

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.

Energy





Please visit the following link to view:
macq.co/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 Finance²

9%¹ 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-producer³

~13 bcf/d of natural gas volume across North America³

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**

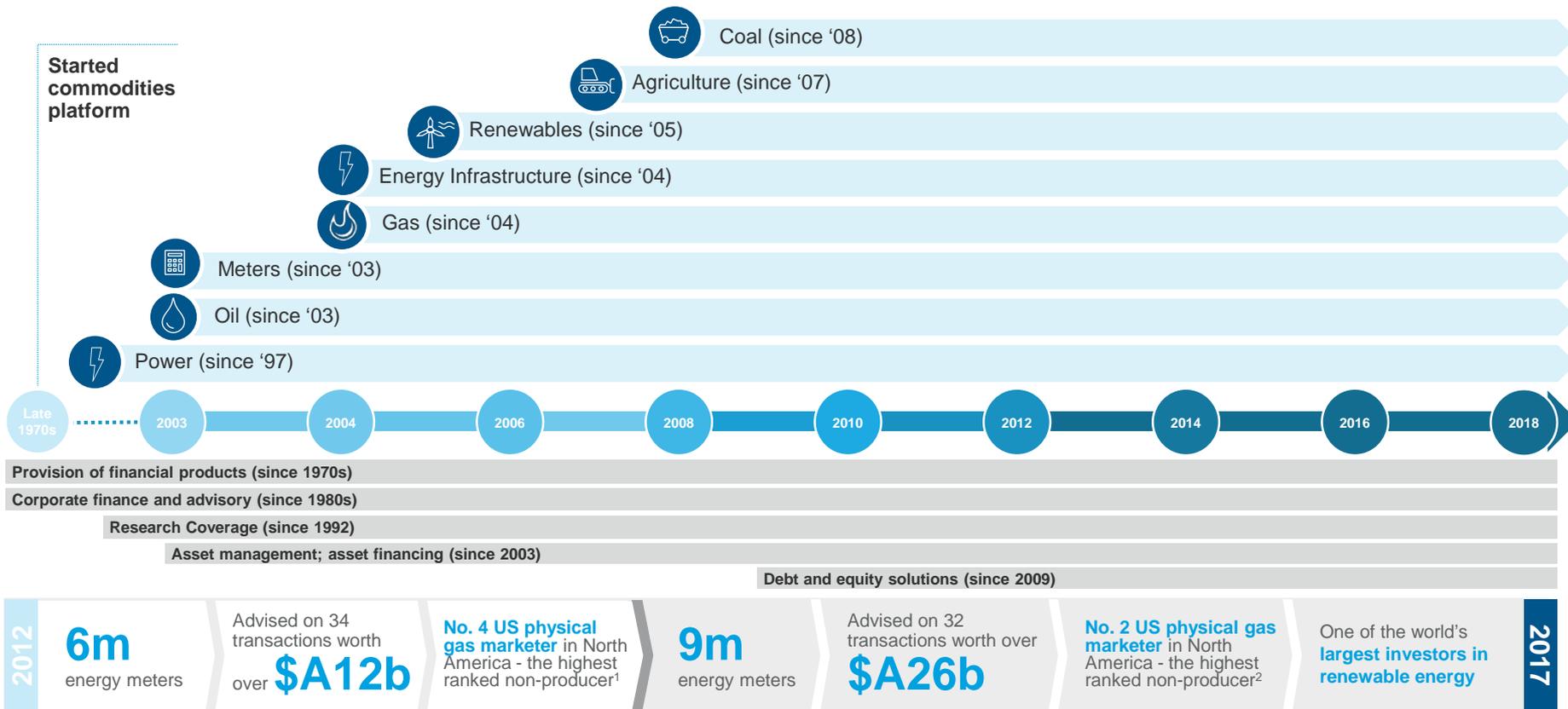
No. 1 Global renewables project finance financial advisors⁴

130+ executives focused on energy infrastructure

Advised on more than **\$US7.5b** in oil and gas related transactions in 2017⁵



Growth of our Energy business



1. Platts 4Q CY11. 2. Based on internal calculations as at 31 Dec 17.



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

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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**



MACQUARIE

Case study

CGM: Heide Refinery

CGM: Cargill

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 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 reduction¹
\$US254m capital investment on infrastructure development and well integrity
43mmboe resource addition and discovery of new Bedout Basin



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 2030¹

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 decades²

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

- ~\$A4b** deployed across 85 oil and gas investments since 2003³

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 2030⁴

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 2030⁵

- Smart meters to be rolled out to **26m UK homes** and all small businesses by 2020⁶

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 2014⁷

- Electric vehicles will account for **~50%** of vehicle sales by 2030⁸

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 California⁹
- 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 loads⁹

Increase in demand for pipes and storage

- No. 2** US physical gas marketer in North America¹⁰, ideally placed to capitalise with **~100 staff**

- Global investment in 2016 in gas **\$US649b**; coal **\$US59b**¹¹
- Investment in US shale increased 53% in 2016¹¹

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 2017¹²

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**

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