



# Infrastructure Investment

International Contractors Association of Korea

Brad Kim

September 2017

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# 01

## Introduction to Macquarie

# Introduction to Macquarie



Macquarie Group Limited is a global provider of banking, financial, advisory, investment and funds management services in all major financial markets



- Founded in 1969 as the Australian subsidiary of UK merchant bank Hill Samuel
- Global provider of banking, financial, advisory, investment and funds management services
- Main business focus is providing products and services to clients
- Listed on Australian Securities Exchange (ASX: MQG; ADR: MQBKY)
- Regulated by APRA, Australian banking regulator, as non-operating holding company of a licensed Australian bank
- Macquarie currently employs over 13,500 people and operates in over 27 countries.

## KEY STATISTICS<sup>1</sup>

Total  
**\$A 482 billion**  
assets under  
management

**\$A 30+ billion**  
market  
capitalization

Advised on 417  
transactions worth  
**\$A 159 billion**

Over  
**\$A 10 billion**  
net operating  
income

**\$A 182.9 billion**  
total assets

1. Macquarie Group annual report 2017 figures.

# Infrastructure coverage

## Coverage across all major Infrastructure sectors



### Power & Utilities

- Electricity and gas
- Generation
- Distribution and transmission
- Pipelines & storage
- Water and wastewater
- Waste
- Metering



### Renewables

- Wind
- Solar
- Geothermal
- Biomass/LFG
- Hydro



### Midstream

- Storage
- Gathering & Processing
- Pipelines
- LNG
- Petrochemical
- Gas-to-liquids



### Roads & PPPs

- Roads
- Bridges
- Tunnels
- Schools
- Hospitals
- Courthouses
- Prisons
- Car parks
- Nursing homes
- Other availability deals



### Airports

- Airports
- Related businesses



### Transport

- Ports
- Ferries
- High speed rail
- Light-rail
- Rapid transit
- On-street parking
- Bus operators
- Track
- Rolling stock















# Advisor, lender, investor, developer

Macquarie Capital can provide advice, capital and expertise across the spectrum of client needs

**Investor/Principal**

- Underwrite and distribute equity capital
- Principal mindset

 <p>Sale of 300MW Balko Wind Farm in Oklahoma</p> <p><b>\$408m</b></p> <p>Principal Investor, Exclusive Financial Advisor</p> <p> MACQUARIE</p> <p>2015</p>	 <p>ANZ terminals, equity sell-down to Fongate and Northleaf</p> <p><b>\$US\$25m</b></p> <p>Financial Advisor</p> <p> MACQUARIE</p> <p>2014</p>	 <p>Acquisition of Apache's Australian oil &amp; gas portfolio</p> <p><b>\$US\$2.1bn</b></p> <p>Principal Investor, Financial Advisor</p> <p> MACQUARIE</p> <p>2015</p>
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 <p>Acquisition of Veolia's North American solid waste business by Highstar Capital</p> <p><b>\$US\$1.9bn</b></p> <p>Financial Advisor/Joint Bookrunner/Lead Arranger</p> <p> MACQUARIE</p> <p>2013</p>	 <p>Provided senior and junior debt to Dublin Waste to Energy project</p> <p><b>€90m</b></p> <p>Financial Advisor/Equity arranger Junior &amp; Senior Lender</p> <p> MACQUARIE</p> <p>2014</p>	 <p>Joint acquisition of First Wind by TerraForma and SunEdison</p> <p><b>\$US\$2.4bn</b></p> <p>Joint Bookrunner/Lead Arranger</p> <p> MACQUARIE</p> <p>2014</p>
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**Lender**

- Underwriting and syndication
- Leveraged loans, mezzanine debt, preferred equity, hybrid

**Developer/Sponsor**

- Development capital and equity capital
- Consortium formation and pursuit of capital

 <p>Development of greenfield CCGT plant in Salem, MA</p> <p><b>~\$US1b</b></p> <p>Financial Advisor</p> <p>2015</p>	 <p>Mersey Gateway Bridge PPP Project</p> <p><b>£600m</b></p> <p>Lead Sponsor and Financial Advisor</p> <p>2014</p>	 <p>Development of a 6.5MW solar plant</p> <p>Principal Investor and Financial Advisor</p> <p> MACQUARIE</p> <p>2016</p>
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 <p>Freeport LNG Liquefaction Project</p> <p><b>\$US\$11b</b></p> <p>Financial Advisor</p> <p> MACQUARIE</p> <p>2014</p>	 <p>Adviser to Queensland Government on the sale of Queensland Motorways</p> <p><b>\$A\$7.1bn</b></p> <p>Financial Advisor</p> <p> MACQUARIE</p> <p>2014</p>	 <p>Acquisition of Cleco Corp. by Macquarie-led Consortium</p> <p><b>\$US\$4.7bn</b></p> <p>Financial Advisor</p> <p> MACQUARIE</p> <p>2016</p>
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**Advisor**

- Financial advisor
- Debt and equity arranger

**FULL SUITE OF SERVICES**

# Trusted by communities



Every day ~100 million people use essential services provided by MIRA managed businesses



## Airports

~134 million  
passengers per  
annum



## Roads

~1 million vehicles  
per day



## Rail

~151 million  
passengers per  
annum



## Ferries

~1 million  
passengers per  
annum



## Sea Ports

~4 million standard  
container units  
handled per annum



## Communications

~103 million people  
through television,  
telephone and radio  
infrastructure



## Power Generation

~22,000 GWh  
power generated  
per annum



## Gas

~14 million  
households



## Water

~13 million  
households



## Electricity

~2 million  
households



## Aged care / Retirement villages

~4,000 beds



## Employees / Contractors

~95,000 across the  
portfolio businesses

Note: Data as at 30 September 2016 or most recent.

