



Buy

Current Price 1.34
Valuation 1.62

Wednesday, 16 March 2022

De Grey Mining Ltd (DEG)

Expectation and delivery

John Macdonald, Royce Haese

Quick Read

The apparent hurdles set by the market for De Grey are reasonably low and we think Mallina will do better than it is being given credit for, mainly through further exploration success.

Main points

Pre feas. preview: Based on our read of the reported data and the PFS process Argonaut predicts DEG might estimate about 8-10Mozs as a headline total resource estimate for Hemi alone (6.8Mozs in June 21) and 10-12Mozs for the Mallina project (9.0Mozs in June 2021). We anticipate up to 2.0Mozs to be added to total resources at Diucon and Eagle with the other deposits chipping in with mainly deeper material. The public data we have is incomplete so our figures are speculative.

The real battle is over how much will be indicated. In June 2021 indicated comprised 2.8 of the 6.8Mozs, with about 3.8 included in the mine plan. This time +70% of the mine plan needs to be indicated. If drilling results can support 5Mozs in indicated, then gold in the plan from Hemi could be 5.0 to 6.0 assuming some losses on conversion. With 0.5-1.0 Mozs from regional deposits it would become a 5.5-7.0Moz mine plan, compared to 4.6Mozs in the scoping study. The group's performance share hurdles of 12Mozs in estimated resource, 500kozspa and a 12 year mine life in a DFS by 2024 seem well in sight. Early year ore grade might improve with Diucon and Eagle's higher grade zones, depending on bottom cut-offs. From a qualitative point of view if grade goes up and strip ratio doesn't it's a good sign for the project.

Market expectations: Industry costs are on the rise, but so is the gold price. Argonaut estimates that the current share price aligns with market expectations of:

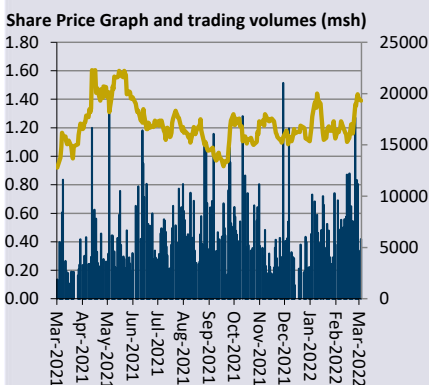
- A\$1.2B spent getting into production, from June 2022.
- 5.2Mozs produced over the life of mine (no additional potential).
- AISC of about half the gold price.

As described above De Grey is aiming for more ambitious outcomes. If the Company can convince the market that better outcomes are achievable the share price will go up. Argonaut thinks Mallina can deliver better than the market expects, mainly by adding more quality ounces to the plan through future discoveries. We also think potential development partners will stress test Mallina on our three criteria and if necessary, act as a bridge to fair value.

Recommendation

Argonaut's valuation is essentially unchanged at \$1.62 per share. The gold price has moved up, but we wait to see the associated cost landscape before changing our settings. We remain on the lookout for signs of additional new discoveries to drive the share price. Drilling in the second half of calendar 2022 will be directed at new targets.

Code:	DEG		
Sector:	Materials		
* All figures in AUD unless stated otherwise			
Shares on Issue (M):	1,409		
Market Cap (\$M):	1,888		
Net cash (\$M Dec 2021)	125		
Enterprise value (\$M):	1,773		
52 wk High/Low (ps):	\$1.61	\$0.92	
12m av. daily vol. (Mshs):	6.15		
Key Metrics			
	FY24e	FY25e	FY26e
P/E (x)	0.0	10.4	4.8
EV/EBITDA (x)	-63.3	6.1	2.9
Financials:			
	FY24e	FY25e	FY26e
Revenue (\$M)	0	577	1,155
EBIT (\$M)	-28	236	497
NPAT (A\$M)	-28	182	391
Net assets (\$M)	48	306	664
Op CF (\$M)	-28	261	498
Per share data:			
EPS (c)	-2.0	12.9	27.8
Dividend (cps)	0.0	0.0	0.0
Yield (%)	-	-	-
CF/Share (cps)	-2.0	18.5	35.4
Prod (koz Au)	0	239	478



