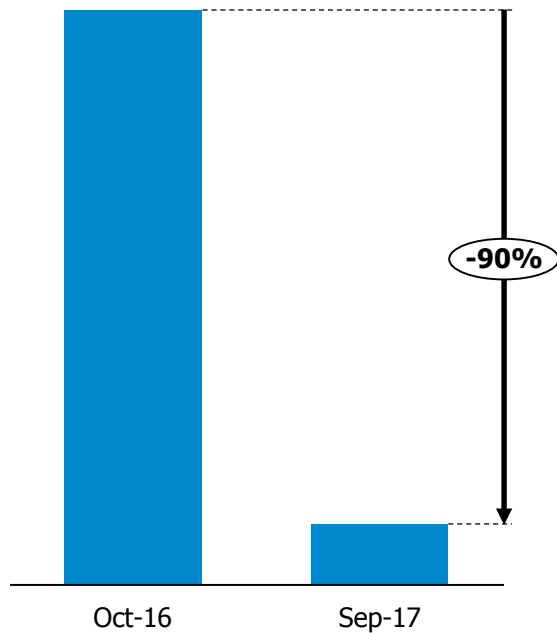
- + What it is:
  - + Is built up by key results areas
  - + Clarity of expectations and standards
  - + Enables measurement against performance standards
- + What it gives:
  - + Annual improvement expectation in each area
  - + Drives a compliance culture to meet standards
  - + Locks in gains through visible performance monitoring



## Improved visibility and focus on key metrics

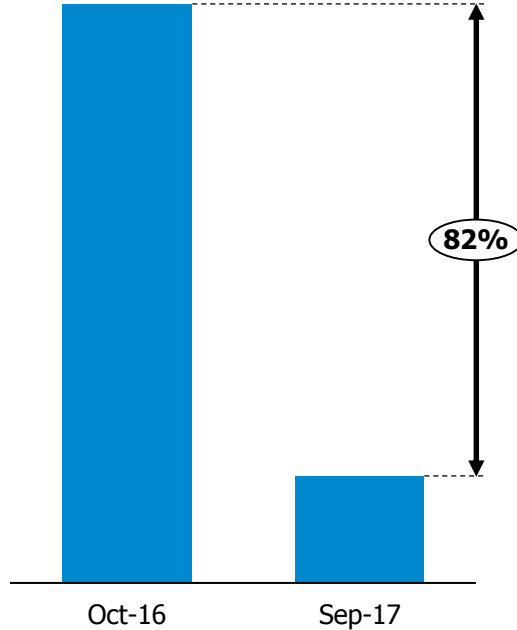
### Standing alarms<sup>1</sup>

Count



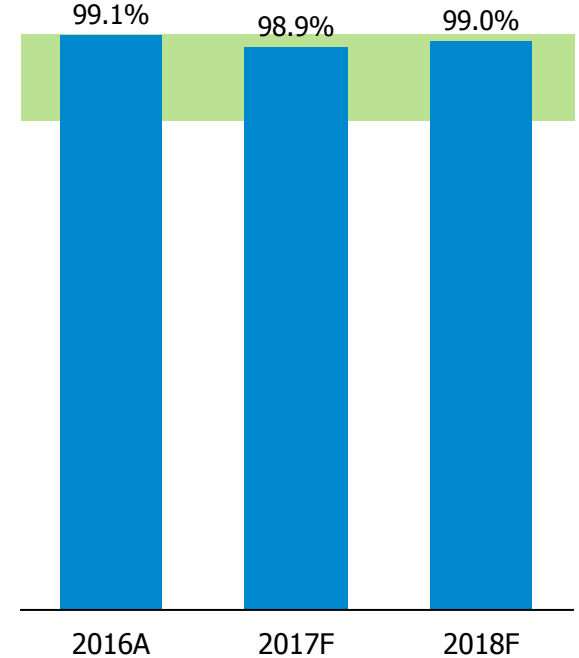
### Master data change requests<sup>1</sup>