# Recent Awards



**2015 Best European Wind Deal of the Year**  
**Galloper OFW**

**2014 European Roads Deal of the Year**  
**Mersey Gateway**

**2014 Airports Deal of the Year**  
**Budapest Airport**



**Global Financial Sponsor of the Year**  
**Macquarie**

**European PPP Deal of the Year**  
**D4/R7 in Slovakia**

**European Power Deal of the Year**  
**MGT**

**Asia/Pacific M&A Deal of the Year**  
**Ausgrid**

**Infra Deal of the Year**  
**LRT 1 Cavite (Manila)**



**European Power Deal of the Year**  
**Galloper OFW**



**Infrastructure Deal of the Year**  
**Mersey Gateway**

**Europe Refinancing Deal of the Year**  
**Budapest Airport**

**American Deal of the Year**  
**Freeport**



**The Banker 2014**  
Investment Banking Awards

**MOST INNOVATIVE INVESTMENT BANK FOR INFRASTRUCTURE AND PROJECT FINANCE**

**Partnerships Awards 2015**

**GOLD AWARD WINNER**  
BEST ROAD PROJECT  
MERSEY GATEWAY PPP

**Partnerships Awards 2015**

**GOLD AWARD WINNER**  
BEST WASTE/ENERGY/WATER PROJECT  
DUBLIN WASTE-TO-ENERGY PPP

Our innovative and entrepreneurial spirit is the reason we're the global infrastructure leader, but we never lose sight of the reason we're number one: always putting our clients first.



# Experienced developer of renewable projects

Macquarie has significant experience in developing, constructing and operating renewable energy projects globally



We understand the renewable energy business



Significant global and regional footprint



There is great potential and synergy to combine what we are doing

## Developmental and construction capital raising for renewable projects



### Gallop Offshore Wind (ongoing)

- Provided 25% of the equity financing for the £1.5bn construction of the 336MW Gallop Offshore Wind Farm Project in the UK
- 70% debt financing raised from a group of 12 lenders
- Developer, RWE Innology, is one of the largest European utility players with strong track record in offshore wind (1.9GW of capacity installed to-date)



### Japan solar (ongoing)

- Invested into a portfolio of Japanese ground mounted and rooftop solar development assets (up to 200MW), capitalising on the introduction of generous feed-in tariffs post Fukushima
- Macquarie provided initial equity funding of A\$30m with a total equity commitment of up to A\$400m



### Baltic 2 – Offshore Wind (2015)

- Acquired a 49.89% stake in the 288MW Baltic 2 offshore wind for c.€720m from EnBW, one of the largest energy supply companies in Germany
- Raised €540m of debt from a club of 9 banks to support the acquisition in an accelerated timetable
- Macquarie put in place an innovative Hold Co financing structure; a first in German offshore wind



### Low Carbon solar JV (2013-2016)

- Partnered with Low Carbon to provide 100% construction funding for a 144MW portfolio of UK solar assets and subsequently arranged long-term refinancing for a 99MW portfolio
- Funding allows Low Carbon to construct 10 projects for 144MW closed in 12 months ahead of regulatory tariff sunset dates



### Mainstream Renewable Power (2012-2013)

- Invested up to €60m in Mainstream Renewable Power and advised on a follow-on transaction securing up to €100m equity from Marubeni
- Projects funded include 8GW of offshore wind projects in England, Scotland and Germany with 4.5GW of secured grid connection and 3.5GW of onshore development assets



