2016 Korea-Australia Superannuation & Funds Management Seminar: Success Factors & Management Strategies 2016 한-호주 퇴직연금 및 운용전략 세미나 발표자료 8 April 2016











Program

일시 : 2016년 4월 8일 (금)

장소 : 한국금융투자협회 불스홀 (3층)

Time	Presenters	Details					
10:00~10:05	황영기 금융투자협회장	Welcoming Remarks					
10:05~10:10	Bill Paterson 주한 호주대사	Welcoming Remarks					
10:10~10:30	Pauline Vamos ASFA 회장	Keynote Speech 호주퇴직연금의 성공요소 및 시사점					
		ian Fund Industry & Mgmt Strategies 호주 자산운용사의 펀드운용전략					
	(AMP Capital) Kerry Ching, Managing Director	> The most attractive opportunities in infrastructure investment in 2016 (2016년 유망 인프라 투자처)					
10:30~11:10 (각사당10분)	(QIC) Melannie Pyzik, Investment Specialist						
	(CP2) Allan Wain, Head of Research & Strategy	> Infrastructure Investment & 'Fiduciary Duty in th 21st Century' (인프라 투자와 21세기형 신의성실의 의무)					
	(Whitehelm) Saji Anantakrishnan, Head	 › Australian Market Update & Mid-Market Infrastructure (호주 운용시장 현황 및 '미드마켓 인프라' 소개) 					
11:10~11:40 (30분)	Moderator: 신인석 자본시장연구원장 Panelist: ASFA회장, 호주운용사 발표자	Panel Discussion > 호주 Superannuation의 성공요소 > 한·호간 공동 투자 기회 등 > Q&A					



www.superannuation.asn.au

Australia's Experience with Superannuation: Insights for Private Pension Provision in Korea

Pauline Vamos
Chief Executive Officer
Association of Superannuation Funds of
Australia

Australia different, in a good way, to most other countries



- Public (government funded) Age Pension that is universal, not related to prior earnings, and means tested
- We use the term "superannuation"
- Superannuation (private pension) assets large both in nominal terms and relative to GDP



Why compulsory superannuation was needed



- Superannuation in existence for more than 100 years but only about 40% of employees covered when system voluntary
- Women, part timers, factory and shop workers, manual workers frequently did not have superannuation
- Government Age Pension close to poverty level

Process for achieving social consensus



- Agreement between peak trade unions and then Labor government
- General recognition that Age Pension alone not sufficient
- Employers with existing arrangements could use them to meet their legal obligations
- Gradual introduction initial contribution rate
 3%, rising to 9% over more than 10 year period

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Process for achieving provider and fund member consensus

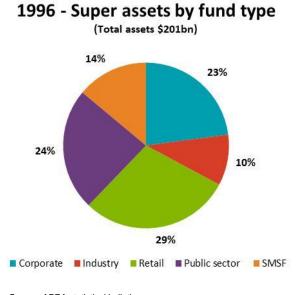


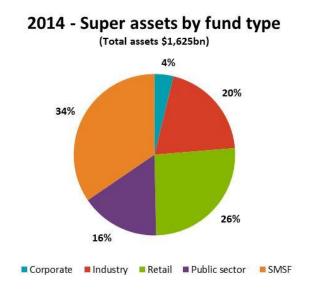
- Variety of providers and delivery modes permitted
- Member choice of fund and investment option
- Self Managed Superannuation Funds permitted where member has complete control

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Superannuation assets have grown and market shares have changed







Source: APRA statistical bulletins

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Trustee profile - many types allowed



	Number of licensees	Total assets under management (\$A billion)	Number of member accounts ('000)
Financial services corporation			
ownership	59	555.1	14,217
Employer sponsor (non-public sector)			
ownership	28	73.0	886
Public sector organisation ownership	7	121.3	1,330
Nominating organisation ownership	27	321.7	9,442
Public company ownership	2	57.7	461
Other ownership type	32	115.1	1,666
Total	155	1,243.9	28,003
By profit status			
For profit	60	536.5	13,751
Not for profit	95	707.4	14,252
Total	155	1,243.9	28,003

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Fund supervision arrangements



- Funds other than Self Managed Funds supervised by Australian Prudential Regulation Authority
- Initial licensing where applicant needs to demonstrate that they are fit and proper
- Ongoing supervision
- Legislation and trust deed requirements
- Prudential standards and best practice documents

Member protection



- Compensation in (rare) cases of fraud or theft
- Disclosure through Product Disclosure Statements
- Supervision of trustees
- Generally no payment guarantees, investment risk with member other than Defined Benefit or annuities
- Fund must have investment strategy but trustees decide on what the strategy is
- No recorded cases of litigation when simply a low investment return without dishonesty

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Protection for default members



- Development of MySuper product framework for default members
- Simpler more standardised product
- · Limits on type of fees that can be charged
- Has only one investment option
- Insurance arrangements must be offered

Assets are divided across three market segments and variety of providers



Market Segment	Pre-retiren	nent Assets	Retirement	Total
As at June 2014	Choice \$billion	MySuper \$billion	Choice \$billion	All \$billion
Corporate Funds	45	21	6	73
Industry Funds	125	259	14	398
Public Sector Funds	143	79	66	287
Retail Funds	260	81	178	521
Self-Managed Funds	243	-	317	560
Total Super Market	816	440	581	1,839

Source: Rice Warner estimates

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Relatively high but volatile investment returns



- Average negative return of 12.8% in 2008-09
- Average annual return of 9.5% over five years to June 2015
- Average annual return of 7.5% over 20 years
- Around 70% exposure to equities
- Default options significant exposure to infrastructure and unlisted investments

Better Retirement Outcomes Over Time



Average retirement income at age 65 (in today's dollars)



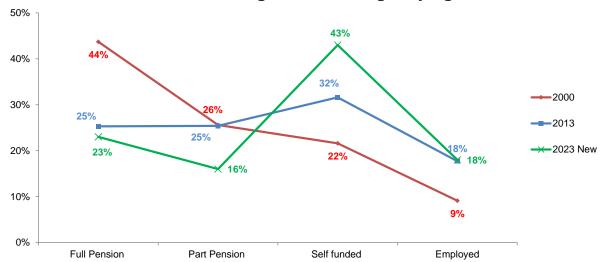
Source: ASFA projections

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Super is reducing reliance on the Age Pension



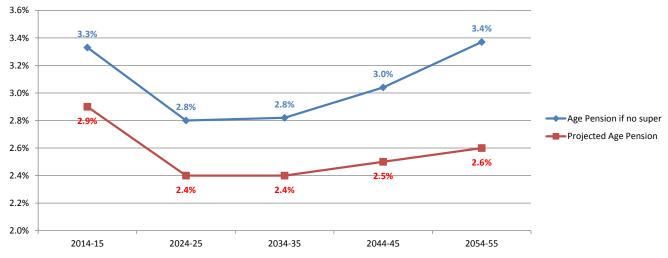
Retirees at Age Pension eligiblity age



Age Pension expenditure lower due to superannuation



Age Pension expenditure as a percentage of GDP



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AMP CAPITAL AN INFRASTRUCTURE PIONEER

4

AMP CAPITAL IS A TOP TIER GLOBAL INVESTMENT MANAGER² AND INFRASTRUCTURE PIONEER

US\$116.3b

FUNDS UNDER MANAGEMENT GLOBAL INVESTMENT MANAGER¹

Subsidiary of AMP Limited, a leading wealth management company established in 1849

- > AMP Capital is one of the largest fund managers in the Asia Pacific ²
- > In-house tax, legal, debt advisory and finance capabilities to assist the GIF investment team

Strong infrastructure experience with 27 years in the market

- > Over 60 infrastructure investment professionals globally
- > Over 125 infrastructure equity and debt investments
- Managing over US\$10 billion¹ in infrastructure equity and debt on behalf of our global client base.
- Successfully raised and managed
 10 infrastructure funds across a range of strategies
- > Recognised as a global leader in infrastructure