Count > 90 days



### Moomba plant inherent availability

Target > 98.5%



<sup>1</sup> Santos operated assets

# Exploration and Appraisal

Bill Ovenden

Executive Vice President Exploration & Appraisal

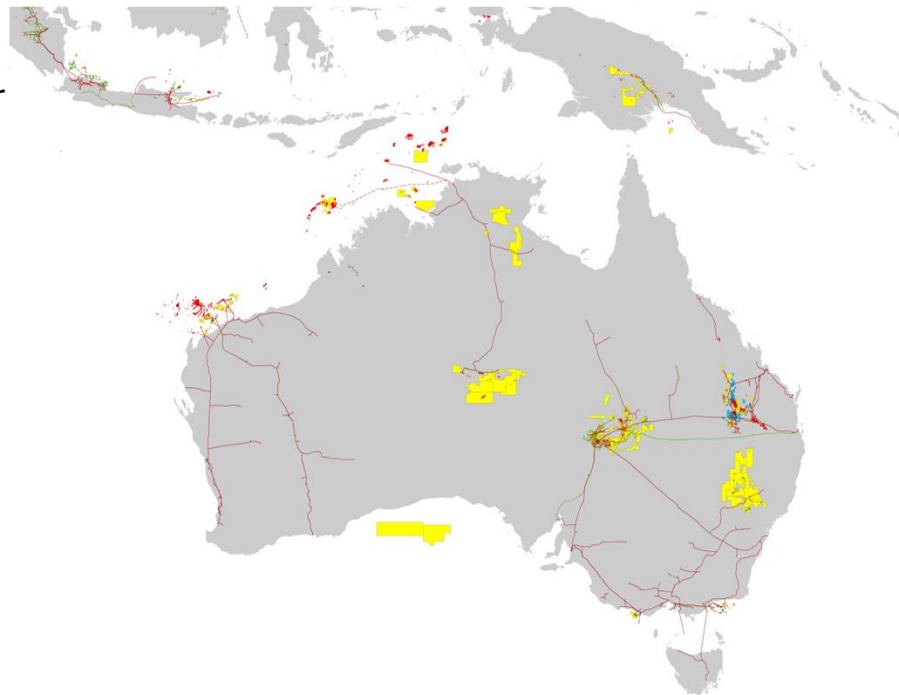
**Santos**

## Activity themes

- + Deepen the exploration inventory across all assets
- + Consolidate and align our exploration acreage around our infrastructure ownership
- + Disciplined and balanced allocation of risk capital

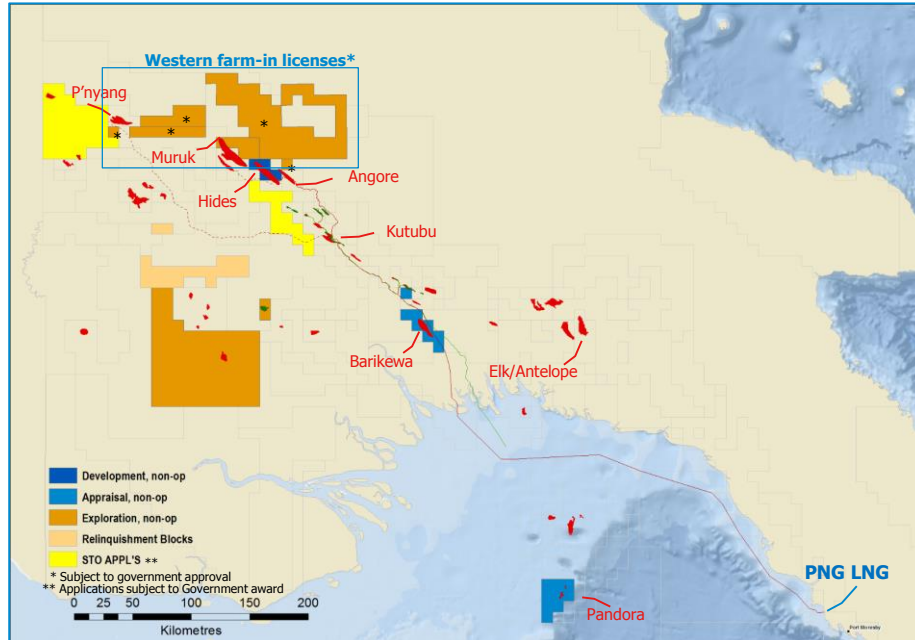
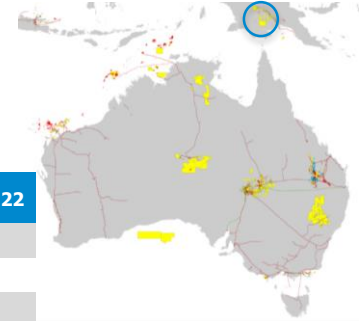
## Exploration and appraisal highlights (last 12 months)

- + PNG Muruk discovery
- + PNG Western farm-in
- + Northern Australia: Barossa appraisal upgrades
- + Cooper: exploration success and inventory build
- + McArthur: investment readiness
- + Amadeus: exploratory concept emerges



# Papua New Guinea

Align and pursue gas resource options that offer commercialisation optionality through existing and expansion infrastructure. Grow short cycle-time opportunities



