

# Operational Briefing

## Presentation to Investors and Analysts

6 February 2018





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Unless otherwise specified all information is as at 31 December 2017.

# Agenda

- 10:00 – 10:05**    **Introduction – Sam Dobson**
- 10:05 – 10:30**    **Update since the interim result – Nicholas Moore**
- 10:30 – 11:00**    **Infrastructure**
- 11:00 – 11:30**    **Energy**
- 11:30 – 12:00**    **Technology**



# 01

## Introduction

Sam Dobson – Head of Investor Relations



# 02

## Update since the interim result

Nicholas Moore – Managing Director and Chief Executive Officer



## ABOUT MACQUARIE

## Building for the long term



Annuity-style businesses	<b>Macquarie Asset Management (MAM)</b> <ul style="list-style-type: none"> <li>• Top 50 global asset manager with \$A483.5b<sup>1</sup> of assets under management</li> <li>• Provides clients with access to a diverse range of capabilities and products, including infrastructure, real assets, equities, fixed income, liquid alternatives and multi-asset investment management solutions</li> </ul>
	<b>Corporate and Asset Finance (CAF)</b> <ul style="list-style-type: none"> <li>• Global provider of specialist finance and asset management solutions, with a \$A34.6b<sup>1</sup> asset and loan portfolio</li> <li>• Asset Finance has global expertise in aircraft, vehicles, technology, healthcare, manufacturing, industrial, energy, rail, and mining equipment</li> <li>• Principal Finance provides flexible primary financing solutions and engages in secondary market investing, across the capital structure. It operates globally in both corporate and real estate sectors</li> </ul>
	<b>Banking and Financial Services (BFS)</b> <ul style="list-style-type: none"> <li>• Macquarie's retail banking and financial services business with a \$A39.0b<sup>1</sup> Australian loan portfolio, funds on platform<sup>2</sup> of \$A85.3b<sup>1</sup> and total BFS deposits<sup>3</sup> of \$A46.3b<sup>1</sup></li> <li>• Provides a diverse range of personal banking, wealth management and business banking products and services to retail clients, advisers, brokers and business clients</li> </ul>
Capital markets facing businesses	<b>Commodities and Global Markets (CGM)</b> <ul style="list-style-type: none"> <li>• Integrated, end-to-end offering across global markets including equities, fixed income, foreign exchange and commodities</li> <li>• Provides clients with risk and capital solutions across physical and financial markets</li> <li>• Diverse platform covering more than 25 market segments, with more than 160 products</li> <li>• Growing presence in commodities (natural gas, LNG, NGLs, power, oil, coal, base metals, iron ore, sugar and freight)</li> <li>• Global institutional securities house with strong Asia-Pacific foundations covering sales, research, ECM, execution and derivatives and trading activities</li> </ul>
	<b>Macquarie Capital (MacCap)</b> <ul style="list-style-type: none"> <li>• Global capability across Infrastructure &amp; Energy, Real Estate, Telecommunications, Media, Entertainment &amp; Technology, Resources, Industrials and Financial Institutions in: M&amp;A Advisory; Equity and Debt Capital Markets; and Principal Investments</li> <li>• Focus on investing Macquarie's balance sheet as Principal to develop and create assets, platforms and businesses in the Infrastructure, Energy and Real Estate sectors and partnering primarily with financial sponsor clients to provide capital solutions, particularly in the Technology sector</li> </ul>

1. As at 31 Dec 17. 2. Funds on platform includes Macquarie Wrap and Vision. 3. BFS deposits exclude corporate/wholesale deposits.



# 3Q18 Overview

- Satisfactory trading conditions in 3Q18 across the Group
- Macquarie's annuity-style businesses' (Macquarie Asset Management, Corporate and Asset Finance and Banking and Financial Services) combined 3Q18 net profit contribution<sup>1</sup> slightly up on pcp (3Q17)
  - FY18 YTD<sup>2</sup> net profit contribution up on FY17 YTD mainly due to: strong performance fees in MAM, timing of transactions in CAF Principal Finance, and continued growth in BFS
- Macquarie's capital markets facing businesses' (Commodities and Global Markets and Macquarie Capital) combined 3Q18 net profit contribution down on pcp primarily due to timing of income recognition associated with transportation and storage agreements within the CGM business
  - FY18 YTD net profit contribution down on FY17 YTD primarily due to timing of income recognition associated with transportation and storage agreements within the CGM business



# 3Q18 Overview

## Annuity-style businesses

	1H18 contribution <sup>1</sup>	Activity during the quarter
Macquarie Asset Management	45%	<ul style="list-style-type: none"> <li>AUM of \$A483.5b at Dec 17, up 2% on Sep 17 predominately driven by positive market movements and foreign exchange</li> <li>MIRA: Over \$A7.1b in new equity raised in 3Q18 including \$A3.9b in Asia and \$A2.0b in Europe; \$A4.1b equity invested including infrastructure in Europe, Asia, Australia and the US as well as agriculture in Australia; and \$A3.9b asset divestments in Denmark, France, the US and Korea; \$A15.1b of equity to deploy at Dec 17</li> <li>MIM awarded \$A4.6b in new, funded institutional mandates and contributions across 35 strategies</li> <li>MIDIS total third party investor commitments increased to over \$A8.2b; closed a number of investments bringing total AUM to \$A5.8b</li> <li>Reached agreement to acquire GLL Real Estate Partners<sup>2</sup>, a ~\$A10b<sup>3</sup> German-based manager of real estate assets in Europe and the Americas</li> <li>Top 50 global asset manager, Australia's largest global asset manager</li> </ul>
Corporate and Asset Finance	23%	<ul style="list-style-type: none"> <li>Asset Finance and Principal Finance portfolio of \$A34.6b at Dec 17, broadly in line with Sep 17</li> <li>Asset Finance originations in line with expectations</li> <li>Principal Finance portfolio additions of \$A0.1b in 3Q18</li> <li>Notable realisations included the sale of Principal Finance's investments in a UK rooftop solar platform, a UK care homes and supported living business, and a US power plant in North Dakota</li> </ul>
Banking and Financial Services	11%	<ul style="list-style-type: none"> <li>Total BFS deposits<sup>4</sup> of \$A46.3b at Dec 17, broadly in line with Sep 17</li> <li>Australian mortgage portfolio of \$A31.2b at Dec 17 up 4% on Sep 17</li> <li>Funds on platform<sup>5</sup> of \$A85.3b at Dec 17 up 8% on Sep 17</li> <li>Business banking loan portfolio of \$A7.2b, up 1% on Sep 17</li> <li>Named Best Digital Banking Offering and Most Innovative Card Product at the 2017 Australian Retail Banking Awards</li> <li>Awarded Best Cash and Term Deposits at the 2017 SMSF Awards and Core Data SMSF Service Provider Awards</li> </ul>

1. Based on 1H18 net profit contribution from operating groups. Net profit contribution is management accounting profit before unallocated corporate costs, profit share and income tax. 2. Signed 4 Feb 18. Subject to certain closing conditions including regulatory approval. 3. As at 30 Jun 17, converted using spot FX rate as at 30 Jun 17. 4. BFS deposits exclude corporate/wholesale deposits. 5. Funds on platform includes Macquarie Wrap and Vision.





# 3Q18 Overview

## Capital markets facing businesses

	1H18 contribution <sup>1</sup>	Activity during the quarter
<b>Commodities and Global Markets</b>	14%	<ul style="list-style-type: none"> <li>• Stronger results in North American Gas and Power, while lower volatility impacted client hedging activity and trading results in Global Oil and Metals</li> <li>• Despite volatility being subdued in foreign exchange and interest rates, client activity in derivatives remained solid, particularly in Japan and North America</li> <li>• Increased market turnover led to improved brokerage income in Asian equities</li> <li>• Ranked No. 2 US physical gas marketer in North America – the highest ranked non-producer<sup>2</sup></li> </ul>
<b>Macquarie Capital</b>	7%	<ul style="list-style-type: none"> <li>• Strong levels of activity with 107 transactions completed globally in the quarter valued at \$A35b, up on pcg (by number), driven primarily by advisory activity in Infrastructure and Energy, and advisory and DCM activity in Americas and Europe</li> <li>• Joint lead manager and underwriter on Transurban Group's \$A1.9b fully underwritten pro rata accelerated renounceable entitlement offer, the largest publically-distributed ANZ new equity issue of 2017<sup>3</sup></li> <li>• Raised over \$US1.7b in equity commitments for Macquarie Capital sponsored real estate logistics platforms globally to be invested in India, China, UK and Australia</li> <li>• GIG announced several low carbon infrastructure transactions during the quarter, including acting as financial advisor, 50% equity investor and development partner in the 650MW Markbygden Wind Farm in Sweden, allowing development of the largest single-site wind farm in Europe (circa €800m total capital raise)<sup>4</sup></li> <li>• Financial advisor to Centerbridge Partners on its acquisition of Davis Vision and joint bookrunner and joint lead arranger on the \$US985m financing</li> <li>• No. 1 in Australia for completed M&amp;A<sup>5</sup> and No. 2 in Australia for ECM deals<sup>6</sup></li> <li>• No. 1 for Global Infrastructure Finance Advisor<sup>7</sup>, No. 1 Renewables Financial Advisor<sup>8</sup> and No. 1 for US LBO Loans - Technology<sup>9</sup></li> </ul>

1. Based on 1H18 net profit contribution from operating groups. Net profit contribution is management accounting profit before unallocated corporate costs, profit share and income tax. 2. Based on internal calculations as at 31 Dec 17. 3. Thomson CY17 (ANZ ECM ex-block trades). 4. Financial Times 2017. 5. Dealogic CY17 (by number and value). 6. Dealogic CY17 (by value). 7. Infraction CY17 (by value). 8. Infraction CY17 (by value). 9. Bloomberg CY17.



# 14,234 staff in over 25 countries

## Europe, Middle East and Africa

STAFF  
**1,707**

### EUROPE

Dublin  
Edinburgh  
Frankfurt  
Geneva  
London  
Luxembourg

Madrid  
Munich  
Paris  
Reading  
Vienna  
Zurich

### MIDDLE EAST

Abu Dhabi  
Dubai  
**SOUTH AFRICA**  
Cape Town  
Johannesburg

## Asia

STAFF  
**3,404**

### ASIA

Bangkok  
Beijing  
Gurugram  
Hong Kong

Jakarta  
Kuala Lumpur  
Manila  
Mumbai  
Seoul

Shanghai  
Singapore  
Taipei  
Tokyo

## Australia<sup>1</sup>

STAFF  
**6,515**

### AUSTRALIA

Adelaide  
Brisbane  
Canberra  
Gold Coast  
Manly  
Melbourne  
Newcastle  
Parramatta  
Perth  
Sydney

