Hazer Group Ltd (ASX:HZR)

Politics support a hydrogen future

15 May 2019

Hazer Group Limited (ASX:HZR) is adopting a multi-prong approach to commercialising its proprietary Hazer Process – the conversion, at moderate temperature and pressure, of natural gas into hydrogen and graphite, using iron ore as a process catalyst.

Hydrogen-focused path

In September 2018, HZR successfully trialled the Hazer Process in an independently designed and operated external Fluidised Bed Reactor (FBR-EXT). The FBR-EXT process is representative of a typical FBR design in industry and is focused on the production of hydrogen, with graphite as a co-product. In the March 2019 quarter, HZR finalised a FEED study for a A$10m Commercial Demonstration Plant (CDP) and completed a concept study for a A$35m commercial scale plant (2,500tpa hydrogen, 8,750tpa graphite). Discussions with potential offtake partners, feedstock (biogas) suppliers and funding partners are currently taking place

Labor and Greens carbon emission reduction policies: good for hydrogen

The 2019 Australian federal election takes place on Saturday May 18… it will be a close thing. Latest opinion polls from Roy Morgan Research (carried out between 10-12 May) place the Coalition ahead with 38.5%, with the ALP at 35.5%, and The Greens and ONP at 10% and 4% respectively. So, it looks like an ALP/Greens coalition might win the day. Certainly, going by Fortescue Metal's (ASX:FMG) surprise announcement of a fully franked special dividend of 60cps, it appears that Andrew Forrest believes that the ALP (or an ALP/Greens alliance) will be first past the post, and is looking to beat the ALP's proposed 30 June 2019 franking credit ban.

Both the ALP and Greens have announced environmental policies which include significant reductions to the country's carbon emissions via an accelerated transition from fossil fuel to renewable energy. The ALP has proposed a target of 50% of electricity generation from renewable sources by 2030 and 50% of new vehicle sales to be electric by 2030. The Greens are even more ambitious and propose 100% of electricity generation to come from renewable energy sources and 100% of new cars to be electric by 2030.

Hydrogen, along with lithium batteries, solar panels and renewable energy from the grid, will undoubtedly play an important role in any hybrid clean energy system. Hydrogen can be used directly as a (vehicle) fuel, injected into the natural gas supply network, or converted back to electricity in a fuel cell. We note that the ALP has a A$1bn National Hydrogen Plan to develop the country's hydrogen industry; the Plan is focused primarily on "green hydrogen" - the production of hydrogen via the electrolysis of water using "green" electrical energy i.e. solar/wind. However, we think it reasonable to assume that HZR's zero/low carbon emission process, which has an advantage of modular or scaled production, will be a participant in any broader country-wide hydrogen initiative.

Risk-adjusted SOTP target price: A$0.45ps

Our estimated risk-weighted SOTP equity value for HZR is A$43m, equivalent to A$0.45ps (@ 97m shares). **We maintain a Speculative Buy (Higher Risk) recommendation.** We see further significant upside potential as the group's PTR and FBR projects are advanced, and as our deep risk discounts of 50% and 90% respectively are unwound.

Share Price: A$0.32

Target Price: A$0.45

Target upside: 41%

Recommendation
Speculative Buy

Risk Assessment
Higher

Chemicals

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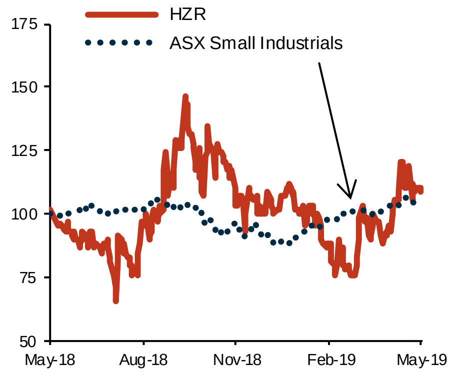
Hazer Group Ltd	
ASX Code	HZR
52 week range (A$cps)	A$0.19-A$0.45
Market Cap (ASm)	31
Fully diluted no. of shares (m)	97
Av Daily Turnover (shares)	187k
ASX All Ordinaries	6,341
FY19E BV per share (A$c)	5.9c
FY19E EPS (A$c)	-3.7c
FY19E Net (Debt)/Cash (A$m)	4.8