# 02

## Infrastructure financing market update

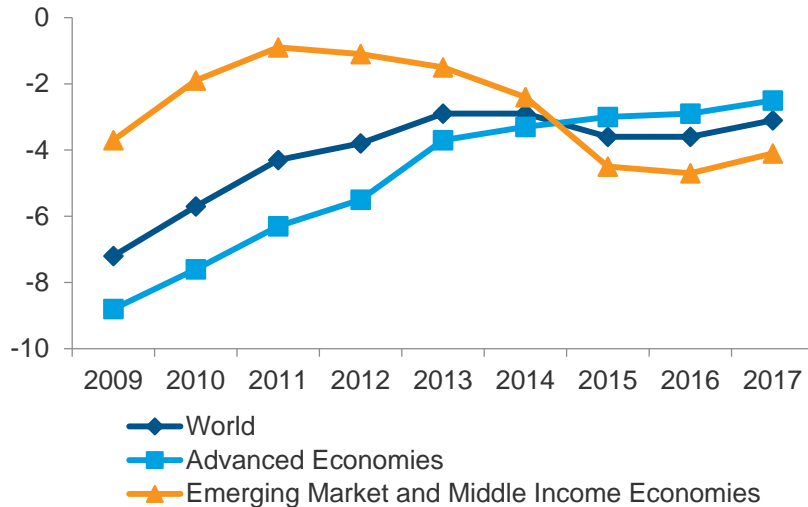
# Current developments

## Macroeconomic trends – Government constraints

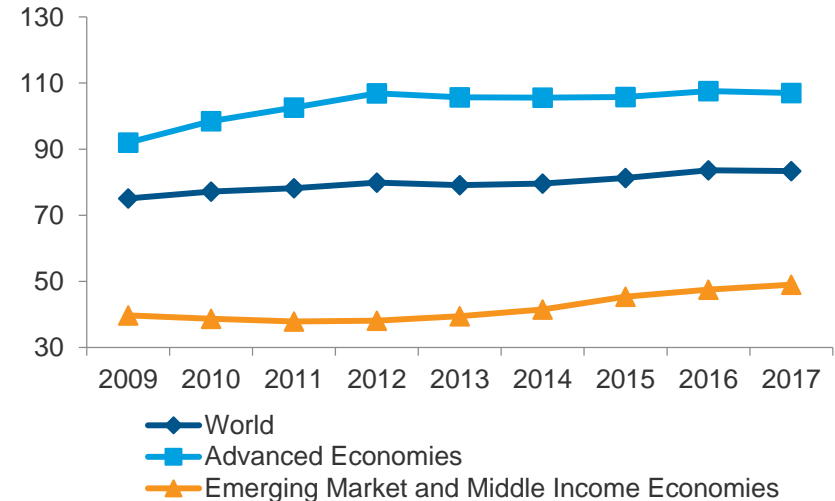


### Increasing pressure on government budgets and increasing government debt

#### Worsening fiscal positions...



#### ...and increasing government debt



# Current developments

## Macroeconomic trends – interest rates



Lowest level of global interest rates favours investment into infrastructure

### 1. US Interest Rates



### 2. UK Interest Rates



### 3. AUS Interest Rates



# Current developments

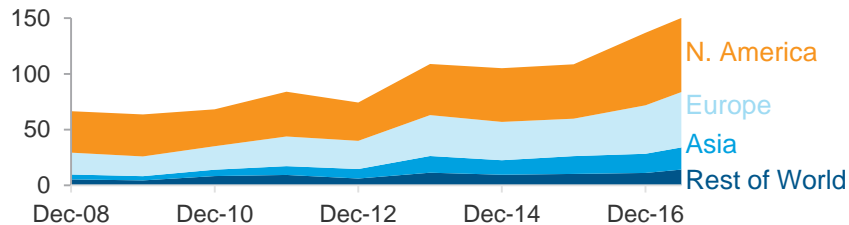
## Macroeconomic trends – liquidity



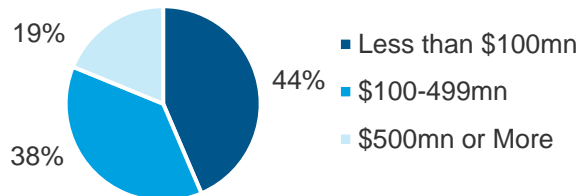
Increasing capital flows in the infrastructure sector are chasing the few attractive assets that come to market and driving aggressive asset pricing

### Dry powder (equity) – Global unlisted infrastructure funds

**\$US150 billion as at June 2017**



### Amount of capital fund managers plan to deploy for the next 12 months in infrastructure



Substantial backlog of capital to put to work –

over **\$US150b** of dry powder  
from unlisted infrastructure funds

**A lack of attractive opportunities in other sectors has ramped up interest in infrastructure**

Investors want to be very aggressive in pricing opportunities, via either or both of low discount rates and higher risk-weighted assumptions

Survey of capital fund managers show that

**19%** expect to be deploying over \$500mn for the next 12 months in the infrastructure sector, a substantial increase from 12% in 2Q 2016

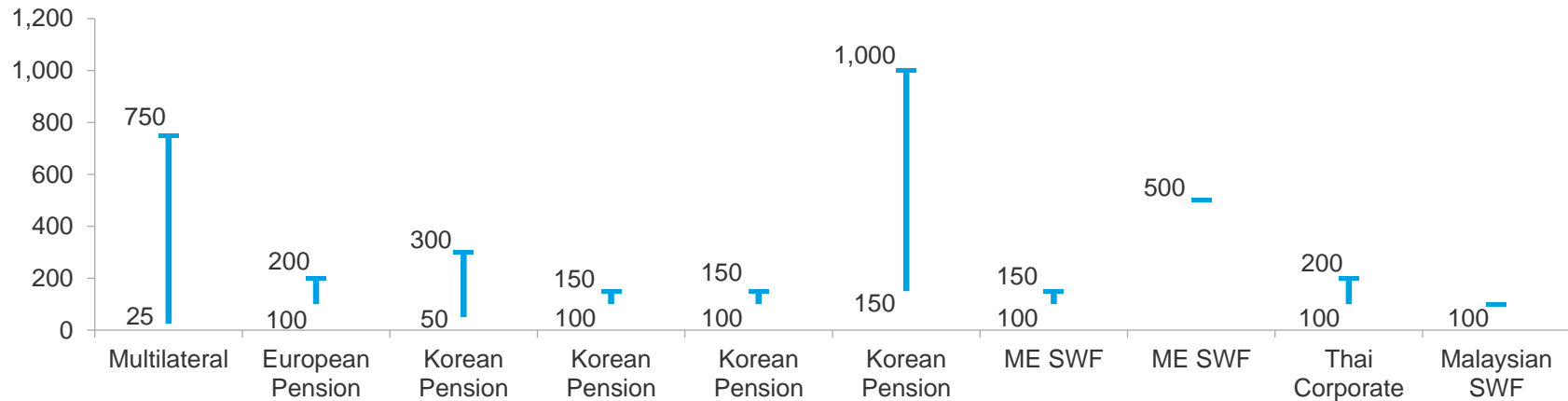
# Current developments

## Macroeconomic trends – liquidity



Significant preference for brownfield assets and large ticket sizes in certain countries

