Australia’s Resource Sector and the Energy Transition

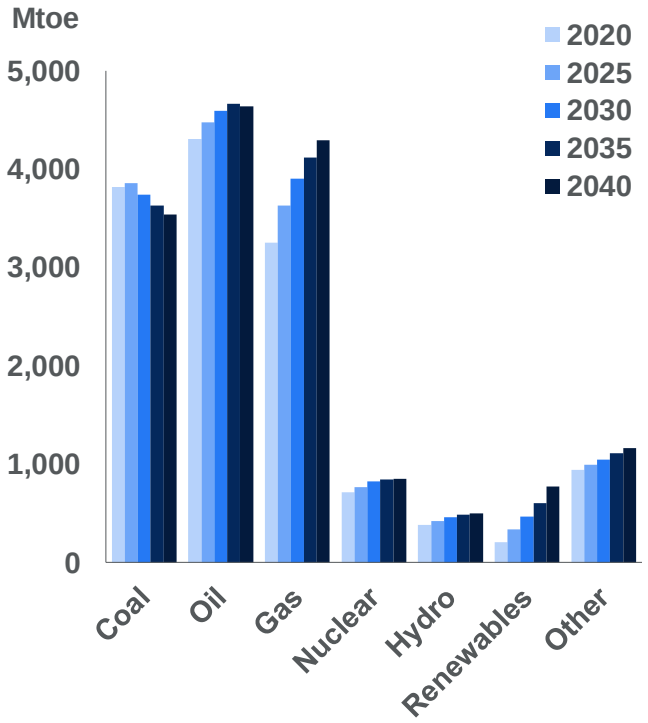
How should Australian companies be repositioning for a net-zero carbon world?

Chris Graham, Vice President Australia Energy Consulting

Rising emissions see the world fall well short of 2ºC limits - an urgent rewiring of the global economy is now firmly on the political agenda

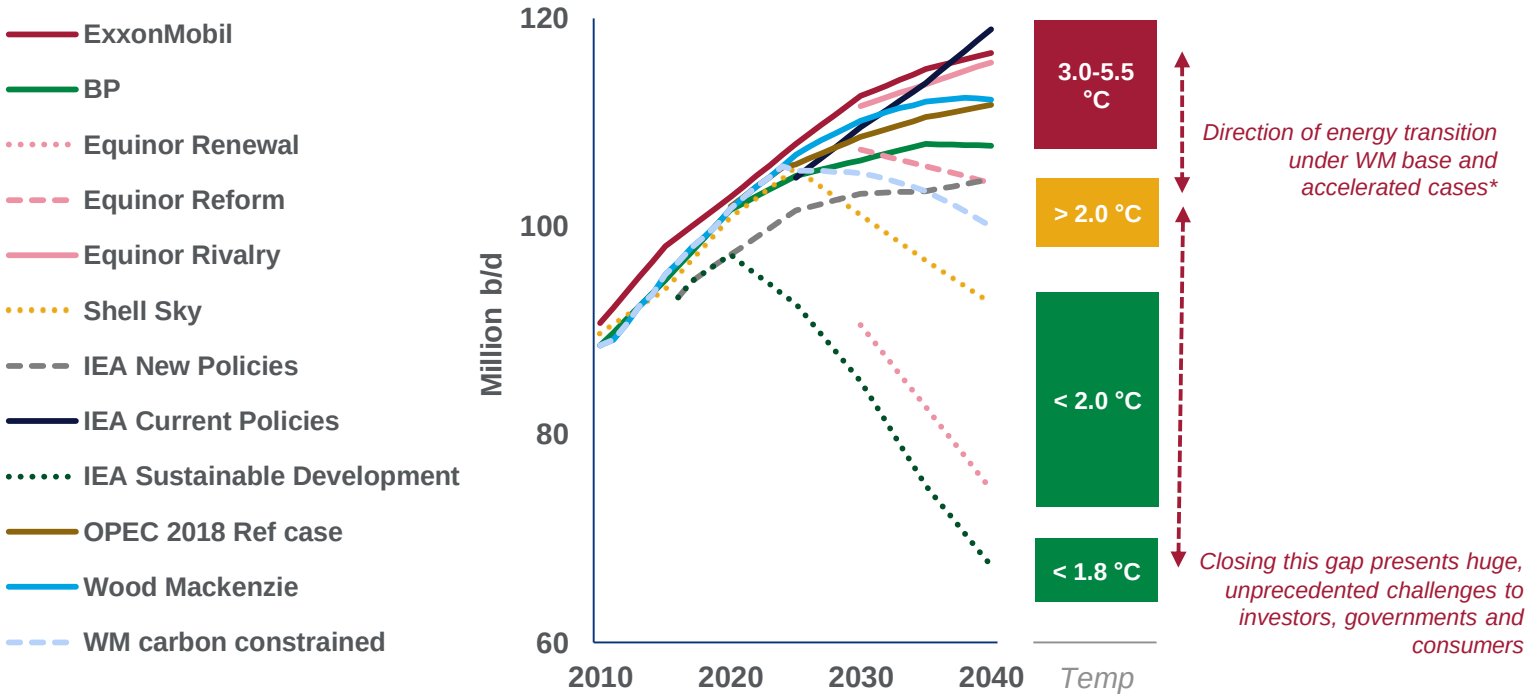
Policy, technology and investment need vast 'scaling up' to shift incentives and behaviour: an unprecedented shift may be underway, bringing business risks for incumbents