	2018	2019	2020	2021	2022
Muruk 2	🏗️				
Barikewa 3	🏗️				
Karoma	🏗️				
Pandora		🏗️			
Tawanda			🏗️		
Western Foldbelt*			🏗️		
Blucher				🏗️	
Western Foldbelt*					🏗️

🏗️ Exploration well  
 🏗️ Appraisal well

- + Western farm-in: Entered aligned exploration position (Santos, ExxonMobil, Oil Search) between Hides and P'nyang fields; Santos 20% equity
- + Licence Applications: pending government decision, two operated licence positions adjacent to Hides & P'nyang Fields
- + Accelerated exploration and appraisal program provides organic opportunity for ullage/expansion

## Building aligned PNG LNG expansion optionality

### Muruk appraisal

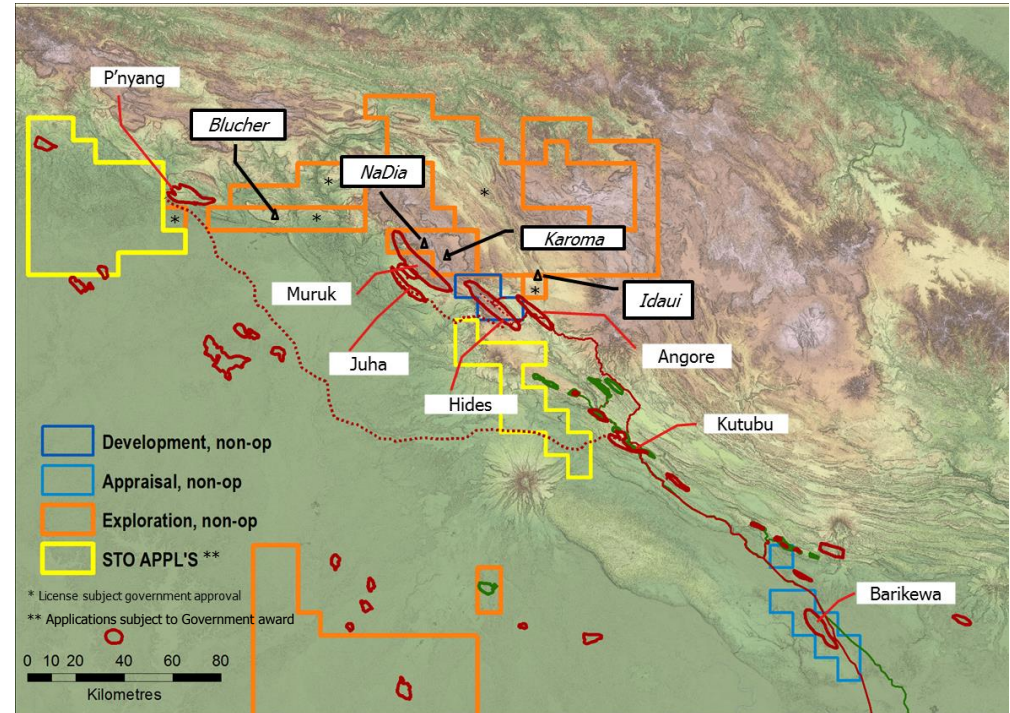
- + 2016-2017 discovery of 2 gas pools in greater Muruk structure
  - + Multi-Tcf contingent resource potential
- + Planned activity
  - + Delineation 2D seismic (2017-18)
  - + Muruk 2 appraisal (1Q 2018)
- + 21 km tieback to Hides
- + Leverage project performance and expansion optionality

### Barikewa appraisal

- + Barikewa 1 proved gas in Toro and Hedinia sands with good flow rates
- + Barikewa 3 appraisal 2018
- + 5 kms from PNG LNG sales gas pipeline
- + Additional gas for PNG LNG or domestic gas