Overview of preferred deal size of funds – typically investors are targeting \$US100 million+ ticket size



90% of investors are chasing big ticket brown-field assets in big Asian markets (India/China), resulting in huge premiums being paid for de-risked assets

# Current developments

## Where does this lead?

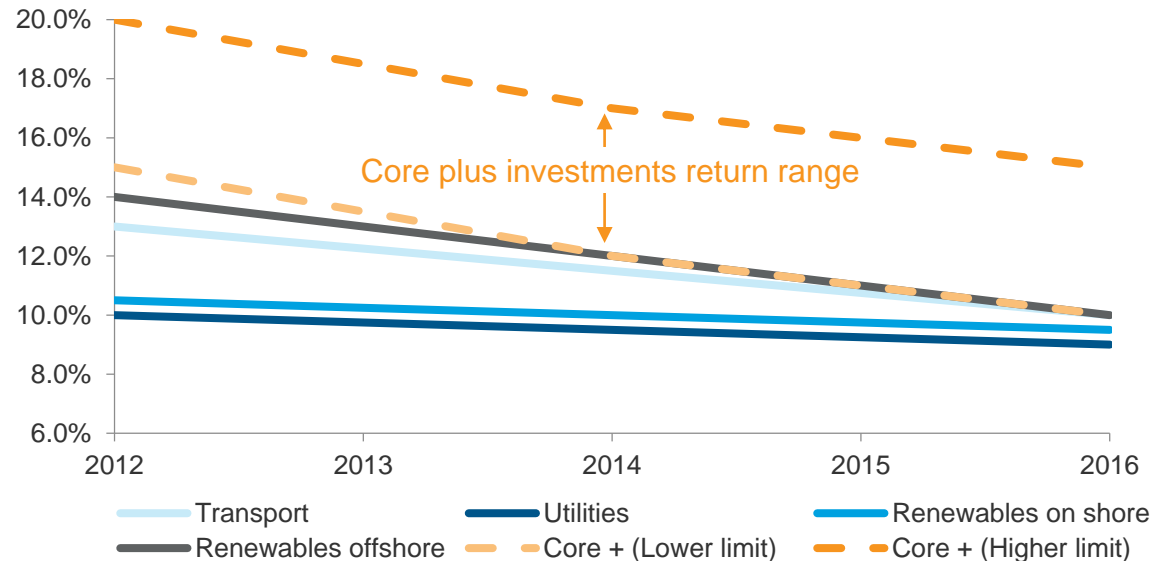


Under the pressure of increasing competition, returns in core and core+ investments are decreasing

### Returns are going down

- 01** Because of their relatively low risk profile, infrastructure investments are attracting **investors in search of yield** that the bond market can **no longer provide**
- 02** As a result, returns have been pushed down across all sectors under the pressure of **increasing competition** and **sustained low interest rates**
- 03** Drop in returns has been the strongest in **transport** and **core plus assets**

### IRR range by type of investments



# Huge deal flow



Developing Asia will need to invest **\$1.7 trillion per year** in infrastructure until 2030 to maintain its growth momentum, tackle poverty, and respond to climate change.

– *Meeting Asia's Infrastructure Needs*, ADB, February 2017



USA roads, dams, airports and water and electrical systems need **\$4.6 trillion** of work.

– *2017 Infrastructure Report Card*, ASCE



To keep pace with projected growth, the world needs to invest **\$3.3 trillion annually** in economic infrastructure through 2030.

– *Bridging global infrastructure gaps*, McKinsey, June 2016





# 03

## What does this all mean?

# Recap from section 2



**1**

**Government funding capacity is tight**

**2**

**Interest rates and funding costs remain low**

**3**

**Large and increasing private sector funding capacity for infrastructure**

**4**

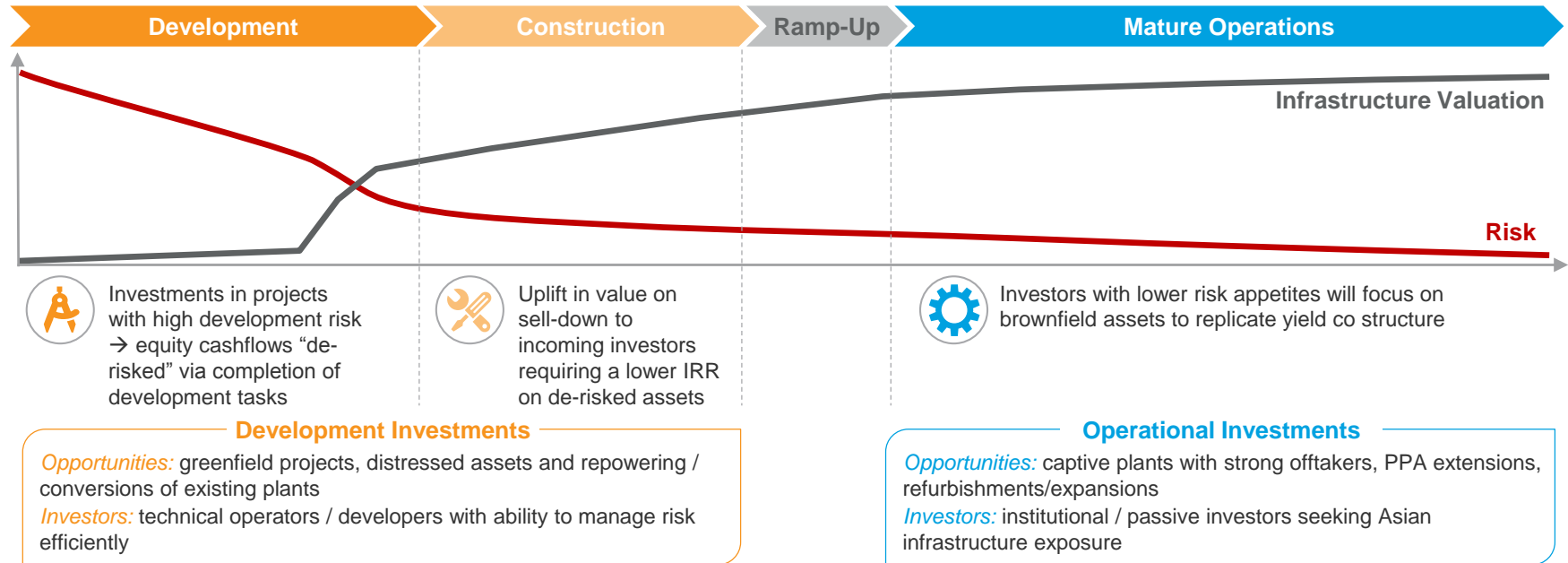
**Huge infrastructure need – both new build and rehabilitation**

