To	Company Announcements Office	Facsimile	1300 135 638
Company	ASX Limited	Date	20 November 2019
From	Helen Hardy	Pages	105
Subject	2019 Investor Day Briefing		

Please find attached a release on the above subject.

Regards

Helen Hardy
Company Secretary

02 8345 5000

2019 Investor Briefing Day

20 November 2019

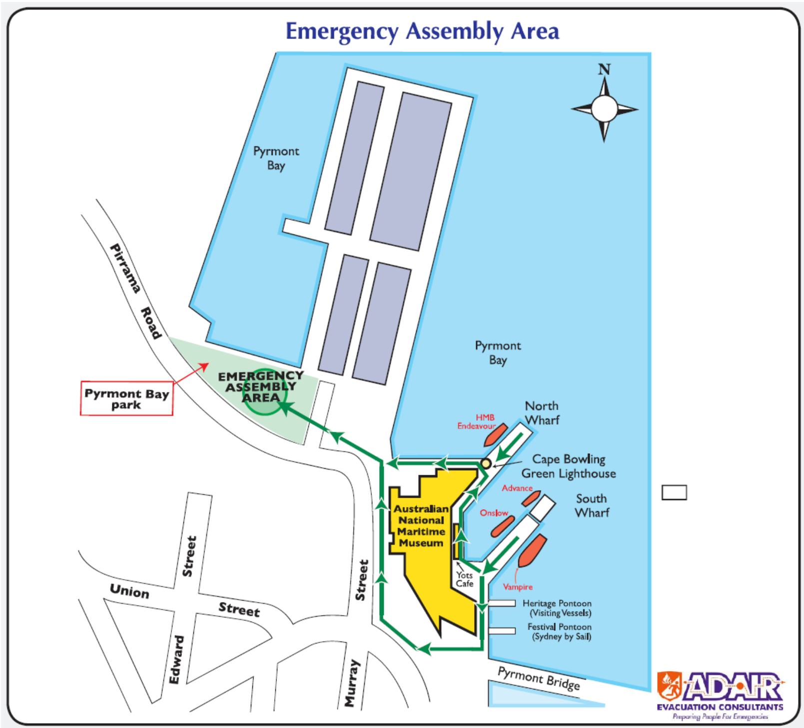
Sydney, Australia

origin

Acknowledgement of Country

We acknowledge the Gadigal People of the Eora Nation as the traditional custodians of the land on which we gather today, and pay our respects to their Elders - past, present and emerging

Safety Moment



Alert tone "beep, beep, beep"

- Follow instructions of Wardens
- Be ready to evacuate

Evacuation tone "whoop, whoop, whoop"

- Leave now via nearest exit
- Proceed calmly to assembly area

Today’s presenters

Frank Calabria, CEO

Sharon Ridgway
EGM, People & Culture

Samantha Stevens
EGM, Corporate Affairs

Lawrie Tremaine, CFO

Mark Schubert
EGM, Integrated Gas

Greg Jarvis
EGM, Energy Supply
& Operations

Jon Briskin
EGM, Origin Retail

Anthony Lucas
EGM, Future Energy &
Business Development

Agenda

Time	Duration	Topic	Presenter
9:30	5 mins	Introduction	Liam Barry, Investor Relations
9:35	15 mins	Strategic overview	Frank Calabria, CEO
9:50	10 mins	People & Culture	Sharon Ridgway, People & Culture
10:00	10 mins	Social purpose	Samantha Stevens, Corporate Affairs
10:10	15 mins	Capital management	Lawrie Tremaine, CFO
10:25	25 mins	Q&A session	
10:50	20 mins	Morning tea	
11:10	20 mins	Integrated Gas	Mark Schubert, Integrated Gas
11:30	15 mins	Energy Markets - Supply	Greg Jarvis, Energy Supply & Operations
11:45	15 mins	Energy Markets – Retail	Jon Briskin, Retail
12:00	20 mins	Energy Markets – Future Energy	Anthony Lucas, Future Energy & BD
12:20	30 mins	Wrap up / Q&A session	Frank Calabria, CEO
12:50		Lunch	

Strategic Overview

Frank Calabria (CEO)

Building a track record

Transforming culture	✓ Building an inclusive and achievement focused culture ✓ Customer and digital first mindset
Simplified portfolio	✓ Simplified processes, leaner corporate function, asset sales ✓ Leaner, asset-led model in APLNG upstream
Operational capability	✓ Reliable, low cost operator ✓ Commercial capability in managing asset portfolios and risk
Rebasing cost structure	✓ $500m APLNG cost out achieved ✓ Targeting >$150m company-wide cost out by FY2021
Capital discipline	✓ Balance sheet repaired ✓ Dividends recommenced

External environment changing rapidly

Core beliefs

Fuels of the future	• Renewables the lowest cost form of new build generation • Gas to grow in the Asia Pacific under all IEA scenarios[1]
Decarbonisation	• Renewables lower average prices, but increases intra-day volatility • Gas crucial as a lower emissions firming fuel • Electrification to unlock emissions abatement
Decentralisation	• Empowering consumers • Pervasive solar PV and batteries in the future • New business models behind the meter
Digitisation	• Enabler of superior customer experience • Automation of business process reduces costs • Data driven business models

Australian context

- Government intervention and shift to central planning has created uncertainty
- Investment in flexible, fast-start technology required to support renewables
- Current policy environment makes investment decisions in generation challenging
- Strong market signal required to incentivise the right investments at the right time

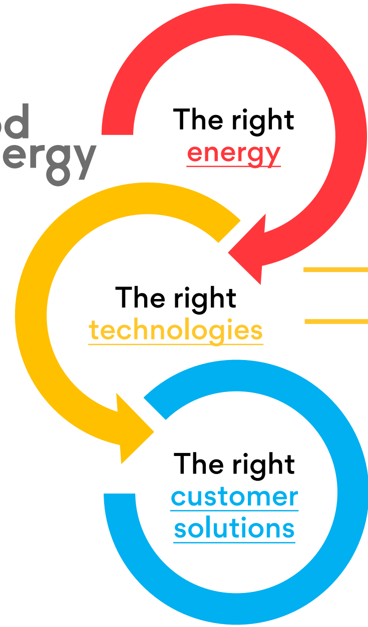
1) International Energy Agency, *World Energy Outlook 2019*

Strategy to deliver value in a future energy world

origin

Connecting customers to the energy and technologies of the future

good energy



- Accelerate towards clean energy
- Low cost operator developing & growing gas resources
- Embracing decentralised and digital future
- Opportunities from emerging technologies
- Customer-centric retailer and wholesaler

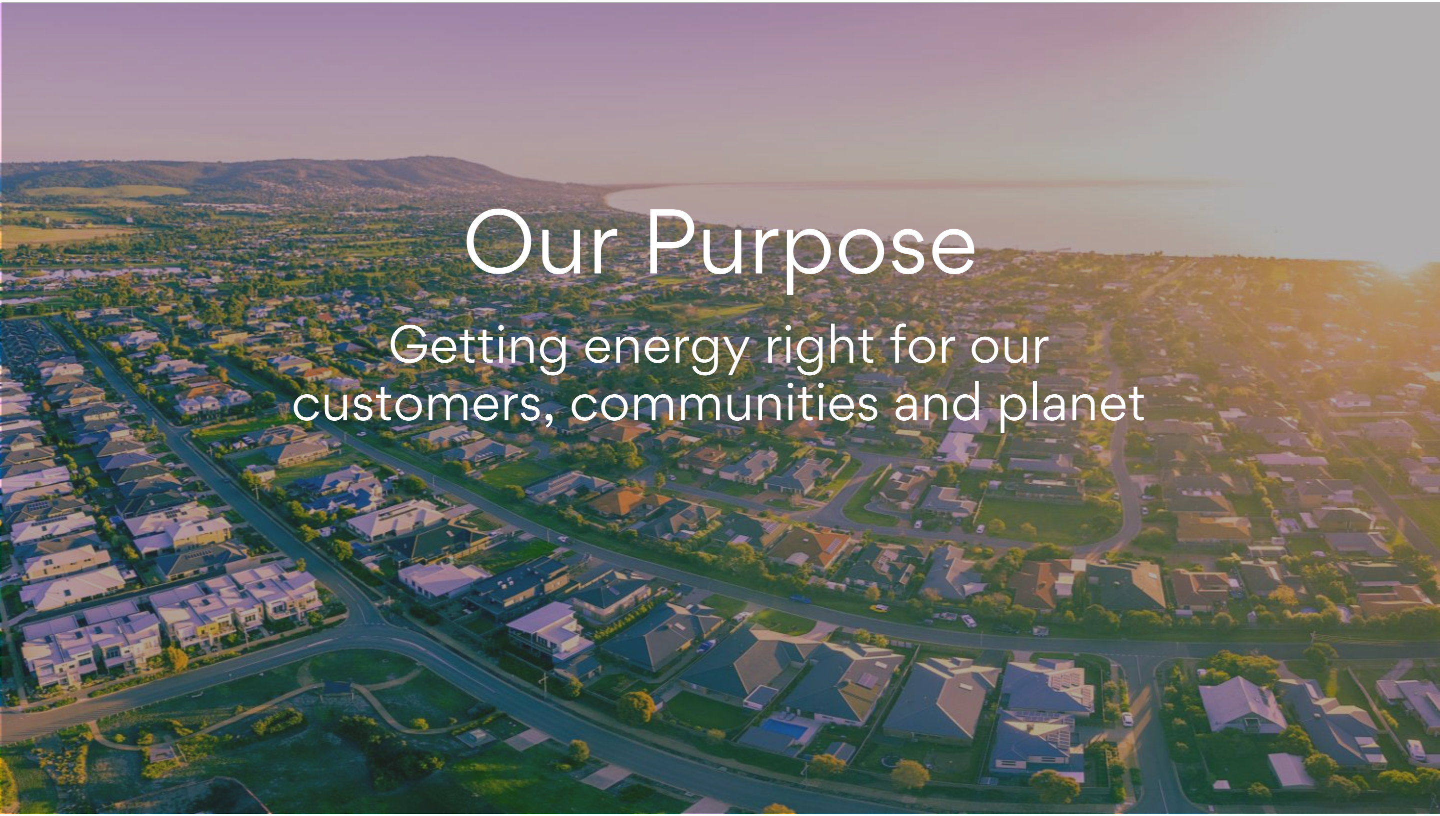
Underpinned by capital discipline, our capabilities and our commitment to all stakeholders

We are committed to delivering for all stakeholders

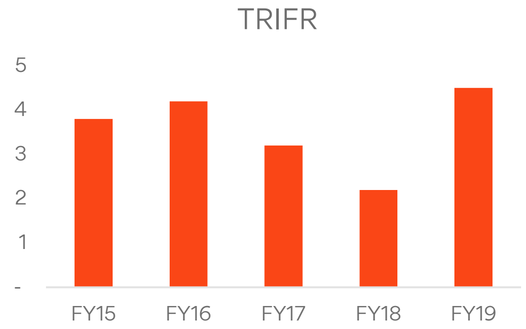
origin

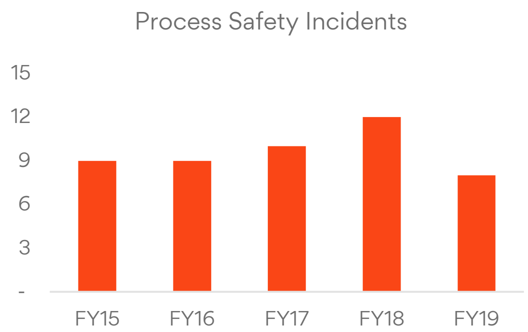
Our people	• Focused on keeping our people safe • Changing the way we work
Our customers	• Transforming customer experience • Addressing energy affordability and reliability
Communities	• Contributing to communities in which we operate • Leading position on climate change
Shareholders	• Resilient capital structure • Disciplined capital allocation • Maximising cash and returns through cycles

Our Purpose underpins everything we do



Safety remains a key priority





- FY2019 TRIFR performance disappointing following improvements in prior years
- Targeted programs to reduce specific risks
  - Partnering with contractors to improve personal safety during shutdowns and drilling
  - Review of site-based HSE improvement plans
  - Consolidating Safety Leadership Programs to apply consistent knowledge and safety tools
- Improvement in FY2019 Process Safety Incidents
  - Continued focused on reducing serious harm incidents
- Safety linked to executive remuneration

Our capabilities and strengths

Flexible electricity position

Competitive gas supply (length, cost and flexibility)

Value management across a large customer base

Digital and analytics platforms

Low cost operator

Ability to scale low cost upstream model

Well positioned for renewables + firming

Potential to grow reserves position

Commercial capability

Continuing to develop the right capabilities for the future

Executing on our strategy – making good progress

Accelerate towards clean energy

- > 25% renewables + storage capacity by 2020
- Generation flexibility supporting renewables
- Competitive fuel supply

Low cost operator developing & growing gas resources

- Increasing production and optimising cash costs at APLNG
- Investing in exploration to grow resource and scale low-cost model

Embracing a decentralised & digital future

- Digital analytics improving customer experience and internal operations
- AI orchestration platform connecting assets and data to customers
- Connected business models in front of and behind the meter

Customer-centric retailer

- Transforming customer experience – simple, seamless, effortless
- Target step change in cost position (>$100m cost out on track)
- Growing revenue streams (CES, Solar & storage, Broadband)

Pursuing opportunities from emerging technologies

E-Mobility

Hydrogen

LNG for transport

Where we are going

- Growing production at APLNG – strong medium term outlook
- Investing in exploration to grow new resources – at APLNG, Beetaloo and Cooper-Eromanga
- Targeting >$150 million Origin-wide cost out by FY2021
  - >$100 million from Energy Markets cost to serve
- Improving customer experience, lowering costs and growing revenue streams in Retail
  - Planning underway for the next wave of Retail transformation
- Energy supply portfolio well positioned for renewables + firming – cautious on investment
- Continuing to develop capabilities to test and deploy new connected energy solutions
- Strong cash generation and more resilient balance sheet provides options for capital allocation

People & Culture

Sharon Ridgway
(EGM, People &
Culture)

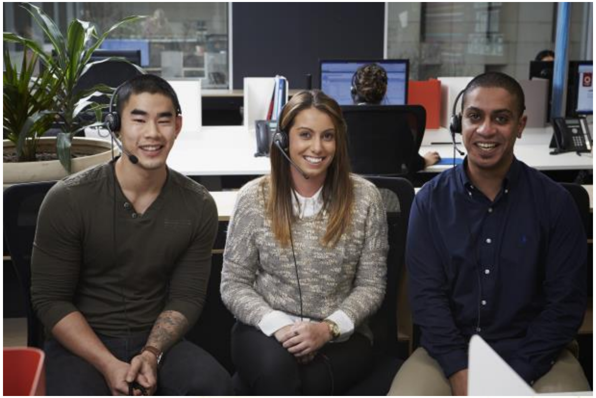
People and culture are critical to our success

- Key enablers of business performance are:
  - Effective ways of working
  - Strong people performance
  - Strong inclusive & achievement focused culture

- A strong culture:
  - ✓ Attracts the right people
  - ✓ Empowers and motivates
  - ✓ Unlocks great customer experience
  - ✓ Supports the success of the strategy
  - ✓ Is built on a solid set of values

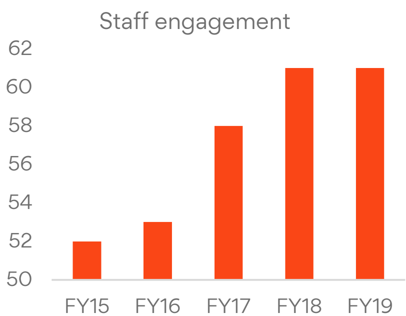
We’re changing the way we work

- Increased ownership & autonomy:
  - Reduced organisational layers
  - Reduced team sizes
  - Leaner management structures
  - Business & system simplification
  - Integrated Gas asset-led organisation
- Focused on capabilities:
  - Customer & digital first mindset
  - Strengthening ‘operational’ mindset
  - Investing in data & analytics
  - Process simplification & cost

