

Financing Infrastructure Projects: Challenges and Approaches

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Overview

- Capital Intensive Infrastructure projects
- Investment Cost and Financing Challenges
- Sources and Types of Financing
- Emerging Financing Schemes and Possible Trends
- Financial Risk Management Strategy
- Concluding Comments

Capital Intensive Infrastructure Projects

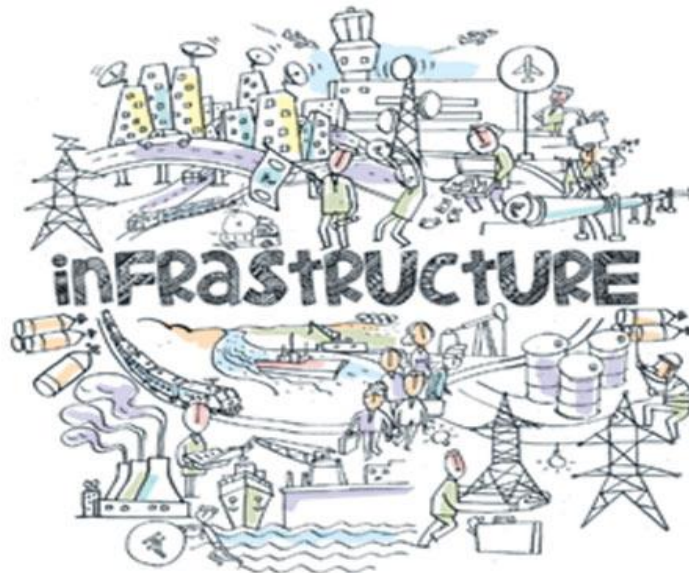
What are capital intensive infrastructure projects?

- Projects generally valued at billion dollar or more
- Significant investment commitment
- Complex financing structures with multiple stake holders (equity and debt holders)
- Long construction duration
- Environmental impact and social Impact

Challenges

Contribute to Gross Domestic Product (GDP)

Construction sector contributed 26% to the Australian GDP (2016-17)*



* Source: Trading Economics

Capital Intensive Infrastructure Projects



Budget 2017-18

Building Australia

Over \$70 billion committed to infrastructure across Australia

The Government's significant infrastructure investments are a critical part of our national economic plan for jobs and growth.

The Government is committing over \$70 billion from 2013-14 to 2020-21 to transport infrastructure across Australia, using a combination of grant funding, loans and equity investments. The Government is establishing a 10-year allocation for funding road and rail investments, recognising that many transformational projects are planned and built over many years. This will deliver \$75 billion in infrastructure funding and financing from 2017-18 to 2026-27.

Australian GDP \$1.2 trillion → 1% of GDP per annum

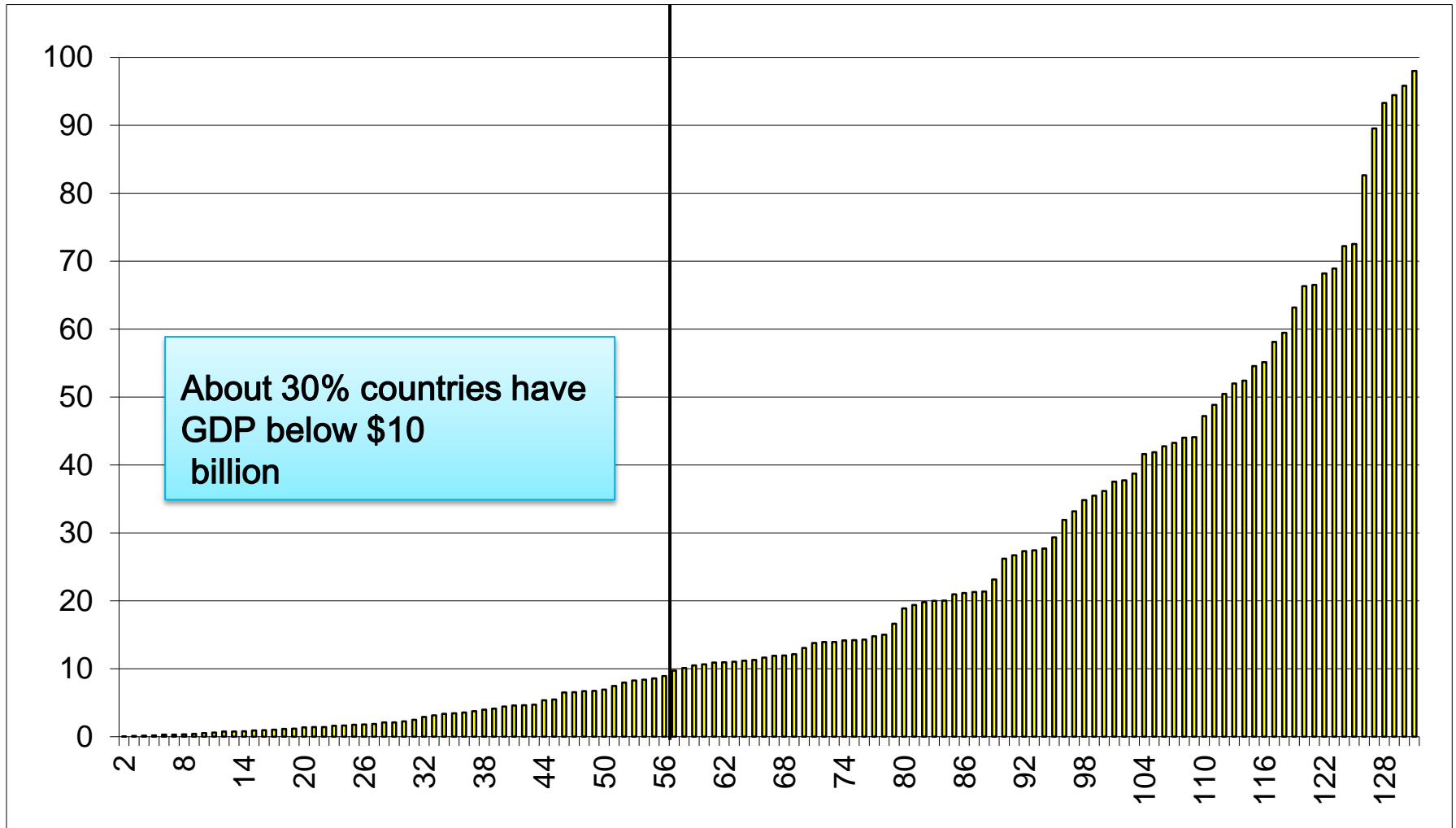
4. Transport for NSW Secretary Tim Reardon addresses IPA's Transport Breakfast Series: NSW transport capital expenditure at \$1 billion per month