**Private sector financing of development and construction critical**



# Capturing opportunities

## Development Capital investment opportunities



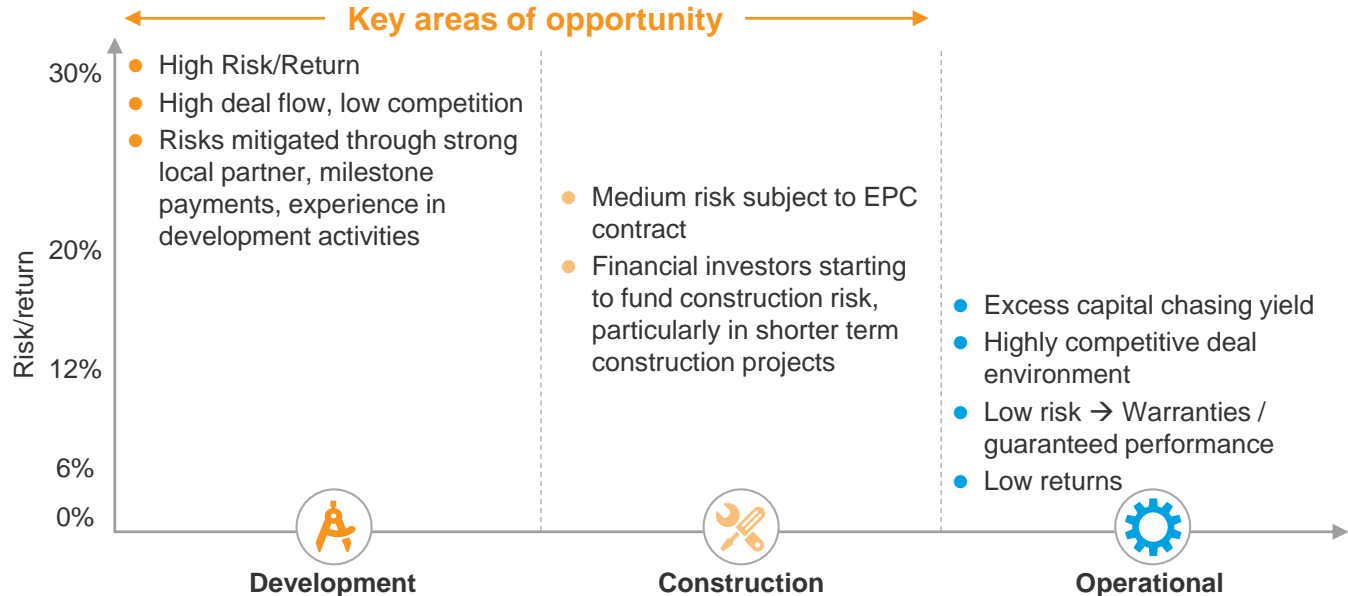
# Capturing opportunities

## Development Capital investment opportunities



Increasingly attractive opportunity in development and construction phase assets providing attractive returns; additional risk mitigated through local partnerships and experience in development activities