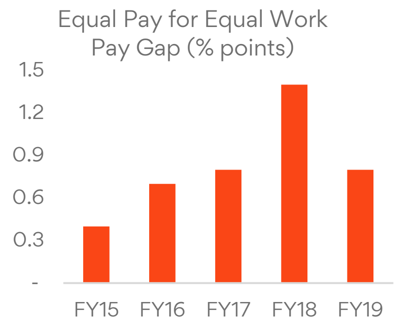


Our people performance

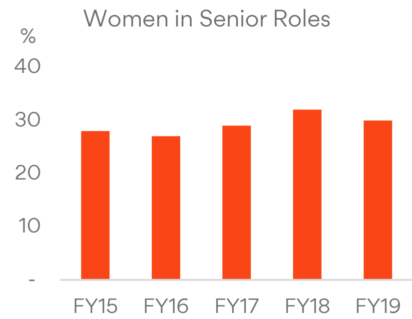
Engagement



Equal Pay



Gender Diversity



- Engagement & Diversity linked to executive remuneration
- Engagement improved during a period of significant change
- Target of <1% gender pay gap for equal work achieved in four of the last five years
- Employer of Choice for Gender Equality for fifth year
- Ranked Top 10 globally for gender equality

Culture is underpinned by our Purpose & Values

Getting energy right for our customers, communities and planet

Work as one team, one Origin

Be the customer champion

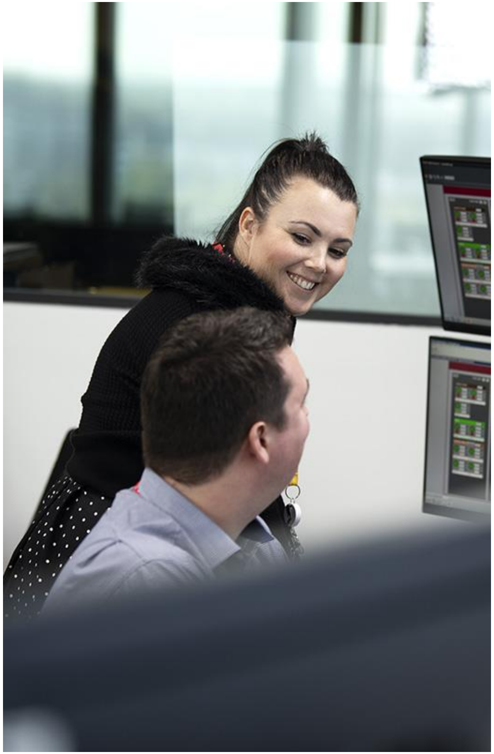
Care about our impact

Find a better way

Being accountable

Building an inclusive & achievement focused culture

- Embedded Values into:
  - Staff incentive arrangements
  - Recruitment
  - Employee communications
- Introduced People Leadership Programme
- Targeting to attract and retain more senior females
- Introduced 'All Roles Flex' and new parental leave policy
- Launched Stretch Reconciliation Action Plan
- Enhanced performance management process



Social Purpose

Samantha Stevens
(EGM, Corporate Affairs)

Getting energy right...

... for our Customers

- Addressing affordability and reliability
- Advocating for sound energy and climate policies
- Leading the transition to a decentralised and digitised future

... for our Communities

- Supporting education through our Origin Foundation
- Contributing to our communities
- Creating opportunities for regional and Indigenous communities

... for our Planet

- Leading position on climate change
- Accelerating towards clean energy
- Focusing on emissions improvements

Creates value for our business and delivers for all our stakeholders

Getting energy right for our Planet

Leading position on climate change

- Believe electricity sector should deliver more than its proportional share of emissions reduction
  - Support national goal of net zero emissions in the electricity sector by 2050 or earlier
- First Australian company to set science based targets aligned to 2°C Paris Agreement
  - Halve Scope 1 and 2 emissions by 2032
  - 25% reduction in Scope 3 emissions by 2032

Accelerating towards clean energy

- Targeting >25% owned and contracted capacity from renewables and storage by 2020
- Utilise our strong gas position as a lower-emissions firming fuel domestically and delivering LNG to Asia to displace coal

Focusing on emissions improvements

- FY2019 Scope 1 and 2 emissions in line with FY2018
- 39% reduction in emissions from flaring in FY2019
- Implemented a range of emissions reductions initiatives across the business

Getting energy right for our Customers

Addressing affordability and reliability

- Reduced prices for > 520,000 customers
- Record Eraring output putting downward pressure on prices
- Market leading program to protect hardship customers
- APLNG supplied ~30% of east coast domestic gas in FY2019
- Co-developed an industry-wide Energy Charter

Advocating for sound energy and climate policies

- Support an overarching energy and climate change policy
- Advocating for policies that encourage the right investment at the right time

Leading the transition to a decentralised and digitised future

- Investing in analytics and digital capability to improve the customer experience
- Leading installer of rooftop solar for more than 10 years

Getting energy right for our Communities

Supporting education through our Origin Foundation

- > $25 million distributed by Origin Foundation since inception
  - includes $3 million of employee matched donations
  - 60,000 volunteer hours by our people
- #1 in GoodCompany's Top 40 Workplace to Give Back in 2019

Contributing to our communities and local causes

- > $750,000 direct community investment in FY2019:
  - Sponsor of Elliot Hawks and established local football oval
  - Supported Roma State College Indigenous senior students' camp
  - Contributed to Wagga Wagga Multicultural Street Festival
- Supporting domestic manufacturing through supply of gas

Creating opportunities for regional and Indigenous communities

- Targeting increased regional procurement from $247m in FY2019
- Aiming to double Aboriginal and Torres Strait Islander employment by 2022
- Delivering treated water to landholders via irrigation schemes

- Founded in 2010
- Focus on education to break the cycle of disadvantage
- Since 2010, supported > 60 non-profit organisations, including:
  - SolarBuddy
  - The Big Issue
  - Big Picture Education Australia
  - Gawura school
- Matched employee donations to more than 250 Australian charities in FY2019

[Click here to learn more about the Origin Foundation](https://youtu.be/2XAGblwSmsc)

https://youtu.be/2XAGblwSmsc

Capital Management

Lawrie Tremaine (CFO)

Improved financial position & performance

Maximise cash & returns through cycles

- ✓ Two strong cash engines
- ✓ Underlying ROCE lifted to 9.1%
- ✓ Company wide cost reduction
- ✓ Lower interest costs at Origin and APLNG
- ✓ Lower hedging costs as balance sheet risk reduces

Resilient capital structure

- ✓ Target capital structure and credit rating achieved
- ✓ $3.7bn reduction in debt FY16-19
- ✓ Debt restructured to optimise tenor and interest costs
- ✓ >$4bn in undrawn facilities cancelled since Jun-17

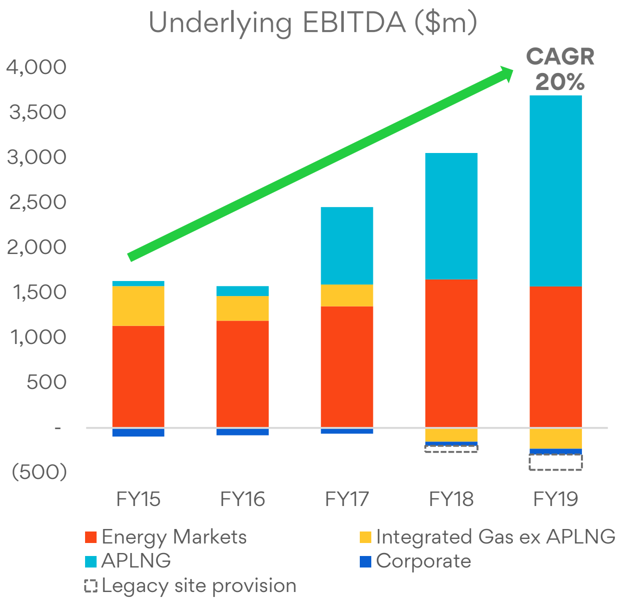
Disciplined capital allocation

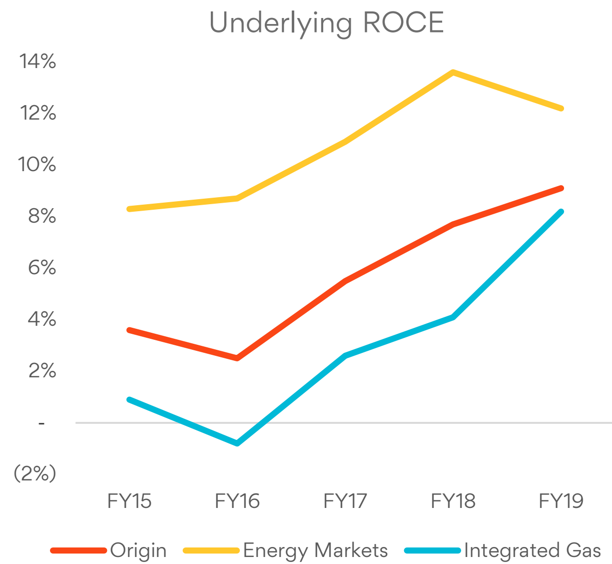
- ✓ Capex and opex tightly managed
- ✓ Dividend recommenced
- ✓ Base dividend policy announced
- ✓ Improved investment framework & governance

Portfolio management

- ✓ Leaner, simplified organisation
- ✓ Robust risk management framework
- ✓ Continual assessment of portfolio

Two strong cash & earnings generating businesses



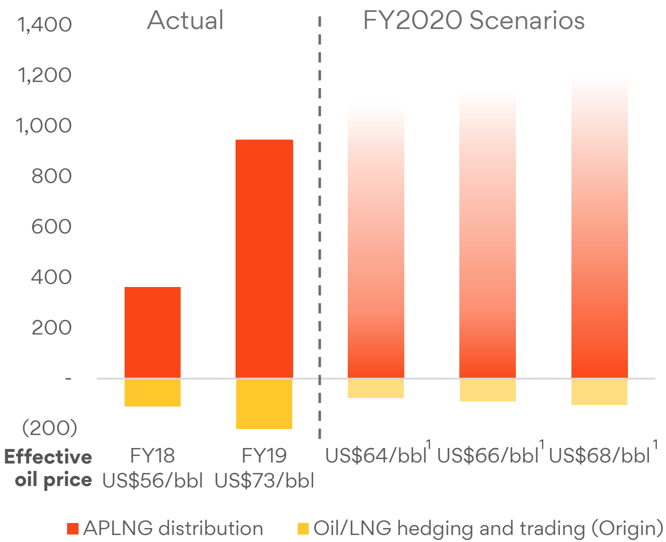


- APLNG provides diversification of cash & earnings
- Energy Markets faces headwinds but earnings relatively stable

- Returns have improved but remain lower than our aspiration

Maximising cash generation from APLNG

APLNG estimated distribution and Origin oil/LNG hedging and trading (A$m)

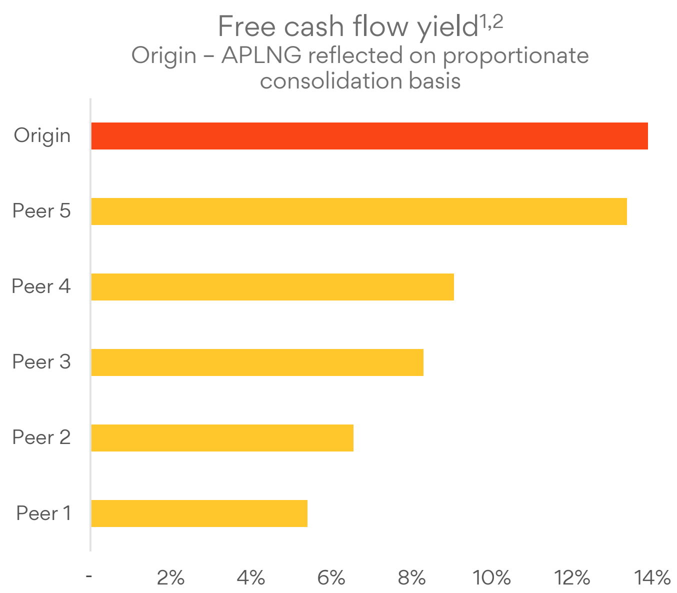


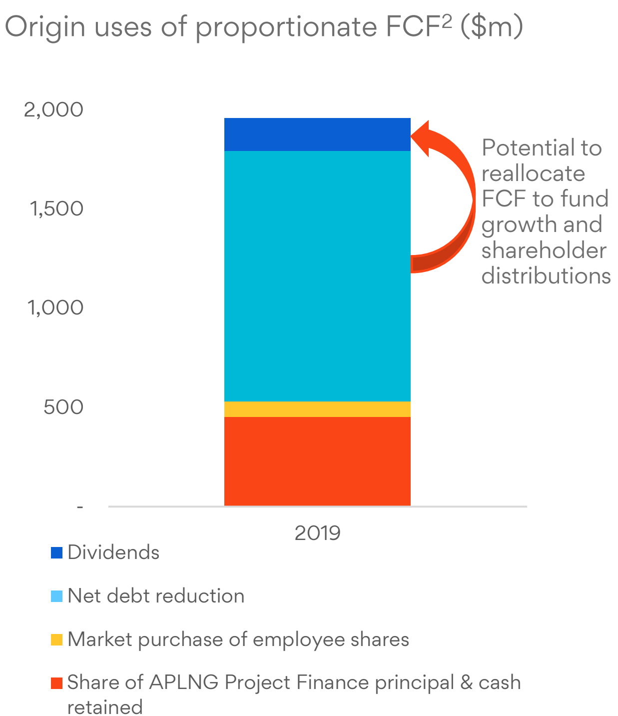
	Effective Oil Price US$/boe	Effective Oil Price A$/boe	Net Cash A$m
FY2019	73	101	943
FY2020 1H	69	~100	~520

- FY2020 full year cash distribution driven by breakeven, FX and oil price
  - Reduce range of outcomes as ~80% of US$ oil exposure priced as at 31 October 2019
  - Sensitivities assume performance is consistent with production & breakeven guidance

1) FY2020 effective oil prices based on a blend of actual pricing and FX to 31 October 2019 and average prices from 1 November 2019 of US$50/bbl, US$60/bbl and US$70/bbl, all at AUD/USD of 0.70

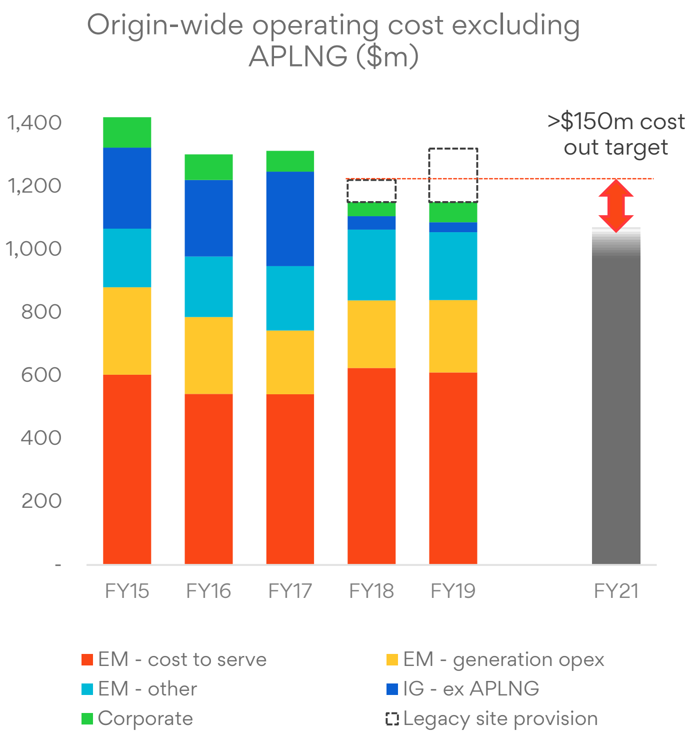
Potential to grow distribution to shareholders