Global energy demand, primary fuel



Source: Wood Mackenzie (2018). *Other Solid Fuels (includes biofuels & waste).

Oil demand scenarios and projected rise in global temp*



Source: Wood Mackenzie (2018), company reports. *Projected rise in global ave. temperature by 2100 relative to pre-industrial levels.

Policy makers and strategists are reacting: ‘net Zero’ is the new goalpost

While listed companies are facing shareholder pressure and actively setting carbon reduction goals

Selected country proposals and targets

Country	Proposal	Year	Status
	Net Zero by 2050	2050	Passed into law
	Net Zero by 2050	2050	Passed into law
	32% of gross final energy from Renewables	2030	Govt. target
	Net Zero by 2050	2050	Proposed law
	Non-fossil fuel electricity capacity to reach 770 GW	2020	Approved in latest 5 year plan
	Aims to become carbon neutral	2030	Approved
	Renewables in primary energy 60% and in power (80% min)	2050	Policy in force
	California aims to become Carbon-free	2045	Approved
	24% of gross final energy consumption from RE	2030	Policy in force

Source: Wood Mackenzie. Company announcements

Company proposals and targets

Company	Proposal	Year	Status
	Reduce Net Carbon Footprint by half of the energy products it sells	2050	Approved (Joint statement with CA 100+)
	Net Zero by 2050 aim	2050	Approved
	Reduce methane emissions from ops by 15% and flaring by 25%	2020	Approved
	Reduce methane and flaring intensity by up to 30% from 2016 levels	2023	Approved
	Eliminate flaring in ops	2030	Approved
	Net Zero by 2050	2050	Approved
	Reduce total operational emissions (Scope 1 & 2) in line with the Paris Agreement	2022	Approved

Global banks begin to acknowledge the relation between fossil fuels and climate breakdown

	THE WORLD BANK	BNP PARIBAS	HSBC	Royal Bank of Scotland	SOCIETE GENERALE	Standard Chartered
Climate Change Acknowledgement	✓	✓	✓	✓	✓	✓
Coal Financing	No longer financing coal	No financing of coal projects located in non-OECD countries	No financing of coal projects located in non-OECD countries	No financing of companies with 40% coal in their generation profile	No financing of coal projects located in non-OECD countries	No financing coal projects
New Offshore O&G Projects	Will not finance upstream oil & gas after 2019	No financing support in the Arctic	No financing support in the Arctic	Only finance O&G companies with compliance with international and have systems to manage ESE risks	No financing support in the Arctic. Upstream clients are expected to address limitation of flaring.	No financing support in the Arctic
ESE* Risk Management Framework	✓	✓	✓	✓	✓	✓

Can this be the start of the trend similar to the termination of coal plants financing?

