

Buy

Current Price **\$1.22**
Valuation **\$1.64**

Code: **DEG**
Sector: **Materials**

* All figures in AUD unless stated otherwise

Shares on Issue (M):	1,288
Market Cap (\$M):	1,571
Net cash (\$M June 2021)	71
Enterprise value (\$M):	1,456
52 wk High/Low (ps):	\$1.61 \$0.81
12m av. daily vol. (Mshs):	5.73

Key Metrics

	FY24e	FY25e	FY26e
P/E (x)	0.0	8.5	4.1
EV/EBITDA (x)	-145.6	5.1	2.5

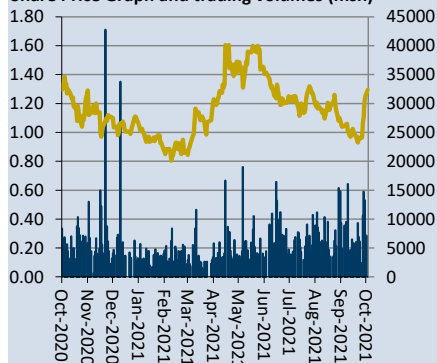
Financials:

	FY24e	FY25e	FY26e
Revenue (\$M)	0	558	1,116
EBIT (\$M)	-10	238	482
NPAT (A\$M)	-13	184	381
Net assets (\$M)	261	520	867
Op CF (\$M)	-13	259	482

Per share data:

EPS (c)	-1.0	14.3	29.6
Dividend (cps)	0.0	0.0	0.0
Yield (%)	-	-	-
CF/Share (cps)	-1.0	20.1	37.5
Prod (koz Au)	0.0	239.2	478.5

Share Price Graph and trading volumes (msh)



Please refer to important disclosures at end of the report (from page 7)

Wednesday, 13 October 2021

De Grey Mining Ltd (DEG)

Scoping study review

John Macdonald, Royce Haese

Quick Read

The Mallina scoping study sets the scene for a push to +450kozspa and the hitting zone of the major established gold miners.

Main points

First numbers: De Grey's Mallina Gold Project scoping study considers;

- An open pit mine inventory of 100Mt at 1.4 g/t (4.6Mozs contained), with an average strip ratio of 4.8:1 after \$58M pre-strip costs.
- Ore processing capacity of 10Mtpa.
- Capital cost estimate of \$835M (\$893M including pre-strip)
- Process recovery of 93%
- Average ore treatment costs of \$26/t
- Average mining costs of \$21/t ore (equivalent to \$3.60/t material earthmoving cost)
- Average annual gold production of 473koz in the first 5 years, peaking at over 500koz.

Relative to Argonaut's presumptions, annual throughput is higher (10Mtpa v 8Mtpa) capex is higher (\$893M v \$700M). Inventory grade (1.43g/t v 1.52g/t Argonaut), volume (100Mt v 98Mt Argonaut) and strip ratio (4.8:1 v 5.0:1 Argonaut) are similar.

The strip ratio/grade profile suggests De Grey has allowed for a better than average margin by not driving the pits too deep, or the block grade cutoffs too low.

Diucon and Eagle modelling were carried out before drilling extended these deposits along strike and at depth. Definition and resource extension drilling will test about 800koz of inferred mineralisation excluded from the plans.

International context: Of 35 gold projects worldwide capable of producing more than 400koz per year, three (including Mallina) are majority owned and operated by single project public companies. Mallina is the only proposed or producing +400kozspa gold project in Australia or North America not owned by one of Barrick, Newcrest, Newmont, Kirkland/Agnico, Northern Star or AngloGold Ashanti. Argonaut thinks De Grey and Mallina will be targeted by larger, established gold producers, and that the price will be less of an obstacle than assurance of outcome. De Grey management believes it can add further value, so an agreed deal is unlikely for now. However the time will come.

Recommendation

Argonaut's valuation is essentially unchanged at \$1.64 per share, with higher confidence, following the scoping study. De Grey's assessment that the project holds together at >400kozspa over ten years widens the range of corporate possibilities. Argonaut upgrades its recommendation from speculative buy to buy.

De Grey Mining

Equities Research

Analyst: John Macdonald

Recommendation **Buy**
 Current Price **\$1.22**
 Valuation **\$1.64**

Sector **Metals & Mining**
 Issued Capital (Mshs) **1,288**
 Market Cap (M) **\$1,571**

Wednesday, 13 October 2021

Profit & loss (\$M) 30 June	2022E	2023E	2024E	2025E
Sales Revenue	0	0	0	558
+ Other income/forwards	0	0	0	0
- Operating costs	0	0	0	-238
- Royalties	0	0	0	-22
- Corporate & administration	-10	-10	-10	-10
Total Costs	-10	-10	-10	-270
EBITDA	-10	-10	-10	288
- margin	0%	0%	0%	52%
- D&A	0	0	0	-50
EBIT	-10	-10	-10	238
+ Finance Income/Expense	0	0	-6	-8
PBT	-10	-10	-16	230
- Tax expense	1	2	3	-46
- Impairments and other				
NPAT	-9	-8	-13	184