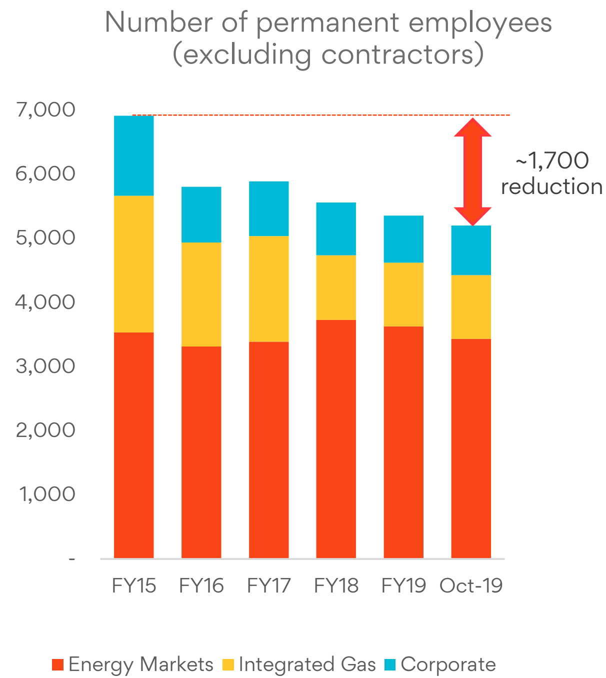




1) Peers group includes AGL, Contact, Oil Search, Santos, Woodside. Free Cash Flow Yield has been calculated based on CY2018 or FY2019 public data
2) Free cash flow defined as cash from operating and investing activities (excluding major growth projects), less interest paid (Origin is prepared on the basis of proportionate consolidation of APLNG). Free Cash Flow Yield based on 30 day VWAP as at 18 November 2019 (for Origin of $8.03 per share)

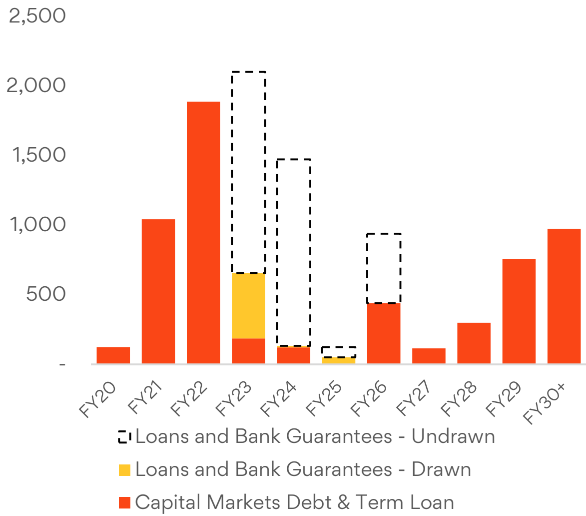
Leaner, Simpler operating model



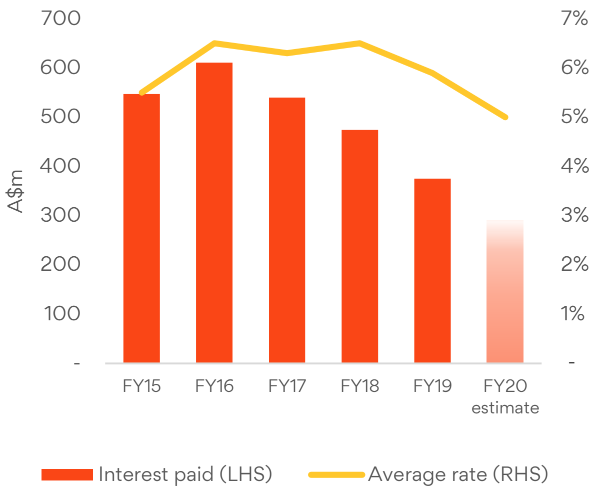


Optimising our debt book

Debt Maturity Profile as at November 2019 (A$m)



Interest paid and average interest rate

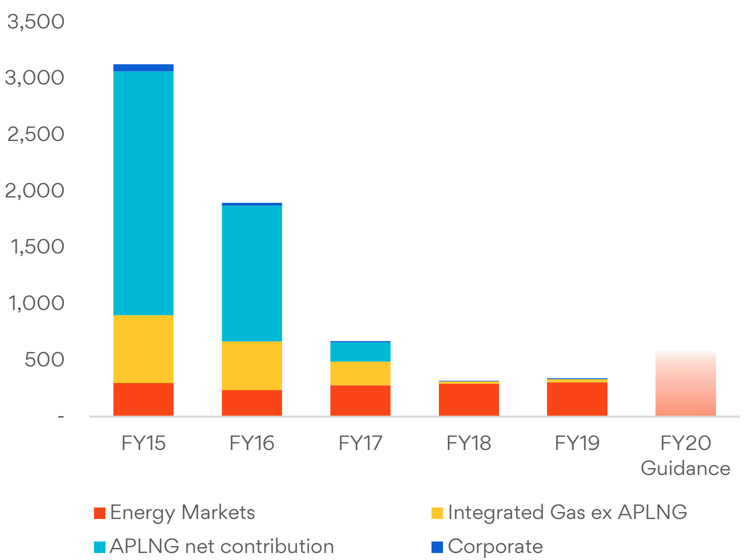


- Active refinancing to lower rates and increase tenor
- Recent 8 to 10 year debt at 2.7% to 3.2% range
- Undrawn liquidity reduced but maintained at high level to fund FY2021/FY2022 maturities

- ~$240 million reduction in annual interest costs from FY2016 to FY2019
- >$80 million reduction in net financing cost expected in FY2020
- FY2020 average interest rate expected to be low 5% range, down from 5.9%

Capital discipline

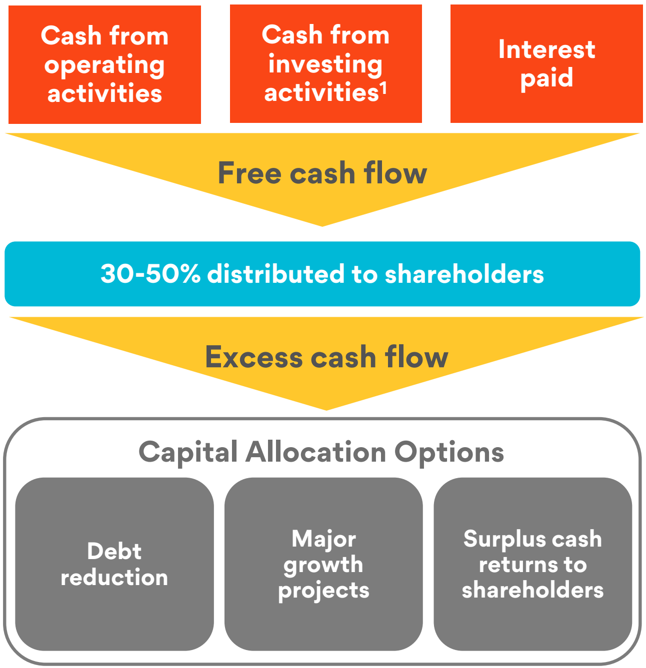
Capex[1] ($m)



- Capex constrained at ~$400 million over time, excluding E&A
- Beetaloo E&A driving the increase in FY2020 outlook
- Mature capital governance process in place
- Origin wide allocation based on greatest need or highest return
  - Hurdle rate: WACC plus buffer
  - Low case > $0 NPV
- Carbon reduction scenarios reflected in business case economics

1) Capital expenditure in the chart above excludes divestments / acquisitions

Disciplined capital allocation framework



- Strong cash generation, a stable sustaining capex
- Potential for distributions at high end of payout range
- Franking limitations expected
  - Low tax payments over FY2021-23 due to realised FX losses on debt maturities
- Further debt reduction within amended Adjusted Net Debt / Adjusted Underlying EBITDA range of 2-3x
- Major growth subject to quality opportunities
- Surplus cash available for additional capital returns

1) Excludes major growth projects (to be announced on FID)

Accounting Update

AASB 16 Leases (effective prospectively from July 2019)

- Required to account for all leases on-balance sheet

Origin excluding share of APLNG	
Predominant lease types	Commercial offices, LPG terminals, power stations and fleet vehicles
Estimated balance sheet impact	Lease liability of $450-500 million and Right-of-use asset of $375-425 million
Estimated income statement impact	$80-90 million increase in FY20 EBITDA offset in D&A and financing costs

Origin treatment of APLNG dewatering and workover costs

- With extended learnings post commissioning, dewatering and workover costs are now deemed more operational in nature (consistent with industry practice)
- Previously, future downhole costs for workovers and dewatering were estimated and amortised through the income statement on a units of production basis
- From 1 July 2019, these costs will be directly expensed as incurred
- Expected to result in a decrease to EBITDA more than offset by a decrease in amortisation
  - Initial estimates indicate a non-cash increase in EBIT of $20-30 million (Origin share)

Questions

Morning tea break

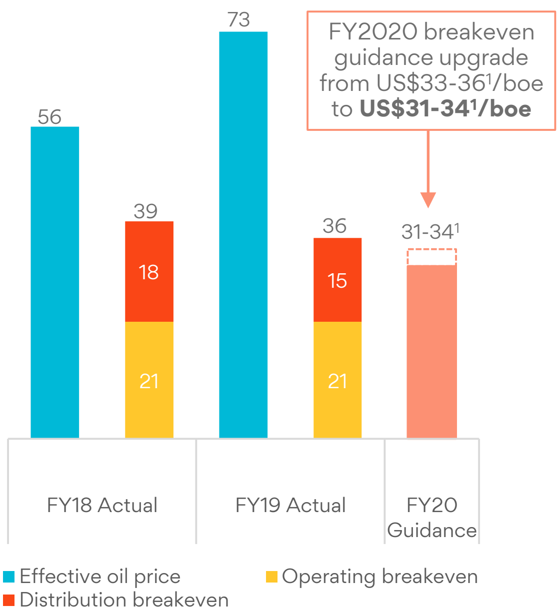
Integrated Gas

Mark Schubert
(EGM, Integrated Gas)

Track record of transformation and performance

2X	**PRODUCTION** 2015 - 2020
↓50%	**WELL COSTS** 2017 - 2019
↓20%	**OPERATED OPEX / GJ** 2017 - 2019
↓	**LAYERS IN THE ORGANISATION**
✓	**ASSET-LED**

Distribution breakeven and effective oil price (US$/boe)



1) FX rate AUD/USD 0.70; reflects royalties payable at the breakeven oil price; excludes Ironbark acquisition costs

Focused on getting energy right

APLNG supplied **~30%** of east coast domestic demand in FY2019

Security of supply for China and Japan with 20 year contracts

Net cash from APLNG **A$943m** in FY2019

Opportunity to leverage capabilities to **deploy capital** into attractive growth

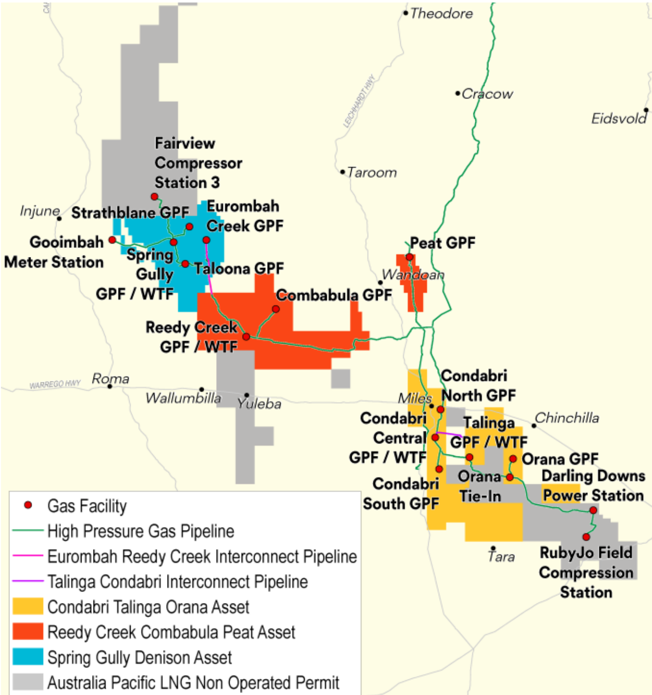
APLNG regional spend of **A$198m** in FY2019

Queensland gazettal supply keeps **450** Incitec Pivot **workers employed**

LNG delivered to China **lowers global emissions** by displacing coal

Delivering **treated water to landholders** via irrigation schemes

Asset led model creates ownership, alignment and results

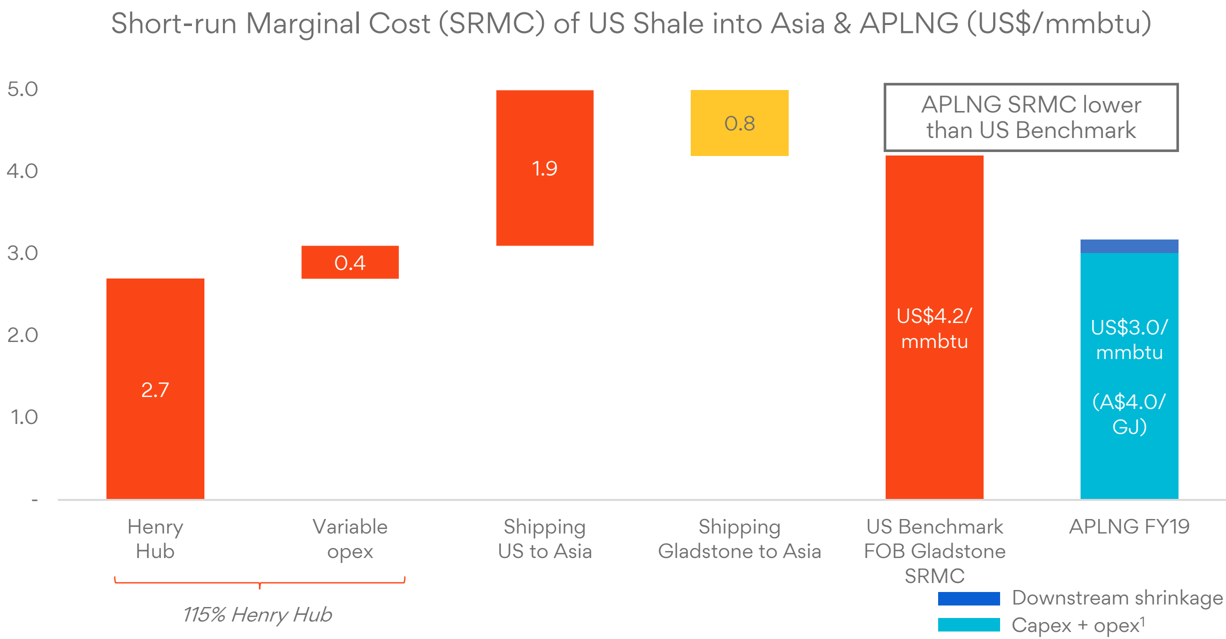


	Avg Production TJ/day[1]	# GPFs[2]	GPF reliability[3]
Reedy Creek, Combabula & Peat	445	2	99.6%
Condabri, Talinga & Orana	757	4	100%
Spring Gully & Denison	284	1	100%
Non operated	441	5	n/a

- Completed major maintenance on 15 GPF trains
- Record breaking production so far in FY2020:
  - Daily Operated Asset production record reset **11** times
  - Daily Portfolio production record reset **9** times

1) Average daily production Q1 FY20 (APLNG share)
2) Phase 1 electric driven GPFs. Excludes legacy gas-fired GPFs
3) Average monthly electric GPF reliability for Q1 FY20. Reliability is measured as operating time divided by the sum of operating time + unplanned down time

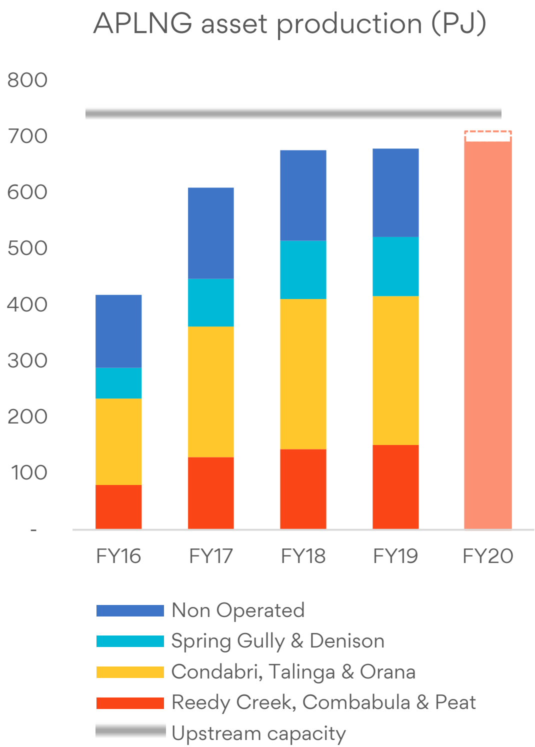
Built a business which is competitive with US Shale into Asia