AMP Capital's global offices and representatives















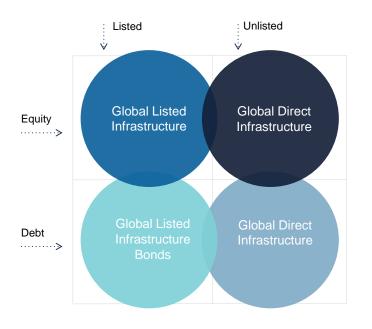








AMP CAPITAL UNIQUE INFRASTRUCTURE INVESTMENT PLATFORM



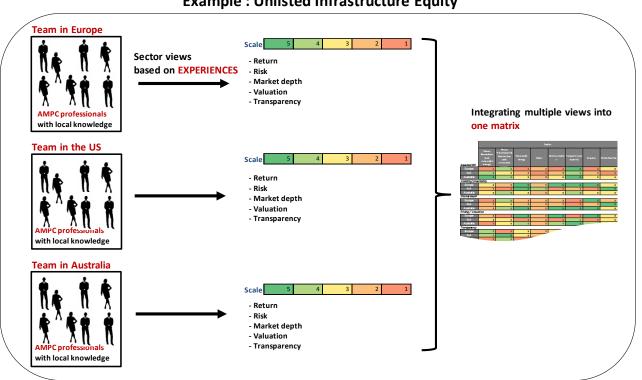


Source: AMP Capital. AUM figures are in USD as at 31 December 2015.

GLOBAL LISTED INFRASTRUCTURE

METHODOLOGY STANDARDISATION OF QUALITATIVE ASSESSMENTS

Example: Unlisted Infrastructure Equity



OPPORTUNITIES IN LISTED INFRASTRUCTURE EQUITY

STABLE RETURNS SLOW AND STEADY WINS THE RACE

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	10 Year CAGR	5 Year CAGR	3 Year CAGR
Emerging Equity 55.8%	Global REIT 38.0%	Emerging Equity 34.0%	Global REIT 42.4%	Emerging Equity 39.4%	Bonds - Agg 5.2%	Emerging Equity 78.5%	Global REIT 20.4%	Global Infrastructure 13.8%	Global REIT 28.7%	Global Equities 26.7%	Global Infrastructure 16.3%	Global Infrastructure 11.7%	Global Infrastructure 14.9%	Global Infrastructure 16.1%
Global REIT 40.7%	Global Infrastructure 32.9%	Commodities 25.6%	Global Infrastructure 36.7%	Commodities 32.7%	Hedge Fund -21.4%	High Yield Bond 58.2%	Emerging Equity 18.9%	Bonds - Agg 7.8%	Emerging Equity 18.2%	Global Infrastructure 15.9%	Global REIT 15.9%	Emerging Equity 8.4%	Global REIT 12.0%	Global REIT 15.9%
Global Equities 33.1%	Emerging Equity 25.6%	Global REIT 15.4%	Emerging Equity 32.1%	Global Infrastructure 16.3%	High Yield Bond -26.2%	Global REIT 38.3%	High Yield Bond 15.1%	High Yield Bond 5.0%	Global Infrastructure 16.0%	Hedge Fund 9.0%	Bonds - Agg 6.0%	High Yield Bond 7.7%	Global Equities 10.2%	Global Equities 15.5%
Global Infrastructure 29.0%	Commodities 17.3%	Global Infrastructure 11.0%	Global Equities 20.1%	Hedge Fund 10.3%	Global Infrastructure -36.4%	Global Infrastructure 34.2%	Global Infrastructure 12.5%	Commodities -1.2%	Global Equities 15.8%	High Yield Bond 7.4%	Global Equities 4.9%	Global REIT 6.9%	High Yield Bond 9.0%	High Yield Bond 8.4%
High Yield Bond 29.0%	Global Equities 14.7%	Global Equities 9.5%	High Yield Bond 11.8%	Global Equities 9.0%	Global Equities -40.7%	Global Equities 30.0%	Global Equities 11.8%	Global Equities -5.5%	High Yield Bond 15.8%	Global REIT 4.4%	Hedge Fund 3.3%	Global Equities 6.0%	Bonds - Agg 4.4%	Hedge Fund 5.7%
Commodities 20.7%	High Yield Bond 11.1%	Hedge Fund 7.5%	Hedge Fund 10.4%	Bonds - Agg 7.0%	Commodities -46.5%	Commodities 13.5%	Commodities 9.0%	Hedge Fund -5.7%	Hedge Fund 4.8%	Commodities -1.2%	High Yield Bond 2.5%	Bonds - Agg 4.7%	Hedge Fund 3.3%	Emerging Equity 4.0%
Hedge Fund 11.6%	Hedge Fund 6.9%	High Yield Bond 2.7%	Bonds - Agg 4.3%	High Yield Bond 1.9%	Global REIT -47.7%	Hedge Fund 11.5%	Bonds - Agg 6.5%	Global REIT -5.8%	Bonds - Agg 4.2%	Bonds - Agg -2.0%	Emerging Equity -2.2%	Hedge Fund 3.0%	Emerging Equity 1.8%	Bonds - Agg 2.7%
Bonds - Agg 4.1%	Bonds - Agg 4.3%	Bonds - Agg 2.4%	Commodities -15.1%	Global REIT -7.0%	Emerging Equity -53.3%	Bonds - Agg 5.9%	Hedge Fund 5.7%	Emerging Equity -18.4%	Commodities 0.1%	Emerging Equity -2.6%	Commodities -33.1%	Commodities -4.8%	Commodities -6.5%	Commodities -12.9%

Past performance is not a reliable indicator of future performance Source: Bloomberg Asset class returns are represented by the following indices: Bonds-Agg – Barclays Capital US Aggregate Bond Index Commodities – S&P GSCI Total Return CME Index Emerging Guity – MSCI Emerging Markets Index Global Equities – MSCI World Index

GLOBAL HEAT-MAP LISTED INFRASTRUCTURE EQUITY (AS AT FEBRUARY 10TH, 2016)

				Sec	tor		Д			Asset Type (a)		Asset T	ype (b)
Expected IRR	Power Generation (excl. renewable energy)	Power Transmission & Distribution (excl. renewable energy)	Renewable Energy	Water	Communicatio n	Transport (excl. airports)	Airports	Public Facilities	Unregulated	Regulated	Partially Regulated	Uncontracted	Contracted
Europe		2	2	2	3	3	3	2	3	2	3	3	3
N.A	3	2	3	3	3	3			2	3	3	3	3
Australia		2				2	2						
Volatilty/Unce	ertainty												
Europe	1	5	3	5	4	3	3	5	2	4	3	4	2
N.A	2	5	3	5	3	2			2	5	4	1	4
Australia		4				4	4						
Market depth													
Europe		5	3	4	4	3	3	2	4	4	4	4	4
N.A	3	5	2	2	3	2	1	1	3	5	4	4	5
Australia		4				4	4						
Pricing / Value	ition												
Europe		2		2	4	3	4	1	4	2	3	4	2
N.A	2	3	3	2	3	3			2	3	3	3	3
Australia		2				1	1						
Transperency													
Europe		4	3	5	4	3	4	4	3	4	3	3	4
N.A	3	5	4	5	4	2			2	5	3		
Australia		4				5	5						

Rating scale	5	4	3	2	1
Expected IRR	More than 20%	16 - 20%	11 - 15%	5 - 10%	Below 5%
Volatilty/Uncertainty	Lowest		Investable		Highest
Market depth	Deepest		Investable		Shallowest
Pricing / Valuation	Under-valued		Fair		Over-valued
Transperency	Best		Investable		Worst

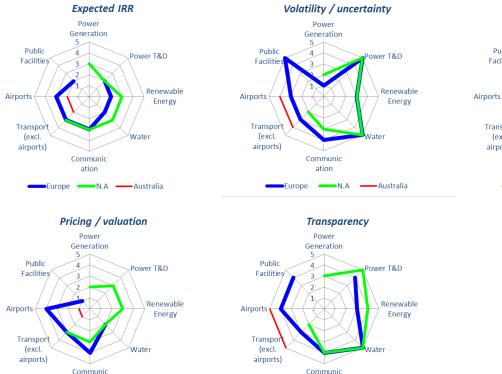
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SECTOR ANALYSIS FIVE FACTORS