### NEW ZEALAND

Auckland

## Americas

STAFF  
**2,608**

### CANADA

Calgary  
Montreal  
Toronto  
Vancouver

### **LATIN AMERICA**

Mexico City  
Ribeirao Preto  
Sao Paulo

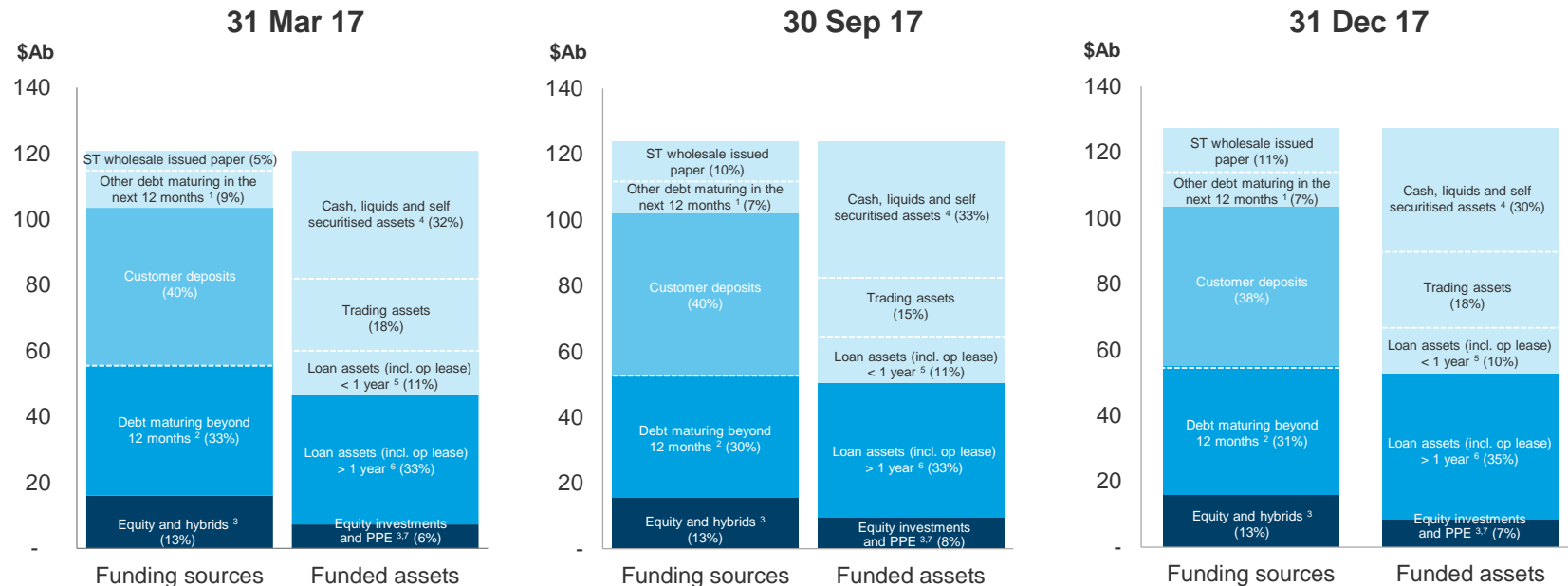
### USA

Austin  
Boca Raton  
Boston  
Chicago  
Denver  
Houston  
Jacksonville  
Los Angeles

Minneapolis  
Nashville  
New York  
Philadelphia  
San Diego  
San Francisco  
San Jose



# Funded balance sheet remains strong

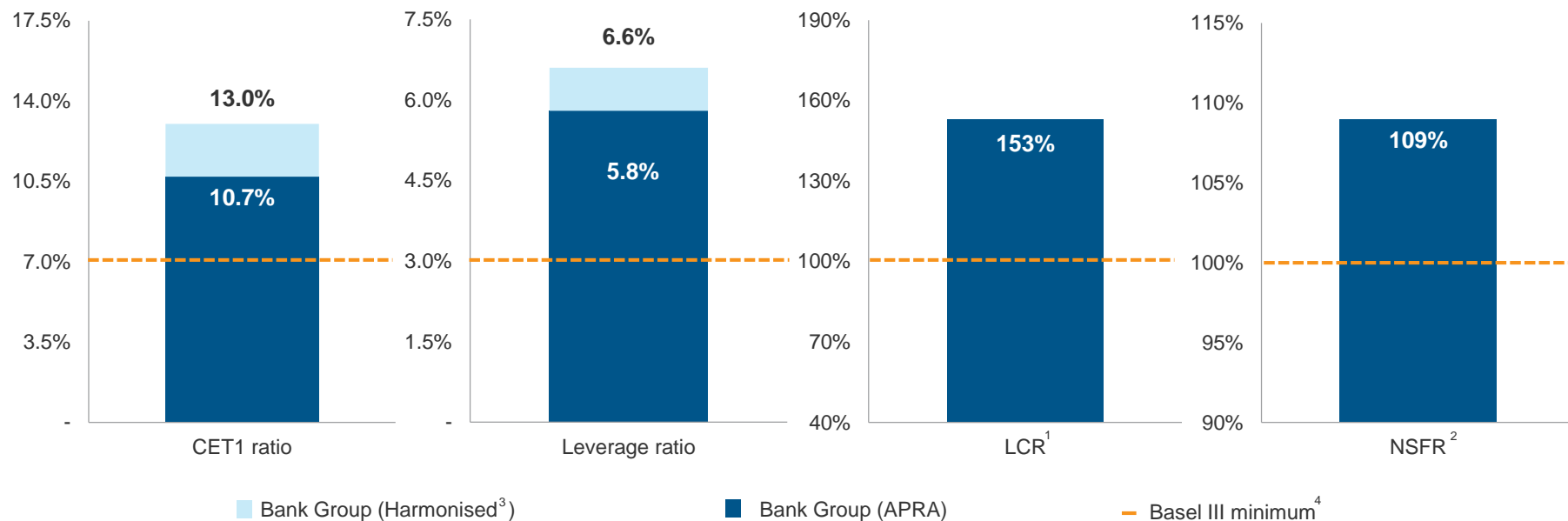


These charts represent Macquarie's funded balance sheets at the respective dates noted above. 1. 'Other debt maturing in the next 12 months' includes Structured Notes, Secured Funding, Bonds, Other Loans, Loan Capital maturing within the next 12 months and Net Trade Creditors. 2. 'Debt maturing beyond 12 months' includes Loan Capital not maturing within next 12 months. 3. Non-controlling interests netted down in 'Equity and hybrids' and 'Equity Investments and PPE'. 4. 'Cash, liquids and self securitised assets' includes self securitisation of RBA repo eligible Australian mortgages originated by Macquarie. 5. 'Loan Assets (incl. op lease) < 1 year' includes Net Trade Debtors. 6. 'Loan Assets (incl. op lease) > 1 year' includes Debt Investment Securities. 7. 'Equity Investments and PPE' includes Macquarie's co-investments in Macquarie-managed funds and equity investments.



# Strong regulatory ratios

## Bank Group (Dec 17)

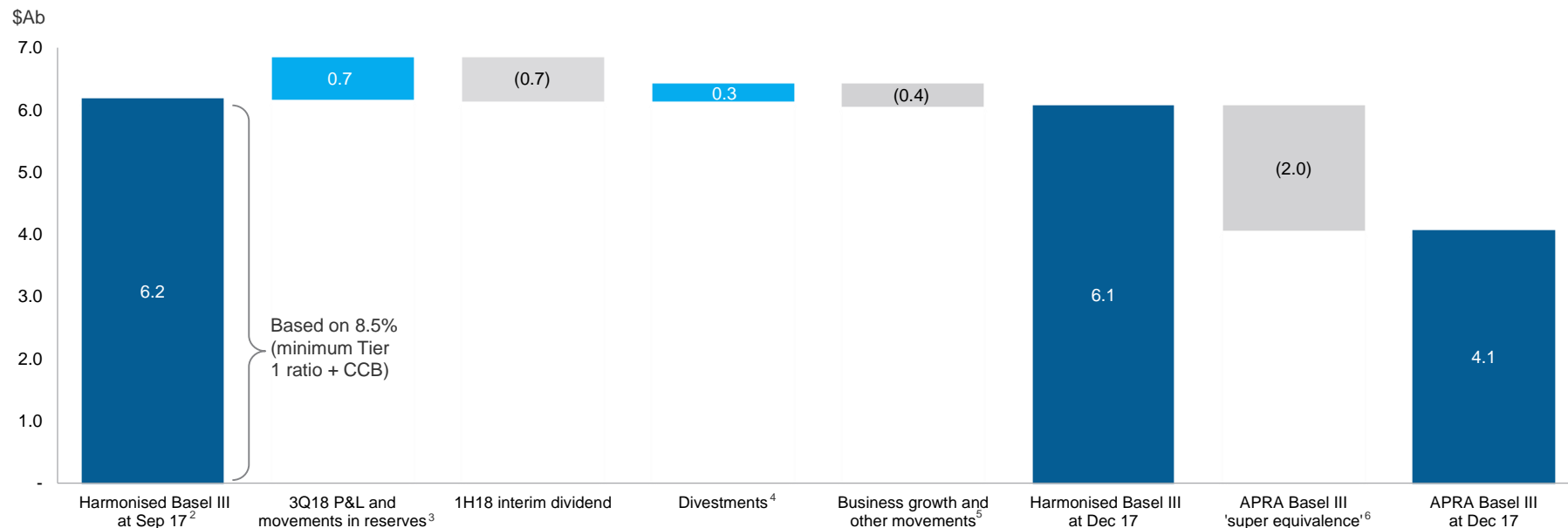


1. Average LCR for Dec 17 quarter is based on an average of daily observations. 2. APRA released final NSFR requirements at the end of 2016. The NSFR and associated changes to APRA ADI Prudential Standard 210 will be effective from 1 Jan 18. 3. 'Harmonised' Basel III estimates are calculated in accordance with the BCBS Basel III framework. 4. Includes the capital conservation buffer in the minimum CET1 ratio requirement. The minimum BCBS Basel III leverage ratio requirement of 3% is effective from 1 Jan 18.



# Basel III capital position

- APRA Basel III Group capital at Dec 17 of \$A18.2b, Group capital surplus of \$A4.1b<sup>1</sup>



1. Calculated at 8.5% RWA including the capital conservation buffer (CCB), per APRA ADI Prudential Standard 110. The APRA Basel III Group capital surplus is \$A5.4b calculated at 7% RWA, per the internal minimum Tier 1 ratio of the Bank Group. 2. 'Harmonised' Basel III estimates are calculated in accordance with the BCBS Basel III framework. 3. Excludes foreign currency translation reserve. 4. Includes Macquarie Atlas Roads \$A0.2b. 5. Includes the net impact of hedging employed to reduce the sensitivity of the Group's capital position to FX translation movements. 6. APRA Basel III 'super equivalence' includes the impact of changes in capital requirements in areas where APRA differs from the BCBS Basel III framework and includes full CET1 deductions for equity investments (\$A0.6b); differences in mortgages treatment (\$A0.6b); capitalised expenses (\$A0.5b); investment into deconsolidated subsidiaries (\$A0.2b); DTAs and other impacts (\$A0.1b).