Please refer to important disclosures at the end of the report (from page 8)



De Grey Mining

Equities Research

Analyst: John Macdonald

Recommendation	Buy
Current Price	\$1.34
Valuation	\$1.62

Sector	Metals & Mining
Issued Capital (Mshs)	1,409
Market Cap (M)	\$1,888

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Profit & loss (\$M) 30 June	2022E	2023E	2024E	2025E
Sales Revenue	0	0	0	577
+ Other income/forwards	0	0	0	0
- Operating costs	0	0	0	-237
- Royalties	0	0	0	-23
- Corporate & administration	-10	-28	-28	-28
Total Costs	-10	-28	-28	-289
EBITDA	-10	-28	-28	289
- margin	0%	0%	0%	50%
- D&A	0	0	0	-53
EBIT	-10	-28	-28	236
+ Finance Income/Expense	0	0	-7	-9
PBT	-10	-28	-35	227
- Tax expense	1	6	7	-45
- Impairments and other				
NPAT	-9	-22	-28	182

Cash flow (\$M)	2022E	2023E	2024E	2025E
+ Revenue	0	0	0	577
- Cash costs	-10	-28	-28	-289
- Forwards	0	0	0	0
-Tax payments	1	0	7	-19
+ Interest & other	0	0	-7	-9
Operating activities	-10	-28	-28	261
- Property, plant, mine devel.	-89	-42	-894	-12
- Exploration	-4	-32	-20	-20
Investment activities	-93	-74	-914	-32
+ Borrowings	0	0	900	-120
- Dividends	0	0	0	0
+ Equity	126	150	0	0
Financing activities	126	150	900	-120
Cash change	24	48	-42	110

Balance sheet	2022E	2023E	2024E	2025E
Cash & bullion	85	133	90	200
Other Current Assets	0	0	0	0
Total current assets	85	133	90	200
Property, plant & equip.	167	209	1103	1062
Investments/other	0	0	0	0
Total non-curr. assets	167	209	1103	1062
Total assets	252	342	1194	1262
Trade payables	12	13	35	73
Short term borrowings	0	0	120	120
Other	12	13	181	73
Total curr. liabilities	24	26	216	146
Long term borrowings	0	0	780	660
Other	0	0	0	0
Total non-curr. liabil.	0	0	780	660
Total liabilities	24	26	996	806
Net assets	228	316	198	456

Shares	2022E	2023E	2024E	2025E
New shs issued/exerciseable	118	101*	2	3
Average issue price	1.07	1.49*	0.00	0.00
Ordinary shares - end	1409	1510	1512	1514
Diluted shares - end	1414	1514	1514	1514

*Argonaut assumption

Financial ratios		2024E	2025E	2026E	2027E
GCFPS	Ac	-2.0	18.5	35.4	35.3
CFR	X	0.0	7.2	3.8	3.8
EPS	Ac	-2.0	12.9	27.8	27.6
PER	X	0.0	10.4	4.8	4.9
DPS	Ac	0.0	0.0	0.0	0.1
Yield	%	0.0%	0.0%	0.0%	5.2%
Interest cover	x	-4.1	27.6	67.6	80.1
ROCE	%	-50%	22%	51%	57%
ROE	%	-18%	50%	60%	51%
Gearing	%	394%	145%	66%	57%

Operations summary	2024E	2025E	2026E	2027E
Mallina project				
Ore processed (Mt)	0.0	5.0	10.0	10.0
Head grade (g/t)	0.00	1.60	1.60	1.60
Met. recovery	0.00	0.93	0.93	0.93
Gold prodn (koz)	0	239	478	478
Cost per milled tonne (A\$/t)	0	47	48	48
Cash costs pre royalty (A\$/oz)	0	1089	1094	1100
All in sustaining costs (A\$/oz)	0	1213	1216	1220
Growth capital (\$M)	893	0	0	0