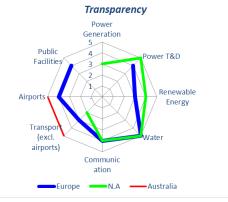
Europe •

-N.A -

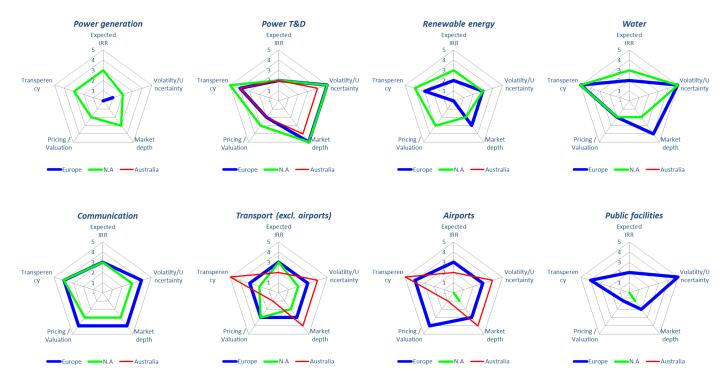
Australia



Market depth Power Generation Public ower T&D Facilities Renewable Energy Transport (excl. airports) Communic ation -Australia







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OPPORTUNITIES IN UNLISTED INFRASTRUCTURE EQUITY

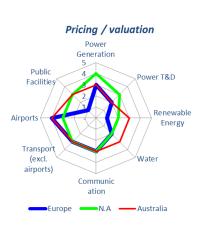
GLOBAL HEAT-MAP UNLISTED INFRASTRUCTURE EQUITY (AS AT FEBRUARY 4TH, 2016)

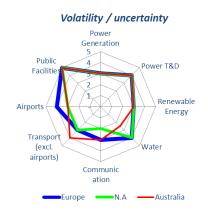
		Brownfield												
				Sec	tor			Asset Type				Asset T	ype (b)	
Expected IRR	Power Generation (excl. renewable energy)	Power Transmission & Distribution (excl. renewable energy)	Renewable Energy	Water	Communicatio n	Transport (excl. airports)	Airports	Public Facilities	Unregulated	Regulated	Partially Regulated	Uncontracted	Contracted	
Europe	3	2	2	2	3	3	3	2	3	2	3	3	3	
N.A	3	2	3	3	4	3	3	2	3	2	3	3	2	
Australia	4	2	3	3	3	3	3	2	3	2	3	3	2	
Volatilty/Unce	ertainty													
Europe	3	4	3	4	3	3	4	5	2	4	3	2	3	
N.A	3	4	3	4	2	3	3	5	2	4	3	2	4	
Australia	3	4	3	2.5	3	4	3	5	2	4	3	2	3	
Market depth	-	•			•			•		-				
Europe	3	5	5	3	3	5	4	4	5	5	5	4	4	
N.A	5	3	5	3	2	3	1	2	4	4	4	4	4	
Australia	2	2	3	2	2	3	2	3	4	2	3	4	5	
Pricing / Valua	ation	•			•									
Europe	3	2	1	2	3	3	4	1	4	2	3	4	3	
N.A	4	3	2	2	3	3	3	3	4	2	3	4	3	
Australia	3	2	3	3	3	3	4	3	3	2	3	3	4	
Transperency														
Europe	4	4	2.5	3	3	3	3	4	4	3	4	3	3	
N.A	4	4	4	4	3	4	3	3	3	4	4	3	4	
Australia	3	4	4	4	2.5	4	4	5	3	4	4	3	4	

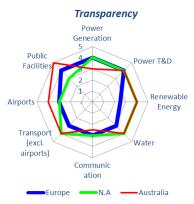
Rating scale	5	4	3	2	1
Expected IRR	More than 20%	16 - 20%	11 - 15%	5 - 10%	Below 5%
Volatilty/Uncertainty	Lowest		Investable		Highest
Market depth	Deepest		Investable		Shallowest
Pricing / Valuation	Under-valued		Fair		Over-valued
Transperency	Best		Investable		Worst

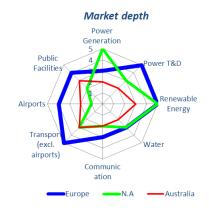
SECTOR ANALYSIS FIVE FACTORS

Power Generation Public Facilities 3 Power T&D Renewable Energy Transport (excl. airports) Communic ation Europe N.A Australia



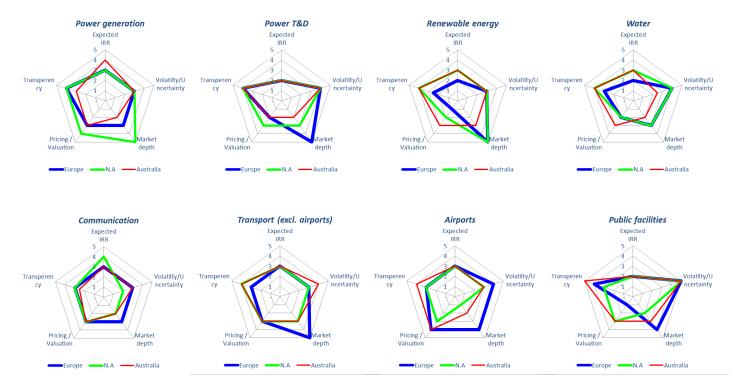






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OPPORTUNITIES INFRASTRUCTURE MEZZANINE DEBT

GLOBAL HEAT-MAP INFRASTRUCTURE MEZZANINE DEBT (AS AT FEBRUARY 18TH, 2016)

							Brownfield						
				Sec	tor			Asset Type (a) Asset			Asset T	ype (b)	
Expected IRR	Power Generation (excl. renewable energy)	Power Transmission & Distribution (excl. renewable energy)	Renewable Energy	Water	Communicatio n	Transport (excl. airports)	Airports	Public Facilities	Unregulated	Regulated	Partially Regulated	Uncontracted	Contracted
Europe	4	3	4	3	4	4	4	3	4	3	4	5	4
N.A	4	3	4	4	5	3	3	4	5	3	4	5	4
Australia	4	3	4	4	4	4	2	4	4	4	4	5	4
Volatilty/Unce	ertainty				•								
Europe	3	4	4	5	3	3	3	5	3	5	4	3	4
N.A	4	5	4	3	2	3	3	3	2	5	4	1	5
Australia	4	5	4	4	3	3	3	4	3	5	4	3	5
Market depth													
Europe	3	3	5	2	3	4	5	2	5	5	3	4	5
N.A	5	3	5	3	3	3	3	3	5	5	2	5	5
Australia	3	3	4	3	3	3	4	3	4	5	3	4	4
Pricing /valua													
Europe	2.8	2.8	3.5	3.3	2.8	2.8	2.8	3.3	2.8	3.3	3.5	3.3	3.5
N.A	3.5	3.3	3.5	2.8	2.5	2.3	2.3	2.8	2.5	3.3	3.5	1.7	4.2
Australia	3.5	3.3	3.5	3.5	2.8	2.8	1.8	3.5	2.8	4.2	3.5	3.3	4.2
Transperency													
Europe	5	4	4	5	3	4	4	5	5	5	4	3	4
N.A	5	5	5	3	3	1	1	3	5	5	3	2	3
Australia	5	5	3	4	4	4	4	5	5	5	4	3	5

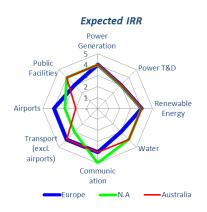
Rating scale	5	4	3	2	1
Expected IRR	More than 12%	10 - 12%	8 - 10%	6 - 8%	Below 6%

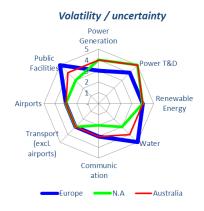
Original scale for unlisted and listed equity

Rating scale	5	4	3	2	1
Expected IRR	More than 20%	16 - 20%	11 - 15%	5 - 10%	Below 5%

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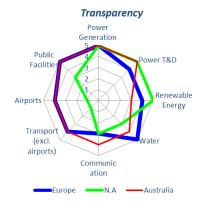
SECTOR ANALYSIS FIVE FACTORS