Relative price performance



Financial Statements

HazerGroup Limited
Year ending June

Profit & Loss Statement (A$M)	FY18A	FY19E	FY20E	FY21E	FY22E
Revenue / Royalty income	0.0	0.0	0.1	1.4	17.3
Gas feedstocks costs	0.0	0.0	0.0	0.0	0.0
Iron ore catalyst/conversion costs	0.0	0.0	0.0	0.0	0.0
Corporate/Other costs	(5.1)	(5.3)	(5.5)	(5.8)	(6.1)
EBITDA	**(5.1)**	**(5.3)**	**(5.4)**	**(4.4)**	**11.2**
Depreciation & Amortisation	(0.6)	0.0	0.0	0.0	0.0
Operating profit	**(5.7)**	**(5.3)**	**(5.4)**	**(4.4)**	**11.2**
NOI (R&D rebate and share payment)	(5.3)	1.5	0.75	0.80	0.85
EBIT	**(11.0)**	**(3.8)**	**(4.7)**	**(3.6)**	**12.0**
Interest income	0.0	0.2	0.1	0.1	0.1
Interest expense	(0.0)	0.0	(0.3)	(0.9)	(0.9)
Tax expense	0.0	0.0	0.0	0.0	0.0
Reported NPAT	(11.0)	(3.6)	(4.8)	(4.4)	11.2
Normalised NPAT	**(11.0)**	**(3.6)**	**(4.8)**	**(4.4)**	**11.2**
EBITDA Margin (%)	na	na	na	na	65%
Operating profit margin (%)	na	na	na	na	65%
EPS Reported (A$c)	(7.0)	(3.7)	(5.0)	(4.5)	11.6
EPS Normalised (A$c)	(7.0)	(3.7)	(5.0)	(4.5)	11.6
EPS growth (%)	na	na	na	na	na
DPS - Declared (A$c)	0.0	0.0	0.0	0.0	0.0
YE no. shares (m)	89	97	97	97	97
YE no. of fuly-diluted shares (m)	158	97	97	97	97

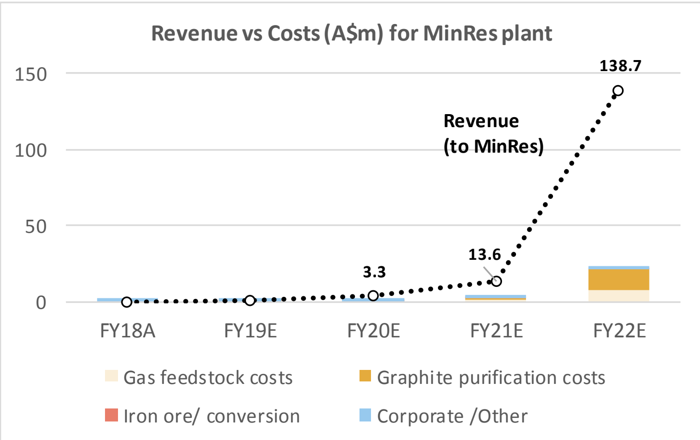
Cash Flow Statement (A$M)	FY18A	FY19E	FY20E	FY21E	FY22E
EBITDA	(5.1)	(5.3)	(5.4)	(4.4)	11.2
Investment in working capital	(0.3)	0.0	(0.0)	(0.3)	(3.9)
Tax expense	0.0	0.0	0.0	0.0	0.0
Operating Cash Flow	**(5.3)**	**(5.3)**	**(5.4)**	**(4.7)**	**7.2**
Capex	(0.5)	(0.3)	(0.3)	(0.3)	(0.3)
Other investments	0.0	0.0	0.0	0.0	0.0
Investing Cash Flow	**(0.5)**	**(0.3)**	**(0.3)**	**(0.3)**	**(0.3)**
Net interest received / (paid)	0.0	0.2	(0.2)	(0.8)	(0.8)
Debt draw down / (repayment)	0.0	0.0	5.0	5.0	(5.0)
Dividends paid	0.0	0.0	0.0	0.0	0.0
Equity raised / (repaid)	2.9	2.5	0.0	0.0	0.0
Financing Cash Flow	**2.9**	**2.6**	**4.8**	**4.2**	**(5.8)**
NOI	0.9	1.5	0.8	0.8	0.9
Inc/(Dec) in Cash	**(2.0)**	**(1.4)**	**(0.1)**	**0.0**	**2.0**