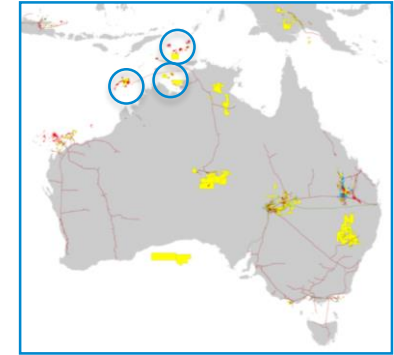
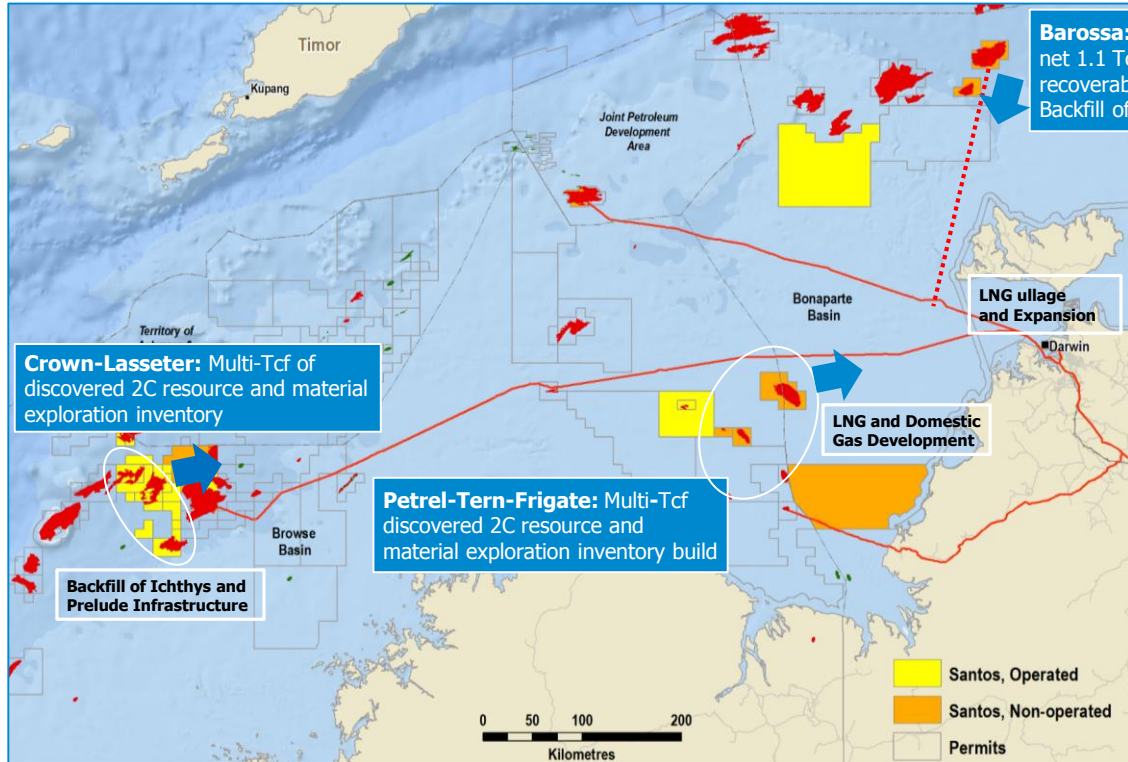
### Exploration

- + Western farm-in inventory – pre-drill alignment and running room
- + Karoma 1 wildcat drill 4Q 2018 – adjacent Muruk, along strike from Hides



# Northern Australia growth

Powerful discovered resource position across 3 potential future upstream production hubs

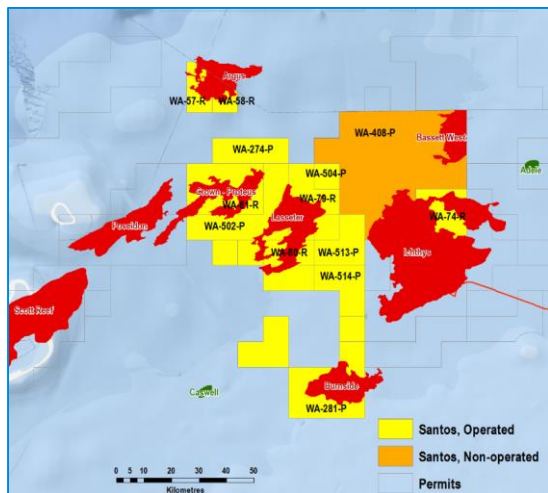


- + Multi-Tcf 2C resource ownership across multiple geologic provinces offers growth diversity
  - + Central Browse Basin: Crown-Lasseter
  - + Petrel sub-basin: Petrel-Tern-Frigate
  - + Northern Bonaparte: Barossa-Caldita field
- + Imminent and emerging market opportunities
- + Active exploration (inventory build) and appraisal programs

## Successful de-risking of DLNG backfill candidate Barossa and systematic exploration inventory build around all discovered resource hubs

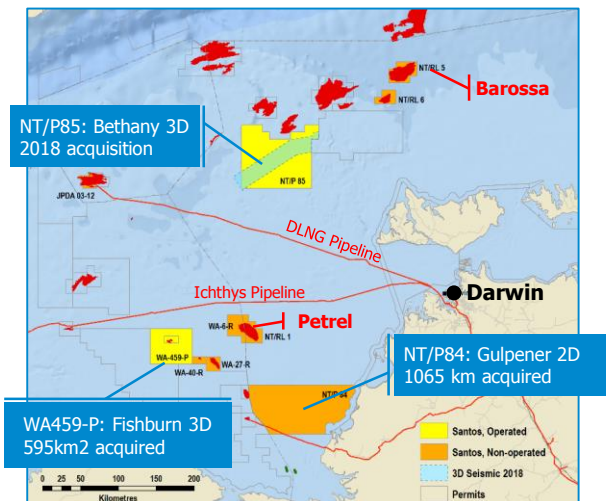
### Browse (Santos 30%)