Similar emergence of substitutes for the O&G sector is yet to find, but the risks of stricter financing terms and potentially higher financing rates remain existent

Source: Wood Mackenzie, various banks websites

"Note: ESE: Environmental, Social and Ethical

As ESG factors go mainstream, climate-conscious investors are leading a charge for action within companies

Demand for greater transparency and recognition of risks presents potential new cost burdens, but also competitive advantages to those that can get it right

Global asset managers considering ESG in investment decisions

80%

Emissions pressure - Climate Action 100+

**$35 trillion**$_{AUM}$

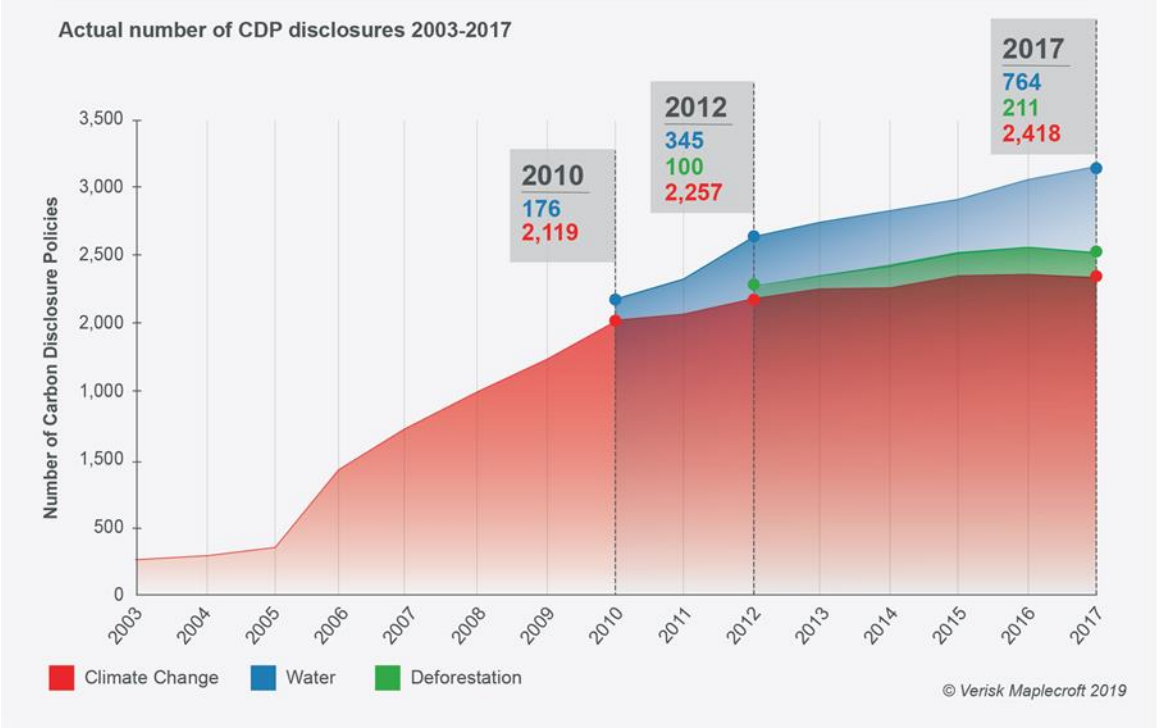
Shareholder climate policy advocacy pressure

E&S shareholder resolutions vs total

50%

Growing calls for transparency of indicators when preparing for TCFD

Scope 3 scrutiny, wider value chain assurance



Amel Zadeh, A, and Serafeim, G., 2017, Climate Action 100+, Eccles, R.G and Klimenko, S., 2019 HBR (US only, 2017 figures), CoEPB 2019.