3% of NSW GNP

Challenge: Highly capital intensive

Some mega projects can be a few billions therefore it is a significant investment commitment

Gross Domestic Product (GDP) in \$2016 billions



Challenge: Highly capital intensive

Market capitalisation of top ten ASX200 companies in
Material, Energy, Utilities and Industrial

Company	Sector	Market Cap (\$ billions)
BHP Billiton Limited	Materials	75
Telstra Corporation Limited	Telecommunication Services	51
RIO Tinto Limited	Materials	27
Woodside Petroleum Limited	Energy	25
Transurban Group Stapled	Industrials	24
Amcor Limited	Materials	19
AGL Energy Limited	Utilities	16
Fortescue Metals Group LTD	Materials	16
Sydney Airport Forus	Industrials	16
Brambles Limited	Industrials	15

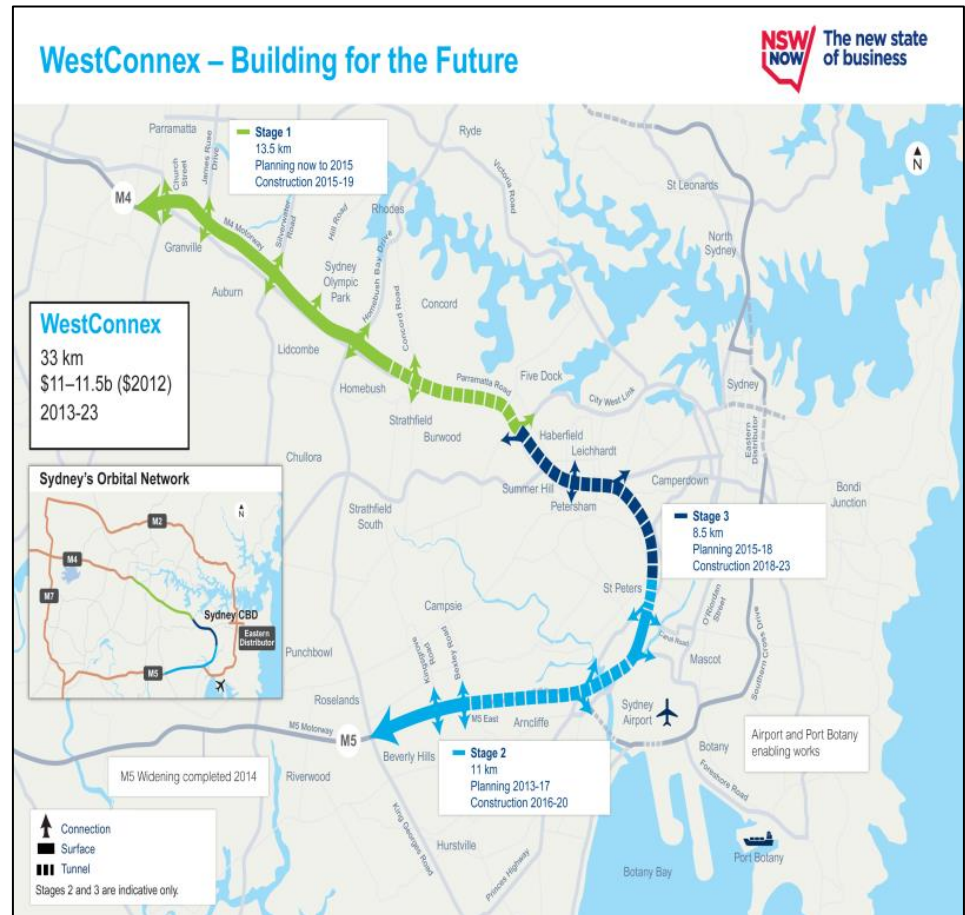
Challenge: Investment Cost

Cost uncertainty and construction risk

➤ Transport: WestConnex

- Initial construction costs estimated at A\$16.8 billion in 2013-14
- Expected total cost will be at least \$20 billion and possibly more...
- Completed by 2023
- The State Government has announced an intention to sell at least 51% of WestConnex