Balance Sheet (A$M)	FY18A	FY19E	FY20E	FY21E	FY22E
Cash & Equivalents	6.2	4.8	4.7	4.7	6.7
Receivables	0.0	0.0	0.0	0.3	3.3
Inventories	0.0	0.0	0.0	0.1	1.0
Other Current Assets	0.1	0.1	0.1	0.1	0.1
PPE	0.8	1.0	1.3	1.6	1.9
Deferred tax asset	0.0	0.0	0.0	0.0	0.0
Other Non Current Assets	0.0	0.0	0.0	0.0	0.0
Total Assets	**7.1**	**6.0**	**6.1**	**6.8**	**13.0**
Payables and other current Liabilities	0.2	0.2	0.2	0.2	0.2
Short Term Debt	0.0	0.0	5.0	10.0	5.0
Long Term Debt	0.0	0.0	0.0	0.0	0.0
Other Non Current Liabilities	0.0	0.0	0.0	0.0	0.0
Total Liabilities	**0.2**	**0.2**	**5.2**	**10.2**	**5.2**
Total Equity	**6.9**	**5.7**	**0.9**	**(3.4)**	**7.8**
Net Cash/(Debt)	6.2	4.8	(0.3)	(5.3)	1.7

Substantial Shareholders	%	Date
Mineral Resources Limited	11.7	
Point at Infinity Pty Ltd	7.4	Aug-18
OOFY Prosser Pty Ltd	6.7	

Source: Company, IRESS, State One Stockbroking forecasts

Royalty income assumptions	FY18A	FY19E	FY20E	FY21E	FY22E
Graphite production (94%) (tonnes)	na	50	313	1,250	12,500
Graphite sales (99.9%) (tonnes)	na	40	250	1,000	10,000
Graphite price (US$/t)	na	10,000	10,000	10,200	10,404
Graphite revenue (US$m)	**na**	**0.4**	**2.5**	**10.2**	**104.0**
Hydrogen sales (tonnes)	-	-	-	-	-
Hydrogen price (US$/t)	n/c	n/c	n/c	n/c	n/c
Hydrogen revenue (US$m)	-	-	-	-	-
Revenue (total) (A$m)	na	0.4	2.5	10.2	104.0
AUD:USD exchange rate	na	0.75	0.75	0.75	0.75
Revenue (total) (A$m)	**na**	**0.5**	**3.3**	**13.6**	**138.7**
Natural gas price (A$/GJ)	na	8	8	8	8
Gas feedstock required (tonnes)	na	72	453	1,812	18,116
Gas input costs (A$m)	*na*	*(0.0)*	*(0.2)*	*(0.8)*	*(8.0)*
Other costs (A$m)	*na*	*(2.1)*	*(2.4)*	*(3.4)*	*(15.7)*
Total costs (A$m)	na	(2.1)	(2.6)	(4.2)	(23.7)
EBITDA (A$m)	na	(1.6)	0.7	9.4	115.0
Royalty rate to HZR (%)	*na*	*15%*	*15%*	*15%*	*15%*
Royalty to HZR (A$m)	**na**	**-**	**0.1**	**1.4**	**17.3**



Leverage	FY18A	FY19E	FY20E	FY21E	FY22E
Net Debt/Equity	cash	cash	-35%	cash	cash
Gearing (ND/ND+E)	cash	cash	-5%	-78%	cash
Interest Cover (x)	na	na	-26.5	-4.6	15.5