Cash flow (\$M)	2022E	2023E	2024E	2025E
+ Revenue	0	0	0	558
- Cash costs	-10	-10	-10	-270
- Forwards	0	0	0	0
- Tax payments	1	0	3	-21
+ Interest & other	0	0	-6	-8
Operating activities	-10	-10	-13	259
- Property, plant, mine devel.	-41	-1	-893	-11
- Exploration	-4	-32	-20	-20
Investment activities	-45	-33	-913	-31
+ Borrowings	0	0	800	-120
- Dividends	0	0	0	0
+ Equity	1	300	0	0
Financing activities	1	300	800	-120
Cash change	-53	257	-126	109

Balance sheet	2022E	2023E	2024E	2025E
Cash & bullion	21	278	152	261
Other Current Assets	0	0	0	0
Total current assets	21	278	152	261
Property, plant & equip.	106	107	1000	960
Investments/other	0	0	0	0
Total non-curr. assets	106	107	1000	960
Total assets	127	385	1152	1221
Trade payables	7	5	32	70
Short term borrowings	0	0	120	120
Other	7	5	179	70
Total curr. liabilities	14	11	211	141
Long term borrowings	0	0	680	560
Other	0	0	0	0
Total non-curr. liabil.	0	0	680	560
Total liabilities	14	11	891	701
Net assets	113	374	261	520

Shares	2022E	2023E	2024E	2025E
New shs issued/exerciseable	4	201*	0	0
Average issue price	0.35	1.50*	0.00	0.00
Ordinary shares - end	1294	1495	1495	1495
Diluted shares - end	1295	1495	1495	1495

*Argonaut assumption

Financial ratios		2024E	2025E	2026E	2027E
GCFPS	Ac	-1.0	20.1	37.5	37.3
CFR	X	0.0	6.1	3.3	3.3
EPS	Ac	-1.0	14.3	29.6	29.4
PER	X	0.0	8.5	4.1	4.2
DPS	Ac	0.0	0.0	0.0	0.1
Yield	%	0.0%	0.0%	0.0%	5.7%
Interest cover	x	-1.7	31.5	75.9	92.8
ROCE	%	-1%	25%	55%	62%
ROE	%	-6%	44%	55%	48%
Gearing	%	261%	108%	51%	44%

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	48	48	48
Cash costs pre royalty (A\$/oz)	0	1087	1092	1098
All in sustaining costs (A\$/oz)	0	1205	1209	1213
Growth capital (\$M)	892	0	0	0

Price assumptions	2024E	2025E	2026E	2027E
AUDUSD	0.75	0.75	0.75	0.75
Gold	1750	1750	1750	1750

Valuation summary	A\$M	A\$/sh
Mallina project 6% real after tax DR	1651	1.28
Exploration, all sites	495	0.38
Corporate overheads	-52	-0.04
Cash	71	0.06
Debt	0	0.00
Tax benefit	15	0.01
Hedging	0	0.00
Option/equity dilution	-70	-0.05
NAV	2,110	1.64

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

Top shareholders	M shs	%
DGO Gold Limited	193.0	15.0
Van Eck	65.0	5.0
Northwest Nonferrous	51.0	4.0

Resources June '21	Mt	g/t Au	Kozs	Mkt cap/oz
Mallina gold project	229.7	1.21	8,939	176
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	115.0	1.44	5,338
Hemi open pit	90.0	1.40	4,051
Satellite open pit	25.0	1.60	1,286

Hemi scoping study

De Grey has published its Mallina Gold Project scoping study findings, giving the first formal direction on potential development paths.

Base findings include;

- An open pit mine inventory of 100Mt at 1.4 g/t (4.6Mozs contained), with an average strip ratio of 4.8:1 after \$58M pre-strip costs.
- Ore processing capacity of 10Mtpa.
- Capital cost estimate of \$835M (\$893M including pre-strip).
- Process recovery of 93%.
- Average ore treatment costs of \$26/t.
- Average mining costs of \$21/t ore (equivalent to \$3.60/t material earthmoving cost).

The project schedule has ore grade weighted to the early years, averaging 1.6 g/t for the first five years.

As a result the scoping study considers average annual gold production of 473koz in the first 5 years, peaking at over 500koz.

At a 5% real, after tax discount rate and a gold price of A\$2400/oz, De Grey estimates a net present value of \$1.98B

Relative to Argonaut's valuation base figures, De Grey has considered a greater annual throughput (10Mtpa v 8Mtpa) and more capex (\$893M v \$700M). De Grey has included \$167M contingency allowance.