- UBS has estimated that the 51% stake might fetch between \$2 billion and \$4 billion.

33 km motorway scheme



Challenge: Investment Cost

Construction risk project delays

Energy Sector

LNG: Wheatstone adds to list of \$40billion megaprojects failing to get off the ground

The Australian February 2016

BUSINESS NEWS ▶ BUSINESS NEWS ▶ COMPANY

\$50b gas project faces major delays

Updated: 12:17 am, Friday, 17 March 2017



- Ichthys gas field project is a natural gas field (NT)
- Major delays
- Project management Contractor issues
- Completion date?

Note: Ichthys LNG Project is a Joint Venture between INPEX group companies (the Operator), major partner Total, CPC Corporation Taiwan and the Australian subsidiaries of Tokyo Gas, Osaka Gas, Kansai Electric Power, JERA, and Toho Gas.

AECOM

Challenge: Investment cost

Construction risk cost overruns

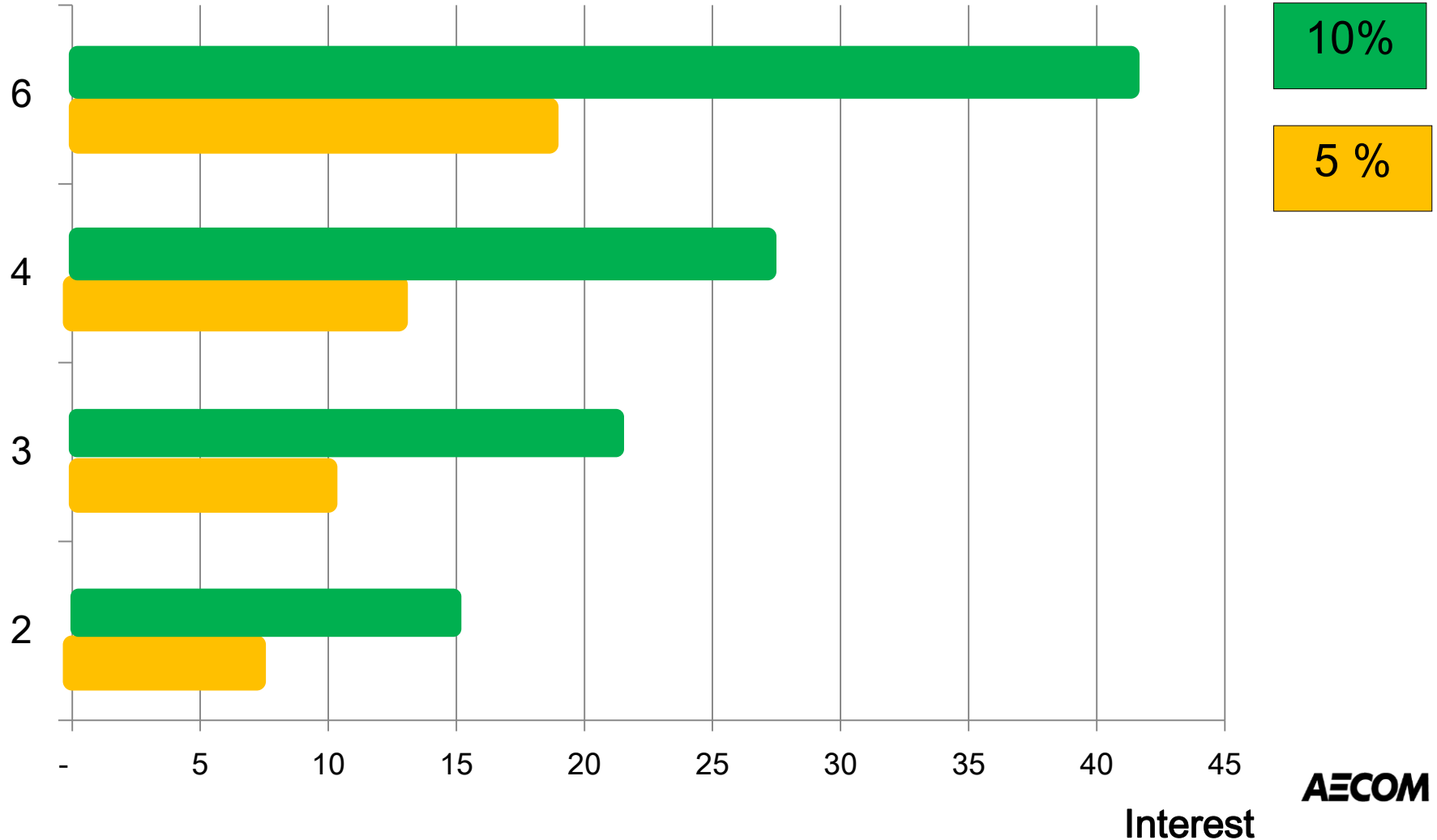
- World's largest top ten projects by capital expenditure
- Power generation, transmission and distribution and water projects across all asset life cycle stages from pre-financing through to decommissioning