Source: McKinsey Energy Insights 'Global Gas Outlook – H1 2019 gas report update' September 2019, Origin analysis

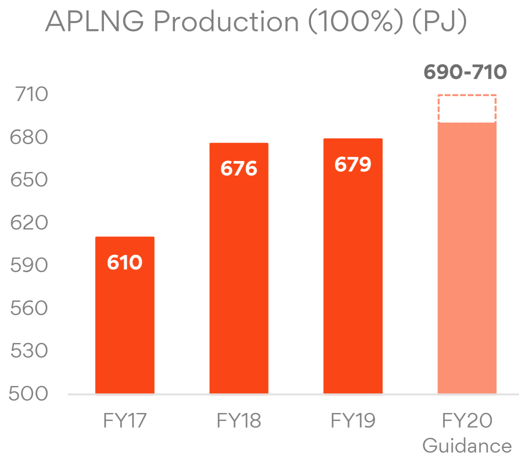
1) Operating cash costs exclude purchases and reflects royalties payable at breakeven oil price; production adjusted for downstream volume shrinkage; AUD/USD 0.72

Production up, strong performance to continue



- Strong field performance and completion of Eurombah to Reedy Creek Interconnect pipeline has led to increased FY2020 production
- FY2020 **production guidance increased** from 680 - 700 PJ to **690 – 710 PJ due to strong field performance**
- **Targeting to maintain current strong production performance over next 3 - 5 years** with potential to increase production further by utilising spare upstream capacity

Steady cost performance to continue



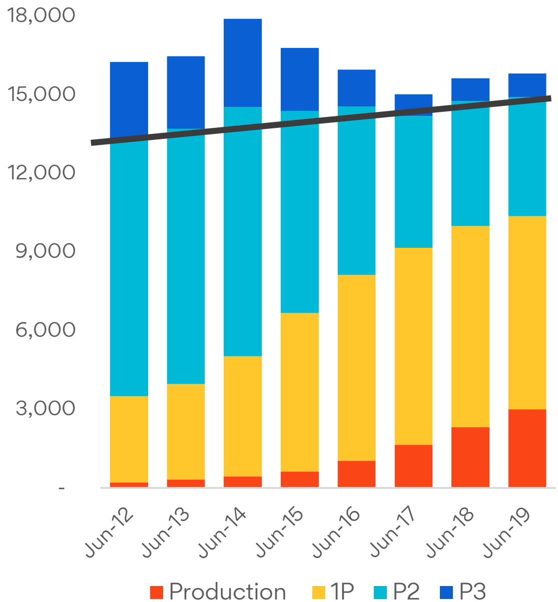
APLNG (100%)	FY17	FY18	FY19	FY20 Guidance
Production (PJ)	610	676	679	690 – 710
Capex + opex, excl. purchases[1] (A$bn)	2.7	2.6	2.7	2.8 – 3.0
A$/GJ	4.4	3.8	4.0	3.9 – 4.3

- **Total capex + opex[1] per gigajoule not expected to increase materially over next 3 – 5 years**
- Next wave of cost reduction prioritises activities that provide the greatest value:
  - Workover costs (frequency and unit cost reduction)
  - Fracture stimulation costs
  - Horizontal wells

1) Operating cash costs exclude purchases and reflects royalties payable at the breakeven oil price. Royalties payable increases as oil price increases

Resource base performing well

APLNG reserves position[1,2] (PJ)



Solid reserves

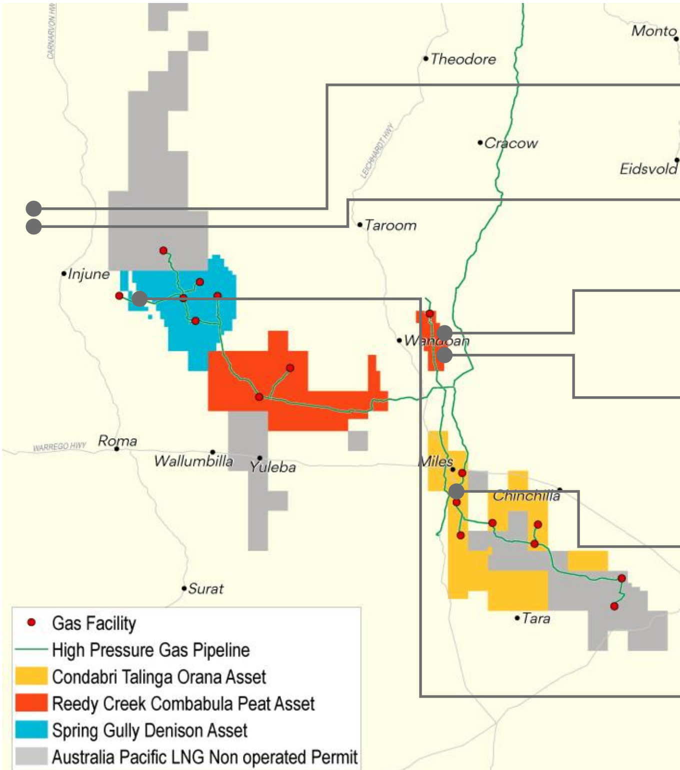
- Reserves converging towards 3P since FID
- Field performing in line with expectations
- Approximately half of 2P reserves yet to be developed

Expanding the resource base in FY20

- Murrungama gazettal awarded Jun-19, development ready (90 PJ 2P)
- Ironbark acquired by APLNG Jul-19, development ready (129 PJ 2P). Further exploration potential
- Gazettal block awarded Oct-19. Exploration potential adjacent to Peat

1) Reserves are 100% APLNG as reported in FY2019 Reserves Report released to the ASX on 22 August 2019
2) Some of APLNG's CSG reserves and resources are subject to reversionary rights and ongoing interest in favour of Tri-Star. Refer to section 7 of the Operating and Financial Review released to the ASX on 22 August 2019 for further information

Exploration program underway and remains on track



Westgrove 9 (deep conventional play)
- Drilling complete
- Fracture stimulation planning underway

Reid's Dome Denison
- Awaiting Westgrove 9 results

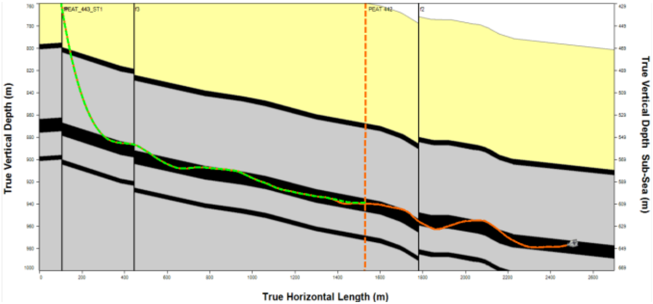
Peat Flank – profiled on the following slide

South Burunga 2 (deep conventional play)
- Drilling complete. Gas in place confirmed
- Stimulation and testing scheduled in late CY2019

East Bowen Deep
- Gas in place confirmed with core holes
- Two pilot wells on track to spud in late CY2019
  Frac and testing scheduled for early CY2020

Reid's Dome Spring Gully flank
- Deliverability testing underway for pilot wells
- 3D seismic acquisition planned for CY2020

Peat Flank profile



Proven ability to steer well for long lengths in reservoir and achieve good gas rates. Combined with 3D seismic, this allows well planning to maximise production

- 20 year old CSG field located on crest of geological structure, current production 10TJ/day
- Appraisal programme testing if field can be expanded to 60-100 TJ/day
- 2 pilot wells online indicate commercial viability (each average ~1 TJ/day), 3rd well ready to start
- High quality 3D seismic – confirmed high resource volumes, can place wells to maximise gas recovery
- Thick, continuous coals similar to Spring Gully – applying same horizontal well technology
- “Development ready” decision scheduled H2 FY2020

APLNG commercial update

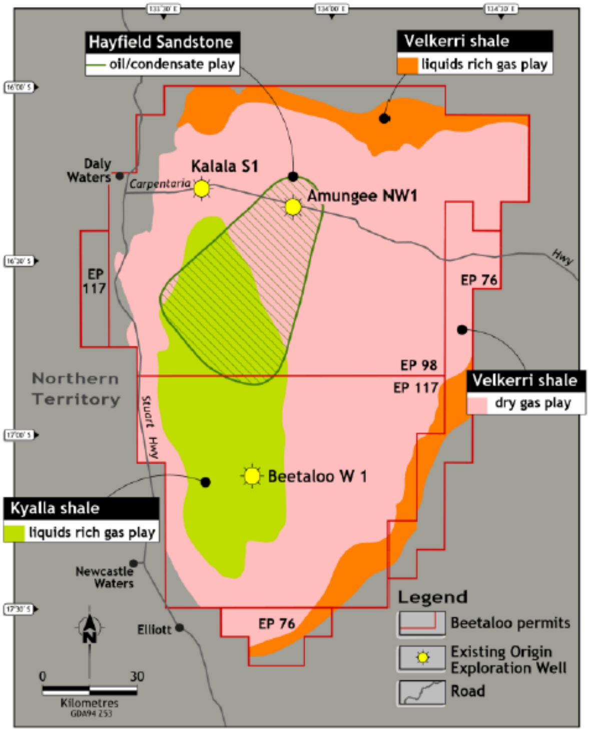
- Supporting the domestic market - multiple supply contracts signed
  - 61 PJ to Origin Energy over 2020 and 2021
  - > 50 PJ to manufacturers including Incitec Pivot, Orica and Orora
- LNG contract Downward Quantity Tolerance (DQT) declared for CY2020
- Cash flow from cargo deferral deal to commence in H2 FY2020
- Tri-Star proceedings
  - APLNG's position remains unchanged since 2015 that reversion has not occurred
  - APLNG expects to file its defence and counter claims to Tri-Star's September 2019 amended statements of claim during H2 FY2020
  - Next step will then be for Tri-Star to file its reply and answer. Once pleadings are finalised the usual court process would involve a period of document disclosure, potentially court ordered mediation and then finally a hearing

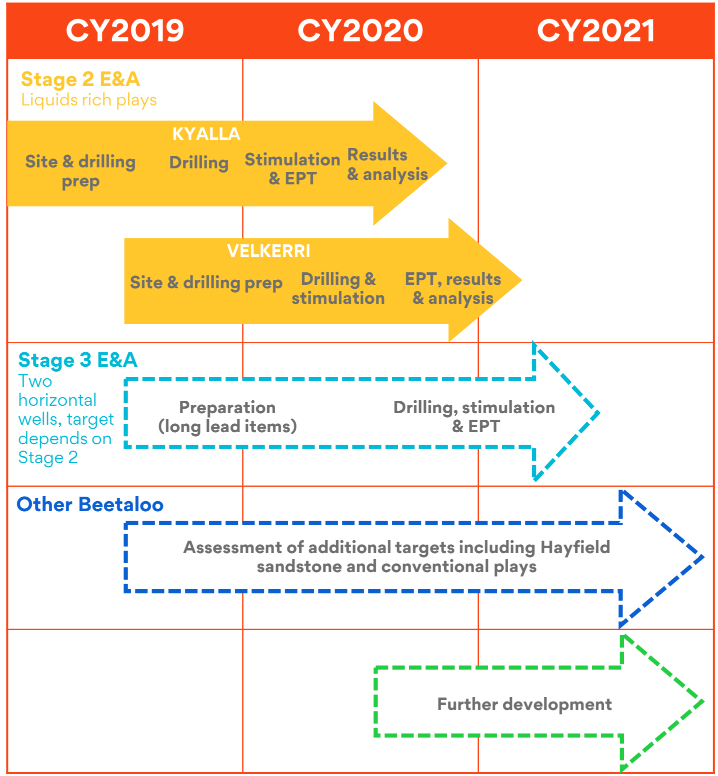
Beetaloo Stage 2 appraisal underway

- **Kyalla shale liquids rich gas play:**
  - Well spudded 9 October, preparing to drill the horizontal section
  - 90-day extended production test (EPT) to commence in Q3 FY2020
  - Results expected in Q4 FY2020
- **Velkerri shale liquids rich gas play:**
  - Well pad civils nearing completion
  - Awaiting drilling and stimulation approvals
  - Drilling expected to commence after the wet season in Q4 FY2020
- **Objectives** are to flow liquids-rich gas to surface under production test conditions

Kyalla 117 well site

Beetaloo timeline





Engaging with Beetaloo Traditional Owners

- We have the support of our Traditional Owners (TOs) who are Native Title holders for where we are working
- We provide them with forward work plans, including any hydraulic fracture stimulation, prior to activity commencing
- We continuously engage with our TOs and host pastoralists – we hold on-country meetings to explain activities, sacred site clearances are coordinated and facilitated by the Northern Land Council and we have Aboriginal Areas Protection Authority Certification for our activities[1]
- We actively seek to meet with communities outside of our exploration permit areas to discuss our activities, and the invitation remains open
- We genuinely work towards contributing to regional and local economic development, including employment and procurement opportunities for the local indigenous communities

1) In compliance with the NT Aboriginal Sacred Sites Act

Other Australian exploration opportunities

Cooper-Eromanga Basin permit

Cooper-Eromanga Basin

- 75% equity and Origin operatorship, Bridgeport 25%
- Staged farm in – drilling up to 5 exploration wells by 2024. Origin will carry Bridgeport's cost up to $12 million
- Planning underway for Stage 1a vertical well
- Targeting unconventional liquids and gas

Other Australian Exploration

- Actively considering other onshore Australian growth opportunities

Looking to the Future

APLNG	• FY2020 production guidance increased to 690 – 710 PJ due to strong field performance • Targeting to maintain current strong production performance over the next 3-5 years with potential to increase production further by utilising spare upstream capacity • Total capex + opex[1] per gigajoule not expected to increase materially over the next 3-5 years • Potential exploration upside
Growth assets	• Beetaloo progressing well, first results expected Q4 FY2020 • Actively looking to replicate, scale and leverage the Integrated Gas model to other Australian onshore exploration opportunities e.g. Cooper-Eromanga Basin

1) Operating cash costs exclude purchases and reflects royalties payable at the breakeven oil price. Royalties payable increases as oil price increases

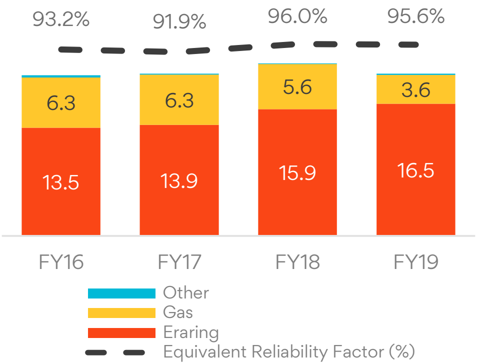
Energy Markets – Supply & Operations

Greg Jarvis
(EGM, Energy Supply & Operations)

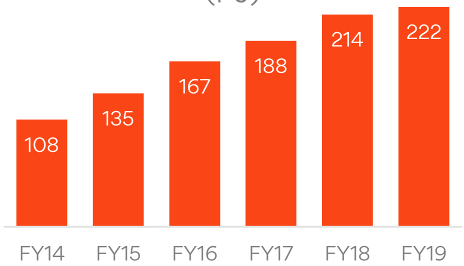
Track record of performance

- Record output at Eraring over the last two years
  - Capable of 880 MW to 2,880 MW in 1-1.5 hours
  - Fuel flexibility with minimal long term take-or-pay coal and enhanced rail unloading capability
- Strong reliability across the fleet
  - Eraring FY2019 full forced outage rate 3% (NSW Black coal - 7%)
  - High start reliability of 98% (4,320 starts in FY2019)
- External gas sales growth of 105% since FY2014
  - Underpinned by competitive gas supply and flexibility in transportation
- Proven wholesale and trading capabilities

Owned Generation Output (TWh)