Inventory grade (1.43g/t v 1.52g/t Argonaut), volume (100Mt v 98Mt Argonaut) and strip ratio (4.8:1 v 5.0:1 Argonaut) are similar. Scoping study metallurgical recovery of 93% is less than our presumed 95%.

The split between the Hemi discoveries and the seven regional deposits in terms of ounces in the scoping study model is 80% Hemi, 20% regional; also similar to our assumptions.

More work is required on all aspects as part of the pre-feasibility study, just approved by the board.

Diucon and Eagle modelling was carried out before drilling extended these deposits along strike and at depth.

Definition and resource extension drilling will test about 800koz of inferred mineralisation excluded from the plans.

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

To Argonaut it looks like a sensible starting point for Mallina's development studies. In particular the strip ratio/grade profile suggests De Grey has allowed for a better than average margin by not driving the pits too deep, or the block grade cutoffs too low. The Company noted potential for improvement with further drilling and we build in 10% more inventory.

+450kozspa...

With the first numbers in and De Grey setting sights on +450kozspa, it is worth putting some context around the early Mallina project objectives.

Fig. 1: Gold projects producing >400koz in 2020.

Property	Location	Ownership (%)	Operator	2020 production koz	Reserves koz	Reserve life years	Startup year
Nevada Operations	USA	61.5	Barrick Gold Corporation	3467	45.2	13	1965
Olimpiada	Russia	100	Public Joint Stock Company Polyus	1229	23.0	17	1996
Pueblo Viejo	Dominican Republic	60	Barrick Gold Corporation	903	10.3	13	2013
Cadia East	Australia	100	Newcrest Mining Limited	843	18.0	24	2013
Kibali	Dem. Rep. Congo	45	Barrick Gold Corporation	808	9.3	12	2013
Lihir	Papua New Guinea	100	Newcrest Mining Limited	776	22.0	30	1997
Loulo	Mali	80	Barrick Gold Corporation	680	8.4	13	2005
Boddington	Australia	100	Newmont Corporation	670	12.7	15	2009
Fosterville	Australia	100	Kirkland Lake Gold Ltd.	640	2.0	4	2005
Geita	Tanzania	100	AngloGold Ashanti Limited	623	2.3	7	2000
Fekola	Mali	80	B2Gold Corp.	623	4.2	8	2017
Canadian Malartic	Canada	50	Agnico Eagle Mines Limited	569	4.4	6	2011
Detour Lake	Canada	100	Kirkland Lake Gold Ltd.	563	15.8	22	2013
Kumtor	Kyrgyzstan	100	Centerra Gold Inc.	556	6.0	12	1997
Paracatu	Brazil	100	Kinross Gold Corporation	542	8.0	15	1987
Tarkwa	Ghana	90	Gold Fields Limited	526	6.1	12	NA
Penasquito	Mexico	100	Newmont Corporation	526	7.1	11	2009
Kupol	Russia	100	Kinross Gold Corporation	511	1.5	4	2008
Tanami	Australia	100	Newmont Corporation	495	5.9	12	1989
Ahafo	Ghana	90	Newmont Corporation	480	6.1	12	2006
KCGM	Australia	100	Northern Star Resources Limited	448	11.6	26	1985
Merian	Suriname	75	Newmont Corporation	461	5.3	12	2016
Blagodatnoye	Russia	100	Public Joint Stock Company Polyus	457	12.0	26	2010
Natalka	Russia	100	Public Joint Stock Company Polyus	456	14.0	30	2017
Sukari	Egypt	100	Centamin plc	452	5.0	10	2009
Veladero	Argentina	50	Barrick Gold Corporation	452	5.2	9	2005
Kyzyl	Kazakhstan	100	Polymetal International plc	450	10.1	31	2018
Telfer	Australia	100	Newcrest Mining Limited	393	5.9	14	2010
El Limon-Guajes	Mexico	100	Torex Gold Resources Inc.	430	1.9	5	2015
Tropicana	Australia	70	AngloGold Ashanti Limited	426	2.7	5	2013
Herradura	Mexico	100	Fresnillo plc	425	6.1	12	1997
Tasiast	Mauritania	100	Kinross Gold Corporation	407	6.3	13	2008
Essakane	Burkina Faso	90	IAMGOLD Corporation	404	3.3	9	2010

Source: S&P Global Intelligence, Argonaut

Figure 1 shows 33 projects producing +400koz in 2020. Established, multinational producers with enterprise values (EVs) in the A\$10B-\$65B range dominate ownership of large scale gold mines. Newmont (5), Barrick (5) Newcrest (3), Kinross (3) Agnico/Kirkland (3) and AngloGold (2) specialise in and compete for +400kozpa projects.

Newcrest's Lihir is further notable as a large scale (15Mtpa ore throughput) pressure oxidation processing operation, which serves as a potentially relevant precedent to Mallina.