64 per cent experienced delays and 57 per cent were over budget

Challenge: Investment Cost Interest During Construction (% of Overnight Cost)

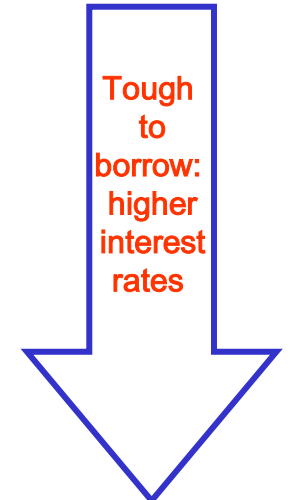
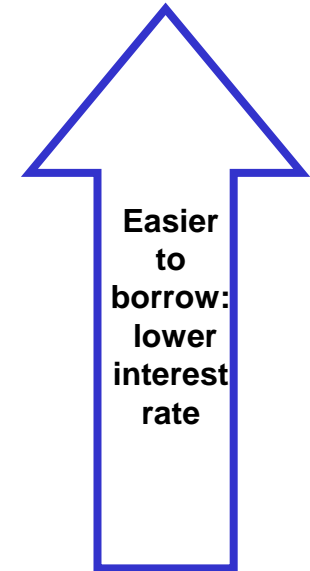
Years



Challenge: Investment Cost

Credit rating pressure

	Fitch	Standard & Poors	Moody's	
Investment Grade	AAA	AAA	Aaa	
	AA+	AA+	Aa1	
	AA	AA	Aa2	
	AA-	AA-	Aa3	
	A+	A+	A1	
	A	A	A2	
	A-	A-	A3	
	BBB+	BBB+	Baa1	
BBB	BBB	Baa2		
BBB-	BBB-	Baa3		
Speculative Grade	BB+	BB+	Ba1	
	BB	BB	Ba2	
	BB-	BB-	Ba3	
	B+	B+	B1	
	B	B	B2	
	B-	B-	B3	
	CCC		CCC+	Caa1
			CCC	Caa2
			CCC-	Caa3
	CC	CC	Ca	
C	C	C		
Default	D	D	C	



Challenge: Investment Cost and Financing Challenges



Other Challenges

- Foreign Exchange Risk
- Commodity Price Escalation
- Operational performance risk
- Uncertainty in the Regulatory process
- Construction Supply Chain risks
- Deregulated electricity market rules and regulation
- Public acceptance
- Liability and insurance issues

Financing More Challenging!



WORLD ECONOMIC OUTLOOK (WEO)

Too Slow for Too Long

April 2016

IMF Cuts Global Growth Forecasts on Brexit, Warns of Risks to Outlook

3.1 % Global Growth with further 0.1 % downward adjustment since Apr 2016

WORLD ECONOMIC OUTLOOK

World Economic Outlook, April 2017: Gaining Momentum?

April 2017

Basel III Liquidity Regulation and Its Implications

Bank Levy?

Infrastructure Mega Projects Currently Underway

Australia: WestConnex motorway costs – AUD \$16.8 billion plus



Australia: Wheatstone LNG project in Western Australia – AUD \$20 billion plus



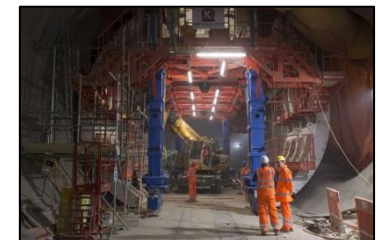
United Arab Emirates: Dubai's Al Maktoum International Airport estimated cost of more than USD\$32 billion.