And even gas projects may not escape investor scrutiny and pressure

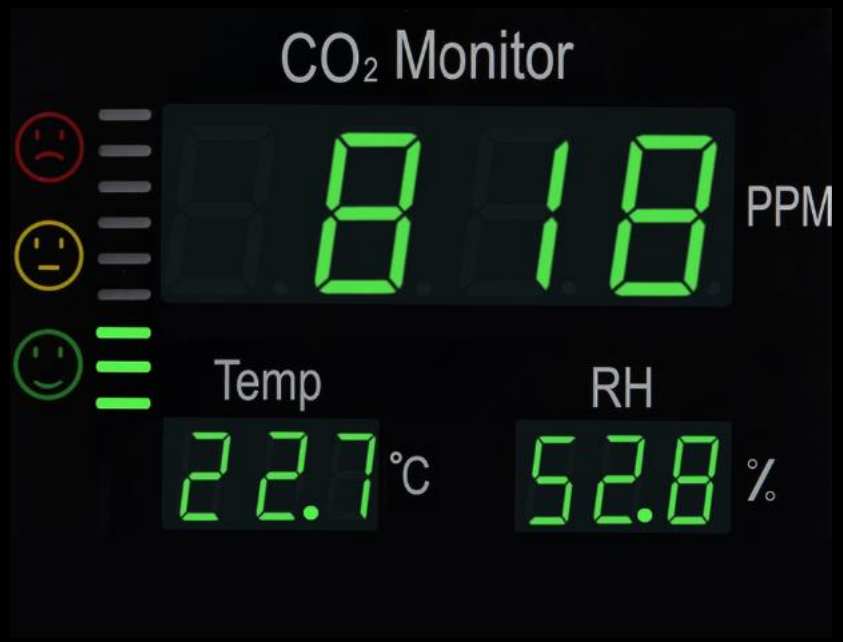
Lending criteria to natural gas are likely to be strengthened or even challenged completely

"The Bank will have a clear position not to support gas production, infrastructure dedicated to natural gas (networks, liquefied natural gas terminals, storage), and power generation or heat production from fossil fuel sources (including gas)"

European Investment Bank
2019 draft energy lending policy

Gas is good compared to other fossil fuels but is it good enough?

Increasing focus on but inconsistent measurement of emissions across the value chain



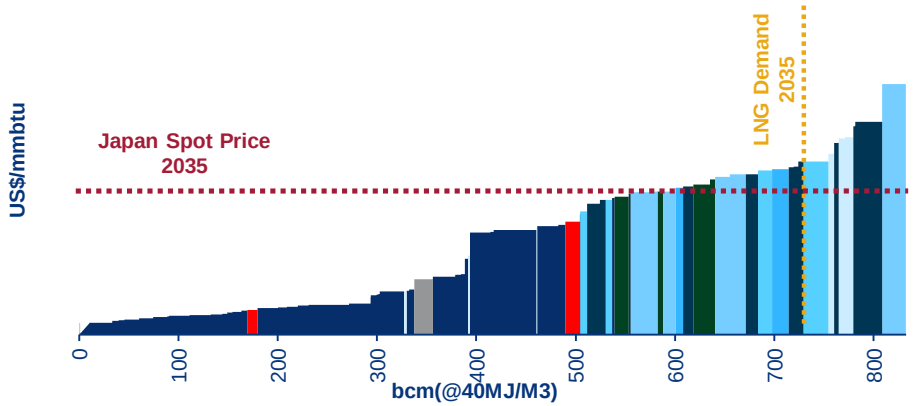
What gets measured gets managed

Peter Drucker

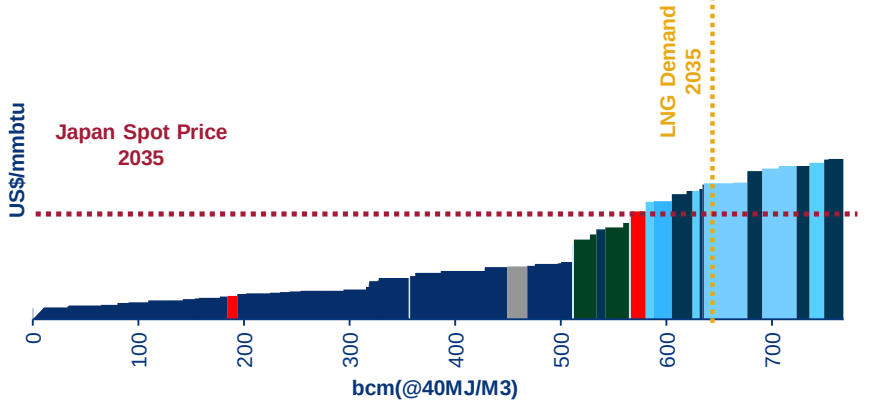
Plotting the global cost curve can highlight how competitive assets are in each year under different climate scenarios