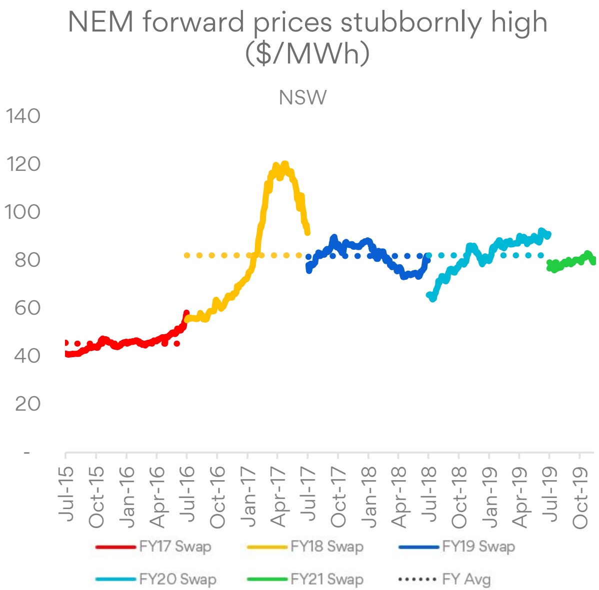
Natural Gas External Sales (PJ)



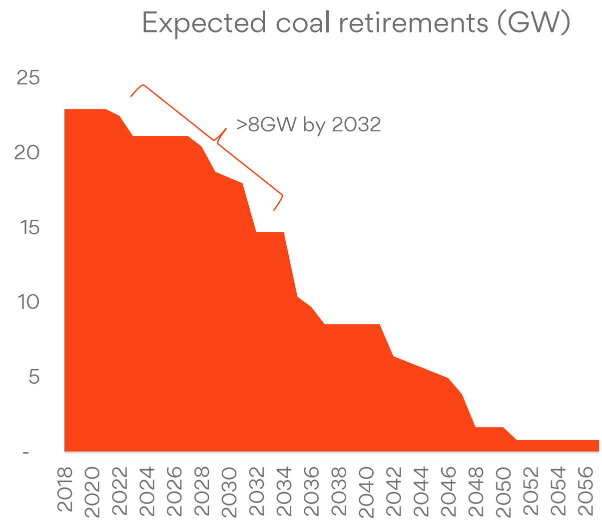
Wholesale energy earnings drivers

Key Drivers	Earnings Considerations
Wholesale electricity prices	• 15-20 TWh of relatively fixed cost generation • Covered for peak demand – fast start generation allows us to generate more in higher price periods and be short in lower price periods allowing us to lower our cost of energy
LREC prices	• Fixed cost PPA position (~5 million certificates p.a.) • Impact to earnings from falling LGC prices to be partially offset by cheaper PPAs entering the portfolio (e.g. Stockyard Hill)
Fuel costs	• Flexible fuel position with ~4 mtpa coal contracted to 2022 out of total ~7mtpa current usage • Strong gas supply underpinned by transportation flexibility, allowing us to direct gas to the highest value market and optimise seasonality
Firming capacity	• Continue to increase portfolio flexibility with low capital outlay • Minimal replacement capex requirements near term, with a number of brownfield growth opportunities

Ageing NEM coal fleet, high wholesale prices



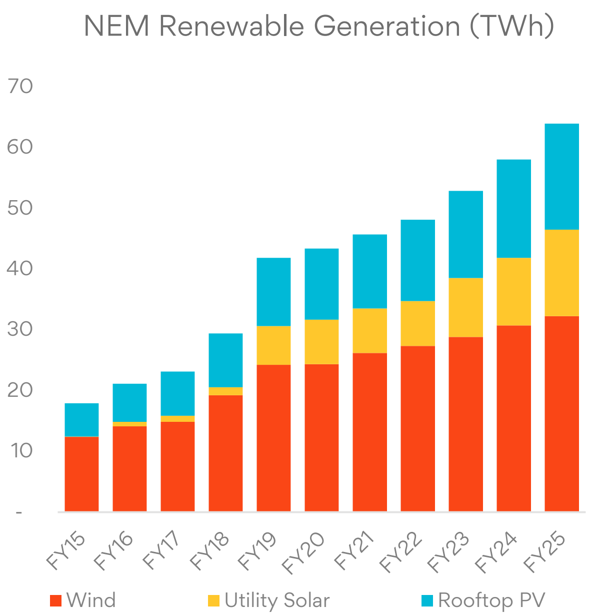
Source: AEMO/Bloomberg



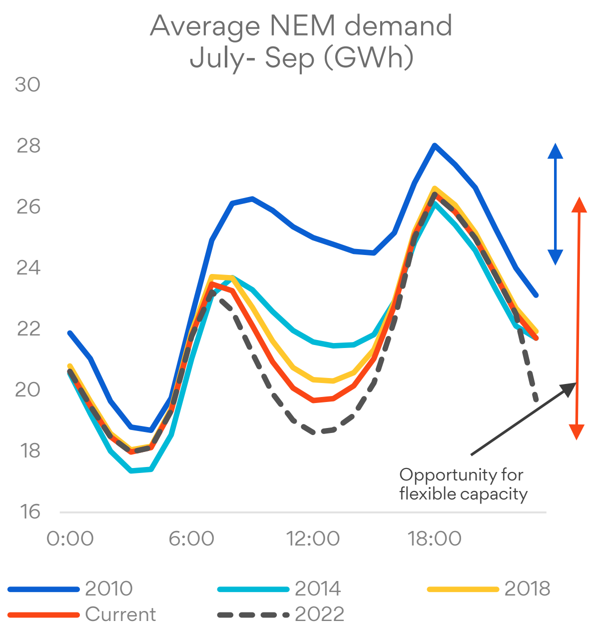
Source: AEMO

- Ageing NEM baseload coal fleet causing increased reliability issues
- Renewables delayed coming onto the grid
- Reliability issues over summer can also result in periods of high volatility

Increasing renewables driving intra-day volatility



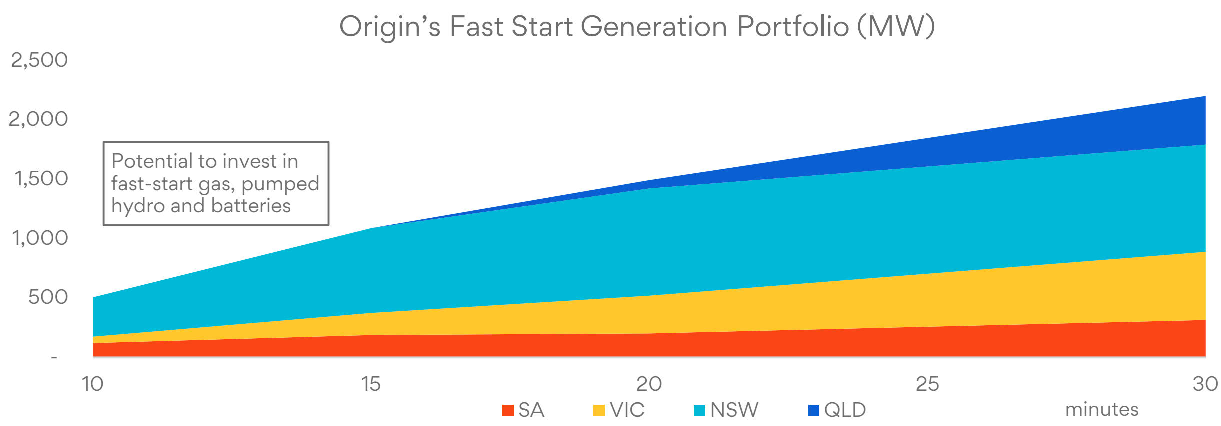
Source: AEMO, ISP 2018 Forecast



Source: AEMO

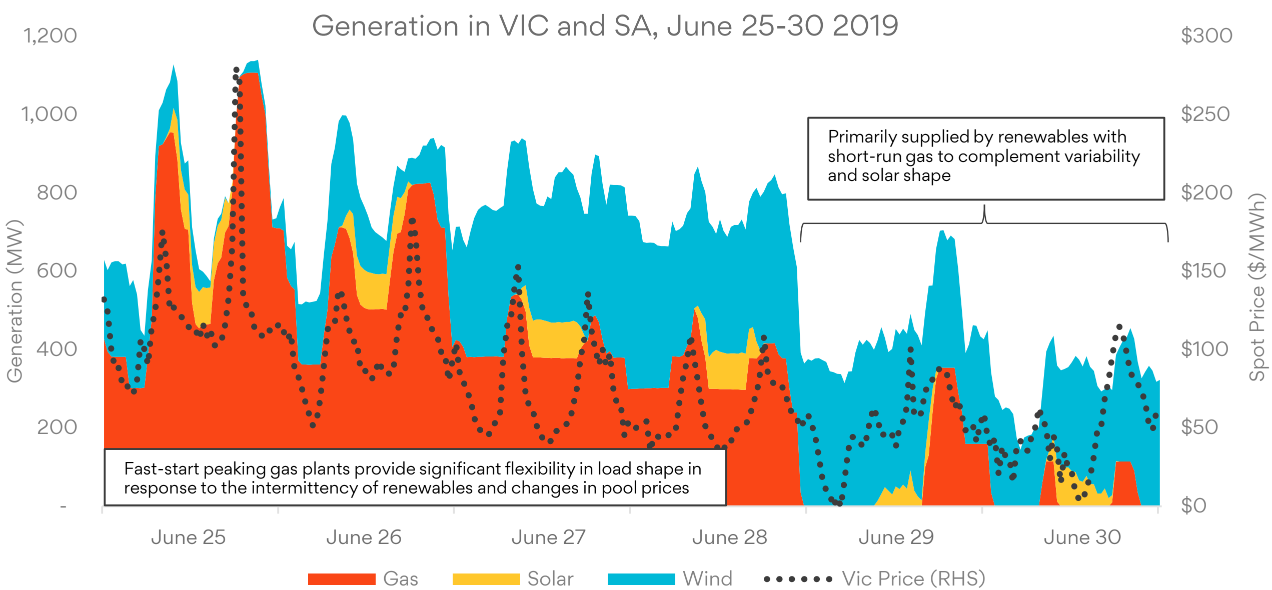
- Renewables generation expected to continue to increase, contributing to increasing intra-day volatility

Well positioned in an increasingly volatile market



- Largest non Government owned portfolio of fast start generation (<30 minutes)
- Flexible gas supply portfolio to back gas fired generation
- Eraring is one of the most flexible coal generators in the market, with a low take or pay coal position
- We continue to analyse the results of our two shifting trial and minimum generation levels to optimise Eraring flexibility

Our flexible portfolio in action today

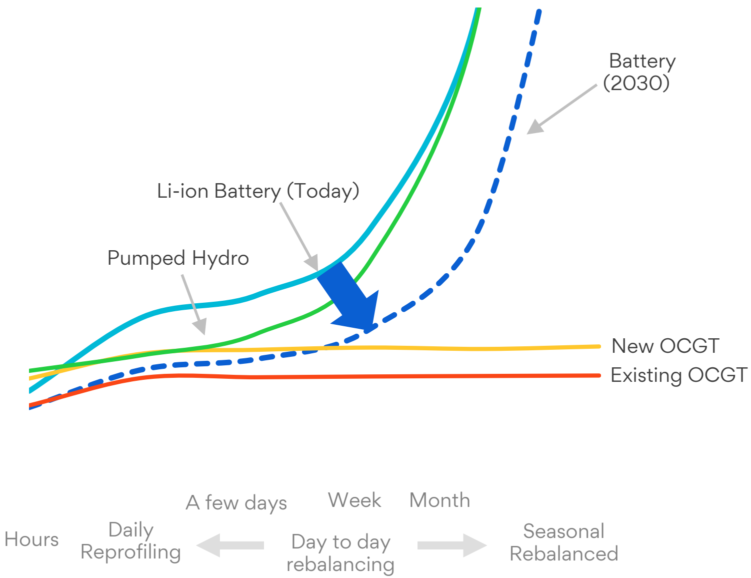


Source: AEMO

- Our gas generation fleet provides flexibility to respond to high prices, and turn off in periods of high renewable generation
- We have sufficient gas fired generation to manage expected renewable growth in the market, with low future capital outlay

Firming requires a range of technologies

Cost of firmed renewables with different technologies



- OCGT (Gas) and hydro will continue to play an essential role in longer duration firming (particularly for evening and seasonal peaks)
- Batteries expected to be competitive for short duration firming (shallow storage)
  - Effective at shifting energy, increasing predictability of renewables
  - Currently not cost competitive for longer duration storage (beyond a few hours)

Progressing opportunities in a disciplined way

origin

476 MW
new renewable supply online FY2019

Morgan
Option for solar plus battery (up to 300 MW)

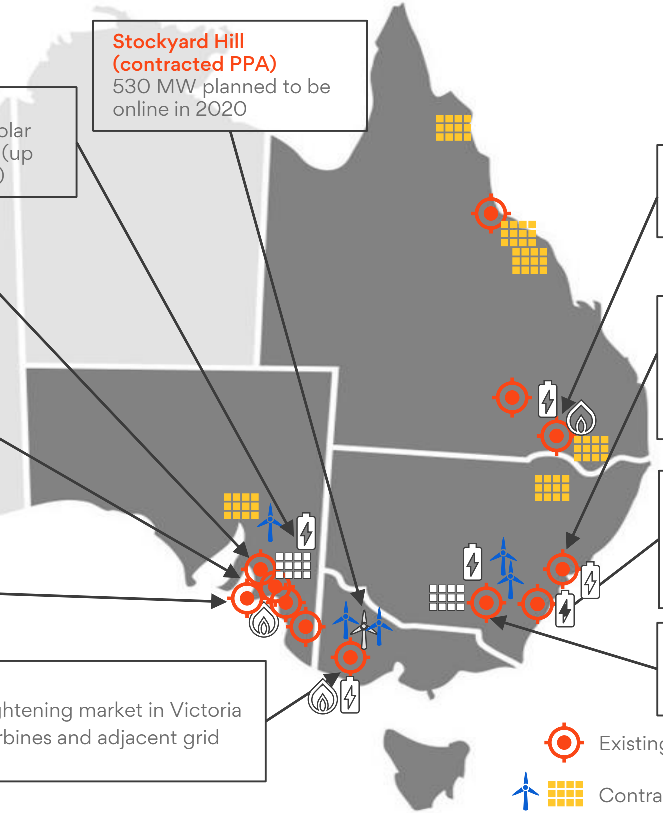
Stockyard Hill (contracted PPA)
530 MW planned to be online in 2020

Pelican Point
Agreement for 240 MW capacity to June 2024

Quarantine
Unit 2 repower expected 2020 (option for units 3-4)
Expansion option for 3 new 55MW turbines

Osborne
180 MW contracted to Dec-23

Mortlake
Potential to expand in response to tightening market in Victoria
Option for additional fast start gas turbines and adjacent grid scale battery (~200 MW total)



Darling Downs
Option for site expansion – battery and fast start gas

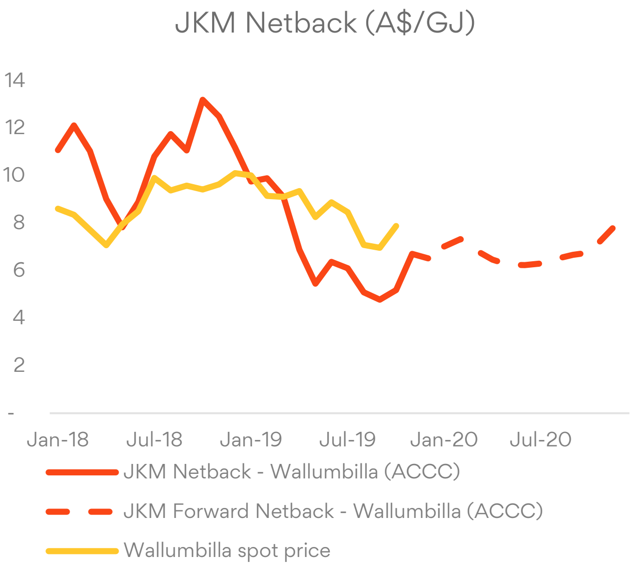
Eraring
Flexibility trials to support renewables
Transmission available to support battery options

Shoalhaven Pump Hydro
Potential 235 MW expansion of capacity (initial feasibility costs higher than expected)