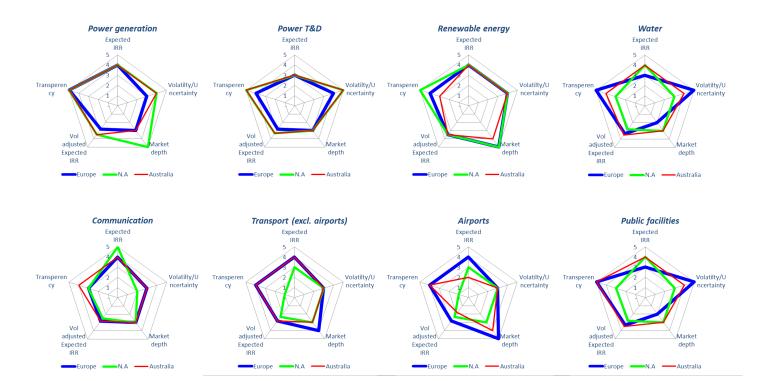








SECTOR ANALYSIS BY INDUSTRIAL SECTOR



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TAKE-AWAYS



- > Infrastructure is not a single asset class
- > Opportunities come up as environment, timing and circumstances vary
- You need an experienced manager with on-the-ground coverage and network to harvest those opportunities,

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QIC OVERVIEW - A GLOBAL DIVERSIFIED ALTERNATIVE **ASSET MANAGER**



A longstanding investor heritage...

Established in 1991 by the Queensland Government to serve its long-term investment responsibilities

Over A \$78.8bn in funds under management ~500 professionals





Global Liquid Strategies

Equity



Over 90 clients including government, pension plans, sovereign wealth funds and insurance companies. Spanning Australia, Europe, Asia, Middle East and US

LONDON1

COPENHAGEN

NEW YORK¹ LOS ANGELES

SAN FRANCISCO

MELBOURNE

SYDNEY1

BRISBANE¹

...with an established investment platform seeking to deliver returns to institutional investors

QIC GLOBAL INFRASTRUCTURE



Proven Track Record

- Since inception 16.4% annualised Net IRR through market cycles -10 year track record¹
- A\$7.1bn² including 10 direct investments. A\$6.85bn² realised back to our foundation clients
- Delivered by the same stable, experienced investment team of 29 professionals³



Global Sector Focus

- · Transport, Energy & Utilities, PPP/Social
- Deconstructs risk across sector value chains identifying relative value for investment
- Drives a targeted origination pipeline and construction of diversified portfolios

> A\$7.1bn FUM

'Active Core' Strategy

- · Drives value creation across each stage of the investment cycle
- Underpinned by our Asset Management Framework (AMF)
- · Makes us seek leadership positions of control or strong influence in our investments



Compelling Investment Opportunity

- · Globally, Organisation for Economic Co-operation and Development (OECD) mandate with Australian focus
- Focused investment thematics underpin an Est. pipeline up to A\$47bn over the next five years⁴
- · Alongside like-minded investors managed by QIC

> A\$47bn pipeline

Aligned Offering QGIF

- The Fund targets returns of 10 12% p.a. including annualised gross cash yield of 5% p.a.⁵
- · Contemporary fund structure with strong alignment of interests
- Significant QIC and team investment
- First Close in August 2015 for 50% of Target



¹ As at 31 December 2015. Net of all fees and expenses. The investments and prior performance described in this document are attributable to the QIC Global Infrastructure team of QIC Private Capital Pty Ltd. Inception of the first mandate was August 2006 and is utilising the same strategy as the QIC Global Infrastructure Fund. Past performance is not indicative of future results. Investors should note that this portfolio IRR is not different fees will apply. Also, the IRR represents AUD unhedged returns whereas other products may hedge non-AUD exposure, which could have a material impact on the returns achieved. ² As at 11 March 2016. ³As at 31 December 2015. ⁴ QIC analysis as at August 2015. ⁵ There is no guarantee the Fund will meet the target returns or target yield..

QIC GLOBAL INFRASTRUCTURE PORTFOLIO OF HIGH QUALITY ASSETS BUILT FOR EXISTING CLIENTS



Built out with a sector-centric focus

Australian Direct Investments	Sector	Year
Brisbane Airport (25%)	Transport	2007
2 Northwestern Roads Group (25%) ¹	Transport	2009
3 Port of Brisbane (26.7%)	Transport	2010
4 Epic Energy South Australia (100%)	Energy & Utilities	2013
5 Lochard Energy (100%)	Energy & Utilities	2015
International Direct Investments	Sector	Year
1 Thames Water (8.7%)	Energy & Utilities	2006
2 Powerco (58%)	Energy & Utilities	2009
3 OSU Parking (100%)	Transport	2012
4 Long Beach Court House (40%)	PPP/Social	2012
Canadian Medical Research Facility (19.6%)	PPP/Social	2012
Realised Direct Investments	Sector	Year
Queensland Motorways Limited (100%) ²	Transport	2011 - 2014

GMTCB (100%)

Note: Does not include indirect investments of \$0.3bn. The information contained herein references and describes specific investment opportunities that QIC has previously pursued, showing name of the investment, the year of acquisition and the percentage of the asset acquired. Such investments are described for informational and illustrative purposes only and there is no guarantee that QIC will pursue similar investments in the future or that such similar investments will continue to be available. It should not be assumed that these investments, or any future investments made by QIC, will ultimately be profitable.

2007 - 2016

Transport

¹ Includes Westlink M7and NorthConnex

² Includes CLEM7, Go Between Bridge & Legacy Way

EXPERIENCED SECTOR CENTRIC TEAM

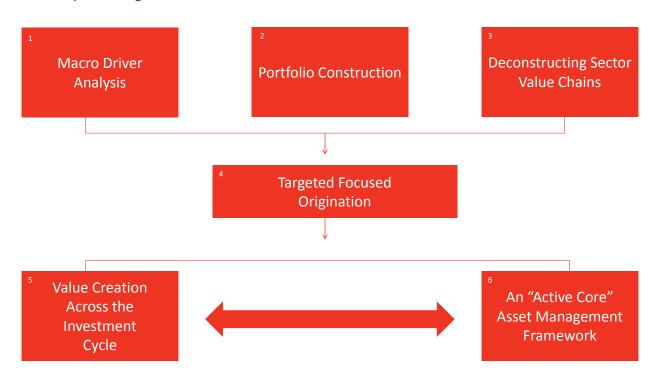




DIFFERENTIATION IS KEY TO FINDING RELATIVE VALUE



Leveraging our proven investment process, we are focused on finding relative value across market cycles through.......

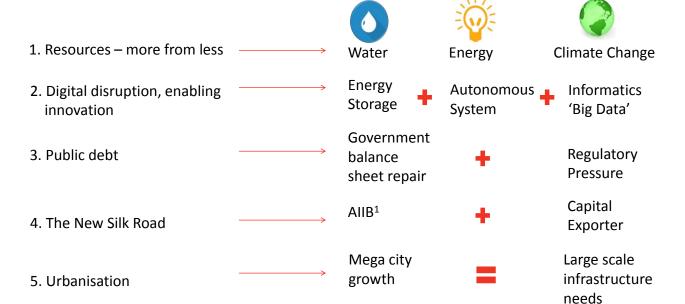


MACRO DRIVER ANALYSIS



Megatrends Touching Infrastructure

Key Consequences for Infrastructure



Notes ¹ Asia Infrastructure Investment Bank

7



DISRUPTIVE TECHNOLOGY IN THE INFRASTRUCTURE SECTOR

Sector	Sector Specific Theme		Impact on Infrastructure	Timeframe*
	Energy Storage Technologies which allow for the capture of energy at a particular time, for use at a later time when required	1 4 +	 Enabler of renewable energy resources Lowered utilisation of T&D networks Transformed utility business models Deferred or avoided capital investments Implications for power forward curves and asset finance 	2030 – 2040
Energy	Solar Energy Radiant light and heat from the Sun that is harnessed using a range of technologies such as photovoltaics	*	 Demand diversion from installed generation Reduced grid infrastructure utilisation New utility business model opportunities 	2025 – 2030
	Smart Grid Electrical networks which enable bi-directionality of electricity flow through intelligent integration of the actions of all participants connected to it		 Improved integration of renewables Enhanced power grid efficiency/reliability Vehicle-to-Grid charging capabilities Deferred or avoided capital investments New utility business models 	2030 - 2040
rtation	Autonomous Vehicles Level 4 AVs capable of driving without human input designed to perform all safety critical driving functions and monitor roadway conditions for an entire trip		 Increased roadway capacity as AVs are capable of driving closer together without collision (e.g. platooning) AVs could displace public transit in or become a utility themselves Potentially more vehicles on road Parking migration outside urban cores 	2035 - 2050
Transportation	Ride Hailing & Car Sharing Use of one-time shared rides on very short notice (real-time ride hailing) and model of car rental where people rent cars for short periods of time (car sharing)		 Reduced roadway/parking utilisation Few car trips overall due to popularity of carpooling services Road maintenance savings Reduced public transport utilisation 	2020 – 2030