China: South-to-North Water Transfer Project – USD \$44 billion



UK: London Crossrail project The world's first underground continues to grow, adding 26 miles of tunnel connecting 40 stations. The estimated cost of construction is USD \$23 billion



Sources and Types of Financing

How to attain finance?

- What are the different financing models employed?
 - Government
 - Industry



Traditional Financing Models

Government Financing and Support



Govt. Equity
Ownership

State Budget
(like, tax
revenue)



Loan guarantee



Development
Banks

Long-term
Infrastructure bonds
issuance



CONTRACT
OFFTAKE AGREEMENT

Guaranteed
long term offtake
agreements (PPA,
CfD, etc)

Government Financing and Support

➤ Government Equity/Support

Western Sydney Airport

- Government \$5.3 billion equity
- Works to commence in late 2018
- 10 million passengers a year
- 3.7 km runway.
- Operational 2026



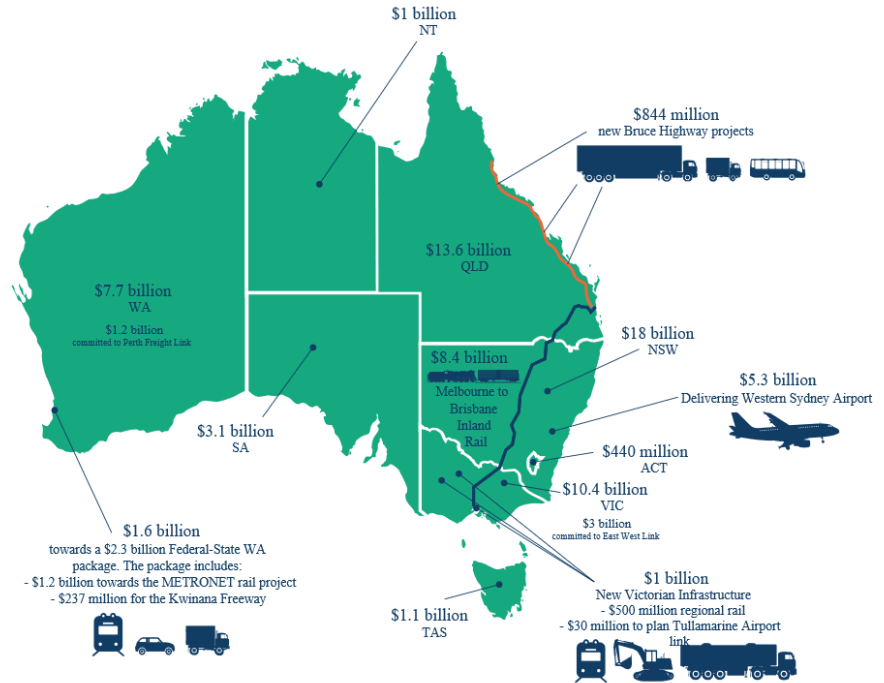
Western Sydney at Badgerys Creek

Add 20,000 direct and indirect jobs by the early 2030s

Government Financing and Support

➤ Government Equity/Support

- \$3.6 billion for the joint Australian Government and NSW Western Sydney Infrastructure Plan
- \$1.6 billion to North-South Corridor in Adelaide
- \$1.5 billion of funding and a \$2.0 billion concessional loan for the WestConnex project in Sydney
- The package includes \$1.2 billion for the METRONET rail project in WA



Government Financing Multilateral Banks



WORLD BANK

USD \$250 billion
capital



USD \$150
billion capital
ASIAN DEVELOPMENT BANK



USD \$100
billion capital

Types and Sources of Financing

Limited Government Finances



Governments seeks private sector participation



**Infrastructure and Project
Financing Agency established as
part of Federal Budget 2017-18**

Private sector financing

Innovative financing

Dividends to tax payers

Types and Sources of Financing

Governments seeks private sector participation why?

Beneficiary principle: Increasing acceptance of the principle that the beneficiaries of a project should pay for it rather than taxpayers as a whole



Great efficiency:

- Greater incentives for efficiency and expertise in innovation, design, construction and operation that the private sector can bring
- Access to modern facilities and advanced technologies of more- developed countries



Types and Sources of Financing



➤ Industry financing

- Corporate finance or balance sheet finance
- Investor Finance or Co-operative finance or hybrid financing
- Project Finance or non recourse finance
- New financing trends

Industry Financing

Corporate finance or balance sheet finance: borrowing or raising finance against the assets of the company