- + Consolidated resource ownership - retention leases secured over core Crown and Lassetter fields (multi Tcf gross discovered resource)
- + Adjacent low risk multi-Tcf potential



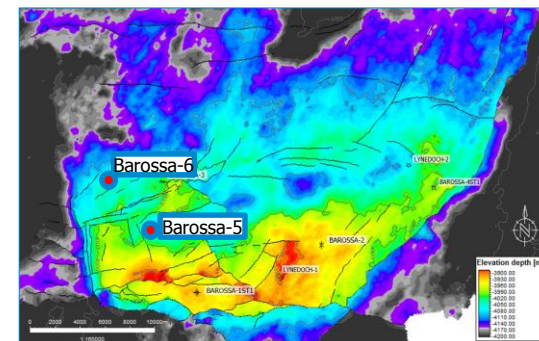
### Petrel-Tern-Frigate (Santos 35-40%)

- + Multi-Tcf gross discovered resource
- + Prime short term LNG ullage feedstock opportunity
- + Organic inventory build in new and emerging plays, with material running room



### Bonaparte – Barossa (Santos 25%)

- + Successful appraisal program complete
  - + 2016/17 appraisal 3D
  - + Barossa-5/5AST1; Barossa-6 drilled
  - + Barossa-6 well test 65 mmscf/d (facility constrained)
- + 35% increase in 2C resource base (gross 4.3 Tcf, net 1.1 Tcf 2C raw gas recoverable resource)
- + FEED entry Q2 2018



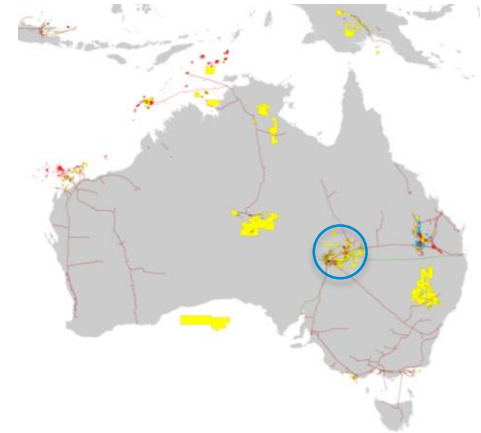
# Cooper Basin exploration

Resurgent exploration effort in a mature production province

- + Leverage deep basin knowledge and drill-complete-connect cost out
- + Focused on reserves replacement and value

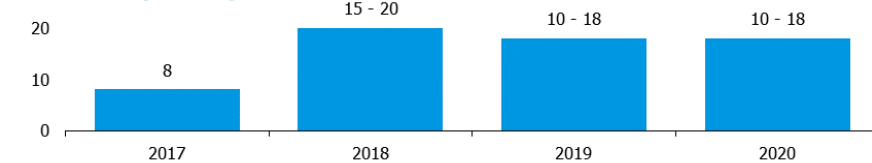
## Deepened Inventory build

- + 100+ oil and gas opportunities identified (multiple proven plays)
- + Balanced high value oil and gas near field exploration and emerging high impact gas wildcat prospect inventory
- + Target infrastructure ullage, high value liquids, aggregation and scale