^{*} Universal adoption



DISRUPTIVE TECHNOLOGY IN THE INFRASTRUCTURE SECTOR

Sector	Sector Specific Theme		Impact on Infrastructure	Timeframe*
Water	Membrane Technologies Engineering approaches for the transport of substances between to fractions with the help of permeable membranes (applications being desalination, wastewater treatment, and specialized water production)		 Replacing conventional infrastructure (water conveyance, thermal treatment) Increasing demand for primary energy 	2020 – 2030
Internet / Communications	Cloud Computing & Data Centres Use of remote servers to manage data rather than local servers and PCs (Cloud Computing) and centralised facilities used to house computer systems (Data Centres)	•	 Proliferating cloud-based "data" utilities Growth of physical IT infrastructure (servers, data storage, communications) Cloud computing helps infrastructure businesses increase operational efficiency and simplify processes CAPEX/OPEX savings to enterprises Increasing energy demand loads 	2020 – 2030



DISRUPTIVE TECHNOLOGY IN THE INFRASTRUCTURE SECTOR

Cross Cutting Theme		Impact on Infrastructure	Timeframe*
Cyber Security technologies and policies that are used to protect data from unauthorized or unintended access, deletion, alteration or destruction		 IoT connected devices are raising the potential impact of a cyber security breach in ports, airports, and secure facilities Cyber attacks can, without proper security, go undetected over a long period of time, amounting to large financial losses Attacks on infrastructure have the potential to disrupt operations and impact the service and reputation of the owners Cyber attacks can ultimately disrupt trade networks and logistical value chains across the globe 	2020 - 2030
Industrial Internet of Things (IIoT) Technological ecosystem which uses remote sensing equipment to create an 'information value loop'	*	 Asset utilisation / condition monitoring Service outage / leakage minimization Improved grid integration of renewables Dynamic signalling adjustment for traffic management to reduce congestion Smart public lighting that can automatically report servicing requirements Sensor applications to assist in tracking of waste levels in containers and optimize collection and disposal services Real-time tracking of pollution levels and other environmental metrics 	2025 – 2030

^{*} Universal adoption



DISRUPTIVE TECHNOLOGY IN THE INFRASTRUCTURE SECTOR

Cross Cutting Theme		Impact on Infrastructure	Timeframe*
Mobile Payments Cashless payment services performed from or via a mobile device	\$	 Increased asset monetization Increased efficiency of transport infra assets Enhanced customer experience Cost savings for parking structure operators (no need for parking meters or vending machines) Role of telecommunications operators becomes increasingly blurred with that of financial institutions New revenue channels for telecommunications operators Integrity of communications infrastructure even more critical to maintain core banking and financial functions in society (zero down-time) 	2020 – 2030
Unmanned Aerial Vehicles ('Drones') Pilotless aircrafts which can be controlled remotely or can fly autonomously based on pre-programmed flight plans		 Reduced infrastructure maintenance costs Monitoring of asset security/right of way Asset utilisation tracking, data collection Internet delivery through aerial drone systems could replace conventional communications infrastructure (fibre optics) Decreased safety risk to utility workers as drones can assist in inspections Shipping and delivery through drones could reduce freight cargo volumes passing through conventional transport infrastructure (ports, airports, roads, etc.) 	2035 – 2040

^{*} Universal adoption

IONA GAS STORAGE CASE STUDY – LOCHARD ENERGY



Iona is a strategic midstream asset and QGIF's maiden investment ¹

Location



Operational metrics

-	
Commissioned	1999
Current gas storage capacity	23.5 PJ
Market withdrawal capacity	390 TJ / day
Reservoir depth	1,280 m
Reservoir volume	70 million m ³

Equivalent to reservoir depth of 4,200 ft and volume of 2.5 billion ft³

Asset overview

- The only major gas storage infrastructure dedicated to serving Eastern Australia
- Key provider of essential variable "swing" supply through long-term gas storage off-take with all major energy retailers in Eastern Australia
- The only underground gas storage facility in South Eastern Australia that is essential to gas supply security in a region representing 66% of Australia's population
- Withdrawal capacity of up to 390 TJ/d, equivalent to approximately 30% of the State of Victoria's peak demand

Investment Highlight

- Macro themes: favourable outlook for gas given growing shift towards decarbonisation and renewable generation
- Unique strategic positioning to take advantage of increasing intermediate and peak gas demand in Victoria, SA and NSW markets
- Differentiated business plan: through QIC's deep sector knowledge and relationships, we were able to secure an additional gas storage contract with AGL, Australia's largest integrated energy retailer, over a substantial amount of capacity for a long term.
- Strong customer demand: long term CPI linked largely take-or-pay contracts primarily with investment grade counterparties
- Proven track record of commercial availability, reliability in meeting demand and in health, safety and environmental performance
- Significant growth and expansion opportunities at a cost effective manner at Iona
 providing upside from active management and stakeholder engagement, plus wider
 opportunities in the midstream space in Australia upon which to leverage Iona's track
 record



TRANSACTION OVERVIEW

Iona is a core investment with predictable cashflows with long term CPI linked contracts with weighted average life in excess of 12 years

Vendor	EnergyAustralia
Transaction Date	8 October 2015
Acquisition value	AUD\$1,780 million
Equity committed	AUD\$888 million
% ownership	100% - QIC ¹
Base case IRR ²	Consistent with QGIF target IRR requirements
Base case 10yr cash yield ²	In excess of QGIF target cash yield requirement
Capital Structure	Gearing of under c.55% structured to achieve "investment grade" credit metrics
Weighted Average Contract Length	Over 12 years (extended from 7 years with the benefit of QIC's differentiated business plan and bid strategy)

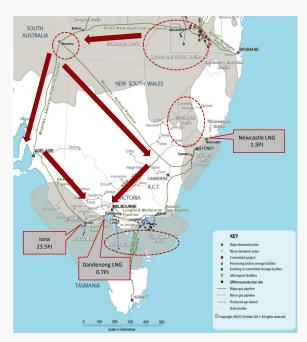
² Target returns are before QGIF fees, including management fees, expenses, other Fund fees and expenses, carried interest, taxes, hedging costs and other expenses borne by entities through which the QGIF Investors participate in investments or otherwise borne directly by the QGIF Investors. There is no guarantee the asset will meet the target returns or target yield.



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INTERCONNECTED INFRASTRUCTURE

lona is the only major gas storage facility dedicated to serving the Victorian, South Australian and NSW domestic gas markets. Existing infrastructure link lona to gas supply from the Otway Basin (South Australia), Gippsland Basin (Victoria), Cooper Basin (South Australia) and coal seam gas (Queensland and NSW)



Region	Key Projects / Potential Gas Sources
East Victoria	 Gippsland Basin JV (Exxon Mobil / BHPB) BassGas (Origin operated) Longtom (Seven West operated) BMG / Sole development (Cooper Energy)
Queensland	 QCLNG (producing) APLNG (in development) GLNG (in development) Arrow Energy (Shell / PetroChina) Other projects (Meridian SeamGas, Blue Energy)
South Australia	 Otway Basin Cooper Basin JV (Santos, Origin, Beach Energy) Drillsearch wet gas Senex Energy tight gas and unconventional Strike Energy tight gas and unconventional Shale gas (Nappamerri Trough)
New South Wales	Gloucester and Camden CSG (AGL)Narrabri CSG (Santos / EnergyAustralia)

Source: AEMO and QIC research

¹ Ownership split is 50:50. 50% to QGIF and co-investors and 50% to an existing QIC managed client.