Oil exploration: Gulf of Mexico

Project investment \$9 billion

Ownership structure

- BP 60.5% interest
- BHP 23.9% *
- Chevron 15.6%

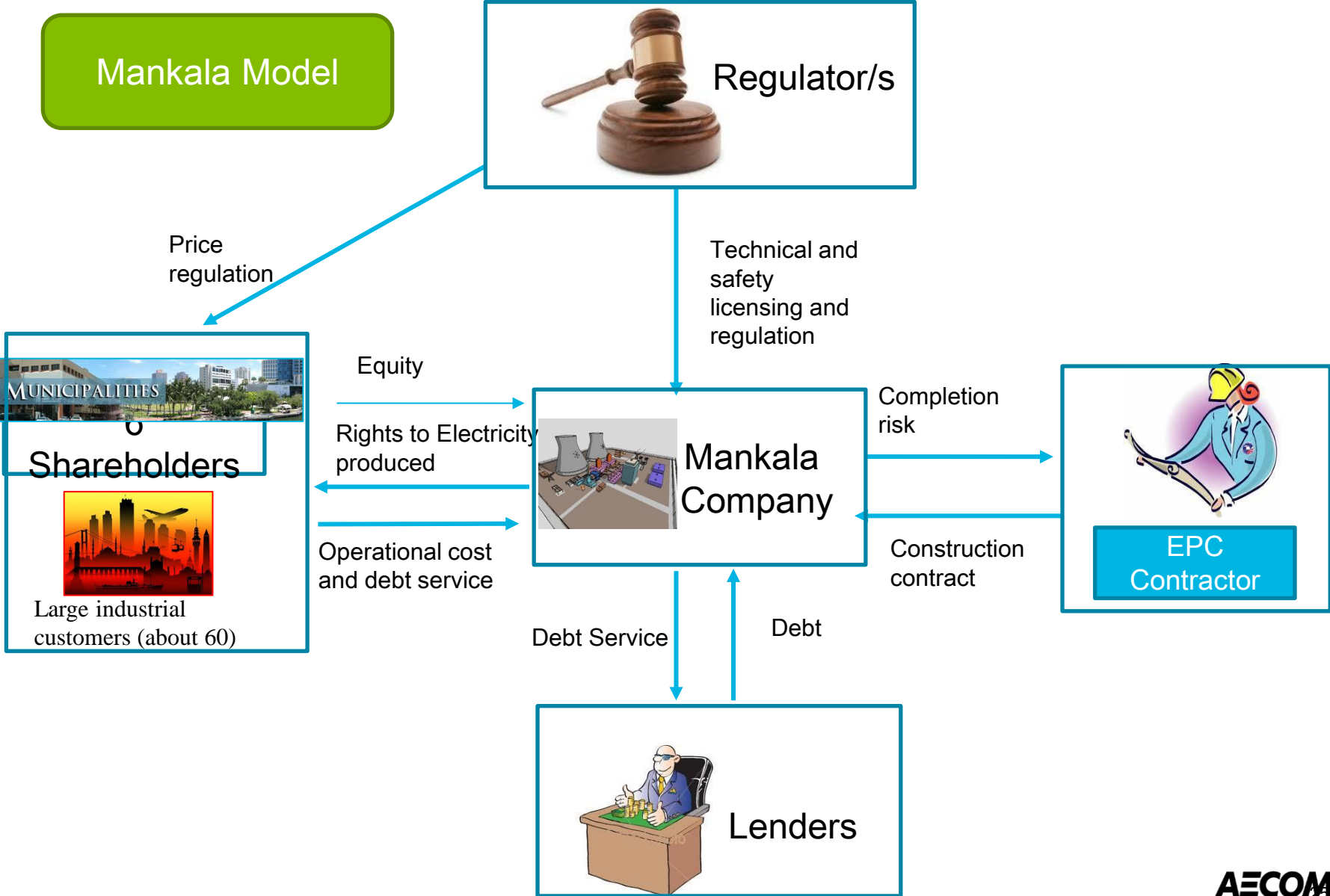
* BHP \$2.2 billion investment



Major deep-water project in the led by BP PLC

Risk diversification: shared ownership and partnerships are important to curtail credit pressure

Industry Financing Trends: Investor Finance Model



Industry Financing Trends

Project Finance: PPP

The Sydney Light Rail

- Initial funding \$2.1 billion
- 12km of track
- Concession End 2030 (Years)
- Financing: Debt / Equity 86% / 14%
- Consortium (equity allocation)
 - ALTRAC:
 - Acciona
 - Alstom
 - Capella Capital
 - Transdev

Construction started in 2014 and to be open in 2019

CBD & SOUTH EAST LIGHT RAIL

The new CBD and South East Light Rail will transform public transport in Sydney, providing high capacity, clean and reliable services. The light rail will extend from Circular Quay along George Street to Central Station, through Surry Hills to Moore Park, then to Randwick and Kingsford via Anzac Parade and Alison Road.