# Regulatory and capital management update

- Regulatory capital
  - In Jul 17 APRA provided guidance on the level of CET1 capital ratios for Australian banks to be considered ‘unquestionably strong’<sup>1</sup>
  - In Dec 17 the Basel Committee finalised reforms to amend the calculation of certain risk weighted assets under Basel III
  - APRA has reaffirmed that its ‘unquestionably strong’ guidance is intended to cover the impact of the finalisation of Basel III
  - APRA intends to release further details on how the new requirements will be implemented in 2018, with expected implementation from 1 Jan 20<sup>2</sup>
  - Based on existing guidance, Macquarie’s surplus capital position remains sufficient to accommodate any additional requirements
- Share buyback
  - No buying occurred during 3Q18. Macquarie’s share buyback program remains in place



# US tax reform

- Following changes to US corporate tax effective 1 Jan 18, and based on information available, Macquarie currently expects that there will be no material impact to FY18 NPAT
- Post 31 Mar 18, Macquarie's US effective tax rate is expected to reduce by approximately 25%
- In the medium term, the impact to Macquarie will be determined by the proportional contribution of earnings from the US in relation to the Group's overall result
  - Based on past performance, Macquarie estimates a reduction of approximately 3-4% in the Group's historical effective tax rate



# Factors impacting short-term outlook

FY18 combined net profit contribution from operating groups expected to be slightly up on FY17

## Annuity-style businesses

### Macquarie Asset Management

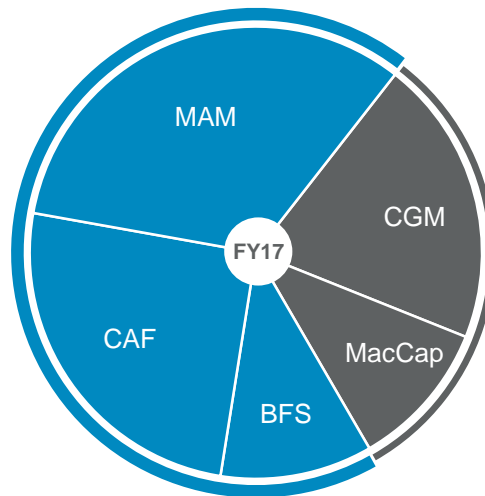
- FY17: \$A1.5b down 6% on FY16
- Base fees expected to be broadly in line
- 2H18 performance fees expected to be lower than 1H18

### Corporate and Asset Finance

- FY17: \$A1.2b up 6% on FY16
- Leasing book broadly in line
- Reduced loan volumes in Principal Finance
- Timing and level of early prepayments and realisations in Principal Finance

### Banking and Financial Services

- FY17: \$A0.5b up 47% on FY16
- Higher loan portfolio, deposit and platform volumes



## Capital markets facing businesses

### Commodities and Global Markets

- FY17: \$A1.0b up 15% on FY16
- Strong customer base expected to drive consistent flow across Commodities, Fixed Income and Futures
- Lower levels of impairments and investment-related income expected
- Improved result in equities

### Macquarie Capital

- FY17: \$A0.5b up 7% on FY16
- Assume market conditions broadly consistent with 1H18
- Solid pipeline of Principal realisations expected

## Corporate

- Compensation ratio to be consistent with historical levels
- Based on present mix of income, currently expect FY18 effective tax rate to be broadly in line with 1H18





# Short-term outlook

- We currently expect the FY18 combined net profit contribution<sup>1</sup> from operating groups to be slightly up on FY17
- Given substantial performance fees were recognised in 1H18, we expect the 2H18 net profit contribution<sup>1</sup> from operating groups to be down on 1H18 and broadly in line with 2H17
- The FY18 effective tax rate is currently expected to be broadly in line with 1H18
- Accordingly, the Group's result for FY18 is currently expected to be up approximately 10% on FY17
- Our short-term outlook remains subject to:
  - Market conditions
  - The impact of foreign exchange
  - Potential regulatory changes and tax uncertainties
  - The completion rate of transactions and the conduct of period end reviews

1. Net profit contribution is management accounting profit before unallocated corporate costs, profit share and income tax.



## Medium-term

- Macquarie remains well positioned to deliver superior performance in the medium-term
- Deep expertise in major markets
- Build on our strength in diversity and continue to adapt our portfolio mix to changing market conditions
  - Annuity-style income is provided by three significant businesses which are delivering superior returns following years of investment and recent acquisitions
    - Macquarie Asset Management, Corporate and Asset Finance and Banking and Financial Services
    - Two capital markets facing businesses well positioned to benefit from improvements in market conditions with strong platforms and franchise positions
      - Commodities and Global Markets and Macquarie Capital
- Ongoing benefits of continued cost initiatives
- Strong and conservative balance sheet
  - Well matched funding profile with minimal reliance on short-term wholesale funding
  - Surplus funding and capital available to support growth
- Proven risk management framework and culture



# Approximate business Basel III Capital & ROE

As at 30 Sep 17

Operating Group	APRA Basel III Capital <sup>1</sup> @ 8.5% (\$Ab)	Approximate 1H18 Return on Ordinary Equity <sup>2</sup>	Approximate 11-Year Average Return on Ordinary Equity <sup>2</sup>
<b>Annuity-style businesses</b>	<b>8.6</b>		
Macquarie Asset Management	2.0	28%	20% <sup>3</sup>
Corporate and Asset Finance	4.2		
Banking and Financial Services	2.4		
<b>Capital markets facing businesses</b>	<b>5.3</b>		
Commodities and Global Markets	3.0	11%	15% - 20%
Macquarie Capital	2.3		
<b>Total regulatory capital requirement @ 8.5%</b>	<b>13.9</b>		
Group surplus	4.2		
<b>Total APRA Basel III capital supply</b>	<b>18.1<sup>4</sup></b>		

1. Business Group capital allocations are indicative and are based on allocations as at 30 Jun 17 adjusted for material movements over the Sep 17 quarter. 2. NPAT used in the calculation of approximate annualised ROE is based on operating group's net profit contribution adjusted for indicative allocations of profit share, tax and other corporate expenses. Accounting equity is attributed to businesses based on regulatory capital requirements. 11-year average covers FY07 to FY17, inclusive. 3. CAF returns prior to FY11 are excluded from the 11-year average as they are not meaningful given the significant increase in scale of CAF's platform over this period. 4. Comprising of \$A15.4b of ordinary equity and \$A2.7b of hybrids.



# Medium-term

Annuity-style businesses	<b>Macquarie Asset Management (MAM)</b> <ul style="list-style-type: none"> <li>• Annuity-style business that is diversified across regions, products, asset classes and investor types</li> <li>• Diversification of capabilities allows for the business to be well placed to grow assets under management in different market conditions</li> <li>• Well positioned for organic growth with several strongly performing products and an efficient operating platform</li> </ul>
	<b>Corporate and Asset Finance (CAF)</b> <ul style="list-style-type: none"> <li>• Leverage deep industry expertise to maximise growth potential in asset and loan portfolio</li> <li>• Positioned for further asset acquisitions and realisations, subject to market conditions</li> <li>• Funding from asset securitisation throughout the cycle</li> </ul>
	<b>Banking and Financial Services (BFS)</b> <ul style="list-style-type: none"> <li>• Strong growth opportunities through intermediary and direct retail client distribution, white labelling, platforms and client service</li> <li>• Opportunities to increase financial services engagement with existing business banking clients and extend into adjacent segments</li> <li>• Modernising technology to improve client experience and support growth</li> </ul>
Capital markets facing businesses	<b>Commodities and Global Markets (CGM)</b> <ul style="list-style-type: none"> <li>• Opportunities to grow commodities business, both organically and through acquisition</li> <li>• Development of institutional coverage for specialised credit, rates and foreign exchange products</li> <li>• Increase financing activities</li> <li>• Growing the client base across all regions</li> <li>• Well positioned for a recovery in equity markets activity by leveraging a strong market position in Asia-Pacific through investment in the equities platform and further integration of the business across CGM</li> </ul>
	<b>Macquarie Capital (MacCap)</b> <ul style="list-style-type: none"> <li>• Positioned to benefit from any improvement in M&amp;A and capital markets activity</li> <li>• Continues to tailor the business offering to current opportunities, market conditions and strengths in each region</li> </ul>

# 03 | Infrastructure, Energy and Technology





# Macquarie's evolution is driven by our people



**Our people**  
are closest to  
client needs  
and markets

We seek to identify **opportunity** and realise it for our clients, community, shareholders and our people

We are **accountable** for all our actions, to our clients, our community, our shareholders and each other

**Integrity:** We earn the trust of our clients, colleagues, community and shareholders through the quality of our work and our high ethical standards

From positions of **deep expertise**, we pursue opportunities **adjacent** to existing businesses, largely via organic growth

Pursuing opportunities that are **profitable** and deliver real outcomes to achieve an appropriate and resilient **long-term return on capital**

## Supported by the Corporate Centre

Funding and  
capital

Risk  
management

External  
stakeholder  
management

Challenging  
ideas and  
supporting  
execution

Facilitating  
Group-wide  
collaboration

Group-wide  
standards and  
central support  
services

## EVOLUTION IN THE BUSINESS

### Business mix

From **25%** To **~70%**  
Annuity-style in FY07 in FY17

### International income

From **53%** To **63%**  
in FY07 in FY17

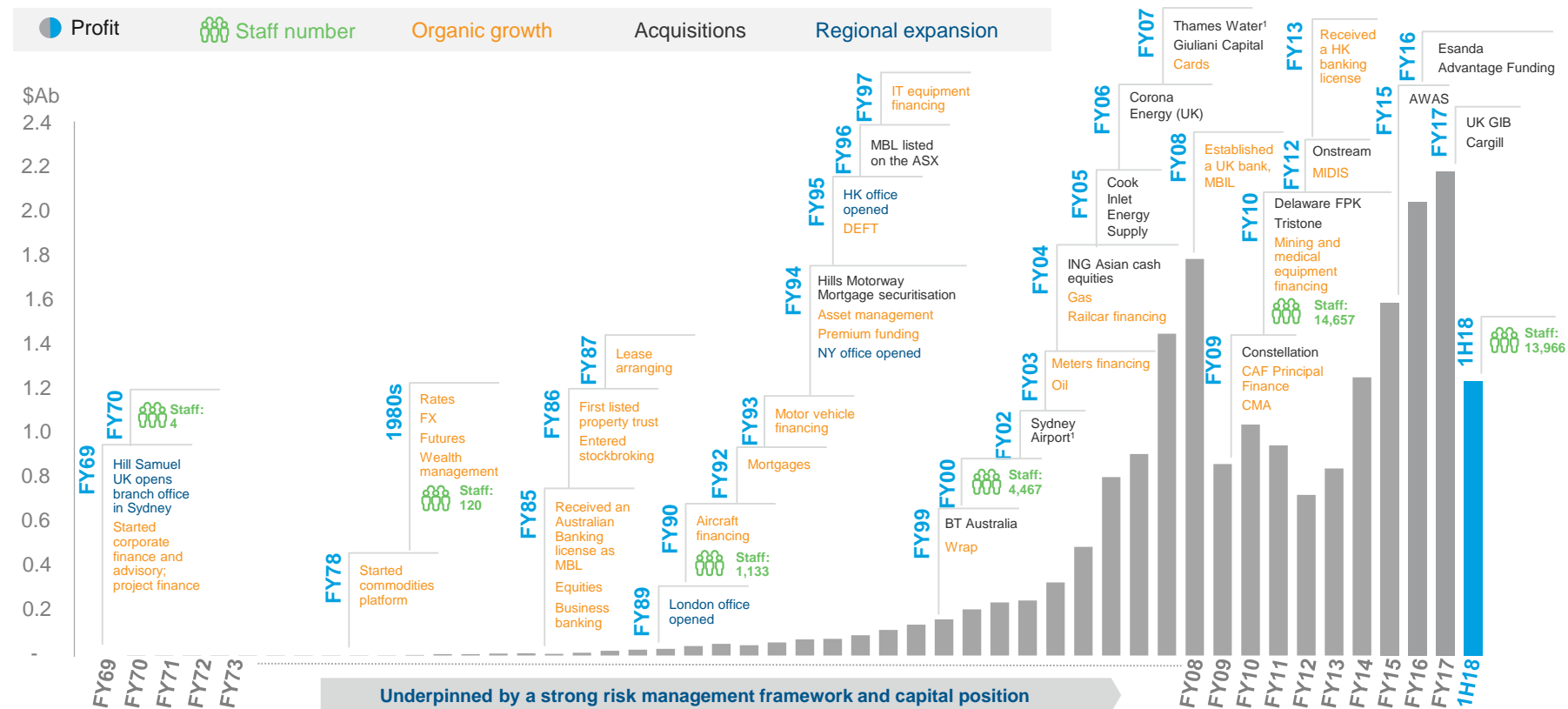
### Offshore staff

From **34%** To **55%**  
in FY07 in FY17

Macquarie has a **global presence**  
across Operating Groups



# Unbroken profitability through adjacent growth



Note: the above list is not exhaustive. 1. Acquired on behalf of managed funds and accounts.