Iona provides a critical service to domestic utilities. Its acquisition leverages QIC's experience in the Australian gas market

Attribute

Commentary

Strong strategic position in the eastern Australia gas market

- ✓ Only major gas storage facility dedicated to serving Victorian and South Australian domestic markets
- ✓ An essential infrastructure supplying Victorian winter peak gas demand and South Australian peak gas demand, and market share is
- ✓ Incumbency benefits arising from its scale, location, geology, facility flexibility and existing customer contracts ✓ Strategically important connecting SWP, SEA Gas, Otway and Casino gas fields to supply/manage peak gas to the domestic market
- ✓ No other competing storage facility of the same scale nor capable of supplying for such long periods

Strong custome demand with favourable

narket dynamics

- ✓ Contracts are with major mass market gas retailers with a strong history of contract renewal
 ✓ In addition to lona's existing contracts QIC negotiated as part of the bid a long term gas storage agreement with AGL, a strong investment grade counterparty, for a substantial amount of lona's capacity. QIC's deep sector knowledge enabled us to structure the contract so as to give AGL structural flexibility which is of strategic value without eroding the fixed cash flow profile of Iona.
- Access to storage is a critical part of managing a gas portfolio
- Value of gas storage is increasing as:
 - Gas demand becomes peakier (Vic and SA have the greatest difference in peak versus average annual gas demand in NEM
 - (2.0x average demand respectively, NSW is also very peaky at c.1.5x) New gas supply agreements are providing less seasonable variability
 - Relative cost of storage as percentage of total delivered cost of gas is decreasing as gas prices rise

Predictable cash

- ✓ Weighted average contract life of over 12 years (extended from 7 years with the benefit of QIC's differentiated business plan and bid strategy)
- ✓ Rolling recontracting profile with a strong history of renewals
- ✓ Fixed capacity charges (take-or-pay) represent vast majority of total revenue, all revenues are CPI linked
- ✓ All three major counterparties are integrated energy supply companies with investment-grade credit ratings

Proven track record and well established cost structure

- ✓ Large reservoir capacity with proven reliability in meeting winter peak demand ✓ Costs of operation and maintenance are predictable and well-understood given >15 years of operation
- High plant reliability and commercial availability
- ✓ Well established management team with deep experience in operating the facility
- ✓ Excellent health, safety and environmental performance

Growth opportunities and well established cost tructure

- ✓ Additional capacity accessible in a cost effective manner
- ✓ Platform for acquiring and developing other gas storage and midstream assets

Proven Track Record

MULTIPLE INDUSTRY AWARDS





Global deal of the year

Global deal of the year

"Queensland Motorways (QIC sale to Transurban consortium): One of the reasons QIC was able to more than double its investment in the course of three years was because it acquired three assets...to transform Queensland Motorways into a unique road network. "



Asia Pacific fund manager of the year "QIC: The wisest investors are those which know how to put their assets in

the fast lane – and take the exit at the right time. By selling Queensland MotorwaysQIC clearly achieved both.



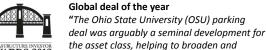
Deal of the year

Asia Pacific deal of the year

"Queensland Motorways (QIC sale to Transurban consortium) - The sale of the 70-kilometre network smashes price expectations and represents investors' clamour for yield writ large"



AWARDS 2012



revitalise the market for privatised parking as well as bolster public-private deal flow in the US." Asian Infrastructure deal of the year For the consortium's winning bid for the Port

of Brisbane: "With global shipping slowly

consortium) may have paid an attractive

recovering from the troughs of the Crisis (the



Asian infrastructure deal of the year

Global Infrastructure Partners, Industry Funds Management, Queensland Investment Corporation (Port of Brisbane)



Best Privatisation Deal - Australia

price for Port of Brisbane."

Awarded to the consortium (comprising QIC), financial advisers and lead arrangers responsible for the A \$2.1B privatisation of Port of Brisbane



Source: PEI Infrastructure Investor as published in the 2014, 2012 and 2010 Annual Reviews. PEI Infrastructure Investor awards are awarded based on reader polls on www.infrastructureinvestor.com. Readers must register only one vote and may not vote for either themselves or their firm. The information provided should not be deemed a recommendation to invest. The Asset award sourced from The Asset Magazine.

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AUSTRADE KOREA

Australia Infra Funds Management Forum 2016

Infrastructure Investment and 'Fiduciary Duty in the 21st Century'



Steve Boulton

Managing Director CP2

Dr Allan Wain

Head of Research & Strategy

LWP Fellow Harvard Law School Harvard University

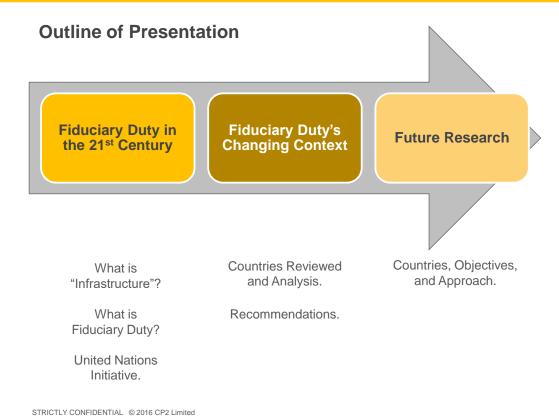
8 April 2016

Australia Infra Funds Management Forum 2016



The purpose of this presentation is to provide a brief overview of CP2 and Harvard University's joint collaboration with the United Nations on Infrastructure Investment and on 'Fiduciary Duty in the 21st Century'





Australia Infra Funds Management Forum 2016



Infrastructure Investment and Fiduciary Duty in the 21st Century



What is Infrastructure?

What is Fiduciary Duty?

Fiduciary duty is an obligation of persons who manage other people's money to act in the interests of the beneficiaries, not in their own interests.

The United Nations Initiative

The United Nations 'Fiduciary Duty in the 21st Century' initiative is predicated on the following position:

That a failure to consider and to evaluate long-term investment value drivers, including social, governance, and environmental issues, in investment practice is a failure of Fiduciary Duty.

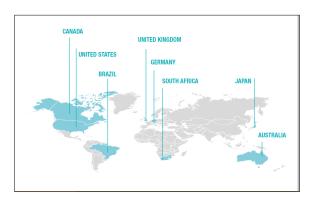


Infrastructure Investment and Fiduciary Duty in the 21st Century



Fiduciary Duty's Changing Context

Countries Reviewed and Analysis



Study's Recommendations

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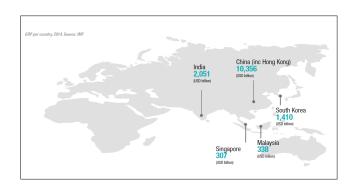
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Infrastructure Investment and Fiduciary Duty in the 21st Century

Future Research. Focus on Asia.





Research Objectives and Approach.

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Thank you.