Built Own Operate and Finance (BOO)



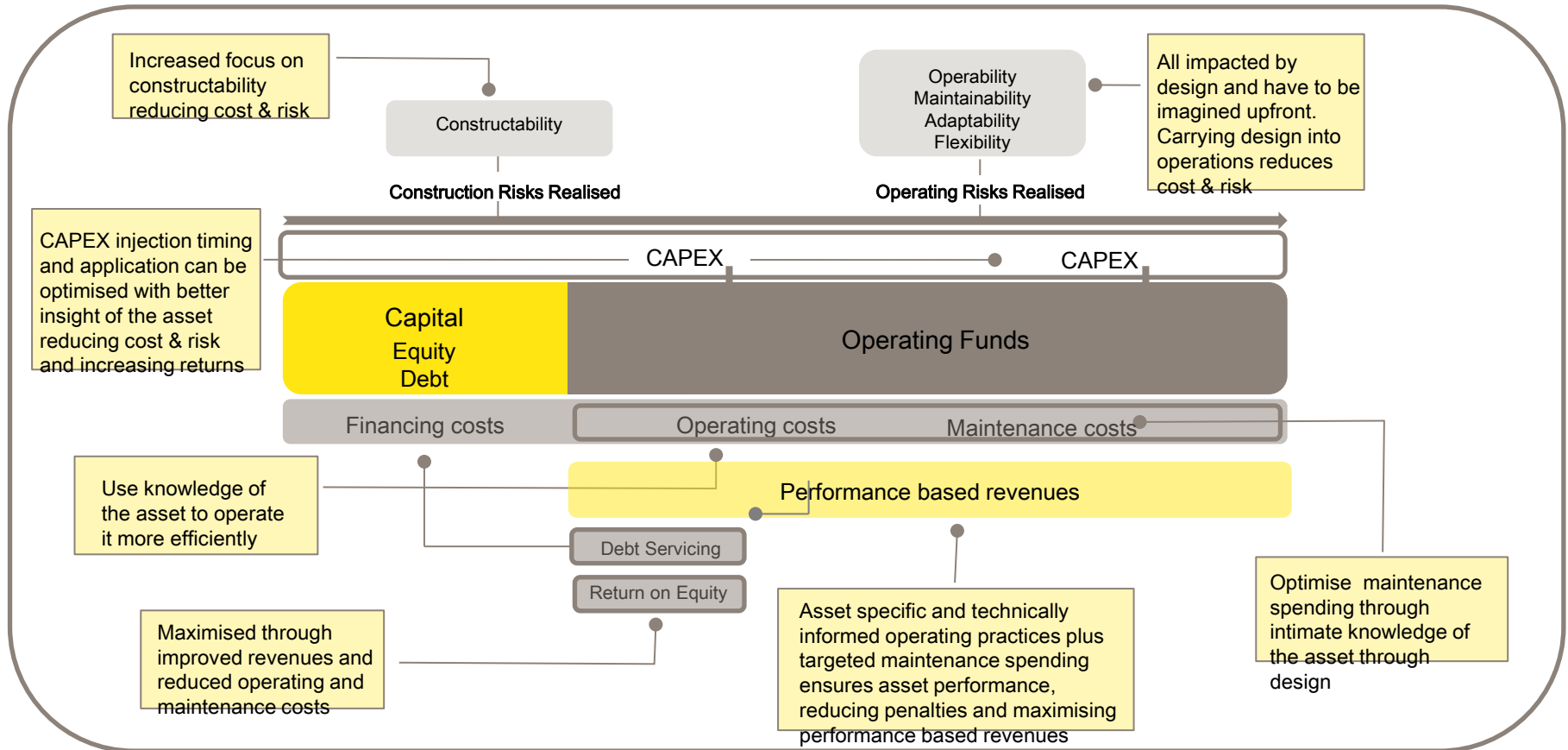
EQUITY

Vendor Financing – suppliers are providing debt and equity

Industry Financing Trends

PPP Efficiency by Design

Designers can add value to infrastructure by investing in it and being involved with it throughout its life