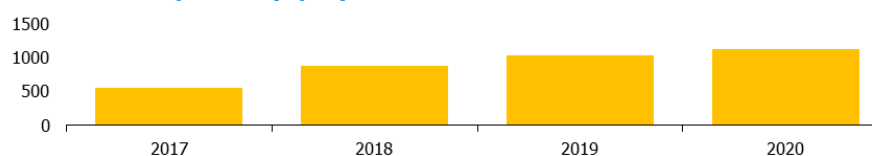


## Planned exploration activity

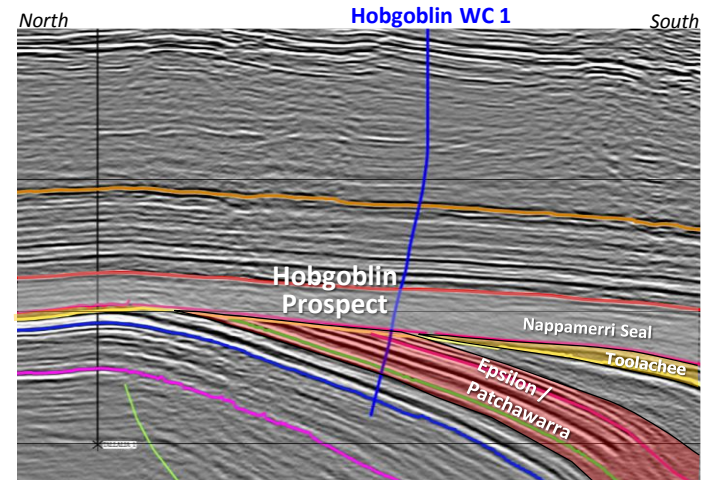
### Drill Count (# wells)



### 3D Seismic Acquisition (sqkm)



Santos 2017 Investor Day

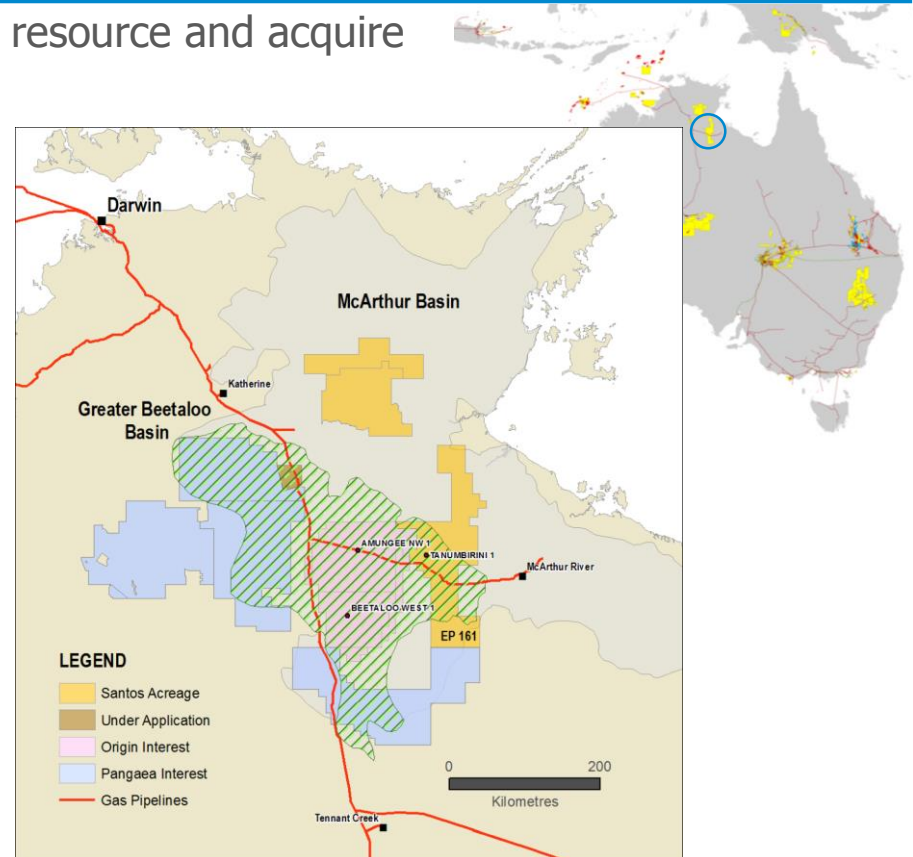




# McArthur Basin EP 161 exploration program

Demonstrate productivity of Velkerri Shale gas resource and acquire critical data for appraisal planning