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AUSTRALIAN MID-MARKET INFRASTRUCTURE

Presentation to Australian Infrastructure Management Forum

April 2016

COMMERCIAL IN CONFIDENCE

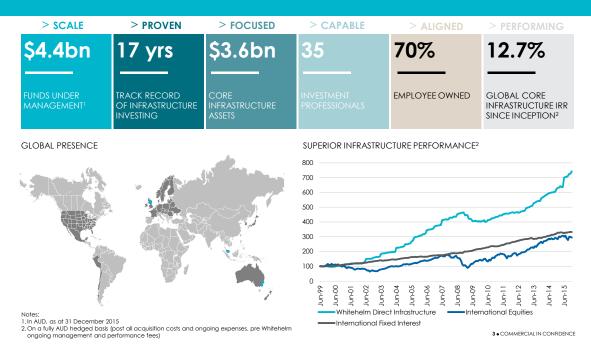


INTRODUCTION TO WHITEHELM CAPITAL



出 WHITEHELM OVERVIEW

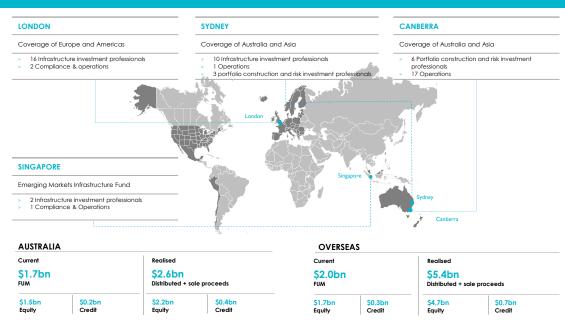
whitehelm is the only australian mid market specialist with a strong global brand and footprint



世 ESTABLISHED GLOBAL INFRASTRUCTURE PLATFORM

WHITEHELM

WHITEHELM OFFERS A GLOBAL INFRASTRUCTURE PLATFORM WITH INVESTMENT PROFESSIONALS LOCATED IN AUSTRALIA, LONDON AND SINGAPORE





WHITEHELM CAPITAL FOCUSES ON DELIVERING SUSTAINABLE INVESTMENT RETURNS, INVESTING ACROSS THE CAPITAL STRUCTURE

0 ADHERENCE TO LONGSTANDING INVESTMENT **PHILOSOPHY**

- Long term horizon focused on capital preservation and delivering predictable cash
-) Patient investor wait until there is an opportunity to pay less than intrinsic value
- Invest across the capital structure to take advantage of security mispricing

2

ESTABLISHED TRACK RECORD

- Investing since 1998, with over A\$600m invested over the last 12 months
- 12.7% global core infrastructure IRR since
- 85 investments made, 36 currently managed and 49 realised
- 3 PROVEN ORIGINATION AND ASSET MANAGEMENT **EXPERTISE**
- Asset management capabilities developed over 16 year history
- Strong Australian and global strategic partnerships / relationships
- Hands-on asset management style creates

-) Strong infrastructure debt franchise
- Independent risk function dual key
- In house asset consulting advisory formulate bespoke investment portfolio to meet client objectives

5 STRONG

ALIGNMENT OF KEY STAFF

- 70% staff ownership and aligned parent investor in Challenger's Fidante Partners
-) Large team of 35 experienced investment professionals - sector specialists
- Senior Australian staff have > 10 years experience with Whitehelm
- CHALLENGER / FIDANTE RELATIONSHIP
 - STRONG GLOBAL **BRAND**
- Whitehelm / Challenger have strong relationships - Asia and alobal
- Challenger is the 8th largest fund manager in Australia
- Fidante Partners has raised A\$33bn over 6

5 • COMMERCIAL IN CONFIDENCE



WHITEHELM CAPITAL

MARKET UPDATE



AUSTRALIAN UNLISTED INFRASTRUCTURE – KEY MARKET THEMES



THIS IS A CHALLENGING ENVIRONMENT IN WHICH TO DEPLOY CAPITAL IN AUSTRALIAN INFRASTRUCTURE.

BOTH EQUITY VALUATIONS AND COMPETITION FOR INVESTMENTS ARE INCREASING

- The search for yield in a low base rate environment continues to drive up valuations and compress returns
- Given macro uncertainty infrastructure's defensive characteristics has made the sector even more attractive
- In private markets, vendors are choosing auctions over bilateral processes

AVAILABILITY AND PRICING OF DEBT

- In 2015, local and offshore banks continued to support infrastructure and reduce margins to win market share
- However since late 2015, funding costs for Australian banks have increased by 20-30bps, translating to more expensive project

INSTITUTIONAL INVESTOR PORTFOLIOS REMAIN BELOW TARGET ALLOCATIONS TO INFRASTRUCTURE

- Globally there is significant dry powder chasing a finite opportunity set this situation is more pronounced in Australia
- 2015 saw increasing activity in the Australasian market by Asian strategics, in particular Chinese investors
- Local and domestic superannuation funds continue to aggressively look to deploy capital in Australia

DESPITE THE ONGOING CHALLENGES OF INVESTING AT ATTRACTIVE RISK-ADJUSTED RETURNS, STRONG HEADWINDS DRIVEN BY CREDIT MARKETS MAY COOL THE VALUATIONS IN THE SECTOR IN 2016

7 • COMMERCIAL IN CONFIDENCE

GLOBALLY AND IN AUSTRALIA, THE WEIGHT OF MONEY CHASING INFRASTRUCTURE IN PRIVATE MARKETS IS SIGNIFICANT...

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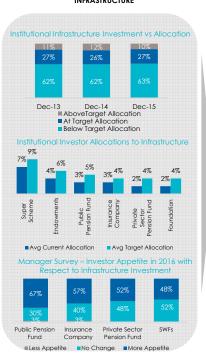
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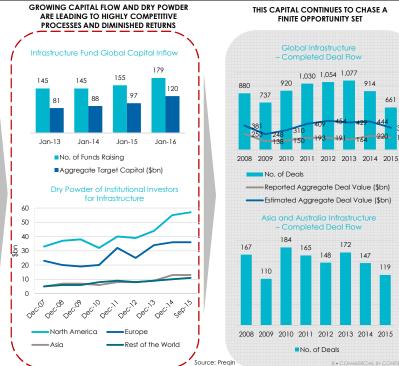
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MERCIAL IN CONFIDENCE

No. of Deals

INVESTORS CONTINUE TO BE UNDER-INVESTED IN INFRASTRUCTURE



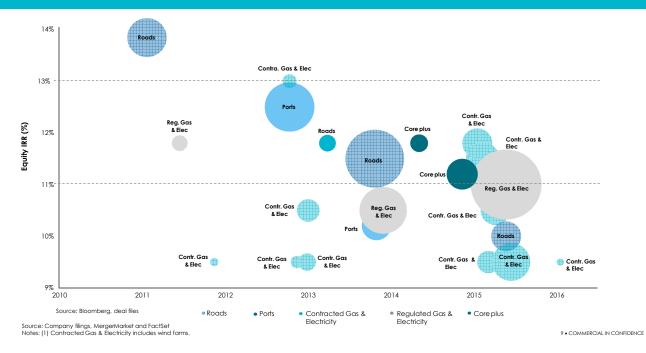


G:U

TOGETHER WITH LOW INTEREST RATES, THIS HAS LED TO RETURN COMPRESSION IN AUSTRALIA ACROSS THE INFRASTRUCTURE ASSET CLASS...

WHITEHELM CAPITAL

DURING THE LAST 4 YEARS, DEAL ACTIVITY IN AUSTRALIAN INFRASTRUCTURE HAS INCREASED, BUT EQUITY RETURNS HAVE DIMINISHED.



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WHY AUSTRALIAN MID MARKET INFRASTRUCTURE?



MID-MARKET INFRASTRUCTURE OFFERS INVESTORS A TRULY DEFENSIVE ALTERNATIVE, WITH SUPERIOR RISK-RETURN ECONOMICS AND A BROADER INVESTMENT UNIVERSE AVAILABLE.

Genuine ability To originate and negotiate non-public opportunities

-) In an environment where there is significant institutional capital to be invested in infrastructure, and low-return transaction pricing, vendors of trophy assets inevitably elect to divest via a competitive auction
-) Succeeding at such an auction risks "winner's curse" lowest return and/or agaressive business plans required
-) Mid market segment allows for opportunities to be negotiated on a semi-exclusive basis with asset vendors, strategic partners or other proponents
 - Such opportunities may progress to bilateral negotiations following initial discussions
 - Processes with reduced competitive tension generally offer superior investment return economics, increased certainty of execution and potential protection in respect of due diligence/transaction costs, maximizing deal and portfolio-wide risk-adjusted return

Invest across more sectors, more opportunistically, To build a more diversified portfolio

- Without a central focus on a large minimum investment size, transaction focus becomes inherently proactive, not reactive/"waiting for the next big one"
-) Many sectors of Australian infrastructure offer only mid market opportunities e.g. airports, renewable energy
-) Enhanced ability to opportunistically focus origination efforts on selected sectors of infrastructure
 - Whitehelm currently focusing on energy infrastructure opportunities given capital markets environment for energy (e.g. Origin Energy divestments)
- Many attractive opportunities are inherently mid market, where vendors are divesting smaller, non-core assets that offer inherent value
-) Ultimately offers ability for enhanced portfolio diversification

Invest across the capital structure

-) Deal size flexibility allows Whitehelm to focus not only on equity but also debt and structured investment opportunities, applying a consistent sector framework
 - We are agnostic across the capital stack relative value philosophy generates superior risk-adjusted returns for client portfolios (arbitrage across capital structure)
-) Occasional opportunity to exploit cost of capital differentials between listed and unlisted markets

11 • COMMERCIAL IN CONFIDENCE

IHU WHY MID-MARKET INFRASTRUCTURE?