Key pockets of opportunity in the development and construction segment

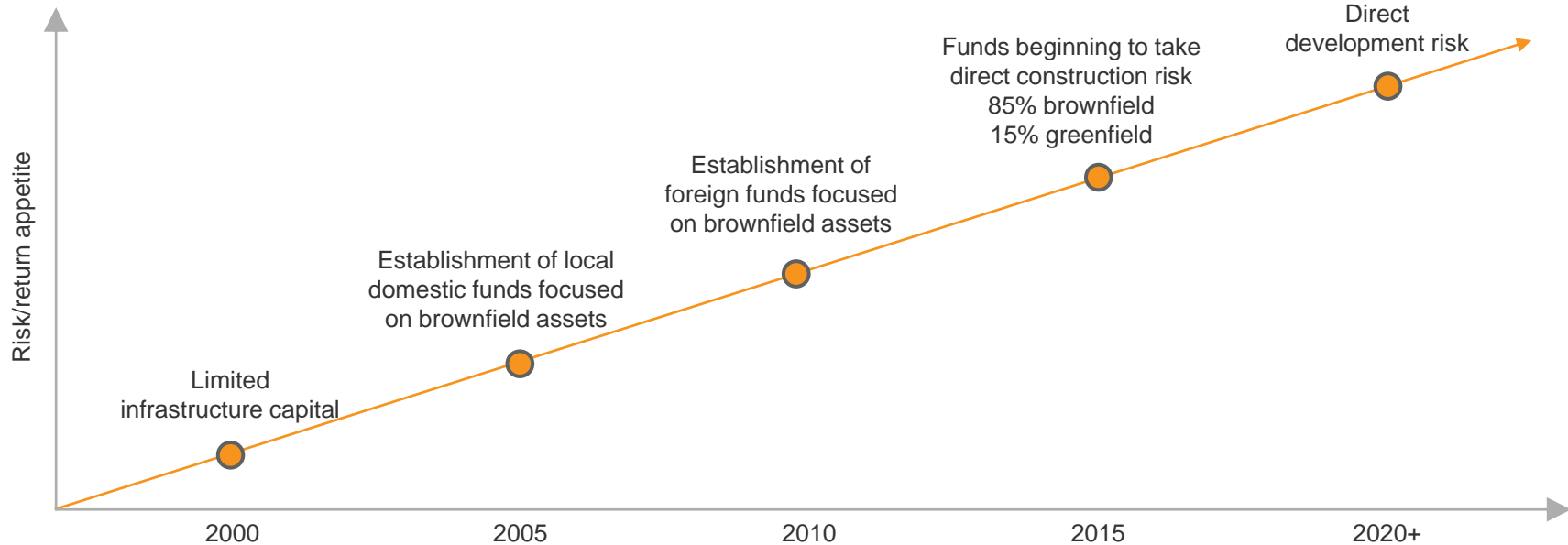


# Historical trend

## Evolution of infrastructure market



In Asia, gradual shift in risk allocation towards direct investment with construction and development risk, particularly around assets with relatively short construction periods



# What does this mean for ICAK member?

## 06 Credit is important

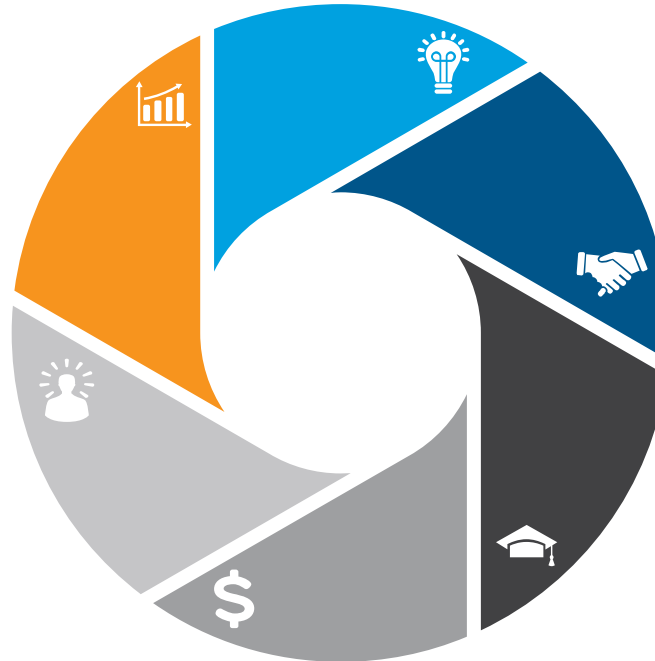
- Bonds & sureties
- PCG
- Partnerships

## 05 Client focus

- Develop relationships
- Focus on desired outcome
- Be innovative

## 04 Use any unfair advantages

- Funding support (KEXIM, Ksure etc)
- Credential support (KEPCO etc)
- Government aid (ODA etc)



## 01 Know your strengths (and weaknesses)

- Sectors
- Regions
- Qualifications

## 02 Partners

- Relationships
- Capabilities and capacity
- Deal access

## 03 Study

- Laws & regulations
- Precedents & practices
- Key players



# 04

## MGT Teesside – Case study

# Executive Summary



Macquarie was development partner, lead equity sponsor and sole financial advisor

## Project description

- 299MW biomass fuelled Teesside Renewable Energy Plant in Teesport, north-east England (the Project)
  - World's largest new build dedicated biomass power station
- Under development by MGT Power since 2008, with Macquarie involvement as developer commencing in January 2015
- The Project holds a UK Government contract for difference (CfD)
  - Fixed power price for 15yrs of operations (no merchant exposure)
- To be constructed under an EPC agreement with a JV of Samsung C&T / Técnicas Reunidas
- To be operated under an O&M agreement with Fortum
- Approximately 1.1 million tonnes p.a. of wood pellets to be supplied by Enviva under an 18yr contract with a guarantee from John Hancock