## Where our people currently see opportunity







# Why these opportunities?

Infrastructure	Energy	Technology
<p>Infrastructure <b>investment required globally</b></p> <p><b>\$US45tr</b></p> <p>by 2030<sup>1</sup></p> <div> <p><b>41</b> megacities by 2030 up <b>~37%</b><sup>2</sup></p> <p><b>~1b</b> people moving to an <b>urban area</b> by 2030<sup>3</sup></p> <p><b>50%</b> increase in <b>GDP</b> per capita by 2030<sup>4</sup></p> </div> <div> <p><b>\$US3tr</b> investment required in <b>water</b> by 2030<sup>1</sup></p> <p><b>Electricity and roads</b> require <b>\$US30tr</b> of <b>infrastructure investment</b> by 2030<sup>1</sup></p> <p><b>\$US6tr</b> investment required in the <b>US</b> by 2030<sup>1</sup></p> </div> <div> <p><b>\$US13tr</b> investment required in <b>China</b> by 2030<sup>1</sup></p> <p><b>Asia</b> has the <b>largest overall</b> Infrastructure need, requiring <b>~50%</b> of global investment<sup>1</sup></p> <p>Global net <b>public debt</b> to exceed global GDP by 2025<sup>4</sup></p> </div>	<p>Investment in new <b>power generation</b></p> <p><b>~\$US6tr</b></p> <p>by 2030<sup>5</sup></p> <div> <p><b>~30%</b> increase in energy consumption by 2030<sup>6</sup></p> <p>Cost of producing <b>solar</b> electricity will reduce <b>66%</b> by 2030<sup>5</sup></p> <p>Renewable energy will account for <b>~50%</b> of installed capacity by 2030<sup>5</sup></p> </div> <div> <p><b>85%</b> of <b>renewable infrastructure investment</b> will be wind and solar<sup>5</sup></p> <p><b>80%</b> decrease in <b>coal</b> use in <b>Europe</b> by 2030<sup>7</sup></p> <p><b>Electric vehicles ~50%</b> of vehicle sales by 2030<sup>8</sup></p> </div> <div> <p><b>~\$US4tr</b> to be invested in <b>renewable power generation</b> by 2030<sup>5</sup></p> <p>Investment in <b>renewable energy capacity</b> has outstripped investment in fossil fuel capacity over last 5 yrs<sup>9</sup></p> <p><b>~\$US5tr</b> Energy investment required in <b>China and India</b> by 2030<sup>1</sup></p> </div>	<p>Economic value created by linking <b>physical and digital worlds</b></p> <p><b>\$US11tr p.a.</b></p> <p>by 2025<sup>10</sup></p> <div> <p><b>Volume of business data worldwide doubles</b> every <b>1.2 years</b><sup>11</sup></p> <p><b>40,000</b> Google searches per second<sup>12</sup></p> <p><b>500m+</b> Apple Pay, Samsung Pay and Android Pay users by 2021<sup>13</sup></p> </div> <div> <p><b>\$US4.8tr</b> potential boost to global revenues from AI by 2022<sup>14</sup></p> <p><b>75b</b> connected devices by 2025<sup>15</sup></p> <p><b>China</b> accounts for <b>40%</b> of worldwide digital transactions<sup>16</sup></p> </div> <div> <p><b>450b</b> business transactions taking place on the internet per day by 2020<sup>17</sup></p> <p><b>54%</b> of the <b>Chinese population</b> are not on the internet<sup>18</sup></p> <p><b>\$US6.2tr</b> potential economic impact of <b>Cloud technology</b> by 2025<sup>19</sup></p> </div>

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# 04 | Infrastructure







# Macquarie's Infrastructure capability

**Broad infrastructure capability**  
to support clients

**Link global long-term capital** with long-term infrastructure assets

**Deep sector expertise** through a strong and stable team with specialist industry expertise

**Adapt to client needs and market conditions:** products and advice shaped for our clients

Strong track record, operating history and **market leading position**

**Delivering all the resources** of the Group to clients

## MACQUARIE ASSET MANAGEMENT

**MIRA:** sourcing, investing and managing quality real asset businesses, on behalf of investors; **\$A133b<sup>1</sup>** AUM across **120 assets** in **25 countries**

**MIM:** managing portfolios of global listed infrastructure securities

**MSIS:** sourcing and managing high-quality private infrastructure debt investments on behalf of investors; **\$A5.8b** deployed across **50 transactions**

**Largest** infrastructure asset manager globally<sup>2</sup> **~500** dedicated staff in 18 countries

**Largest** specialist infrastructure debt asset manager<sup>3</sup>

**\$A1.5b+** invested by Macquarie and staff alongside Macquarie-managed infrastructure funds

## CORPORATE AND ASSET FINANCE

**Principal Finance:** provides **flexible primary financing solutions** and engages in secondary market investing, across the capital structure

**26%<sup>4</sup>** of CAF Principal Finance portfolio in Infrastructure

**\$A4b** of total capital invested in Infrastructure by CAF Principal Finance in the last 5 years

## COMMODITIES AND GLOBAL MARKETS

**Global institutional securities house** with specialist expertise in Infrastructure

**Provides an end-to-end offering** across commodities markets which are used in the building of infrastructure assets, including risk and capital solutions across physical and financial markets

**No. 1** in Infrastructure for the past 6 years<sup>5</sup> by institutional investors

**170+** stocks under coverage

**15+** analysts globally

## MACQUARIE CAPITAL

A **global leader** in financial advisory and capital raising across equity, debt and private capital markets within the **Infrastructure sector**

Invests its own balance sheet to facilitate early stage infrastructure projects **alongside clients**

**No. 1** Global Project Finance Financial Advisor<sup>6</sup>

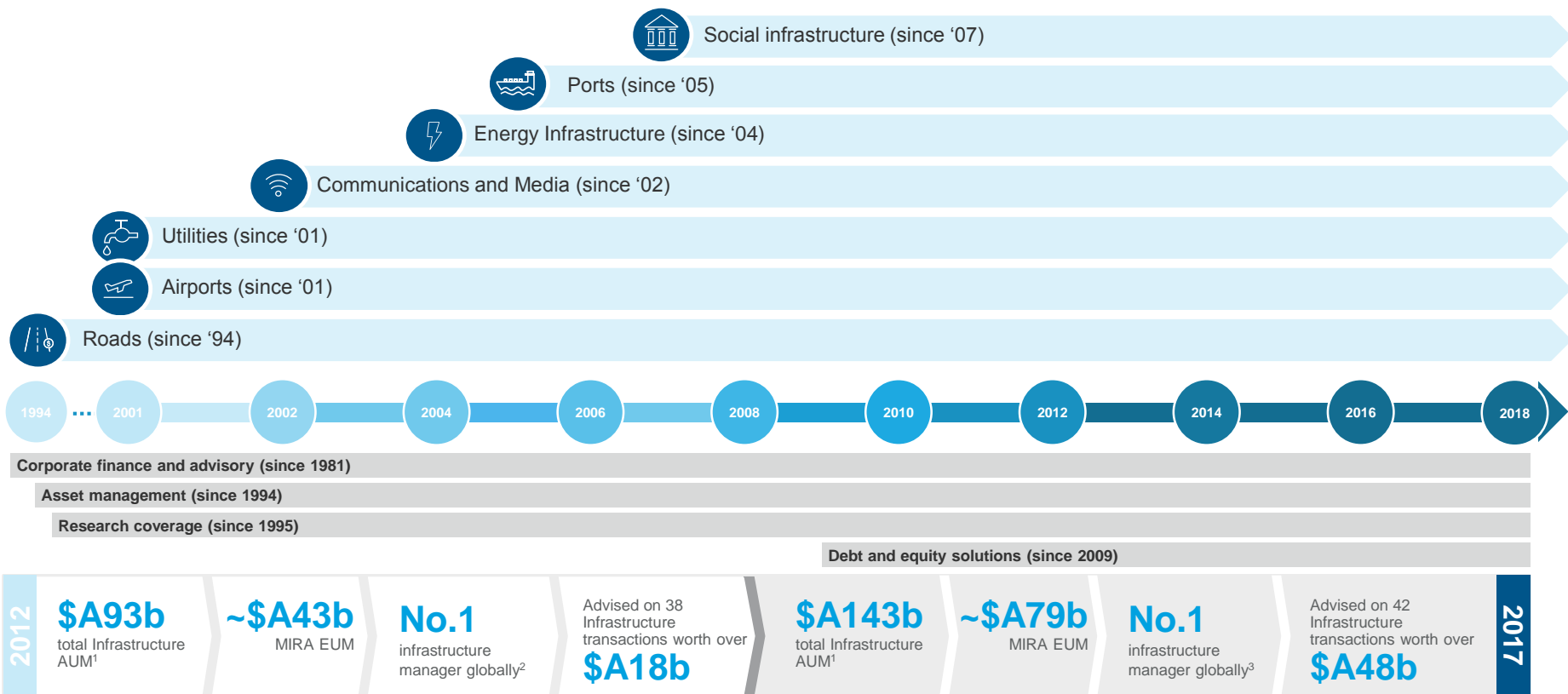
**No. 1** Global Project Finance Sponsor<sup>7</sup>

**220+** executives globally in Infrastructure

**Most innovative investment bank** for Infrastructure and Project Finance<sup>8</sup>



# A pioneer of Infrastructure growing through adjacent evolution







# Case study

## Core strengths in Infrastructure



**Deep sector expertise** achieved through a strong and stable team with specialist industry expertise



**Strong local presence of staff globally**, regionally focused in all major markets



**Adapt to client needs** and market conditions



**Growth and expansion into adjacent spaces** and markets through acquisitions and organic growth

## MAM: Thames Water

**MIRA is a leader in alternative asset management worldwide. Through its funds, MIRA invested in Thames Water - the largest water and wastewater company in the UK**

### Transaction

Consortium led by Macquarie-managed funds MEIF1 and MEIF2 **acquired** a 100% interest for £2.3b in Dec 06

**Optimised** asset performance through a “back-to-basics” approach, focusing on the core business post-acquisition

Final Macquarie-managed fund **divested** in 2017<sup>1</sup>

### Highlights

**Largest-ever capital investment** program to London's water supply

- Delivered a **~£1b p.a. capital investment** program between 2006 - 2017

Achieved a **22% reduction** in leakage rates

**71% decrease** in injuries over the past 5 years

Served over **9 million water** and **15 million wastewater** customers

## MAM: Water portfolio in Northern China

**MIRA's Asia platform manages over \$A18b of equity capital, including a joint controlling stake in a water portfolio in Northern China**

### Transaction

Macquarie-managed fund **acquired** a joint controlling interest in a water portfolio in Shenyang, China

**Supplies clean water** to 5m Shenyang residents each year, accounting for ~50% of total water usage in Shenyang, with a combined capacity of 900,000 tonnes per day

### Highlights

**Essential part of Shenyang's infrastructure** network, replacing underground water with high quality surface water

- Previously 90% of drinking water came from underground water; now, 70% of water usage comes from surface water

Consistent **top tier operational performance** with industry leading health and safety standards

Achieved a **>75%** increase in utilisation since acquisition

**Local presence** with collaborative and empowered teams



# Case study

## Core strengths in Infrastructure



**Deep sector expertise** achieved through a strong and stable team with specialist industry expertise



**Strong local presence of staff globally**, regionally focused in all major markets



**Adapt to client needs** and market conditions



**Growth and expansion into adjacent spaces** and markets through acquisitions and organic growth

## MAM: Copenhagen Airport

**MIRA-managed businesses provide essential services to the community every day. Through its funds, MIRA invested in Copenhagen Airport - the largest airport in Scandinavia**