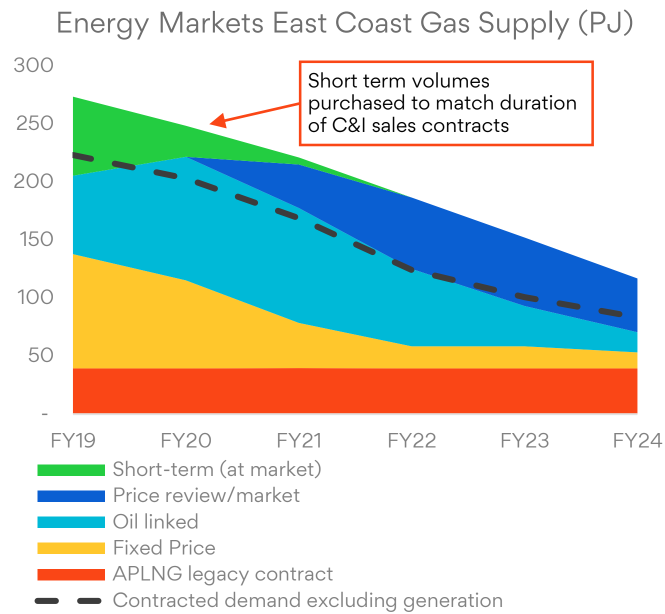
Uranquinty
Option for battery plus solar (up to 200 MW)

Existing generation
Contracted renewable PPAs
Expansion opportunities

Competitive gas supply



Source: ACCC, AEMO



- Domestic gas market well supplied in the near term
- Gas prices softening driven by weaker Asia region LNG pricing

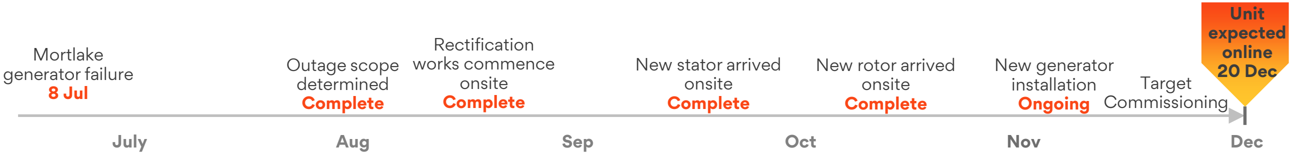
- Portfolio well supplied medium term, with flexibility to provide firming generation
- As the market transitions to more renewable energy, gas supply flexibility becomes more valuable

Mortlake on schedule

Old rotor being removed at Mortlake

New stator on-site at Mortlake

Replacement rotor unloaded at Avalon airport, and transported to site



- Mortlake unit repair on track, expecting return to service by 20 December 2019

Energy Markets – Retail

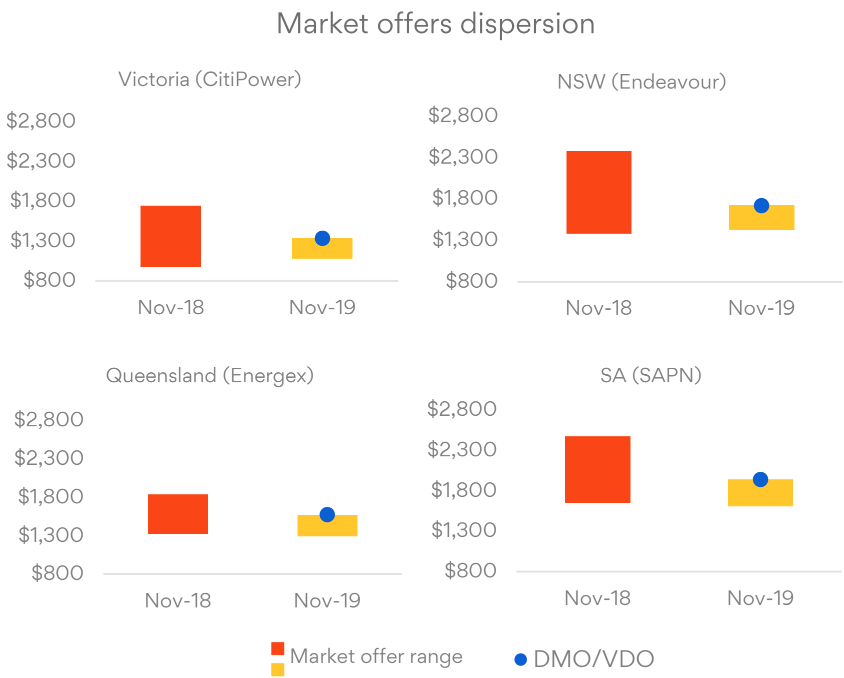
Jon Briskin
(EGM, Origin Retail)

On track to deliver our strategy in changing market

- Market dynamics have changed post implementation of VDO/DMO
  - Reduced dispersion in market offers
  - In situ churn reducing
- We continue to manage customer numbers and Customer Lifetime Value, with more emphasis on holding or growing share over time
- We are on track to deliver our strategy:
  - Transform customer experience
  - Target step change in cost position – >$100 million cost out by FY2021 on track
  - Growth in revenue streams
- We are looking ahead to further improve customer experience and reduce cost beyond current targets
  - Developing plans to execute next wave of business transformation

Price dispersion reduced, transparency improved

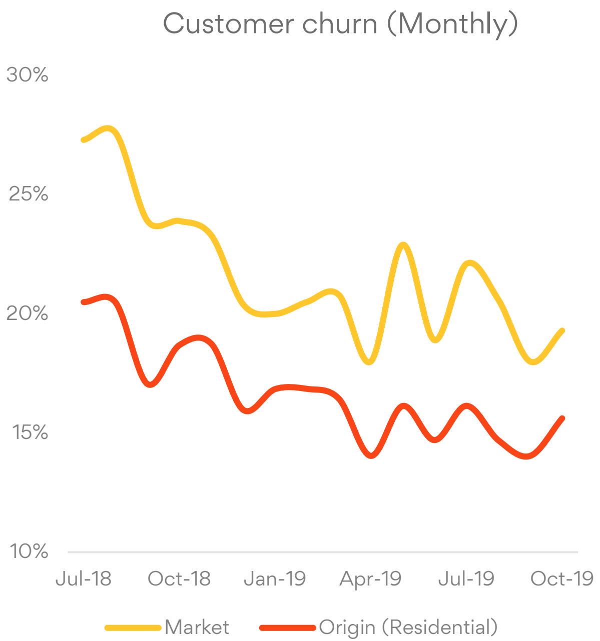
Market dynamics have changed post implementation of VDO/DMO

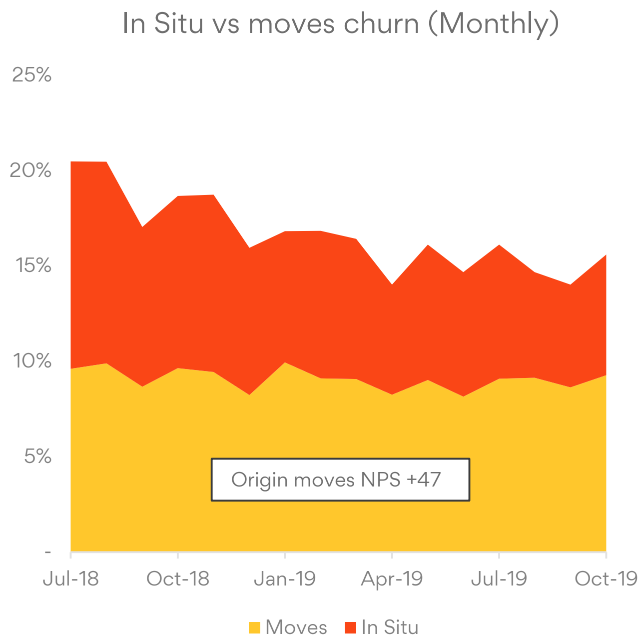


- Discounts quoted off DMO/VDO reference bill going forward
- AER has guided to adjusting the DMO for movements in component parts going forward
- ESC preliminary guidance has minimal changes to VDO methodology

Source: Energy Made Easy/Switchon - based on DMO/VDO reference bills, as at 12 November 2019, and offers quoted prior to announcement of DMO/VDO (Nov-18) including both discounted and standing offer rates

Customer activity reduced

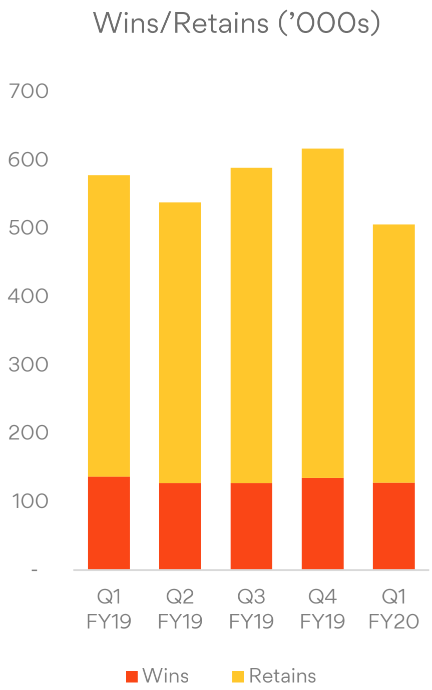




Source: AEMO/AER

- Reduced in situ churn increases the importance of movers and new connections as acquisition channels

Customer numbers and value remain a key priority

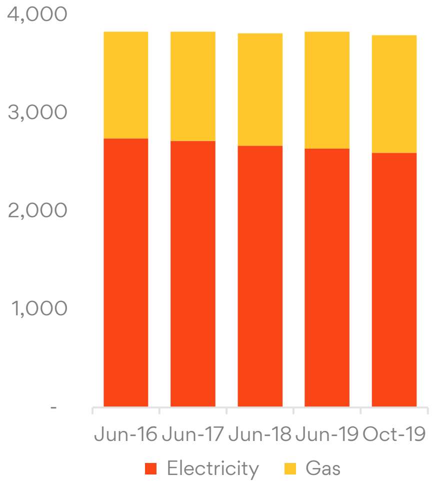


- Despite lower market activity, >2 million customers per annum are still being managed through a retention or win event
- We take a careful commercial approach, considering customer numbers and value
- Leading with a high headline discount to grow customer numbers has a direct impact on renewal costs and Customer Lifetime Value
- Use of lower cost channels also becomes an important driver of how we compete in market
- We optimise Customer Lifetime Value – pricing, products, channels and renewal strategies – and we monitor and respond to strong competition
- Underpinned by strong data and analytics capabilities

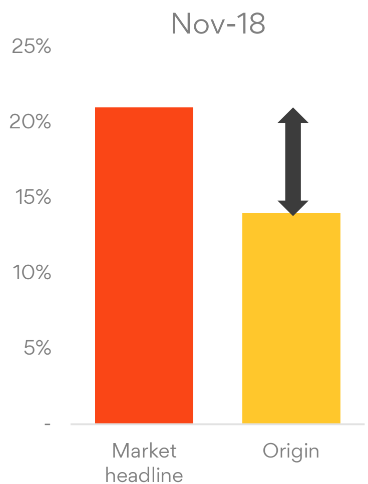
Considering share and value

We seek to win share, but are mindful of Customer Lifetime Value

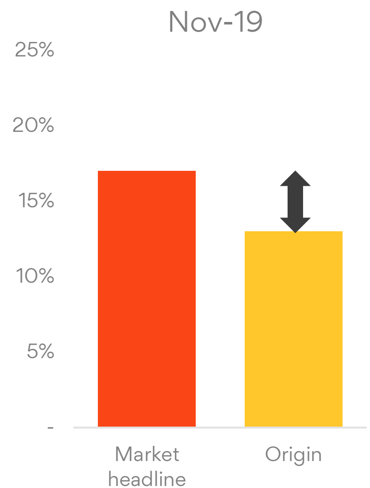
Customer accounts ('000)



Headline vs Origin discount – NSW (Full bill %)



Source: Energy Made Easy



Source: Energy Made Easy

- Customer accounts relatively steady last 4 years – down ~8k FYTD
- Currently, lower acquisition costs provide opportunity to compete effectively and maintain or grow share

Focused on customers, cost and growth

Transform **customer** experience	• Effortless digital experience • Simpler offers and streamlined customer journeys • Leading brand awareness and consideration
Target step change in **cost** position	• Simplified organisation driven by a customer and digital first mindset • >$100m cost out by FY2021 on track • Underlying change in culture and capabilities
Grow revenue streams	• Community Energy Services (CES) - Centralised hot water and electricity networks • Solar and Storage • Broadband and Adjacencies

Moving to a simpler, digitised customer experience

origin

Good Energy brand

Simpler offers	Streamlined customer journeys	Personalised, effortless digital experiences
Digitally-led customer journeys	Helping customers stay in control	Analytics-driven personalised solutions

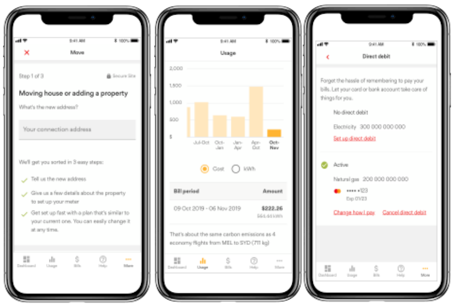
Max Saver
Manage online and save

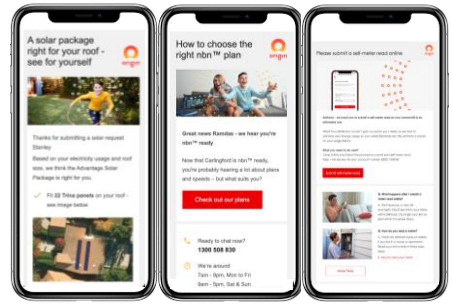
Flexi
Flexible billing and payments

Basic
Set and forget

Solar Optimiser
Higher feed-in-tariff

Broadband Bundle
Bundle and save





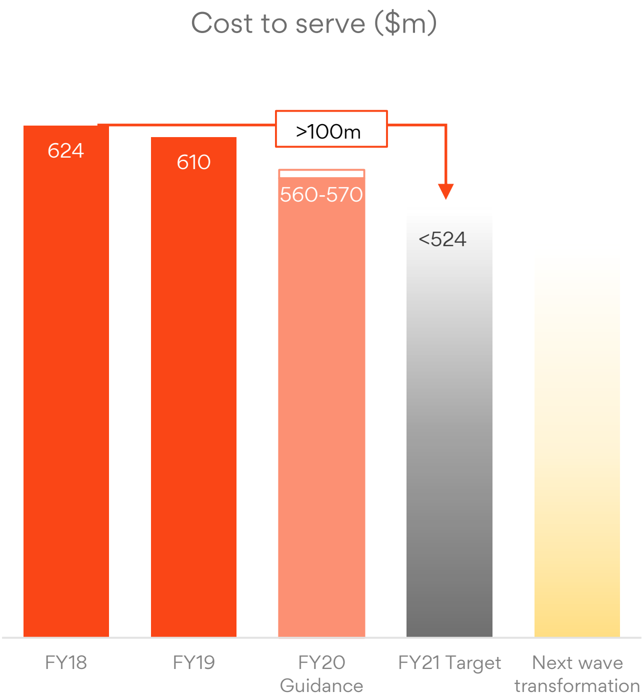
- Fewer products and price points
- Easy to compare plans
- Bundle benefits
- Digital activation and onboarding

- Simpler Moves and Renewals
- Usage insights
- Alerts and notifications
- New Connections portal

- >1.1m mobile App logins
- Digital service interactions up from 72% to 87% year on year
- Livechat volumes up 122% period on period[1] (NPS +40)
- Targeted campaigns driving digital awareness and adoption

1) 7 mths to Oct following April 2018 commencement

>$100m cost out on track



Digitisation, automation and simplified organisation

	12 months to Oct 19
Retail headcount[1]	↓ **21%**
Service call volumes	↓ **16%**
eBilling accounts	↑ 10% to **64%**
Direct debit accounts	↑ 7% to **32%**

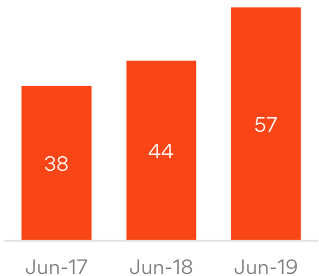
1) Onshore

- Simpler products and customer journeys
- Targeted marketing and optimised channels
- Digitised customer interactions
- Automated processes
- Outsourced simple transactional activity
- Leaner support structure