Industry Financing Trends

Tapping the capital markets Issuance of bonds/shares

Debt: Issue of Project Bonds



- Sovereign Wealth Funds
- institutional investors
- Superannuation funds

Equity: Initial Public Offering or share schemes

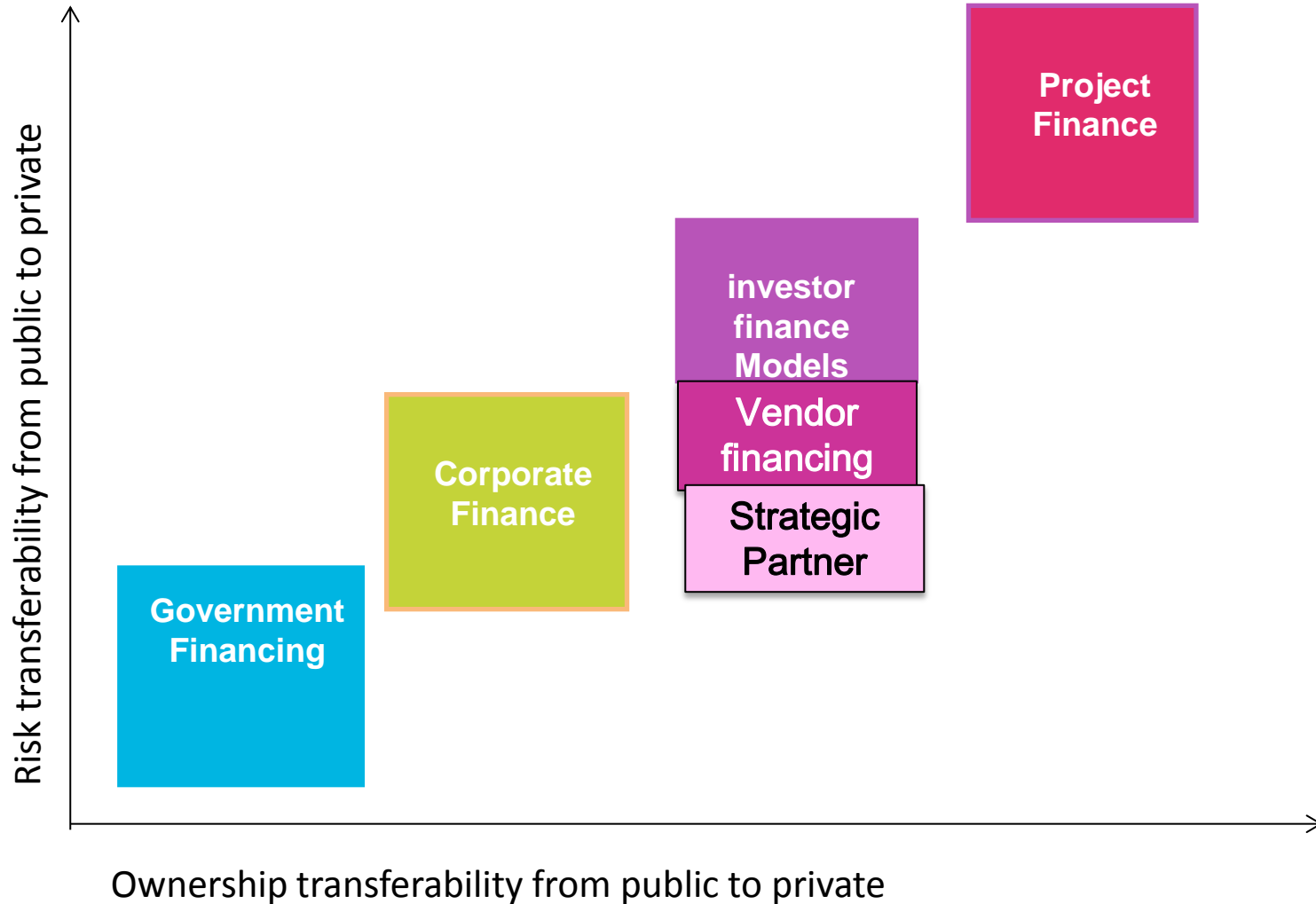


38 larger cap listings (>\$75m) in 2016 with an average market capitalisation of \$340.3m, which raised a total of \$7.4bn in new capital

Share issuance schemes

Source: <https://www2.deloitte.com/au/en/pages/finance/articles/deloitte-ipo-report.html>

Financing Models Trend



Financial Risk Management


- To attain finance requires development of “Financial Risk Management Strategy Framework”



Matrix

Financial Risk Management

Financial Risk Management Matrix: Planning and construction phase risks



Name of Risk	Nature of Risk	Risk Assessment	Risk Allocation	Risk Mitigation
Construction delay/Project Manag't	Pure	High	Owner/Main contractor	Qualified third party contractors/PMC
Construction delay/Licensing	Speculative	Low	Owner	Independent Regulatory Body and have good communication with the Regulator
Non Delivery or delay due to low capacity of the vendor to supply equipment	Pure	High	Main contractor	Selection of qualified supplier with good track record/contract clause liquidation damages/Third party monitoring
Credit risk (Loan disbursement schedule)	Speculative	Medium	Owner/Lenders	Well defined loan agreement
Credit risk/foreign exchange (currency)	Speculative	High	Owner/Lenders	FX hedging strategy

Concluding Comments

- Investment cost uncertainty is challenging
- Financing and construction duration key influencing factors to impact total investment cost
- Governments have a critical role to provide support and government financing still dominate the industry
- Governments are looking towards the private sector to invest as Governments have limited funds
- Vendor financing of both or either debt and equity is very much in demand
- Owners tapping into the capital markets to raise capital, either bonds or share issuance schemes or IPOs
- Strict financial industry regulation, like Basel III to impact liquidity and more vigilance of large scale risky projects
- Financing megaprojects is challenging and innovative financing structures and models are required to attract investors
- **Construction risk is rated is rated high – to gain confidence of investors –”more projects on Schedule and within Budget”**

Thank You!