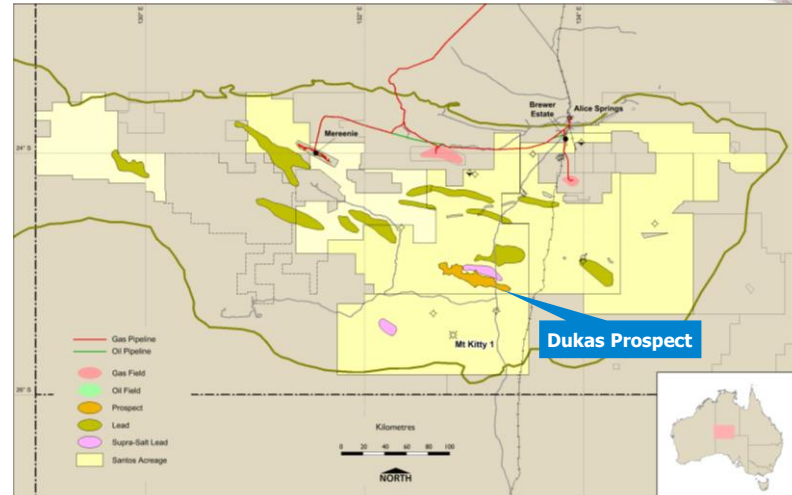
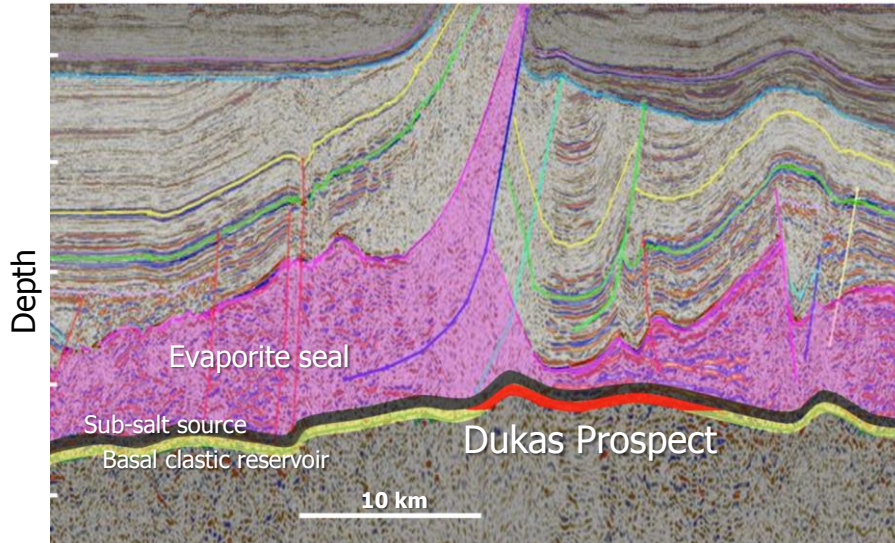
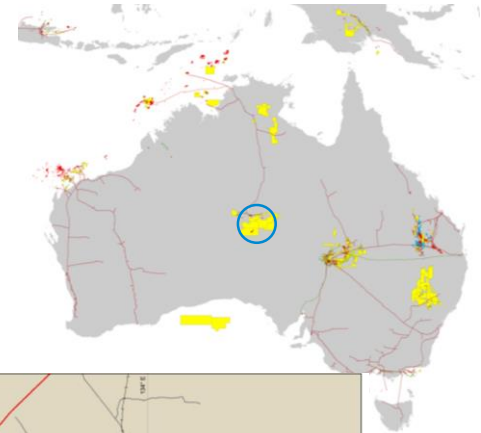
- + Focus on EP 161 in the Greater Beetaloo sub-basin
  - + Multi-Tcf prospective resource
  - + Santos 75% and operator
- + Forward activity plan
  - + 3D seismic acquisition & processing
  - + Stimulate and test Tanumbirini 1 vertical well
  - + Drill, stimulate and test two horizontal appraisal wells
  - + Subject to outcome of NT moratorium