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MID-MARKET INFRASTRUCTURE ALSO OFFERS INVESTORS GREATER FLEXIBILITY TO INVEST AND DIVEST.

Flexible timing with respect to deploying capital

-) Mid market infrastructure offers greater flexibility for an investor deploying capital regularly
 - Greater number of deals relative to large cap, well flagged transactions no need to commit to each large transaction for fear of missing out
-) Partnerships and platform opportunities often provide access to periodic deal flow, rather than single asset deals
-) Smaller greenfield transactions easier to progress and accelerate as required

Superior governance rights

- Smaller transactions allow single investor or manager to achieve control and/or meaningful governance rights in assets requiring active management (e.g. Whitehelm's experience in GasValpo), supporting execution of investment thesis
-) When divesting, governance rights traditionally enhance asset value and broaden buyer universe to include strategic/active parties as well as financial investors

Within an illiquid asset class, superior liquidity

Although private markets infrastructure remains an illiquid asset class, investing in a greater number of smaller transactions naturally increases portfolio liquidity, in the event capital recycling or reallocation is required

oblic relations

Mid market opportunities offer ability for institutional investors to deploy capital away from the media and public spotlight

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BROADER INVESTMENT UNIVERSE IN MID MARKET INFRASTRUCTURE



IN MANY SECTORS OF AUSTRALIAN INFRASTRUCTURE OFFER, THERE ARE MORE PLENTIFUL MID MARKET OPPORTUNITIES. AN EXCLUSIVE FOCUS ON LARGE CAP OPPORTUNITIES WOULD EXCLUDE SEVERAL SECTORS FROM THE INVESTOR UNIVERSE.

	LARGE CAP	MID MARKET
PORTS	Few remaining opportunities: Port Melbourne, Fremantle Port expected to be final Australian assets of scale to be sold	Multiple opportunities across Australia of varied risk profile – principally bulk and commodity ports (e.g. Utah)
AIRPORTS	Capital city airports tightly held by incumbent shareholder group	Sunshine Coast, Hobart, Ballina
TELECOMMUNICATIONS AND REGISTRIES	e.g. ASIC Registry	Occasional brownfield and greenfield opportunities (e.g Nextgen minority stake, Canberra Data Centres)
RENEWABLE GENERATION	X No renewable opportunities in Australia with EV>\$1bn	Multiple brownfield and greenfield opportunities (e.g. Origin divestment)
CONVENTIONAL GENERATION	No major contracted opportunities available – flaws recognised in Gentrader model	Occasional contracted generation opportunities
RESOURCES INFRASTRUCTURE	Transactions are infrequent (e.g. Newcastle Port, Fortescue TPI auction process in 2013)	Co-located assets providing essential services (such as power/cogen, sewage, accommodation)
ENERGY INFRASTRUCTURE	Limited large scale assets remaining (excluding take private opportunities)	Opportunities to partner with E&P companies on a long-term basis
REGULATED ASSETS	Major Government privatisations (Ausgrid, Endeavour Energy, ARTC)	AquaSure (minority stake)

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BENEFITS OF GOVERNANCE AND CONTROL: GASVALPO CASE STUDY

WHITEHELM

WHITEHELM HAS DELIVERED A 19.2% IRR THROUGH ITS ACTIVE ROLE IN MANAGING GASVALPO

OVERVIEW

- GasValpo is a Chilean gas distributor and retailer that supplies natural gas to over 90,000 residential, commercial, and industrial customers
-) GasValpo is the third largest distribution company by volume, and the second largest in terms of revenue and network length.

INVESTMENT HISTORY & BOARD CONTROL

-) GasValpo was acquired from AGL by a Whitehelm in 2008 (exclusive transaction)
- Whitehelm has had a continuous exposure to GasValpo through Challenger's Emerging Markets Infrastructure Fund ("EMIF") since 2008
- Currently 92% of the shareholding is managed by Whitehelm for its clients including EMIF and two other Whitehelm clients.

KEY ASSET MANAGEMENT ACHIEVEMENTS

- Undertaken an active role in managing the asset since 2008. Examples of key achievements over the past 8 years include:
 - Energas acquisition (2008)
 - Debt facilities negotiated and executed (2010)
 - Key long term gas contract Metrogas supply contract signed (2012)
 - Management of Tax and Energy reforms (2014)
 - Expansion activities including LNG by Trucks (2014 2016)
 - Managed a complex arbitration process with government



BENEFITS OF EXCLUSIVITY: WORSLEY COGENERATION CASEWHITEHELM STUDY

A CONSORTIUM ADVISED BY WHITEHELM CAPITAL ACQUIRED A 49.9% INTEREST IN WORSLEY COGEN IN DECEMBER 2015.

In December 2015, MTAA Super, Prime Super and one other investor, advised by Whitehelm Capital, completed the acquisition of a 49.9% equity interest in the Worsley Multi-Fuel Cogeneration Facility ("Worsley Cogen") from GE Energy Financial Services ("GE EFS").

Whitehelm Capital negotiated an exclusive process with GE EFS, completing full due diligence and financial close in under 8 weeks.



Worsley Cogen is a two unit multi-fuel cogeneration plant (550tph steam and 104MW electricity) commissioned in January 2014 and located in Collie, WA, that provides steam and electricity to one of the world's largest and lowest cost alumina refineries, the Worsley Alumina Refinery (a JV between South32, Itochu and Sojitz) (the "Refinery").

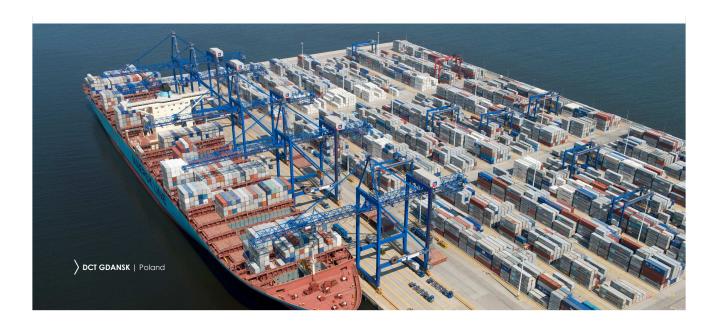
Worsley Cogen is fully contracted - there is no direct volume, O&M, price or commodity risk for the investors.

GE EFS is to retain a significant interest alongside the Whitehelm Capital advised consortium. GE EFS is one of the world's leading energy infrastructure developers and investors, and a long-term proponent of energy and renewable projects globally.

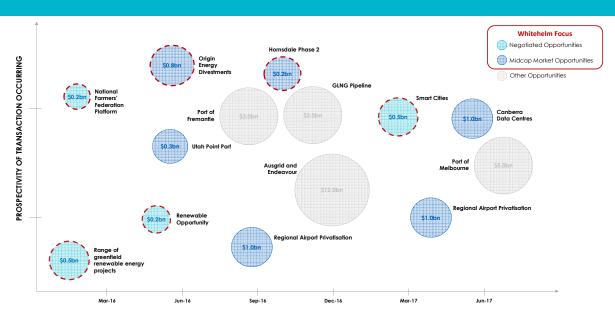
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SELECT OPPORTUNITIES IN AUSTRALIA



WITHIN A HIGHLY COMPETITIVE INFRASTRUCTURE MARKET, WHITEHELM IS BEING SELECTIVE IN ORIGINATION FOCUS.



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