Valuation Ratios (x)	FY18A	FY19E	FY20E	FY21E	FY22E
Normalised P/E	na	na	na	na	2.8
Price/OP Cash Flow	-6	-6	-5.7	-6.6	4.3
Book value per share (A$c)	4.4	5.9	0.9	-3.5	8.0
EV/EBITDA	-5	-5	-6	-8.1	2.5
ROE (%)	-160%	-62%	-526%	127%	144%

Risk-weighted SOTP target price	(A$m)	(A$ps)
NPV of technology licencing arrangements (TLA) with MIN (10ktpa G)	56	0.57
Discount (timing, royalty rate, operations, high purity graphite price)	*50%*	
Risk-weighted NPV of TLA with Mineral Resources (ASX:MIN)	28	0.29
NPV of FBR commercial plant (100% HZR) (8,750tpa G, 2,500tpa H)	86	0.89
Discount (timing, financing, operations, hydrogen price)	*90%*	
Risk-weighted NPV of FBR commercial plant	9	0.09
NPV of TLA with Primetals Technologies (for 1X 500ktpa methanol plant)	89	0.91
Discount (timing, royalty rate, operations)	*97.5%*	
Risk-weighted NPV of TLA with Primetals Technologies	2	0.02
FY19E net cash / (debt)	4.8	0.05
Risk-weighted group valuation and target share price	**43**	**0.45**
Current share price		*0.32*
% upside / (downside)		*40%*

Note: Per share valuations based on 97m quoted shares in issue

Recommendation and risks

Recommendation:

Speculative Buy
(Higher risk)

Risks to our earnings profile and target price include, but are not limited to:

- **Timing – MinRes**: Nearly 65% of our SOTP valuation is based on the estimated NPV of royalties associated with technology licencing arrangements with Mineral Resources (ASX: MIN). MinRes is a significant shareholder in HZR (at 13.5%), and in December 2017 signed a binding Co-operation Agreement with HZR. However, the precise nature of the licencing arrangements – including royalty rates to HZR - have not been disclosed.
- **Timing – FBR commercial plant:** A significant portion (20%) of our group valuation is based on the estimated NPV of sales of graphite and hydrogen from a FBR commercial plant. At this juncture, the plant is at the Concept Study stage; the timing, costings, and critically the financing, of the plant have still to be confirmed.
- **Operational/Technical**: The Hazer Process – converting natural gas to hydrogen and graphite using an iron ore catalyst - has been successfully demonstrated in laboratory-scale apparatus and at a pre-pilot plant level. Under the MoA with MinRes, initial commissioning of a 1tpa ultra-high purity graphite pilot plant is scheduled for the March quarter 2019. Success here will largely determine the timeline associated with scaling up production to 10,000tpa.
- **Natural gas costs:** The only input cost of significance in the Hazer Process is the cost of natural gas feedstock. We calculate that in the proposed modified process for MinRes (which will produce graphite only, not hydrogen and graphite), some 18,000t (960,000GJ) of natural gas is required to produce 10,000t of ultra-high purity graphite. At our base-case natural gas price of A$8/GJ (real), we calculate natural gas input costs will come to ~A$8m. Natural gas prices significantly higher (or lower) than forecast will reduce/increase margins.
- **Graphite price:** Our NPV_{10} for the MinRes royalty stream to HZR is particularly sensitive to realised prices for ultra-high purity graphite (99.9% C). Our base-case price assumption is US$10,000/t (real); this compares to current synthetic graphite prices of ~US$12,000-20,000/t and US$7,000-10,000/t for spherical coated natural graphite prices.
- **Hydrogen price:** Our NPV_{10} for the FBR commercial plant is particularly sensitive to realised prices for hydrogen. Our base-case price assumption is US$7,500/t. Note: hydrogen fuel retail prices in the US are currently between US$13,000-US$16,000/t.
- **Currency:** A stronger/weaker AUD:USD exchange rate relative to our base-case of US$0.75 will reduce earnings/increase earnings respectively.
- **Other:** Increased competition from new and existing technologies, regulatory risks, dependence upon key personnel,
- **Financial risk – the ability to fund the group's activities before forecast first material royalties from Mineral Resources are received in FY22E**.

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