Price assumptions	2024E	2025E	2026E	2027E
AUDUSD	0.73	0.73	0.73	0.73
Gold	1775	1750	1750	1750
Gold	2448	2414	2414	2414

Valuation summary	A\$M	A\$/sh
Mallina project 6% real after tax DR	1864	1.32
Exploration, all sites	559	0.40
Corporate overheads	-130	-0.09
Cash	71	0.05
Debt	0	0.00
Tax benefit	15	0.01
Hedging	0	0.00
Option/equity dilution	-102	-0.07
NAV	2,277	1.62

Directors, management		
Simon Lill	Non-Executive Chairman	
Glenn Jardine	Managing Director	
Andy Beckwith	Executive Director	
Peter Hood	Non-Executive Director	
Ed Eshuys	Non-Executive Director	
Bruce Parncutt	Non-Executive Director	
Samantha Hogg	Non-Executive Director	
Top shareholders	M shs	%
DGO Gold Limited	203.6	14.4
Jupiter Investment Management	99.0	7.0
Van Eck	65.0	4.6

Resources June '21	Mt	g/t Au	Kozs	Mkt cap/oz
Mallina gold project	229.7	1.21	8,939	211
Measured & indicated	84.4	1.40	3,799	
Inferred	145.3	1.10	5,139	
Argonaut model Jun '21	Mt	g/t Au	Kozs	
TOTAL INVENTORY	120.0	1.46	5,624	336
Hemi open pit	95.0	1.42	4,338	
Satellite open pit	25.0	1.60	1,286	


Market expectations, as at 15 March 2022

We argue the market accepts the following as realistic assumptions when it comes to gold company share prices:

- Maximum 30% margins above total costs at the corporate level. No Australian gold company has done better in the last five years for an extended period, and we suspect this is the best shareholders can expect over the long run. Outperformance does not come from wider margins, but from finding and mining more gold at the same margin and/or by acquiring/developing new projects, also at the same margin.
- AISC will average 65% of gold company total costs. By total costs we mean all payments to outside parties other than shareholders. Companies have consistently averaged 65% AISC/CAIC for the last 5 years, and we think the market accepts this.
- The spot gold price is best used to price shares.
- The gold price will look after you. No need to discount cash flows or inflate costs because gold will adjust. Mine life correlates to value as much as next year's cash flow does. This might change with economic circumstances, but it holds for now.

By taking the above on board we model what De Grey might look like in real terms once it gets into production, if the market is right today.

Fig. 1: Check model run at spot gold, DEG share price of \$1.34 (as at 15 March 2022). If the market expects 30% margin above total costs, it also expects 5.2Mozs to be produced.

					
		A\$/oz	2711	2711	2711
		US\$/oz	1960	1960	1960
		Exch rate	0.723	0.723	0.723
De Grey			<i>June 2022</i>	<i>Post construction</i>	<i>1st quarter</i>
Gold production per quarter	kozs				125
Reported AISC	A\$/oz				1350
Net cash & bullion (EOP)	\$M		75	-1125	-1046
Cost to get to first prodn	\$M			1200	
Total costs	\$M				260
CAIC	A\$/oz				2077
S/holder cash build/qtr	\$M				79
AISC/CAIC					65%
Market Capitalisation	\$M		1871	1871	1871
EV	\$M		1796	2996	2917
Cash banked/EV					2.7%
Margin					31%
Expected margin			30%	30%	30%
Expected reserve	kozs		5205	5205	5067

Source: Argonaut research

Metallurgy and analogs

Early tests of Brolga, Falcon and Crow material at bench scale point to a process design including flotation-pressure oxidation, and cyanidation of both the concentrate and the concentrate tails, and +90% total recovery. Prior to the discoveries at Hemi, De Grey was considering 50-100ktpa POX with Withnell sulphide ore as base load feed (90% total recovery, 9% mass pull). Withnell is 30km from Hemi and will now form a satellite proposal to Hemi.