### Transaction

First Macquarie-managed fund announced investment in 2005

**Oversaw construction** and launch of CPH Go, a low cost airline carrier facility

Final Macquarie-managed fund **divested** in 2017

### Highlights

Since Macquarie involvement:

- **Invested over DKK10b (~\$A2b)** across terminal expansion and upgrades
- **~45% increase in passenger volumes** – now ~29m annual passengers
- **3x increase** in low cost carrier passengers
- **165 direct routes** to/from airport; +33 routes
- First Scandinavian airport to cater for the A380 aircraft

## MAM: MIDIS

**Since its establishment in 2012, MIDIS has grown to be the largest specialist infrastructure debt manager<sup>1</sup>, with over \$A8b of third party investor commitments**

### Transaction

Currently managing **\$A5.8b** of AUM deployed

**50 debt investments** across transport, power and utilities, and social infrastructure

### Highlights

Providing **attractive long-dated returns** superior to sovereign and corporate investment grade credit

**Capitalising on supply side dislocation** with inflexible public bond markets and the withdrawal of banks from long-term lending

**Actively participate in shaping facilities** to meet borrower's needs including adding value through non-standard features, and participating in live bid-situations





# Case study

## Core strengths in Infrastructure



**Deep sector expertise** achieved through a strong and stable team with specialist industry expertise



**Adapt to** client needs and **market conditions**



Sourcing capital and **deploying our balance sheet** to support clients



**Strong local presence of staff globally**, regionally focused in all major markets

## CAF Principal Finance: Energetics

**Between 2013 and 2015, CAF acquired a controlling interest in Energetics - a rapidly growing provider of “last mile” electricity and gas utility connections in the UK**

### Highlights

Energetics has completed **168,000 electricity and gas connections** to date, linking utility trunk lines to new residential properties, as well as an additional 331MW of industrial and commercial connections

Supports new home building in the UK, **providing utility connections to ~8% of new homes** built, 16,000 homes annually, and has an order book of 95,000 connections

Providing **significant equity capital and financing** to support expansion; £79m invested since original investment

## CAF Principal Finance: Toll road

**CAF has continued and developed Macquarie’s longstanding expertise in toll road investment and management**

### Highlights

**Invested** \$US149m in the senior debt of Northwest Parkway, a privatized toll road in Denver, Colorado USA

CAF acquired the debt at discounted levels from non-core units of multiple banks

Building on Macquarie’s **unique and longstanding strength** in toll roads; Investment benefited from **insight** in traffic forecasting

Traffic growth of **10% p.a.** during the period of CAF’s investment. Debt was paid off early at par in 2017





# Case study

## CGM: Deep sector expertise and capability

## CGM: Teesside

### Core strengths in Infrastructure



**Broad infrastructure capability** to support clients



**Adapting to client needs** and market conditions



**Deep sector expertise** achieved through a strong and stable team with specialist industry expertise



**Delivering all the resources** of the Group to clients

**CGM has deep expertise and a leading position in global listed infrastructure. A significant distribution capability is backed by a strong research platform, and enables the mobilisation of capital into infrastructure projects**

#### Highlights

- Research platform – ranked **No.1** in Infrastructure sector by institutional investors for past 6 years<sup>1</sup>
- Strong underwriting and distribution capability** through equity capital markets JV with MacCap
- In 2017, Macquarie acted as Joint Bookrunner and underwriter in Transurban's **\$A1.9b** entitlement offer
  - The **largest capital raising in Asia-Pacific** for an infrastructure company in 2017
- Market leader in helping **ASX-listed companies access investors** all over the world including hosting Transurban on 17 global roadshows since 2009
- Well positioned** to support clients with risk management products as infrastructure developments become more exposed to market volatility
- Hedging price and foreign exchange risk

**With MGT Power, Macquarie successfully commercialised, structured and financed the world's largest new-build dedicated biomass plant - the largest cross-group collaboration transaction in EMEA to date**

#### Transaction

- The **299MW** biomass fuelled power station, located in North-East England, will generate renewable electricity for the equivalent of **600,000** homes
- MacCap** acted as financial advisor
- CGM** and **MacCap** provided a development loan and underwriting
- CGM** provided the Power Purchase Agreement (PPA) and FX hedging
- MAM** arranged and underwrote the ECA

#### Highlights

- Market first** 18 year fixed price GBP denominated UK CPI linked wood pellet supply agreement
- Market first** PPA for a project of this size
- Macquarie's **first principal sale/partnership with PKA**, a £28b Danish pension fund



# Case study

MacCap: Leading advisor

MacCap: Global sponsor

## Core strengths in Infrastructure



**Deep global sector expertise** achieved through a strong and stable team with specialist industry expertise



**Strong technical and operational expertise**



**Sourcing capital and deploying our balance sheet**

**MacCap is a global market leader in infrastructure advice, connecting institutional investors with innovative opportunities around the world**

### Highlights

#### Clear market leader

- No. 1 Infrastructure Financial Advisor globally<sup>1</sup>
- No. 1 Infrastructure Financial Advisor in Europe<sup>1</sup>
- No. 1 Infrastructure Financial Advisor in ANZ<sup>1</sup>
- No. 1 Infrastructure Financial Advisor in the US<sup>2</sup>

#### Diverse product and regional offering

Landmark deals completed in each region

Diverse geographic spread; Europe is the largest revenue generating region at ~40%

#### Deep range of clients

Strong global client relationships with the major global infrastructure, sovereign and pension funds, corporates and governments

**MacCap is a global infrastructure sponsor, assisting in the creation of assets through use of early stage development capital**

### Highlights

#### The Netherlands

Lead sponsor and sole financial advisor of the 25 year PPP to design, construct, finance and maintain Rotterdam's new €1b A24 Blankenburg Submerged Tunnel

- Complex project won by quality of submission based on learnings from a globally successful sponsor business
- Continues strength in the Benelux PPP space, in addition to prisons and courts

#### Mexico

Together with Techint Engineering and Construction completed the acquisition and financing of Norte III, a 907MW combined-cycle gas plant, under construction near Ciudad Juarez, Mexico

- A landmark transaction in Latin America, an area of opportunity moving forward
- During peak construction period, the project will employ approximately 2,000 workers and is expected to supply more than 500,000 houses in Mexico once completed





# What's next?

## MACQUARIE ASSET MANAGEMENT

### Continue to raise and deploy regional-focused flagship infrastructure funds

**Strong and longstanding track record**; largest dedicated team of any infrastructure manager

Over the past 5 years<sup>1</sup>

- **Raised ~\$A44b** in new equity; **~12%** of capital raised<sup>2</sup>
- **Invested ~\$A34b** in equity
- **Returned ~\$20b<sup>3</sup>** to investors through asset realisations and distributions

### Meet investor demand to move up/down risk curve

Defensive SuperCore assets and infrastructure debt given macro environment

Value adding through **proactive origination**, including complex separations, take-privates, roll-ups

Providing innovative funding solutions (e.g. ECA-backed financing)

**\$A13.7b of \$A15.1b of dry powder in MIRA's Infrastructure funds for disciplined deployment** in assets sourced through **local industry and financial experts**, often on a proprietary or bi-lateral basis

**\$A10b** of co-investment capital deployed in last 12 months providing scope for additional separate account mandates

### Focused on active asset management

Managing risks and **driving key strategic activities** to deliver operational and financial improvements; dedicated team of **over 500 staff** in 18 countries the largest of any infrastructure manager

**40+** senior executives with extensive industry or operational backgrounds

## CORPORATE AND ASSET FINANCE

### Principal Finance

Continue to bias towards **bespoke and less liquid situations** for primary capital and financing solutions and niche assets in secondary markets

**Well positioned** to capitalise on any increase in volatility in asset prices

## COMMODITIES AND GLOBAL MARKETS

**Well positioned to provide bespoke and innovative risk management products to enable the mobilisation of capital into infrastructure projects**

**Increasing levels of private capital** continues flowing towards infrastructure development

Expect **increased demand for risk management** products to protect against market risk in both the physical and financial spaces

Supporting clients to achieve the most efficient cost of capital

## MACQUARIE CAPITAL

### Advisory

Continue to source opportunities to advise on and execute global M&A transactions, leveraging long-term relationships with clients and providing innovative global solutions

### Continue to focus on asset creation

Differentiated as a principal investor with a development capability, in house expertise and development risk appetite

- Employs **~120** engineers, geologists, project managers, safety experts and other technical experts
- Infrastructure projects currently under construction or development worth over **~\$A10b** globally; average monthly construction spend of **~\$A135m**

### Infrastructure replacement cycle

Sourcing global capital to connect with projects to upgrade ageing infrastructure, particularly in developed economies such as in North America

- Global infrastructure dry powder totalled **~\$A200b** as at 31 Dec 17<sup>3</sup>
- **\$US6tr** investment required in the US by 2030<sup>4</sup>

# 05 | Energy







# Macquarie's Energy capability

**Full spectrum offering in Energy** to support clients across traditional and renewable energy

**Growth and expansion into adjacent spaces and markets** through acquisitions and organic growth

**Sourcing capital and deploying our balance sheet** to support clients

**Project development and management capability** to increase capacity and secure supply

Strong **track record** and strong **market position**; one of the world's largest investors in renewable energy

**Delivering all the resources** of the Group to clients

## MACQUARIE ASSET MANAGEMENT

**MIRA:** Sourcing, investing, managing and enhancing quality real asset businesses on behalf of our investors

**MSIS:** sourcing and managing high-quality private energy-related infrastructure debt investments on behalf of our investors

Manage investments totalling **36GW** of generation assets:

- **11GW** of renewable energy across wind, solar PV, biomass, geothermal, and hydro assets
- **40** conventional power plants

One of the largest independent owners of bulk liquids storage facilities; combined capacity of **~125m barrels**

**125+ staff** focused on energy infrastructure

## CORPORATE AND ASSET FINANCE

**Asset Finance:** Provides **financial and asset management solutions** for energy assets, including renewable assets

**Principal Finance:** Provides **flexible primary financing solutions** and secondary market investing capability, together with platform development experience

A portfolio of **energy assets** with **9m** gas and electricity meters deployed in the UK

**35+** Energy staff in Asset Finance<sup>2</sup>

**9%<sup>1</sup>** of CAF Principal Finance portfolio in Energy

**\$A1b** of total capital invested in Energy by CAF Principal Finance in the last 5 years

## COMMODITIES AND GLOBAL MARKETS

**End-to-end offering** across commodities markets providing risk management products, lending and financing, and inventory management, transport and storage solutions across physical and financial markets

**Global institutional securities house** with specialist expertise in Energy as an asset class

**#2** **US physical gas marketer** in North America - the highest ranked non-producer<sup>3</sup>

**~13 bcf/d** of natural gas volume across North America<sup>3</sup>

**170+** stocks under coverage by **25+** analysts globally

**Schedulers, Structurers, Logistics experts, Geologists, Meteorologists, Petroleum engineers**

## MACQUARIE CAPITAL

Established track record, long history, deep **M&A Advisory expertise** coupled with operational and technical expertise

Invests its own balance sheet to facilitate early stage development of energy projects **alongside clients**