## Key project statistics

**299MW**

Gross capacity

**2,190GWh**

Average annual generation

**600,000**

houses powered

**£700m**

Debt

**£215m**

Equity

## Macquarie's roles

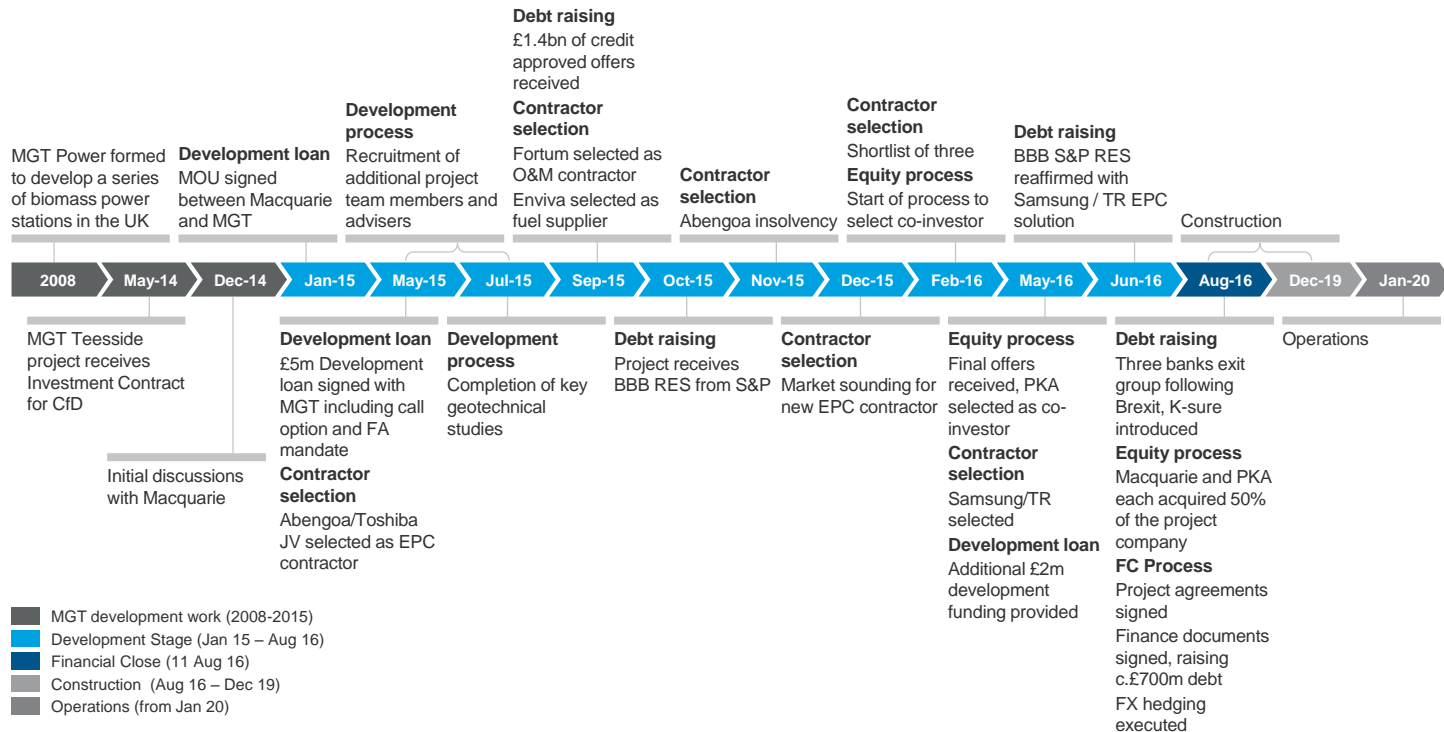
- Macquarie signed an MOU with the MGT team in January 2015 and from that point worked jointly as co-developers of the project
- Macquarie provided £7m development funding, underwrote 100% of the equity required for the project and acted as sole financial adviser
- MacCap developed a commercial structure that was specifically designed with long term project finance in mind
- MacCap selected, negotiated delivered the key contractual arrangements including EPC/O&M/Fuel supply agreements
- MacCap arranged more than £700m of senior debt, in addition to running a competitive equity raising process to bring in PKA as equity partner
- Across the group, Macquarie invested 50% of the equity, underwrote more than £200m of senior debt and provided the PPA

## Project location





# Timetable Overview



# Development Phase



MacCap and CGM worked jointly with MGT during 18 months to select counterparties and negotiate key contracts in order to complete development and bring the Project to Financial Close




## Development loan

- After engaging with MGT and performing initial DD, Macquarie provided a £5m development loan in April 2015
  - Additional £2m provided in April 2016 to fund additional costs due to a delay in FC caused by the insolvency of the previously selected EPC contractor
- The loan was used to fund a range of development expenses, including project development costs (geotechnical work, grid connection costs, planning permissions), advisors fees (engineering / legal / technical) and project team salaries

## Macquarie's involvement as developer

- The MGT development team moved in-house to Macquarie's London office in order to work closely with the Macquarie deal team
  - Macquarie recruited for the project team and grew it from two in January 2015 to eight by FC
- Macquarie was instrumental in the tendering and negotiation of all key project contracts, including EPC, O&M, PPA and fuel supply
  - CGM's Energy Markets Division was selected to provide the 15 year PPA following a competitive PPA tender process
- Macquarie also acted as exclusive financial advisor, running a debt raising process raising c.£700m debt from 12 institutions
- Macquarie underwrote 100% of the project equity, and brought in PKA AIP as co-investor at FC for 50% of the equity