Hemi has significant oxide and transition components amenable to direct cyanidation. Depth of oxidation is typically 80-100m, suggesting up to 30-40% of mineralised material discovered so far at Hemi could be direct CIL feed rather than POX. Mt Berghaus and Wingina (10-20km from Hemi) have estimated M&I oxide resources of 240kcozs (1.7g/t). Withnell has an oxide component of 45kcozs, M&I. Mallina (45km from Hemi) has 30kcozs oxide M&I resources (1.3 g/t). Toweranna's 290kcozs M&I (4.3Mt at 2.1 g/t Au open pit, 60km from Hemi) was assessed in mid-2019 as free milling. Based on the prevalence of oxide and free milling ores throughout the project we assume 25% of the mine inventory is direct CIL feed.

The oxidation processing design is still to be finalised. Pressure oxidation remains our base case because practical and cost precedents are available.

Oxidation of pyrite and arsenic bearing pyrite involves complex chemical interactions. There is considerable variation between the process flow sheets of operating POX gold projects.

The Macraes gold mine (operated by Oceana Gold) uses POX of a float concentrate. Macraes has a mass pull of 2.5% from 4-6Mtpa crushed and milled (120ktpa POX). The flotation tailings do not undergo CIL treatment. The concentrate is ultrafine ground to 80% passing 13 microns before CIL. Total processing costs are NZ\$10.70/t ore, assisted by a power cost of NZc9/kWh. The float recovery is 86%, CIL 95% for total of 82% recovery.

At the Copley gold mine in Turkey (operated by SSR Mining) a relatively high mass pull of 25%, containing 70% of the gold, initially precluded flotation concentration. The project was set up on whole ore POX, and modified in 2019 to partial flotation, part direct ore POX with a sulphide ore capacity of 2.8Mtpa. Total recovery is 98%. Processing costs of US\$34/t of ore lead to use of a 1.05 g/t cut-off on sulphide material.

Lihir was set up initially as a total pressure oxidation of flotation concentrates designed to recover 94-96% of the gold. The circuit was redesigned to partial oxidation in 2014 upon recognition that most of the pyrite in the ore is barren, and not worth oxidising once the more reactive arsenic and gold bearing pyrite is in solution. Newcrest plans for gold recovery of 81-82%. In 2020 US\$33/t was used as the marginal (ex-mining) cost to determine ore v waste in the pit shell. 15.5Mtpa ore throughput is planned from FY2024. On hard blast material flotation recovers 93% of the gold in 30% of the material. Autoclave feed is a mix of whole ore and concentrate. Lime consumption is about 15kg/t ore.



Fig. 2: Hemi intercept bubbles from reported drill results to 30 June 2021 (top) and 15 March 2022 (bottom).



Source: Argonaut Research, DEG announcements

Valuation

Argonaut's De Grey valuation is based on a discounted cash flow valuation of the Mallina project, and an informal estimate of exploration assets value and nominal assessment of De Grey's other assets and liabilities, as at June 2022. Assumptions about Mallina's future development and cash flows are based on De Grey's October 2021 scoping study, with differences in timing and price settings, and presumed addition of material in the base mine plan above scoping study assumptions. A real, after tax discount rate of 6% is used. Future tax benefits are added back as an estimate of present value. Argonaut's base case commodity and currency forecasts, set out in the summary table, are used to estimate the base case NAV.