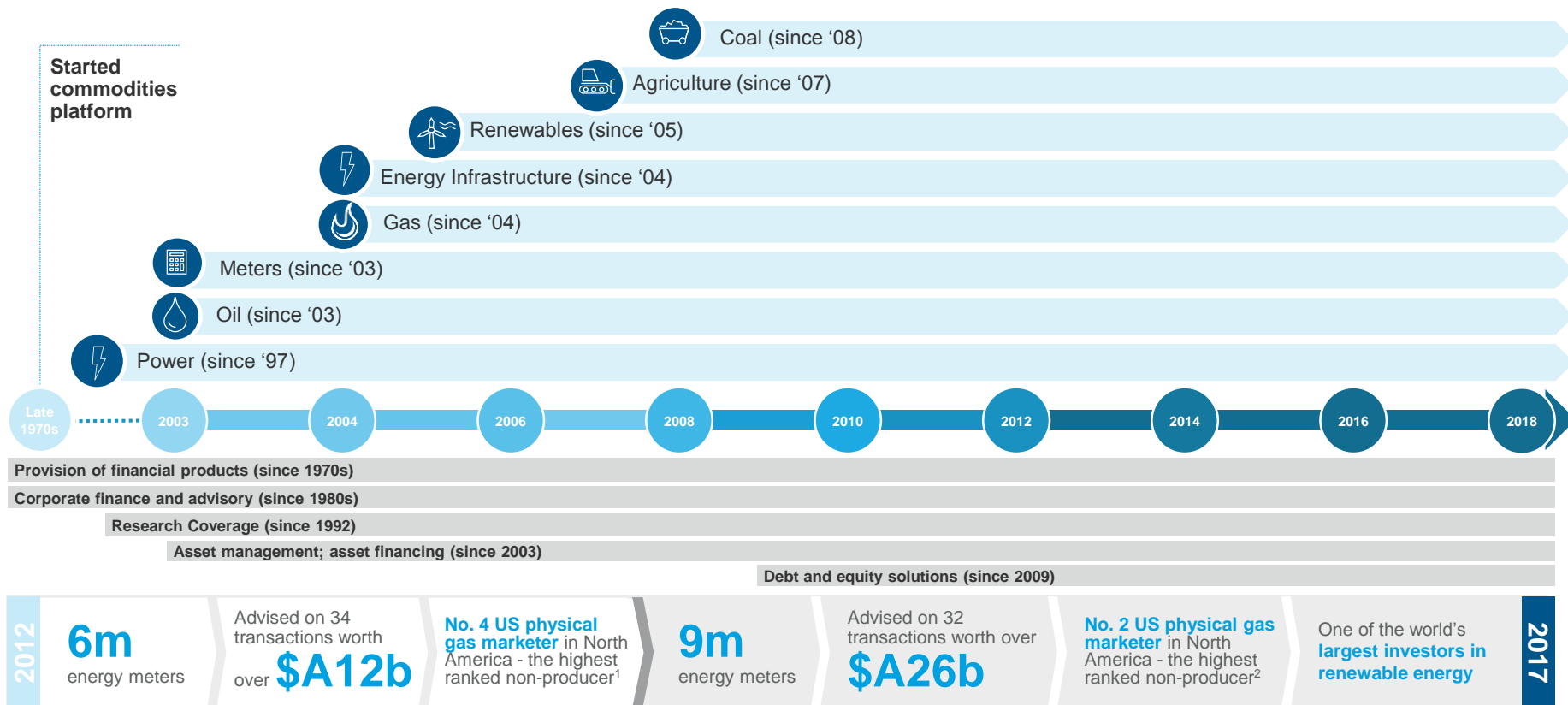
**#1** Global renewables project finance financial advisors<sup>4</sup>

**130+ executives** focused on energy infrastructure

Advised on more than **\$US7.5b** in oil and gas related transactions in 2017<sup>5</sup>



# Growth of our Energy business









# Case study

MAM: Viesgo

MAM: MEIF renewables

Core strengths  
in Energy

 **Full spectrum offering in Energy**

 **Growth and expansion into adjacent spaces** and markets through acquisitions and organic growth

 **Deep expertise** achieved through strong and stable leadership team

 **Adapt to client needs** and market conditions

**A Macquarie-led consortium acquired a group of diversified, high quality Spanish and Portuguese assets in the electricity generation and distribution sector**

**Transaction** | In Mar 15, a Macquarie-led consortium **acquired** 100% of Viesgo from E.ON SE, the German energy utility

**Fourth largest distribution network in Spain**, spanning 32,000km serving ~690,000 customers

Renewable generation assets including ~**700MW** of large hydro assets, ~**750MW** of Spanish and Portuguese wind assets and **5** conventional power assets

**Highlights** | Well positioned with **deep local relationships** and prior transactional experience with the vendor

Ability to **meet vendor objectives** to lift out entire Iberian business

Timing and complexity required large team, **deploying more than 25 investment professionals**

**Swiftly delivered a complex carve-out**, introducing liquidity management, key management changes and a refinancing and debut bond issuance

**MEIF renewables, a portfolio of renewable energy generation assets diversified across both technologies and geographies**

**Transaction** | Between 2005-2008, Macquarie-managed MEIF1 **completed the roll-up of several companies**

**Created a sizable renewables player**, including 5 UK biomass power plants, 11 wind farms, 2 Spanish solar PV parks, 24 UK landfill gas assets

**Highlights** | Provides renewable energy to the equivalent of **more than 300,000 households**

**Job creation and training** to support improvements and growth in biomass plants

**Strong focus on operations**, including appointing a complete management team – CEO, CFO, Heads of HR, Health & Safety

**Improved focus on capital expenditure** strategy to support improvements in plant reliability and availability





# Case study

## Core strengths in Energy



**Full spectrum offering  
in Energy**



**Growth and expansion  
into adjacent spaces**  
and markets through  
acquisitions and organic  
growth



**Deep expertise**  
achieved through strong  
and stable leadership  
team



**Adapt to client needs**  
and market conditions

## MAM: EDC

### A MIRA-led consortium made a voluntary tender offer for EDC, the largest pure-play renewable energy company in the Philippines

#### Transaction

Macquarie-managed MAIF1 and MAIF2 alongside a **sovereign wealth fund** completed a voluntary Tender Offer for 47.5% of EDC for ~\$US1.3b

World's largest vertically-integrated geothermal company with **1.4GW of clean and baseload power**

#### Highlights

Installed capacity of **1.4GW**

Majority of contracts are on a take-or-pay basis

**~90% contracted** with weighted average contract tenor of 8 years

## MAM: UK Green Investment Bank

### Macquarie completed the acquisition of the UK Green Investment Bank plc from HM Government for £2.3 billion

#### Transaction

In Aug 17, a Macquarie-led consortium acquired UK GIB

**£4b total green projects under management**

- £1.1b offshore wind fund, the world's first
- £200m joint venture with UK Government to invest in developing countries

#### Highlights

Compelling logic to **accelerate growth of green energy platform** and acquire assets

**Strong collaboration across the Group** to take forward business as the Green Investment Group (GIG) and expand it internationally

- Integration of team and business now complete
- Part of MAM's 11GW of installed renewable energy capacity



# Case study

## Core strengths in Energy

↗ ↘ **Growth and expansion into adjacent spaces and markets**

💰 **Sourcing capital and deploying our balance sheet** to support clients

🔗 **Project development and management capability**

👥 **Deep expertise** achieved through strong and stable leadership team

📈 **Adapt to client needs** and market conditions

## CAF Asset Finance: Meters

**A market leader in UK meter provision through organic growth and acquisition, now expanding into adjacent asset classes and geographies**

### Transaction

- 2003:** contract to install 1.5m traditional residential gas and electric meters in the UK
- 2006:** commenced funding to own smart electricity meters, with 600,000+ installs for commercial customers
- 2011:** acquired OnStream's 4.2m traditional gas and electricity meters in the UK
- 2013:** commenced funding distributed power, storage, and energy efficient assets in Australia and the UK
- 2015-2016:** contracts awarded to own and deploy 9m residential smart gas and electricity meters in the UK to 2020

### Highlights

- 9m** energy assets
- ~20%** of total UK market
- In **~6m** UK homes and commercial premises
- 500,000** assets redeployed

## CAF Principal Finance: Rooftop solar PV

**From 2014-2016, CAF developed and installed >13,000 residential rooftop solar systems in the UK, representing approximately 41MWp of generation capacity**

### Transaction

- Systems provided at no cost to the occupier** (primarily social housing tenants) who also benefited from the system's electricity output
- CAF owned and operated the systems until successfully exiting the portfolio in Dec 17 to a **long term infrastructure investor**

### Highlights

- In the last year, the portfolio has:
- Generated 33GWH in **residential power**
- Helped to reduce household bills in the UK by ~£3m and **avoid around 11,500 tonnes in carbon emissions**





# Case study

## Core strengths in Energy



**Full spectrum offering  
in energy**



**Growth and expansion  
into adjacent spaces**  
and markets through  
acquisitions and organic  
growth



**Deep expertise**  
achieved through strong  
and stable leadership  
team



**Adapt to client needs**  
and market conditions

## CGM: Heide Refinery

## CGM: Cargill

**CGM provides financing, risk management and physical execution, supporting refineries to supply high quality products to their customers**

### Transaction

Long-term inventory monetisation and working capital facility with the Klesch Group, owner of the **Heide Refinery** in Northern Germany

**90,000** barrel per day refinery

**Supplier of >90%** jet fuel to Hamburg airport

### Highlights

**CGM is an essential part of the refinery's inventory management**

- **Input:** procure, store and supply crude oil just-in-time for processing
  - **Output:** store and deliver product just-in-time for on-sell
- Ownership, pricing and hedging of **30+** different crude grades and oil products

**Completed the acquisitions of Cargill Petroleum and Cargill North America Power and Gas trading businesses, expanding energy platform**

110+ new staff joined CGM, bringing strong capabilities and expertise and providing CGM with access to new markets and customers

### Transaction

**Cargill Petroleum**

**Increased logistics capabilities:** Latin America, China, Africa, Middle East

**Greater oil insights:** supply + demand drivers

**New commodities offices:** Geneva + Minneapolis

### Transaction

**Cargill North America Power and Gas**

**Complements:** existing North American energy footprint

**Expands:** geographic and service coverage



# Case study

## MacCap: Green energy infrastructure platform

## MacCap: Quadrant

### Core strengths in Energy



**Full spectrum offering in energy**



**Growth and expansion into adjacent spaces** and markets through acquisitions and organic growth



**Sourcing capital and deploying our balance sheet** to support clients



**Project development and management capability**



**Deep expertise** achieved through strong and stable leadership team

### The global transition to a low carbon economy and our acquisition of the GIG has led us to become a global leader in green energy infrastructure

#### Transaction

Macquarie **completed the acquisition of the UK GIB plc** from HM Government for £2.3b

A **highly complex transaction** that involved performing due diligence on 40 separate assets in a short time frame

Joining of the world's first green bank and largest infrastructure investor to create a **market leader in green investment**

#### Highlights

Led over **£1b in new commitments** since transaction closed in Aug 17

**Expanding into new markets** such as continental Europe and Asia

**Targeting £3b of green energy** projects in the next 3 years

Unparalleled renewables expertise with a **strong global team** focused on green energy

### Initiated and jointly underwrote the acquisition of Quadrant Energy, an established energy provider and significant energy player in Western Australia

#### Transaction

Investment alongside long-time clients Brookfield and Wesfarmers in a \$US2.1b transaction

A **decade plus relationship with Alcoa** was important. The gas offtake contract resolved their long term energy needs while providing certainty for acquisition debt funding facilities

#### Highlights

**Active engagement in strategy** at all levels of the organisation

**27% opex reduction**<sup>1</sup>

**\$US254m** capital investment on infrastructure development and well integrity

**43mmboe resource addition** and discovery of new Bedout Basin

1: Based on 2016 cost of production compared to annualised cost of production for the period of Jul-Dec 15.