Illustrative

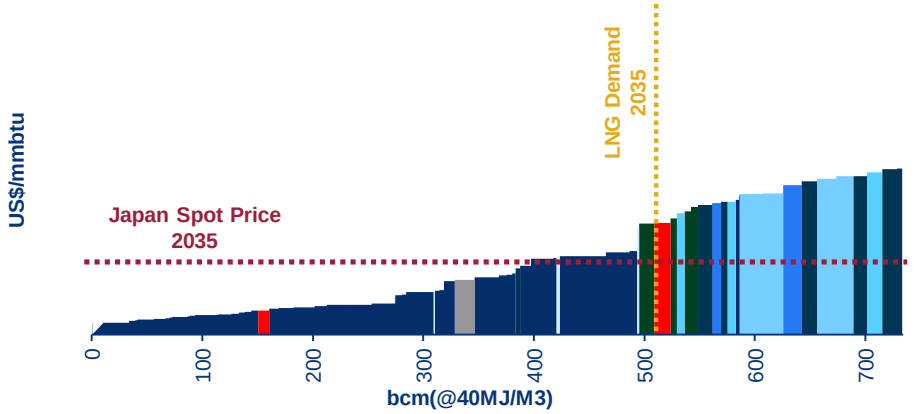
2030 LNG Cost Curve – Scenario 1



2030 LNG Cost Curve – Scenario 2



2030 LNG Cost Curve – Scenario 3

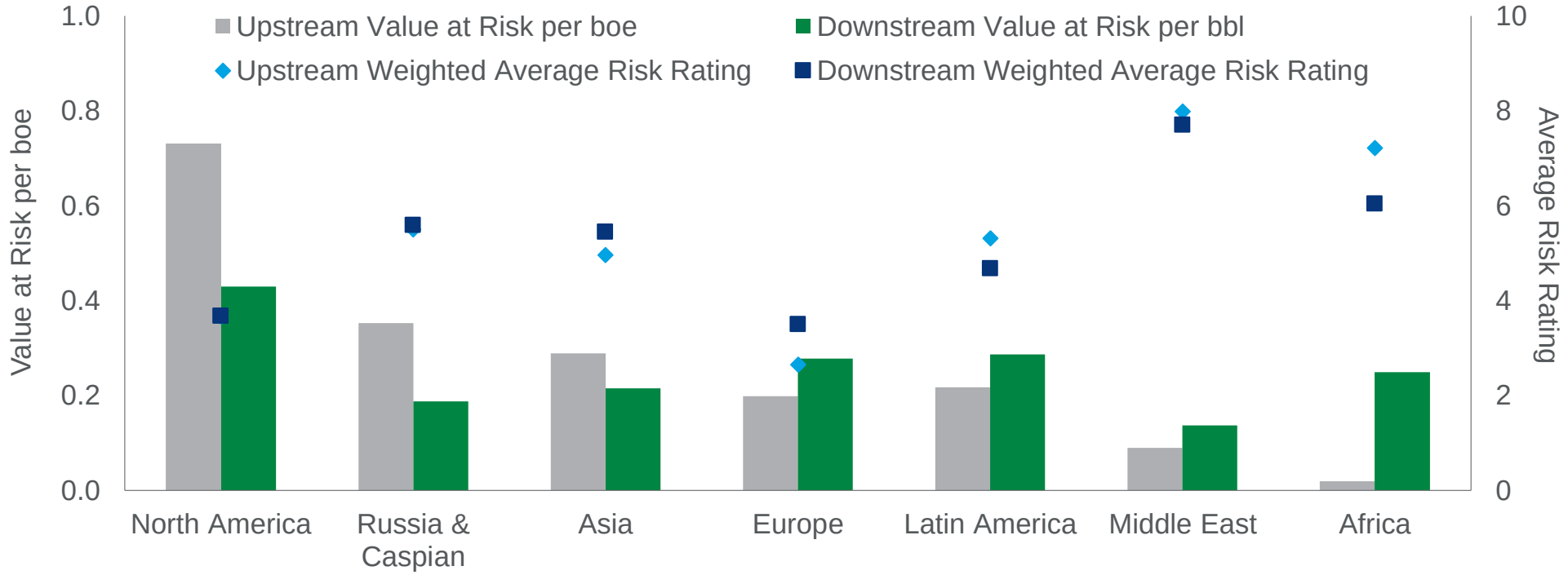


Illustrative – source Wood Mackenzie Consulting

Carbon risk can impact value

Companies are increasingly assessing carbon risk in their investment appraisals

Value at risk per unit versus average risk rating by region



Source: Wood Mackenzie Carbon Benchmarking Multiclient

Where could this journey go for Australia's oil and gas?

CLOSING REMARKS

Wood Mackenzie

A Verisk Business

Chris Graham

Vice President – Energy Consulting Australia

Biography

Chris leads business development for Wood Mackenzie's Australasia energy consulting practice. He has been with Woodmac for twelve years in a variety of analytical, leadership and commercial roles, across its upstream oil and gas, LNG and energy markets research and consulting.

Chris' work focuses on supporting the sustainable growth of resource sector clients and governments in Australia, PNG, Timor Leste and New Zealand.

He directs and provides expert input into a number of Woodmac's core consulting offerings including energy transition and corporate strategy design, growth opportunity screenings, fuel procurement, price reviews and performance benchmarking projects.

He has an MSc with distinction in Environmental Economics from the University of Edinburgh in Scotland and prior to Woodmac worked for KPMG in Madrid, Spain, supporting its audit and risk advisory departments for its energy sector clients.

chris.graham@woodmac.com

+ 61 2 8224 8817

@chris_graham01

Your questions answered

Wood Mackenzie Consulting

Gas & LNG

- What's the highest value option for monetising my gas resources?
- Where are global gas prices heading and what are the price drivers?
- How will different carbon outlooks impact potential demand and pricing of natural gas in global and local markets?
- How will electric vehicles impact power and subsequently gas demand?