Grow revenue streams

Community Energy Services

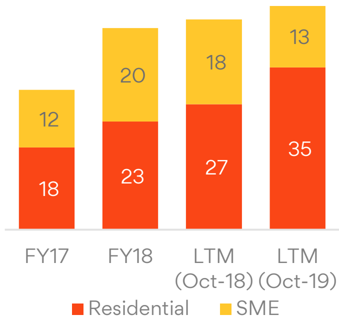
CES Gross Profit ($m)



- CES allows customers to access bulk discounted prices, and benefit from the aggregated load profile
- Acquired OC Energy, adding 55,000 embedded network customers

Solar and Storage

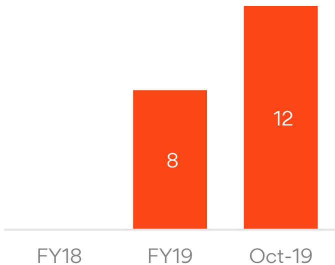
Solar installs (MW)



- Strong growth in retail solar
- Solar + storage enables opportunity to engage beyond the meter
- Residential sales ↑ 30% (12 months to Oct-19 vs Oct-18)

Broadband and Adjacencies

Broadband Customers ('000)



- Provides opportunities to bundle and build customer loyalty, lowering churn
- Moves an increasing component, providing opportunities to grow adjacent services

Next wave of transformation

- Built capability to transform customer experience and cost
  - A customer-centric culture
  - Simplified ways of working
  - A leading digital platform with automated processes
  - Growing sophistication of data and analytics
- This capability allows us to move to the next wave of transformation
- Lower activity provides an opportunity to further lower costs
- We are looking ahead to further improve customer experience and reduce costs beyond current targets
- Early stages – we will update the market as plans and targets become clear

Future Energy

Anthony Lucas (EGM, Future Energy & Business Development)

Energy and Data are converging

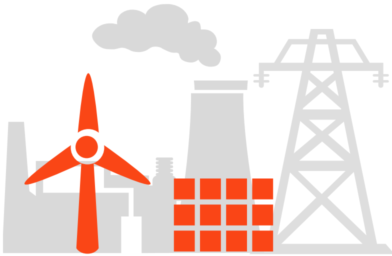
origin

We are experts at Energy, and now we have to be experts at Data

- Every time someone consumes
  an electron, data is generated
- Distributed assets are democratising energy and climate change challenges the traditional supply model
- Our customers expect more insights and innovation to make their lives easier
- IoT devices and big data analytics can be used to deliver these solutions for our customers

Decentralisation & digitisation changing the energy landscape

THE GRID IS CHANGING

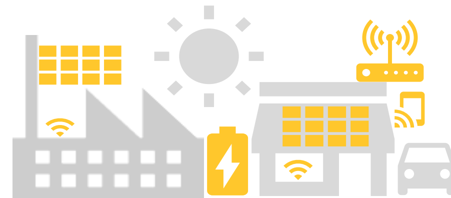


Centralised grid with increasing renewables

Historically …
- Few large & reliable generation assets
- Aggregated analogue data

Moving to …
- Increased intermittency from renewables
- Variable generation
- Increasing digitisation and data points

THE CUSTOMER IS CHANGING



Decentralised energy assets and IoT devices

- Many distributed assets & IoT devices
- Disaggregated data
- Control at appliance / device level
- Variable demand / supply
- Two-way power flows
- Greater customer value from connecting and sharing distributed assets

Origin's core skill of managing the demand / supply balance is a key strength

Building blocks for the future

Evaluated > 2,000 companies, deciding on where to procure, partner, invest or build capability

Data & Analytics	Distributed Generation & Storage	Connected Assets	Orchestration	Digital Security & Distributed Transactions
✓	ONGOING	ONGOING	✓	✓
Data is at the core of everything we do Built a world class cloud based data & analytics platform	**Providing the latest technologies to our customers** • Assessing multiple technologies • Invested in Orison, co-creating a customer proposition ORISON	**Enabling control of distributed assets** Assessing and trialling multiple hardware and software options, including edge computing and smart hubs	**Orchestrating distributed assets** • Built an internal AI orchestration platform • 15 MW under control and growing	**Ensuring security and governance of customer data** Invested in intertrust Invested in CryptoWerk
BUILT	PROCURE / INVEST	PROCURE / INVEST	BUILT	INVEST

Built a world class Data & Analytics capability

Industry Leading

Artificial Intelligence & Machine Learning

- Redesign of business processes based on predictive analytics
- Personalised customer experiences
- Targeted marketing and customer interventions

Automation & Insight

- Replace manual processes with automation
- Enhanced insight into business performance and customer behaviour
- Facilitate new data-driven business processes

Data Staging

- Consolidation of 25 legacy systems & 700 data sets
- Single source of truth
- Highly accessible, scalable & cost efficient (Cloud)
- **$10m of annual cost savings delivered in Retail**

"...of 10,000 global customers we consider Origin to be in the top 10% for maturity & capability"

"...level of engagement with the AWS product team, Origin would be in the top 1%"

Maor Kleider
Principal Product Manager, Amazon Web Services

Data & Analytics capability is a business enabler

RETAIL AND BUSINESS ENERGY

Business simplification and leading customer experience

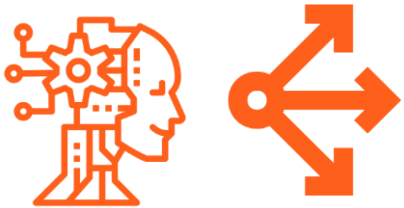
DIGITAL IoT RETAIL & WHOLESALE CAPABILITY

Data & Analytics

- Churn propensity
- Renewal propensity
- Demand forecasting
- Move propensity
- Call optimisation
- Solar propensity
- CLV modelling
- Dual fuel cross sell
- Next best action
- Personalised customer experiences
- Network tariff optimisation

- AI orchestration platform
- Data Collection & Staging
- IoT device trials
- Personalised customer experiences

Case Study: Call Optimisation



AI used to predict likelihood of a customer calling, and the reason for their call

We found that:

- **80% of customers either don't call or call only once**
- **8% of customers drive ~45% of call costs and call more than 4 times a year**

Customer A: Frequent calls regarding product information and switching → Encourage customer to go Digital, avoiding need for call

Customer B: Quarterly calls after receiving bills → Send customer insights around bills and usage, avoiding need for call

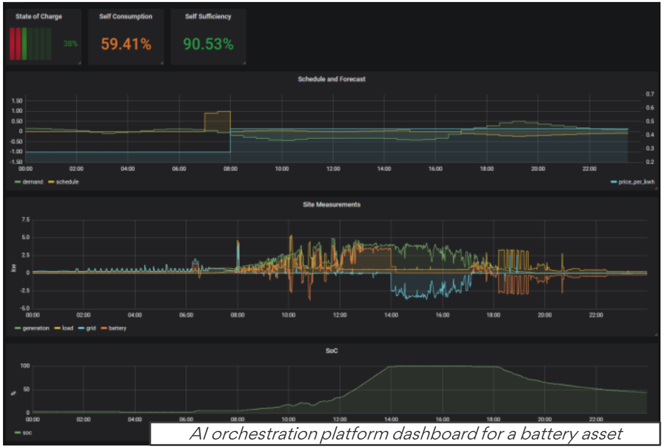
Customer C: Unlikely to call → No action required

AI improves the customer experience and reduces costs

Built AI orchestration platform for distributed assets

origin

- Combines use of machine learning and algorithms to optimise across the grid for a number of variables, including
  - supply/demand balance
  - wholesale price
  - customer tariffs
- Platform live and orchestrating 15 MW of distributed assets
  - Load flexing of industrial chillers
  - Large scale commercial batteries with cogeneration plant
  - Power station cooling water pumps
  - Residential AC control
- Capable of computing millions of optimal schedules every 5 minutes



AI orchestration platform dashboard for a battery asset

Pipeline of MW from:

- C&I customers' assets
- Energy assets and IoT devices in the home (batteries, EV chargers, hot water, AC controllers, etc)
- Hot water trials

Strategic investments in Intertrust and Cryptowerk

intertrust

- Management and security of data critical in distributed and digitised energy world
- Global pioneer in Digital Rights Management technology, data security and privacy, distributed data governance and trusted transactions
- Major co-investors include Innogy/E.ON, Sony, Philips, WiL
- US$20 million equity investment with a 5 year Joint Technology Development Partnership to co-develop data-driven products

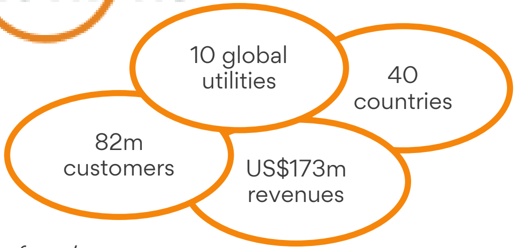
CryptoWerk

- Blockchain technology can provide a cyber-resilient solution for data verification
- Traditional blockchain has limited transactional throughput and is very costly
- Cryptowerk technology enables high transaction throughputs at low cost by cryptographically bundling individual transactions
- SAP certified and PwC technical audit
- US$1.5m investment

Deeply imbedded in the global innovation ecosystem

Co-founder of **Free Electrons**, a global open innovation program

- Over 1,500 applications
- 42 clean tech energy start-up graduates
- Now taking applications for the 4th cohort



www.freeelectrons.org

Principal sponsor of **EnergyLab**, Australia's largest cleantech start-up accelerator

Presence in **Silicon Valley**, the global epicentre of digital innovation.
Investment in **The Westly Group** fund.

Wrap up

Frank Calabria

FY2020 Guidance update

Provided on the basis that market conditions do not materially change and the regulatory and political environment does not result in further adverse impacts on operations

		FY2019	FY2020 previous guidance	FY2020 updated guidance
Energy Markets				
Underlying EBITDA	A$m	1,574	1,350 – 1,450	1,400 – 1,500
Integrated Gas – APLNG 100%				
Total production	PJ	679	680 – 700	690-710
Capex + opex, excl. purchases[1]	A$m	2,691	2,800 – 3,000	2,800 – 3,000
Distribution breakeven	US$/boe	36	33 - 36	31 - 34[2]
Corporate				
Underlying costs	A$m	(234)[3]	(70 – 80)	(60 – 70)
Capex (incl. investments)	A$m	(405)	(530 – 580)	(530 – 580)

Guidance update due to adoption of lease standard

- EBITDA changes due to adoption of leasing standard offset within D&A and financing costs (no change to underlying profit)

1) Operating cash costs excludes purchases and reflects royalties at the breakeven oil price. Royalties payable increases as oil price increases
2) FX Rate: 0.70 AUD/USD, excludes Ironbark acquisition costs
3) Includes $170 million relating to a non-cash provision increase in legacy site remediation

Wrap up

- Two strong and diversified cash generating businesses
  - APLNG increasing production, capex + opex[1] per gigajoule not expected to increase materially over the next 3-5 years
  - Wholesale portfolio well suited for renewables + firming
  - Retail cost out on track
- Capabilities to enhance value going forward
  - Replicating the low cost upstream model to develop new resources
  - Transforming our Retail business, with opportunity to further improve customer experience and reduce costs beyond the current target
  - Building a digital IoT retail and wholesale capability
- Disciplined approach to capital management with potential for dividends at high end of 30-50% free cash flow

1) Operating cash costs exclude purchases and reflects royalties payable at the breakeven oil price. Royalties payable increases as oil price increases

Questions

Lunch

Appendix

Capital investment pipeline

Moderate medium term capex at ~$400 million, excluding E&A

	Estimated medium term spend p.a.	FY2020 Project examples
Generation Sustain	~$150m	• Major inspections at Uranquinty and Eraring • Mortlake repairs
Other Sustain	~$125m	• ERP upgrade over FY20-21 • LPG
Productivity/ Growth	~$125m	• Solar & Energy Services • Digitisation • QPS repower (unit 2)

E&A spend is subject to project maturation

E&A		• Beetaloo – stages 2 and 3[1] • Cooper-Eromanga Basin

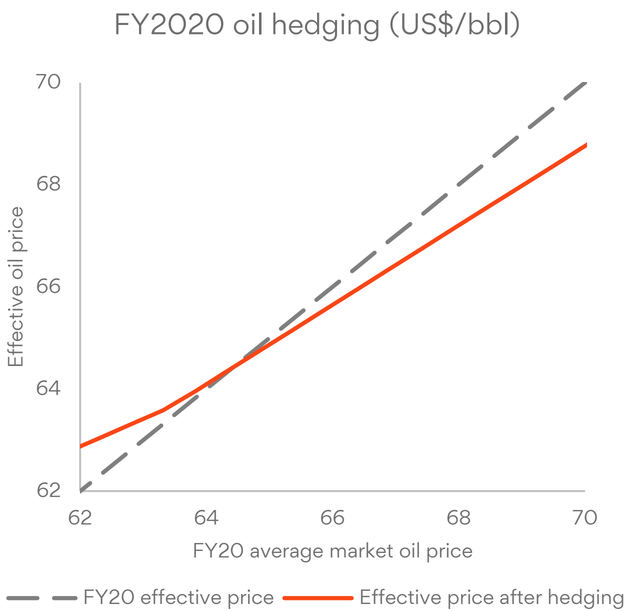
1) Subject to Northern Territory approvals

Regulatory summary

Major regulatory themes and activities during 2019

Government investment in energy	**Feb 19: Snowy 2.0** approved ($1.4b funding)	**Mar 19:** Underwriting New Generation Investment **(UNGI)** program	**Underwriting Transmission** work pre approval	**$1bn to CEFC** to invest in new energy
Intrusive regulation of pricing & conduct	**Jul 19:** Default Market Offer **(DMO)** and Victorian Default Offer **(VDO)** came into effect	**Aug 19**: Review of **gas reservation**, the **ADGSM** and **gas transparency** measures	**Aug 19: Consumer Data Right** legislated	**Nov 19**: Federal government **'Big Stick' legislation** passed
Shift to central planning	AEMO Integrated System Plan **(ISP)** being 'actioned' through 2019	**Aug 19: Task force** formed to consider options for **Liddell closure**	**Sep 19:** Expansion of Reliability and Emergency Reserve Trader **(RERT)** panel	
Climate change policy uncertainty	**May 19:** Coalition election win without policy to meet **Australia's Paris commitment**	**Jun 19:** Independent expert report on pathways for **Victoria** to achieve **net zero emissions by 2050**	**Oct 19:** Coalition appoints **expert panel** to examine opportunities for further emissions abatement	
Changes in market design	ESB **NEM 2025** review ongoing	AEMC proposes Coordination of Generation & Transmission Investment scheme **(COGATI)** scheme	Jul 19: Retailer Reliability Obligation **(RRO)** scheme commenced	**Jul 19**: Draft Determination proposes Wholesale **Demand Response Mechanism**

Oil price risk management



FY2020 oil hedging

- $28 million[1] hedge premium
- Gain of $11 million based on forward market prices as at 20 November 2019
  - 11.6 mmbbl hedged at US$48/bbl floor
  - 2.5 mmbbl capped at US$85/bbl
  - 3 mmbbl fixed via a swap at A$97/bbl
  - Estimated Origin JCC exposure ~22mmbbl

FY2021 oil hedging

- 2.1 mmbbl fixed via swaps
  - 1.7 mmbbl at A$85/bbl
  - 0.4 mmbbl at US$57/bbl

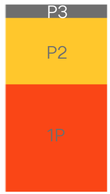
1) FX Rate: 0.70 AUD/USD

APLNG summary

APLNG is underpinned by:

Strong reserves[1,3]
Quality assets

3P: 12,820 PJ



Leading operators

origin
Upstream Operator

ConocoPhillips
Downstream Operator

Aligned shareholders

origin
37.5%

ConocoPhillips
37.5%

Sinopec (SIPC)[2]
25%

Strong offtake contracts with creditworthy customers

The Kansai Electric Power Co., Inc.
~1 mtpa contracted until 2035
A3/Stable (Moody's)

Sinopec
~7.6 mtpa contracted until 2035
A+/Stable (S&P), A1/Stable (Moody's)

1) Refer to the Important Notices section for more information on reserves and resources. Refer to SPE PRMS 2018 for classification and categorisation guidelines for reserves and contingent resource estimates. Reserves balance as at 30 June 2019.
2) SIPC, being Sinopec International Petroleum Exploration and Production Corporation ("SIPC"), is owned 30% by Sinopec Group, 30% by China Reform Holdings Corporation ("CRHC") and 40% by China Chengtong Holdings Group ("CCHG"). CRHC and CCHG are Chinese central government-owned investment companies, to whom Sinopec Group transferred 70% of its ownership in SIPC in 2016 (40% to CCHG and 30% to CRHC).
3) Some of APLNG's CSG reserves and resources are subject to reversionary rights and ongoing interest in favour of Tri-Star. Refer to section 7 of the Operating and Financial Review released to ASX on 22 August 2019 for further information.