# What's next?

## MACQUARIE ASSET MANAGEMENT

**Facilitate growing investor demand** and market opportunity within renewables; following on from GIG acquisition with subsequent renewables funds/products

- Renewable energy will account for **~50%** of installed capacity by 2030<sup>1</sup>

**Continue to invest in traditional energy assets** where regulated and infrastructure characteristics exist

- 47%** of existing infrastructure assets are involved in generating, delivering or supplying energy
- \$A18b** deployed within energy-infrastructure assets in last three years

Requirement in Asia for **~\$US18tr** of energy investment during next two decades<sup>2</sup>

Continue to target niche oil and gas investments within upstream energy sector

- ~\$A4b** deployed across 85 oil and gas investments since 2003<sup>3</sup>

## CORPORATE AND ASSET FINANCE

### Asset Finance

**A shift to distributed power:** continue to offer energy efficient solutions in Australia and UK

- ~30%** increase in energy consumption by 2030<sup>4</sup>

**Connected devices:** funding smart homes and commercial premises: micro grids, battery storage, load shedding, demand management and distributed generation

- Number of connected devices amongst consumers is expected to increase by a CAGR of **~14%** by 2030, while connected communication devices is expected to increase by a CAGR of **~8%** by 2030<sup>5</sup>

- Smart meters to be rolled out to **26m UK homes** and all small businesses by 2020<sup>6</sup>

**Geographic expansion:** further opportunity expected through partnership with GIG

**A shared economy** usage based 'As a Service': continuing to evolve and lead the market in offering flexibility for customers through usage based pricing

- Spending on the shared economy in travel, car sharing, finance, staffing and streaming is expected to increase to

**~\$A335b by 2025** from \$A15b in 2014<sup>7</sup>

- Electric vehicles will account for **~50%** of vehicle sales by 2030<sup>8</sup>

### Principal Finance

Continue to provide **capital and financing solutions** to energy assets, particularly in renewables development

**Expand development platforms** for storage and renewables

Translate insights from markets at the forefront of transformation to markets earlier in the transition process

## COMMODITIES AND GLOBAL MARKETS

### Changing dynamics in energy markets

**Energy demand and supply profiles are shifting**, presenting opportunities to partner with clients and provide support across both traditional and renewable energy; the way the world sources and consumes energy is changing

- Since 2012 the need for traditional energy generation has fallen **33%** as renewables energy has increased in California<sup>9</sup>
- Increasing use of renewables in California will increase the need for more flexible traditional energy resources with **13GW** of energy needed to meet peak night time loads<sup>9</sup>

### Increase in demand for pipes and storage

- No. 2** US physical gas marketer in North America<sup>10</sup>, ideally placed to capitalise with **~100 staff**
- Global investment in 2016 in gas **\$US649b**; coal **\$US59b**<sup>11</sup>
- Investment in US shale increased 53% in 2016<sup>11</sup>

The daily load shape for electricity markets used to look like traditional consumption charts, but with solar and other forms of renewable energy gaining traction, the shape of consumption is changing

- The US has moved from a net importer of ~3 bcf/d of gas in 2013 to a net exporter of **~0.3 bcf/d in 2017**

## MACQUARIE CAPITAL

### Expanding into new technologies

Acquired a 50MW in-development portfolio of distributed battery storage systems in the US

Launched a new service with CAF called **Energy Solutions** to provide organisations with development expertise and a new source of capital to finance distributed energy and energy efficiency projects

### Convergence of traditional energy and renewable energy

Significant opportunities expected as **traditional energy players seek to diversify** their asset portfolios and reassess their strategy

- Advised on **13** renewables-related transactions worth more than **\$A10b** in 2017<sup>12</sup>

### Targeting new markets

Taking the GIG brand into Latin America – an exciting new area for expansion

Energy projects currently under construction or development worth over

**~\$A20b** globally; average monthly construction spend of **~\$A250m**

1. Bloomberg New Energy Finance London Summit 2017, Breaking Clean, 2017. 2. Asian Infrastructure Investment Bank team estimate based on International Energy Agency's World Energy Investment Outlook, 2014. 3. Through Macquarie Energy Capital, which operated within the CGM since 2002 and joined MIRA on 1 Jan 17 as part of a restructure, to provide Energy asset management services across the real assets space. 4. BP Energy Outlook, 2017. 5. HIS Markit, The Internet of Things: a movement, not a market, 2017. 6. Smart Energy GB. 7. Supply Chain Digital, May 17. 8. Boston Consulting Group, Electrified Vehicles to take half of Global Auto Market by 2030, 2017. 9. California Independent System Operator, What the duck curve tells us about managing a green grid, 2016. 10. Based on internal calculations as at 31 Dec 17. 11. International Energy Agency, World Energy Investment, 2017. 12. Infraction, by value, 2017.

# 06 | Technology









# Macquarie's Technology capability

**Investment in people and culture** creating opportunities to continue to grow and develop

**Business-focused strategy** benefits from close alignment with technology specialists

**Deep expertise in technology** allows the adoption of new and disruptive technologies

**Open API architecture** connecting our platforms

**Cloud-first strategy** supports agility, scalability and efficiency

**Partner with entrepreneurs,** with a focus on long-term relationships

## MACQUARIE ASSET MANAGEMENT

**MIRA: automating data collection and analytics** from portfolio companies to streamline reporting and improve portfolio company oversight

**MIM: investing in real time global portfolio management** and risk management platform

**Relying on technology for better investing, operational processes and investor engagement**

## CORPORATE AND ASSET FINANCE

**Asset Finance:** investing in **market leading platforms** to create an engaging and seamless customer journey

**Principal Finance:** provides **flexible primary financing solutions** and engages in secondary market investing, across the capital structure

**\$A465m**  
Secured debt software financing by CAF Principal Finance

## BANKING AND FINANCIAL SERVICES

Investment in **a real-time core banking platform** for loans and retail deposits

Built **Australia's first open banking platform** to give customers control over their own data and the power to manage how they want to share it

Support **innovative digital banking solutions** for our customers with the launch of ApplePay and AndroidPay

**Best Digital**  
Banking Offering<sup>1</sup>  
**Most Innovative**  
Card Product<sup>1</sup>

## COMMODITIES AND GLOBAL MARKETS

Global institutional securities house with **specialist expertise in the technology sector** – including deep quantitative expertise in machine learning and AI, **gaining insights** from complex data sets

Investment in electronic execution/DMA systems

**420+**  
stocks under coverage globally in Telecoms, Media and Technology; by **45+ analysts**

## MACQUARIE CAPITAL

**Dedicated global team** providing advisory and capital raising services

**Work with entrepreneurs** to provide capital and advice to grow their business, including the creation of platforms through subsequent acquisitions

**\$A1b+** invested in technology companies since 2000

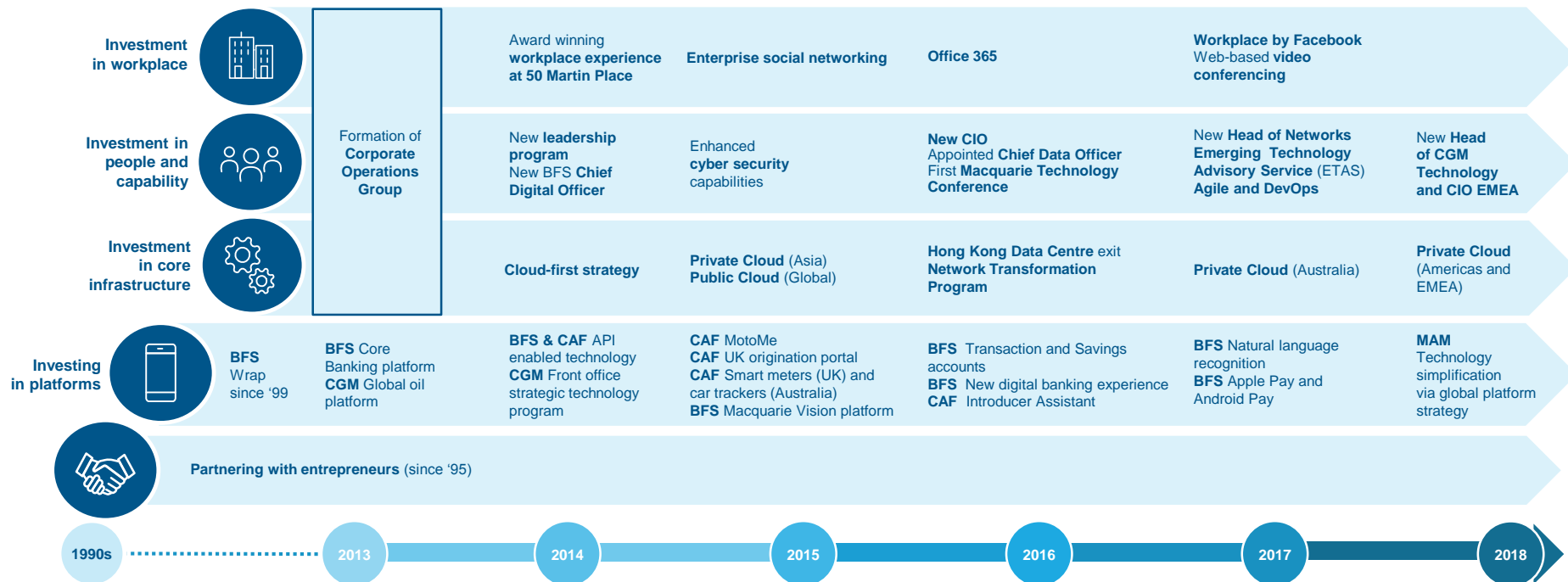
Invested in **36** technology-related transactions  
**No. 1** financial advisor on Technology<sup>2</sup>

## ENABLED BY CORPORATE OPERATIONS GROUP

Corporate Operations Group manages Macquarie's core infrastructure, designs, develops and supports applications and services; provides strategic leadership on disruptive technology opportunities



# Investing in our people and platforms, and partnering with entrepreneurs



# Case study: Operating Groups are supported and enabled by the Corporate Operations Group



Corporate Operations Group manages Macquarie's core infrastructure, designs, develops and supports applications and services and provides strategic leadership on disruptive technology opportunities

## CORE INFRASTRUCTURE AND WORKPLACE



**36%** servers running in the **Cloud**



**Workplace by Facebook** for enterprise social networking

**13.5k** users migrated to **Office 365**



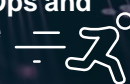
**Network transformation** and next generation firewalls

## APPLICATIONS AND SERVICES



**99.9%** platform availability

**DevOps and Agile**



**Open API architecture**

## Digital transformation

M O T O M E

Introducer Assistant |



MACQUARIE | Research



I bank with Macquarie

**DEFT**

## PEOPLE AND LEADERSHIP



**Cyber Awareness** educating staff about security threats

**ambition**  
Automate, Simplify, Innovate

Inspiring staff through the **Macquarie Technology Conference**

**ETAS**

Specialist knowledge in **emerging technologies**

**TechEd**



Investing in **professional and technical skills**



# Case study

CAF: investment in platforms

## Core strengths in Technology



**Business-focused strategy** benefits from close alignment with technology specialists



**Open API architecture** connecting our platforms

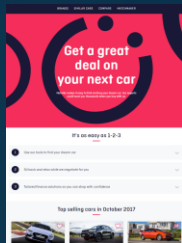


**Deep expertise in technology** allows the adoption of new and disruptive technologies



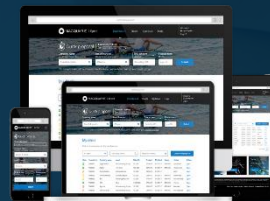
**Cloud-first strategy** supports agility, scalability and efficiency