Fig. 3: Valuation summary, projected June 2022

Valuation summary	A\$M	A\$/sh
Mallina project 6% real after tax DR	1864	1.32
Exploration, all sites	559	0.40
Corporate overheads	-130	-0.09
Cash	71	0.05
Debt	0	0.00
Tax benefit	15	0.01
Hedging	0	0.00
Option/equity dilution	-102	-0.07
NAV	2,277	1.62

Source: Argonaut research

Key risks to valuation

Mineable inventory

Argonaut's estimates of mineable inventories at Mallina are based on De Grey's scoping study figures, plus 10% to account for additional potential subject to further drilling.

Metallurgy

De Grey's early tests indicate high rates of recovery using conventional processes. Elements of the process design are undecided. Other large scale operations with successful operating records use the technologies available to and being considered by De Grey.

Gold price

Our estimates of De Grey cash flows are sensitive to the gold price. Each 10% change in the Australian dollar gold price changes our valuation by 20%.

Costs.

Cost assumptions are based on scoping study estimates. Scoping study cost accuracy is +/- 35%.

Exploration success

De Grey may invest its cash and any future free cash flows in exploration and/or other mineral asset acquisitions. Valuation assumes that future exploration and investments achieve acceptable returns. Subjective value is attributed to exploration assets at Mallina.

Interest rates/discount rates

Argonaut takes cash flow risk into account when choosing discount rates for different projects. Our valuation is sensitive to the discount rate used. A 2% change in the (after tax) discount rate makes a 16-20% difference to our De Grey valuation.



RESEARCH:

Ian Christie | Head of Research
+61 8 9224 6872 ichristie@argonaut.com

John Macdonald | Director, Metals & Mining Research
+61 8 9224 6835 jmacdonald@argonaut.com

George Ross | Analyst, Metals & Mining Research
+61 8 9224 6840 georger@argonaut.com

Royce Haese | Analyst, Metals & Mining Research
+61 8 9224 6869 rhaese@argonaut.com

INSTITUTIONAL SALES:

Chris Wippl | Executive Director, Head of Institutional Sales
+61 8 9224 6875 cwippl@argonaut.com

Damian Rooney | Director Institutional Research Sales
+61 8 9224 6862 drooney@argonaut.com

Josh Welch | Institutional Research Sales
+61 8 9224 6868 jwelch@argonaut.com

George Ogilvie | Institutional Research Sales
+61 8 9224 6871 gogilvie@argonaut.com

John Santul | Consultant, Sales & Research
+61 8 9224 6859 jsantul@argonaut.com

CORPORATE AND PRIVATE CLIENT SALES:

Glen Colgan | Managing Director, Desk Manager
+61 8 9224 6874 gcolgan@argonaut.com

Kevin Johnson | Executive Director, Corporate Stockbroking
+61 8 9224 6880 kjohnson@argonaut.com

James McGlew | Executive Director, Corporate Stockbroking
+61 8 9224 6866 jmcglew@argonaut.com

Ben Willoughby | Senior Dealer, Corporate Stockbroking
+61 8 9224 6876 bwiloughby@argonaut.com

David Keogh | Senior Dealer, Corporate Stockbroking
+61 8 9224 6852, dkeogh@argonaut.com

Geoff Barnesby-Johnson | Senior Dealer, Corporate Stockbroking
+61 8 9224 6854 bj@argonaut.com

Philip Grant | Senior Dealer, Corporate Stockbroking
+61 8 9224 6834, pgrant@argonaut.com

Rob Healy | Dealer, Private Clients
+61 8 9224 6873, rhealy@argonaut.com

James Massey | Dealer, Private Clients
+61 8 9224 6849 jmassey@argonaut.com

Cameron Prunster | Dealer, Private Clients
+61 8 9224 6853 cprunster@argonaut.com

Harry Massey | Dealer, Private Clients
+61 8 9224 6829, hmassey@argonaut.com

Jake Solomon | Dealer, Private Clients
+61 8 9224 6855, jsolomon@argonaut.com

Matej Mandic | Dealer, Private Clients
+61 8 9224 6887, mmandic@argonaut.com

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