- What is the best approach to procuring gas/electricity supplies?
- What scope is there for renegotiating price in a gas sales agreement?
- Is a gas infrastructure project commercially viable/attractive?

Power, Renewables and New Energies

- How might markets evolve under different carbon regimes and scenarios?
- How will evolving technologies affecting industry structure and competitive positioning?
- How can utilities best position themselves to succeed amidst growing adoption of electric vehicles?
- How do lifecycle emissions of different asset types compare?
- How can I achieve key performance metrics related to the adoption of emissions targets, internal carbon pricing and adjustment of portfolio composition?
- What are the key considerations in opportunity identification and M&A due diligence of new energies?

Upstream and Corporate

- How can I competitively position my company or asset base for the future?
- Is my portfolio robust to changes in the external environment, and which assets might be stranded under different carbon-constrained scenarios?
- How will different carbon-constrained scenarios impact my competitors' portfolios?
- How can I evaluate the strategic options for my business and what are the key success factors to drive value creation while limiting risk in a low-carbon future?
- What market entry/exit/portfolio strategies are appropriate?
- What is the fair market value of my portfolio or of a potential acquisition?

Downstream

- How will fuel efficiency, regulation or substitution (EVs) affect my product demand?
- Which assets are best positioned for success over the coming decades and how do mine compare against my competitors?
- How can I improve commercial performance of my asset?
- What is the commercial feasibility of a refinery or petrochemical project investment?
- How will renewables affect demand along different segments of the value chain?

Disclaimer

Strictly Private & Confidential

Europe	+44 131 243 4400
Americas	+1 713 470 1600
Asia Pacific	+65 6518 0800
Email	contactus@woodmac.com
Website	www.woodmac.com