## Selection of contractors

Agreement	Parties	Description
EPC	 SAMSUNG C&T TECNICAS REUNIDAS	<ul style="list-style-type: none"><li>• Following the insolvency of the previous EPC contractor (Abengoa), Macquarie promptly ran a new selection process by leveraging its relationships with major contractors globally, and selected a new contractor in only 5 months</li><li>• Samsung C&amp;T is a world leader in delivery of major infrastructure projects and is currently constructing 28GW of power projects globally</li></ul>
O&M		<ul style="list-style-type: none"><li>• Fortum selected as O&amp;M contractor following a selection process run by Macquarie</li><li>• Fortum are highly experienced operators of a number of biomass power stations across Europe</li></ul>
Fuel supply		<ul style="list-style-type: none"><li>• Macquarie ran a fuel procurement competitive process and entered into negotiations with several potential suppliers before finally selecting Enviva</li><li>• Fixed price fuel supply agreement entered into with Enviva (the world's largest producer of wood pellets), with a guarantee from AA- rated John Hancock</li></ul>
PPA		<ul style="list-style-type: none"><li>• Macquarie structured an PPA specifically to match the project's baseload CfD (a market first PPA) and then ran a competitive process to select the offtaker</li><li>• CGM's Energy Markets Division selected as preferred bidder for PPA after providing the most competitive offer</li></ul>

# Debt raising



MacCap raised c.£700m of senior debt with 7 commercial banks, 2 ECAs and 3 institutional lenders, including CPI linked debt and long term FX hedging

## Debt facilities summary

<b>ECA covered accelerated CPI-linked tranche</b>	<b>Quantum:</b> £100.0m <b>All-in rate:</b> 2.835%	
<b>Institutional CPI-linked tranche</b>	<b>Quantum:</b> £65.5m <b>All-in rate (real):</b> 1.10%	
<b>Institutional fixed rate tranche</b>	<b>Quantum:</b> £27.5m <b>All-in rate:</b> 2.93%	
<b>Fixed rate commercial debt tranche</b>	<b>Quantum:</b> £65.0m <b>All-in rate:</b> 3.650%	
<b>Commercial Bank Debt Tranche / K-Sure Tranche</b>	<b>Quantum:</b> £271m (banks) + c.£117m (K-sure tranche) + £27.5m WCF + £28.9m DSRF <b>All-in rate:</b> 3.149%	

## Hedging summary

<b>Fuel USD FX hedging</b>	<b>Quantum:</b> \$280.1m <b>Hedging:</b> 100% of USD denominated pellets for 9yrs of the project life	
<b>Capex USD FX hedging</b>	<b>Quantum:</b> \$32.6m <b>Hedging:</b> EPC USD capex	
<b>Capex EUR FX hedging</b>	<b>Quantum:</b> €388.4m <b>Hedging:</b> EPC EUR capex	

## Macquarie's value add

- Recognised early the challenge of raising c.£700m 18yr project finance debt for a biomass power station due to lenders' relative inexperience (or negative experience) with the sector
  - Close involvement in development of the project allowed Macquarie to structure the project contracts to create a highly robust credit story
  - External validation of credit via S&P RES process, giving BBB rating
- Development of an innovative financial structure to maximise liquidity while keeping pricing competitive, with 5 bespoke tranches of debt
  - Includes £165.5m of CPI-linked debt, to match the CPI-linked revenues under the CfD
- Worked with Macquarie's institutional debt team to structure an institutional format, "accelerated" CPI-linked, ECA covered facility, boosting the liquidity while providing a hedge to the CPI-linked revenues



MACQUARIE



# 05

## Contact

# Brad Kim



**Managing Director,  
Infrastructure, Korea**

**Contact Details:**

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+82 2 3705 8633

**Professional qualifications**

Bachelor of Laws  
Bachelor of Commerce  
(University of New South Wales,  
Australia)

## Background

Brad Kim has been with Macquarie since 2000, focusing on infrastructure and utilities. With a focus on development and financing of complex greenfield projects, he has worked in Australia, Asia and the Middle East. During this time, Brad was a founding member of Macquarie's infrastructure advisory teams in Korea and UAE, and has worked on the establishment of a number of specialized infrastructure funds.

Brad has worked on numerous transactions in power, transport and utilities and has worked closely with numerous private and public sector clients to develop bespoke solutions for infrastructure and utilities projects. Brad's experiences include a wide array of project and corporate financing advisory engagements as well as principle investments, mostly in emerging markets.

Based in Seoul since July 2016, Brad is focusing on Macquarie's investment and development transactions in Korea.

## Experience

Brad's transactional experience includes the following:

- Lead for Macquarie's investment in environmental and energy projects in Korea
- Buy side advisor for confidential power company M&A in Hong Kong
- Sell side advisor for confidential power company M&A in Kingdom of Saudi Arabia
- Advisor on various PPP projects in Philippines - Manila LRT1; Mactan Cebu International Airport; Cavite-Laguna Expressway; Laguna Lakeshore Expressway & Dike; Philippines Regional Airports
- Advisor for the bid for 1,500MW and 100MIGD Az Zour South IWPP in Kuwait
- Advisor for the successful development and financing of several bespoke PPP projects in Abu Dhabi, UAE – Industrial City of Abu Dhabi II, III and IV; Industrial Effluent Treatment Plant; Al Ain Industrial City
- Advisor for the successful bid and financing for the ADWEA Wastewater Treatment Plant PPP in Abu Dhabi, UAE
- Advisor for the successful bid and financing for the Muharraq Wastewater Treatment Plant PPP in Manama, Bahrain
- Advisor for acquisition by Meiya Power of Yulchon Power Plant in Korea
- Investment into the Incheon Bridge PPP Project in Korea
- Advisor for the successful project financing by Bouygues and Hyundai of the Machang Bridge Project in Masan, Korea
- Advisor for the successful acquisition and project financing by MKIF of New Airport Highway in Incheon, Korea.