APLNG sales mix and domestic legacy contracts

Legacy domestic contracts:

- ~40 PJ p.a. to Origin ending 2034
- 472 PJ over 21 years to Rio Tinto ending 2031
- ~16 PJ p.a. to QAL ending 2041
- 25 PJ p.a. to AGL ending 2020
- ~25 PJ p.a to QGC ending 2035, oil linked

Contract LNG:

- Flexibility for both the buyer and the seller
  - Sellers maintenance flexibility
  - Buyers Downward Quantity Tolerance option

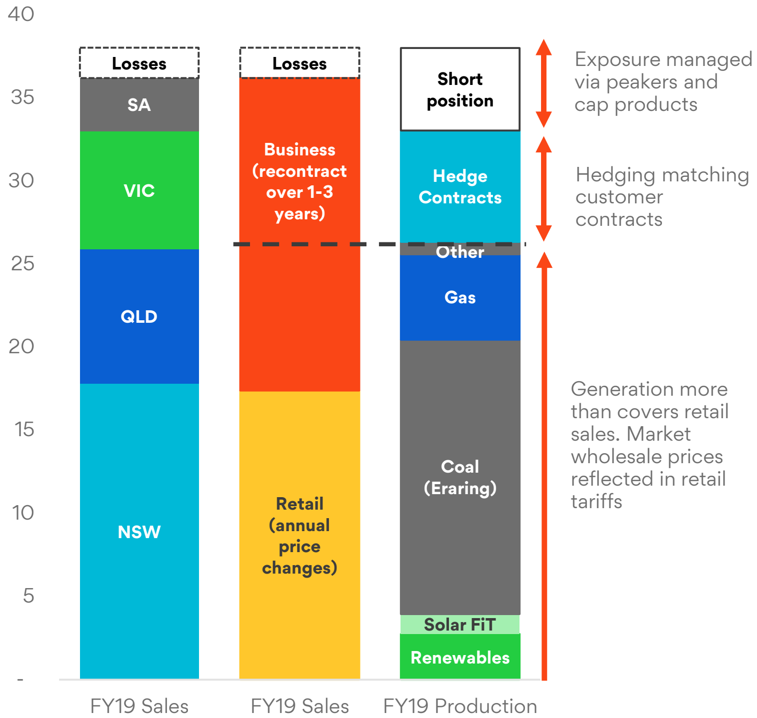
Sales mix (100%)	FY2019		FY2018	
	PJ	%	PJ	%
Contract LNG	464	69%	433	64%
Legacy domestic contracts	127	19%	127	19%
Short term domestic	68	10%	78	11%
Spot LNG	17	2%	42	6%
Total	**676**		**680**	

Australian energy market context

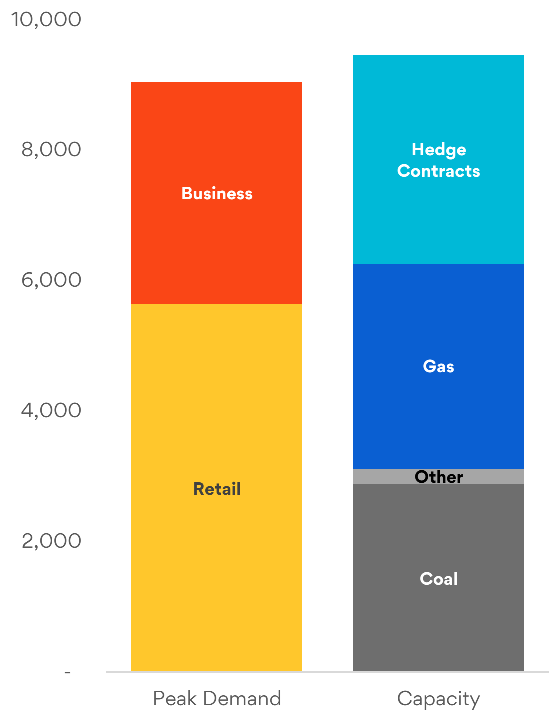
	Retail market	Wholesale market
	• Retail profitability on marginal supply is modest – Competitive market – Default tariffs act as price cap & reference bill	• Margins reflect long term investments and risks – Investment in generation – Long term supply and transportation contracts
Value drivers	• Attracting customers through superior experience and solutions • Low operating costs • Growing revenue streams in front of and behind the meter	• Ability to use physical assets to deliver low cost solutions • Movement in wholesale prices relative to portfolio cost of energy • Volatility and ability to respond to market signals

Flexibility: short energy, covered for peak

Flexible energy position (TWh)

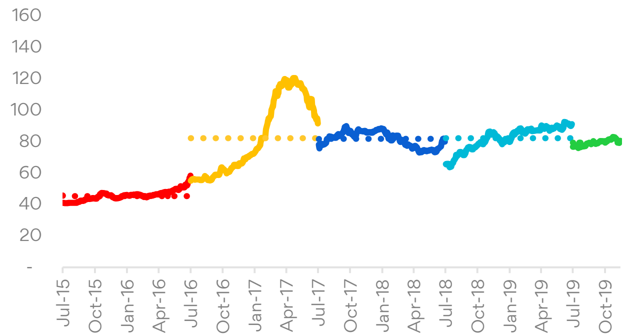


Capacity position (MW)

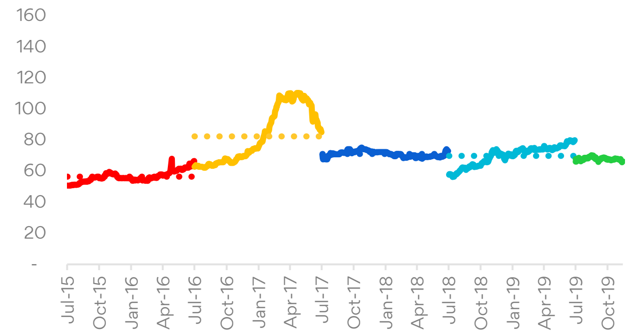


Electricity forward price by state (A$/MWh)

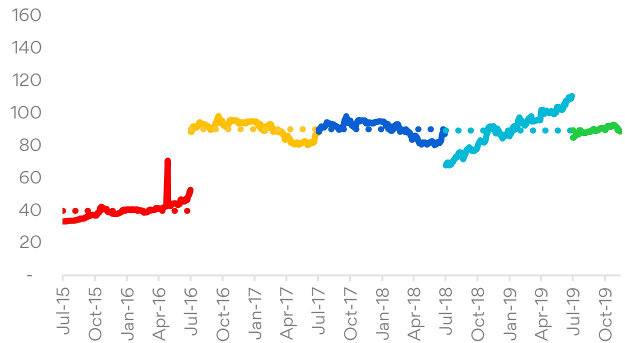
NSW forward baseload energy prices



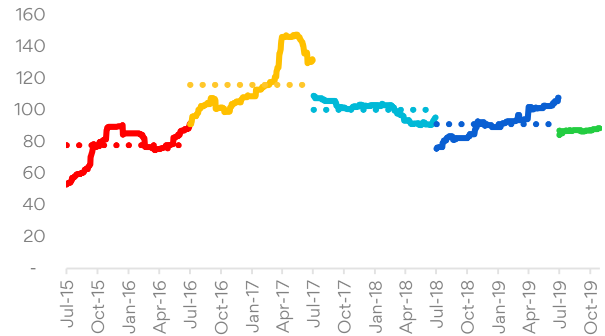
QLD forward baseload energy prices



Vic forward baseload energy prices



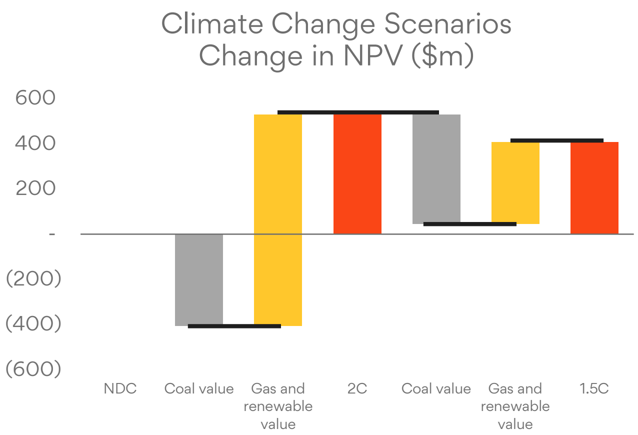
SA forward baseload energy prices

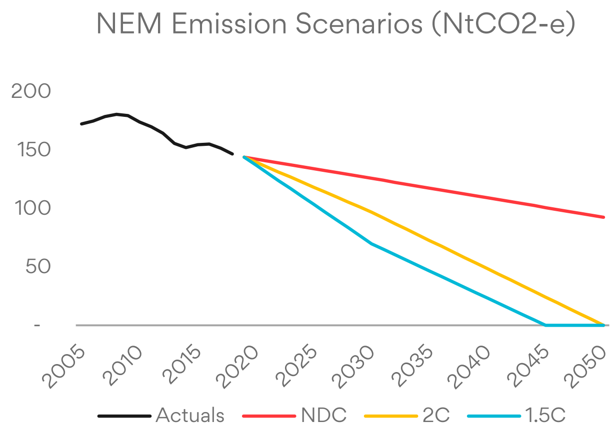


FY17 Swap FY18 Swap FY19 Swap FY20 Swap FY21 Swap
FY17 Avg FY18 Avg FY19 Avg FY20 Avg FY21 Avg

Source: AEMO/Bloomberg

Resilience to a low carbon future





- Portfolio resilience as the market transitions to a low carbon future
  - Value higher under 1.5ºC scenario than Nationally Determined Contribution (NDC) case driven by gas and contracted renewables
  - Value of Eraring declines, however remains positive due to its role near term in providing affordable and reliable supply

Source: Resilience of Origin's generation portfolio to a low-carbon economy. Released to the ASX on 16 October 2019

Glossary

Financial Term	Meaning
Adjusted Net Debt	Net Debt adjusted to remove fair value adjustments on hedged borrowings.
Adjusted Underlying EBITDA	Underlying EBITDA – Share of APLNG Underlying EBITDA + net cash from APLNG
CAGR	Compound Annual Growth Rate.
Free Cash Flow	Net cash from operating and investing activities (excluding major growth projects), less interest paid.
Proportionate Free Cash Flow	Origin's Free Cash Flow plus share of APLNG Free Cash Flow, excluding transactions between Origin and APLNG shareholders.
Underlying EBITDA	Underlying earnings before underlying interest, underlying tax, underlying depreciation and amortisation (EBITDA) as disclosed in note A1 of the Origin Consolidated Financial Statements for the year ended 30 June 2019.
Underlying ROCE	Underlying ROCE (Return on Capital Employed) is calculated as Adjusted EBIT / Average Capital Employed. Average Capital Employed = Shareholders Equity + Origin Debt + Origin's Share of APLNG project finance - Non-cash fair value uplift + net derivative liabilities. The average is a simple average of opening and closing in any year. Adjusted EBIT = Origin Underlying EBIT and Origin's share of APLNG Underlying EBIT + Dilution Adjustment = Statutory Origin EBIT adjusted to remove the following items: a) Items excluded from underlying earnings; b) Origin's share of APLNG underlying interest and tax; and c) the depreciation of the Non-cash fair value uplift adjustment. In contrast, for remuneration purposes Origin's statutory EBIT is adjusted to remove Origin's share of APLNG statutory interest and tax (which is included in Origin's reported EBIT) and certain items excluded from underlying earnings. Gains and losses on disposals and impairments will only be excluded subject to Board discretion.
VWAP	Volume Weighted Average Price

Non-financial Term	Meaning
1P	Proved Reserves are those reserves which analysis of geological and engineering data can be estimated with reasonable certainty to be commercially recoverable. There should be at least a 90 per cent probability that the quantities actually recovered will equal or exceed the estimate.
2P	The sum of Proved plus Probable Reserves. Probable Reserves are those additional reserves which analysis of geological and engineering data indicate are less likely to be recovered than Proved Reserves but more certain than Possible Reserves. There should be at least a 50 per cent possibility that the quantities actually recovered will equal or exceed the best estimate of Proved plus Probable Reserves (2P).
3P	Proved plus Probable plus Possible Reserves. Possible Reserves are those additional Reserves which analysis of geological and engineering data suggest are less likely to be recoverable than Probable Reserves. The total quantities ultimately recovered from the project have at least a 10 per cent probability of exceeding the sum of Proved plus Probable plus Possible (3P), which is equivalent to the high estimate scenario.
2C	The best estimate quantity of petroleum estimated to be potentially recoverable from known accumulations by application of development oil and gas projects, but which are not currently considered to be commercially recoverable due to one or more contingencies. The total quantities ultimately recovered from the project have at least a 50 per cent probability to equal or exceed the best estimate for 2C contingent resources.

Glossary

Non-financial Term	Meaning
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AI	Artificial Intelligence
APLNG	A reference to Australia Pacific LNG or APLNG is a reference to Australia Pacific LNG Pty Limited (and its related entities), an incorporated Joint Venture between Origin, ConocoPhillips and Sinopec in which Origin holds a 37.5% shareholding. Origin's shareholding in Australia Pacific LNG is equity accounted
Bbl	Barrel – An international measure of oil production. 1 barrel = 159 litres
Boe	Barrel of oil equivalent
CES	Community Energy Services
CSG	Coal seam gas
DMO	Default Market Offer
E&A	Exploration and appraisal
FID	Final Investment Decision
GJ	Gigajoule = 10^9 joules
GPF	Gas Processing Facility
GW	Gigawatt = 10^9 watts
GWh	Gigawatt hour = 10^3 megawatt hours
JCC	Japan Customs-cleared Crude
LNG	Liquified Natural Gas
LPG	Liquified Petroleum Gas
LREC	Large scale Renewable Energy Certificate
mmbbl	Million barrels
mmbtu	Metric million British thermal units
mtpa	Million tonnes per annum
MW	Megawatt = 10^6 watts
MWh	Megawatt hour = 10^3 kilowatt hours
NEM	National Electricity Market
NPV	Net Present Value
OCGT	Open cycle gas turbine
P2	2P reserves less 1P reserves
P3	3P reserves less 2P reserves
PJ	Petajoule = 10^{15} joules
PPA	Power Purchase Agreement
PRMS	Petroleum Reserves Management System
QPS	Quarantine Power Station
SPE	Society of Petroleum Engineers
SRMC	Short run marginal cost
TJ/d	Terajoules per day (Terajoule = 10^{12} Joules)
TRIFR	Total Recordable Incident Frequency Rate
TWh	Terawatt hour = 10^9 kilowatt hours
Watt	A measure of power when a one ampere of current flows under one volt of pressure.

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Reserves
Disclosures of Origin and APLNG's reserves and resources are as at 30 June 2019. These reserves and resources were announced on 22 August 2019 in Origin's Annual Reserves Report for the year ended 30 June 2019. Petroleum reserves and contingent resources are typically prepared by deterministic methods with support from probabilistic methods. Petroleum reserves and contingent resources are aggregated by arithmetic summation by category and as a result, proved reserves (1P reserves) may be a conservative estimate due to the portfolio effects of the arithmetic summation. Proved plus probable plus possible (3P reserves) may be an optimistic estimate due to the same aforementioned reasons.

Some of APLNG's reserves and resources are subject to reversionary rights and an ongoing royalty interest in favour of Tri-Star. Refer to Section 7 of the Operating and Financial Review released on 22 August 2019 for further information.

Figures
All figures in this presentation relate to businesses of the Origin Energy Group (Origin, or the Company), being Origin Energy Limited and its controlled entities, for the reporting period ended 30 June 2019 (the period) compared with the reporting period ended 30 June 2018 (the prior corresponding period), except where otherwise stated.

A reference to $ is a reference to Australian dollars unless specifically marked otherwise.

All references to debt are a reference to interest bearing debt only. Individual items and totals are rounded to the nearest appropriate number or decimal. Some totals may not add down the page due to rounding of individual components.

For more information

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