# Amadeus Basin exploration

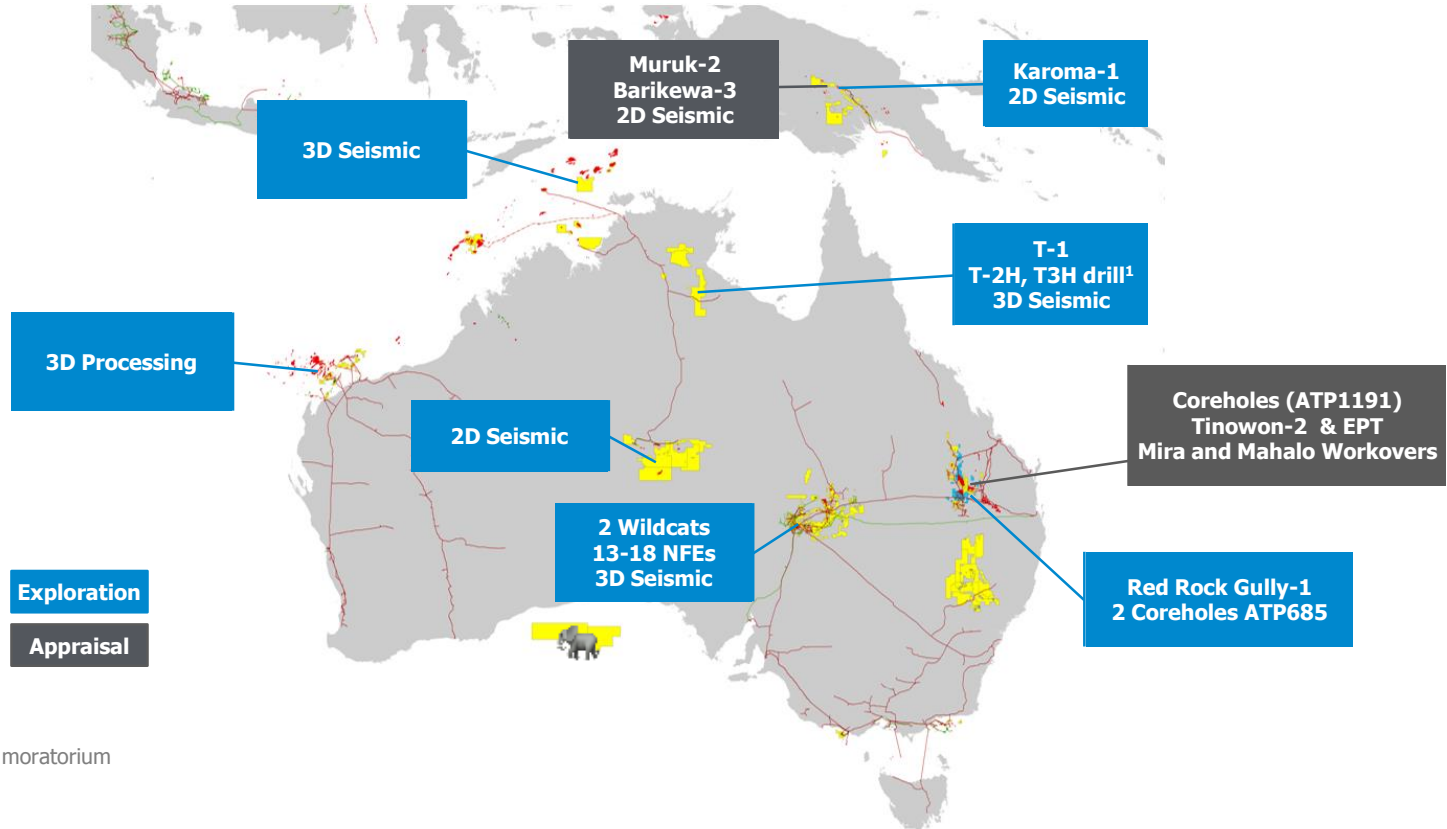
## Frontier sub-salt play – Multi-TCF gas potential

- + 2D seismic acquisition Dec17/Jan18 to supplement multiple phases of regional reconnaissance seismic (2014 and 1H 2017 campaigns) – prospect delineation
- + Geologic concept on farm-in - regional sub-salt central basin arch hosting large sub-regional closures – validated: Dukas Prospect ~520 km<sup>2</sup> closure
- + On discovery, elemental He and H gas stream contents represent high value liquids proxies
- + Exploration well planning for Q1 2019 drill



# 2018 exploration & appraisal program summary

Activity focused around core asset hubs



<sup>1</sup> Subject to outcome of NT moratorium

# Wrap-up

Kevin Gallagher

Managing Director & CEO

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**Santos**

## Transform, Build & Grow



### Transform

- + Focus on five core, long-life natural gas assets
- + Implement disciplined low-cost operating model to maximise cash flows
- + Maximise production, drive down costs and increase gas supply
- + Implement effective governance and risk management framework to enable new operating model



### Build

- + Identify and develop growth opportunities across the five core long-life natural gas assets
- + Develop the lowest cost onshore drill-complete-connect business
- + Establish facilities and infrastructure operations strategic capability
- + Maximise margin through M&T business



### Grow

- + Execute and bring on-line growth opportunities across the core portfolio
- + Focused exploration strategy to identify new high-value targets and unlock future core assets
- + Generate new revenue through low-carbon Energy Solutions projects

Disciplined growth initiatives in the core assets and reducing debt further

## TODAY'S ANNOUNCEMENTS

- + Farm-ins to five prospective exploration licences in PNG along the Hides-P'nyang trend
- + Barossa confirmed as lead candidate for DLNG backfill
- + Evacuation route secured for Combabula equity gas in Eastern Queensland
- + Further reduction in gross debt through pre-payment of an additional \$350 million of the 2019 ECA loan facility
- + Narrabri gas asset in NSW to join the core asset portfolio

## Business focus aligned with the core strategy

Focus on business improvement to further reduce costs and maximise operating cash flow

Disciplined allocation of free cash to repay debt and build production levels across core assets

Disciplined inventory build around core assets

Progress program for new developments in Eastern Queensland, PNG, Northern Australia and Narrabri

Strengthen and develop Santos' high-performance culture

# Santos 2017 Investor Day

9 November 2017

**Santos**