## Creating an engaging and seamless customer journey



### MotoMe platform

A car buying and financing ecosystem, connecting digital, social and physical environments



### Origination portals in Australia and EMEA

Market leading technology platforms, enabling operational efficiency and continued growth through increased market access and service differentiation



### Automated credit decisions

Increasing productivity and efficiency, and optimising the customer experience




BFS: Digital Banking


# Case study

## Core strengths in Technology

 **Investment in people and culture** creating opportunities

 **Business-focused strategy** benefits from close alignment with technology specialists

 **Deep expertise in technology** allows the adoption of new and disruptive technologies

 **Open API architecture** connecting our platforms

 **Cloud-first strategy** supports agility, scalability and efficiency

## Digital Banking

More than 1.1 million Australian clients



**Leading digital banking** experience with features that are firsts in Australian banking including client push notifications and natural language search



### Datastax

The same technology as Netflix and Facebook



**First Australian bank** to have implemented leading API-enabled systems architecture using OpenShift technology from Redhat



### Rebuilt our technology stack

and are the first to offer lending and retail deposits on one core banking system



### Open Banking

Australia's first open banking platform giving customers control over their own data



**Yellow Brick Road**  
Wealth Management



### Intermediaries / partnerships

Facilitating customisable experiences that incorporate banking capability for our partners (Woolworths Money, mortgages)



### Platform

Significant investment in platforms as a key part of our business and growth moving forward (Wrap, DEFT)

**\$A85.3b**

Funds on platform<sup>1</sup>

**\$A31.2b**

Australian mortgage portfolio

**\$A46.3b**

Total BFS deposits<sup>2</sup>

**\$A7.2b**

Business banking loan portfolio





# Case study

CGM: investment in platforms

## Core strengths in Technology



**Business-focused strategy** benefits from close alignment with technology specialists



**Open API architecture** connecting our platforms



**Investment in people and culture** creating opportunities



**Deep expertise in technology** allows the adoption of new and disruptive technologies



**Cloud-first strategy** supports agility, scalability and efficiency

**Electronic execution platform provides a seamless client experience with 24/6 trading coverage**



Partnering with clients located around the world to help them achieve their global trading objectives through a comprehensive suite of algorithms, tools and investment analytics utilising big data and cloud computing

The platform enables clients to access over **100** liquidity venues in **50** countries through an intuitive global interface

Algorithms are designed with a deep understanding of global market microstructures and includes regional and market specific optimisation

**This technology is complemented with local market insight from our regional trading desks located in 23 countries**

**The cost to provide innovative services to clients is declining as volumes increase**

**+22%**

increase in transactions year on year<sup>1</sup>

**-23%**

decline in total technology costs per transaction<sup>2</sup>



# Case study

## MacCap: PEXA

## MacCap: Nuix

### Core strengths in Technology



**Business-focused strategy** benefits from close alignment with technology specialists



**Partner with entrepreneurs**, with a focus on long-term relationships



**Deep expertise in technology** allows the adoption of new and disruptive technologies

### Supported PEXA since 2012 including providing significant investment funds in its initial funding round

#### Transaction

Supported **company formation** and initial business planning process in 2011

Provided the **first external venture capital** in 2012 and continued to follow on in subsequent funding rounds

#### Highlights

Investment was underpinned by a **deep, long term relationship** with the PEXA founding CEO, together with many years of experience investing in property data and consumer credit data businesses

Macquarie's retail and business bank were **early adopters** of the PEXA platform

Operating in 5 Australian States which together represent over **90% of all Land Registry transactions in Australia** by volume<sup>1</sup>

**112 financial institutions** are engaged representing in excess of 90% of all Land Registry transactions by volume<sup>2</sup>

### MacCap has supported Nuix, an Australian software company that allows organisations to pinpoint critical information to act on cybersecurity, risk and compliance threats

#### Transaction

First invested in Nuix in 2011 and has also provided **financing in subsequent investment rounds**

Nuix, founded in 2000, is now recognised as a **global leader** in delivering solutions to address the key challenges, risks and opportunities associated with the growth and complexity of data

#### Highlights

Leveraged its **extensive experience** as an investor in adjacent data-focused software businesses to provide support to the Nuix team

Nuix today has over **1,800 customers** in **70 countries**

Customers include major financial regulators, law enforcement agencies, global corporations, intelligence agencies, the United Nations, and all leading advisory firms and litigation support vendors



# What's next?

## MACQUARIE ASSET MANAGEMENT

Further leveraging data and **analytics in portfolio management** to identify new sources of alpha generation

Leveraging **technology within operating assets** to drive performance and unlock trends across portfolio of 138 portfolio businesses, **~300 properties** and **~4.5m** hectares of farmland

Enhancing client experience through **technology-enabled interactions**

Automating middle and back office processes

## COMMODITIES AND GLOBAL MARKETS

**Global trade digitalisation:** as supply chains becomes more efficient, 5% increase in world wide GDP and **15% increase in total trade volume**<sup>1</sup>; well positioned to find growth in commodity markets

**Digital relationships:** increased sophistication of electronic execution and research platforms for clients

**Internet of things:** optimised commodity trading in CGM will be based on IoT data streams

**Deep market insight and intellectual property:** continue to be at the forefront of investment themes for next generation technology including machine learning, AI and IoT

## CORPORATE AND ASSET FINANCE

**Use of technology to enhance customer purchase**, including online choice (virtual reality)

Development of vehicle fleet products (including pay per ride) to facilitate driverless and shared vehicles

- Electric vehicles will account for **~50%** of vehicle sales by 2030<sup>2</sup>

**Big data opportunity to gain insights** into customer behaviour and understanding the asset and asset lifecycle

- Volume of business data worldwide doubles every 1.2 years<sup>3</sup>

## MACQUARIE CAPITAL

Continue to work with entrepreneurs in the technology sector to support long term growth through advisory services

Investing in opportunities in the infra-tech space to take advantage of crossover with strong infrastructure business

Recently acquired a **50% stake** in environmental monitoring business EMS B&K, a global leader in real time, continuous environmental monitoring for infrastructure, resources, smart cities and industrial customers

## BANKING AND FINANCIAL SERVICES

Continue with **digitisation transformation**, including mortgages and wrap

Continue **platform enhancements** and **automation** to:

- Improve the customer experience through self-service and a more personalised experience
- Allow intermediaries to be more efficient and offer more tailored experiences to their clients
- Platform enhancements in Wealth Management will provide advanced smart searching capabilities, data analytics, practice management reporting, and integration with digital advice solutions for advisors

## CORPORATE OPERATIONS GROUP

Drive **automation** of core infrastructure and processes, increasing opportunities for creativity and innovation

- **\$A2.2tr** boost to Australia's national income between 2015 and 2030 from productivity gains; \$A1tr from accelerating the rate of automation and \$A1.2tr from transitioning the workforce<sup>4</sup>
- By 2030, the average Australian worker will spend 2 hours per week less on manual and routine tasks; **71%** of the total expected reduction in work time will come from people doing the same job

Opportunity to gain customer and operational insight, leveraging **big data and analytics** to provide strategic advice to our businesses and clients

# Operational Briefing

## Presentation to Investors and Analysts

6 February 2018





# A | Glossary





# Glossary

<b>\$A / AUD</b>	Australian Dollar
<b>\$C / CAD</b>	Canadian Dollar
<b>\$US / USD</b>	United States Dollar
<b>£ / GBP</b>	Pound Sterling
<b>€</b>	Euro
<b>1H</b>	Half-year ended 30 Sep
<b>2H</b>	Half-year ended 31 Mar
<b>3Q</b>	Quarter ended 31 Dec
<b>ABN</b>	Australian Business Number
<b>AI</b>	Artificial Intelligence
<b>ANZ</b>	Australia and New Zealand
<b>API</b>	Application Programming Interface
<b>APRA</b>	Australian Prudential Regulation Authority
<b>Approx.</b>	Approximately
<b>ASX</b>	Australian Securities Exchange
<b>AUM</b>	Assets Under Management
<b>b</b>	Billion
<b>BCBS</b>	Basel Committee on Banking Supervision
<b>bcf/d</b>	Billion Cubic Feet Per Day
<b>BFS</b>	Banking and Financial Services

<b>CAF</b>	Corporate and Asset Finance
<b>CAGR</b>	Compound Annual Growth Rate
<b>CCB</b>	Capital Conversion Buffer
<b>CEO</b>	Chief Executive Officer
<b>CET1</b>	Common Equity Tier 1
<b>CFO</b>	Chief Financial Officer
<b>CGM</b>	Commodities and Global Markets
<b>CMA</b>	Cash Management Account
<b>CY</b>	Calendar Year ended 31 Dec
<b>DCM</b>	Debt Capital Markets
<b>DMA</b>	Direct Market Access
<b>DTA</b>	Deferred Tax Asset
<b>ECA</b>	Export Credit Agency
<b>ECM</b>	Equity Capital Markets
<b>EMEA</b>	Europe, Middle East and Africa
<b>EUM</b>	Equity Under Management
<b>FX</b>	Foreign Exchange
<b>FY</b>	Full year ended 31 Mar
<b>GIG</b>	Green Investment Group (rebranded from Green Investment Bank)
<b>GDP</b>	Gross Domestic Product



# Glossary

<b>GW</b>	Gigawatt
<b>GWH</b>	Gigawatt Hours
<b>HK</b>	Hong Kong
<b>HR</b>	Human Resources
<b>IT</b>	Information Technology
<b>JV</b>	Joint Venture
<b>KM</b>	Kilometre
<b>LBO</b>	Leveraged Buyout
<b>LCR</b>	Liquidity Coverage Ratio
<b>LNG</b>	Liquefied Natural Gas
<b>m</b>	Million
<b>M&amp;A</b>	Mergers and Acquisitions
<b>MacCap</b>	Macquarie Capital
<b>MAIF</b>	Macquarie Asian Infrastructure Fund
<b>MAM</b>	Macquarie Asset Management
<b>MBL</b>	Macquarie Bank Limited
<b>MEIF</b>	Macquarie European Infrastructure Fund
<b>MGL / MQG</b>	Macquarie Group Limited
<b>MIDIS</b>	Macquarie Infrastructure Debt Investment Solutions
<b>MIM</b>	Macquarie Investment Management

<b>MIRA</b>	Macquarie Infrastructure and Real Assets
<b>mmboe</b>	Million Barrels of Oil Equivalent
<b>MSIS</b>	Macquarie Specialised Investment Solutions
<b>MW</b>	Megawatt
<b>MWp</b>	Megawatt Peak
<b>NGLs</b>	Natural gas liquids
<b>No.</b>	Number
<b>NPAT</b>	Net Profit After Tax
<b>NSFR</b>	Net Stable Funding Ratio
<b>p.a.</b>	Per annum
<b>pcp</b>	Prior Corresponding Period
<b>PPP</b>	Public-Private Partnership
<b>PV</b>	Photovoltaic
<b>RBA</b>	Reserve Bank of Australia
<b>ROE</b>	Return on Equity
<b>RWA</b>	Risk Weighted Assets
<b>SMSF</b>	Self Managed Super Fund
<b>S&amp;P</b>	Standard & Poor's
<b>t / tr</b>	Trillion
<b>TMET</b>	Telecommunications, Media, Entertainment and Technology
<b>MIRA</b>	Macquarie Infrastructure and Real Assets



# Glossary

<b>UK</b>	United Kingdom
<b>UK GIB</b>	United Kingdom Green Investment Bank
<b>US / USA</b>	United States of America
<b>yr</b>	Year
<b>YTD</b>	Year To Date

# Operational Briefing

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