We identify five +400kozspa projects in companies with EVs less than \$5billion, shown in Figure 2.

Fig. 2: +400kozspa operations in single asset or sub A\$10 billion EV companies, October 2021.

Property	Location	Ownership %	Operator	2020 production koz	Reserves koz	Reserve life years	Market cap A\$M	EV A\$M
Fekola	Mali	80	B2Gold Corp.	623	4.2	8	5273	4982
Kumtor	Kyrgyzstan	100	Centerra Gold Inc.	556	6.0	12	2991	1802
Sukari	Egypt	100	Centamin plc	452	5.0	10	2035	1650
Essakane	Burkina Faso	90	IAMGOLD Corporation	404	3.3	9	1589	1286
El Limon-Guajes	Mexico	100	Torex Gold Resources Inc.	430	1.9	5	1260	999

Source: S&P Global Intelligence, Argonaut

The five (relatively) small companies operating large scale gold mines in 2020 includes Centerra, whose Kumtor mine in the Kyrgyz Republic was expropriated in May 2021. Fekola in Mali is the largest of B2 Gold's projects with a collective EV of A\$5B. The Egypt government's 50% stake has effectively served to ward off major participation in Centamin's Sukari. Apparent insecurity in northern Burkina Faso (Essakan) and a relatively

short mine life (El Limon-Guajes) can be used to explain the two remaining wallflowers, in IAMGOLD and Torex Gold.

There is one proposed or in construction gold project with targeted life of mine gold production of greater than 400kozspa; Donlin in Alaska (Figure 3). Donlin is operated and half owned by Barrick.

Fig. 3: Proposed or under construction gold mines with +230kozspa objective, October 2021.

Property	Location	Ownership %	Operator	M,I&I resource	Resource grade	Au in resource	Market cap	EV	Status	LOM Prod'n
				Mt	g/t	Moza	AS\$M	AS\$M		kozspa
Donlin	Alaska	50	Barrick Gold Corporation	634	2.2	45.0	45209	56827	Construction Planned	1130
KSM	British Columbia	100	Seabridge Gold Inc.	7637	0.4	107.3	1723	1665	Prefeas/Scoping	540
Mallina	Australia	100	De Grey Mining	230	1.2	9.0	1616	1564	Scoping	427
Cote	Ontario	64.75	IAMGOLD Corporation	555	0.8	14.0	1599	1286	Construction Started	367
Blackwater	British Columbia	100	Artemis Gold Inc.	614	0.6	11.9	902	684	Construction Planned	321
Sitbnite	Idaho	100	Perpetua Resources Corp.	273	1.4	12.1	412	401	Feasibility Complete	301
Livengood	Alaska	100	International Tower Hill Mines Ltd.	578	0.7	12.6	204	189	Prefeas/Scoping	294
Mt Todd	Northern Territory	100	Vista Gold Corp.	360	0.8	9.3	114	106	Feasibility Started	288
Namdini	Upper East	100	Shandong Gold Mining Co., Ltd.	194	1.1	7.0	17284	19542	Feasibility Complete	287
Windfall	Quebec	100	Osisko Mining	22	8.5	6.1	987	779	PEA complete	238
New Prosperity	British Columbia	100	Taseko Mines Limited	1011	0.4	13.2	773	1105	Feasibility	234

Source: S&P Global Intelligence, Argonaut

Of 35 gold projects identified worldwide as capable of producing more than 400koz per year, less than a handful are operated by independent public companies. The larger the gold operation, the more likely it is to end up as part of a portfolio with sister assets.

Mallina aside, there are no +400kozspa gold projects in Australia or North America, proposed or producing, other than those operated by Barrick, Newcrest, Newmont, Kirkland/Agnico, Northern Star or AngloGold Ashanti.

Argonaut's perspective

De Grey and Mallina are targets. There are paper premiums, competitive pressures, gold bulls and unmeetable growth targets galore among the Majors. Every mining company battles ore depletion and ore quality deterioration daily. Mallina can address many problems for the larger producers with minimum risk and management effort. Acquiring control of Mallina becomes not so much a question of price, as assurance of outcome. De Grey management believes it can add further value so an agreed deal is unlikely for now. However the time will come.

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 2021. 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. 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. 4: Valuation summary

Valuation summary	A\$M	A\$/sh
Mallina project 6% real after tax DR	1651	1.28
Exploration, all sites	495	0.38
Corporate overheads	-52	-0.04
Cash	71	0.06
Debt	0	0.00
Tax benefit	15	0.01
Hedging	0	0.00
Option/equity dilution	-70	-0.05
NAV	2,110	1.64

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.

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Important Disclosure

Argonaut acted as Joint Lead Manager in respect of the Placement to raise up to \$103.2M and Senior Management SellDown in September 2020 and received fees commensurate with this service.

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