

Ticker: AR3 AU	Cash: A\$9m	Project: Koppamurra
Market cap: A\$26m	Price: A\$0.20/sh	Country: Australia
REC. (unc): BUY	TARGET (unc): A\$1.45/sh	RISK RATING (unc): HIGH

Today's announcement of first MREC production is an important milestone given the importance of met test work for ionic clay deposits. The release was high level, but the fact that first production was achieved at ambient temperature and pressure is noteworthy, particularly the ambient temperature aspect. Our base case expectation remains a tank leach operation; the key variables here are pH, leach time, and temperature (potential for higher recoveries at moderately elevated temperature – to be determined by further test work). While the precise details of the flowsheet are to be determined, the fact that AR3 has reached this milestone, and the involvement of Neo are both a material advantage over Australian projects and reinforces our view that Koppamurra is the best and most advanced REE ionic clay project in Australia. **We maintain our modelled 70Mt mine inventory, our BUY rating and A\$1.45/sh price target based on 0.75x NAV_{7%}.** Stepping back, we think heavy rare earths have significant upside potential at current prices, as prices are simply too low to incentivize <1000ppm non-Chinese ionic clay deposits, but the strategic importance of HREE supply and current Chinese supply chain dominance make the status quo untenable. Of the domestic Aussie names, AR3 is still our top pick – the best project in domestic Australia on a grade-near surface – location screen, a well-connected management team, and further advanced than peers on metallurgy, development, permitting and rehabilitation planning.

First MREC production at ANSTO at ambient temperatures confirms AR3's development edge

Australian Rare Earths (AR3) announced first pilot scale production of a mixed-rare earth carbonate product. MREC was produced at ANSTO at ambient temperature and pressure from an 800kg bulk sample and pressure. The initial MREC is being used for market purposes including developing an offtake relationship with Neo Performance Materials.

Figure 1. (A) MREC sample; (B and C) equipment used at the pilot facility at ANSTO



Source: Australian Rare Earths

Why we like Australian Rare Earths

1. Domestic Australian source of HREEs
2. Can enter production by 2025/2026 due to low capex, quick build and no permitting red flags
3. Exploration upside on huge 4,000km² tenements that were first drilled in December 2020

Catalysts

1. 2023: Drilling, met work, PEA
2. 2024-1H25: SCPe DFS, permitting, FID
3. 2025: SCPe construction
4. 1H26: SCPe production ramp up

Research

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Ticker:	AR3 AU		Price / mkt cap:	A\$0.20/sh, A\$26m		Market P/NAV:	0.07x		Assets:	Koppamurra			
Author:	J Chan / E Magdzinski / K Kormpis		Rec / PT:	BUY / A\$1.45		1xNAV FD:	A\$2.15/sh		Country:	Australia			
Group-level SOTP valuation			4Q22	1Q23E		Resource / Reserve		Mt	ppm	TREO	000t REO	\$m insitu	EV/insitu
		A\$m	O/ship	NAVx	A\$/sh	Measured, ind. & inf.		40	725	29	1,877	0.59%	
Koppamurra NPV 1Q23E		185	100%	0.75x	1.43	SCPe Mine Inventory		70	750	53	2,469	0.45%	
SCPe 50Mt MRE growth - 3% insitu value		82	100%	0.75x	0.64	Commodity price		Jun '22	Jun '23	Jun '24	Jun '25	Jun '26	
Exploration incl other Aussie projects		25	100%	0.75x	0.19	NdPr price (US\$/t)		143	113	154	154	154	
Central SG&A & fin costs 1Q23E		(23)	-	0.75x	(0.17)	Share data							
Cash and restr. cash 4Q22		9	-	0.75x	0.07	Basic shares (m): 129.5		FD + options (m): 129.5		FD/FF	168.2		
Cash from options		-	-	0.75x	-	Ratio analysis		Jun '22	Jun '23	Jun '24	Jun '25	Jun '26	
Debt 4Q22		-	-	0.75x	-	FD shares out (m)		129	168	168	168	168	
1xNAV7% spot fully diluted, pre-funded		279			2.15	EPS (US\$/sh)		(0.04)	(0.01)	(0.03)	(0.05)	0.02	
Assumed equity raised		50		0.75x	0.30	CFPS before w/c (US\$/sh)		(0.01)	(0.01)	(0.04)	0.05	(0.09)	
1xNAV7% spot fully funded		329			1.95	FCFPS pre growth (US\$/sh)		(0.02)	(0.02)	(0.04)	0.15	0.01	
1x fully funded NAVPS sensitivity to gold price and discount / NAV multiple													
Valuation (A\$/sh)		Dy: \$100/kg	\$125/kg	\$150/kg	\$175/kg	\$200/kg							
0.50xNAV	0.50	0.75	1.00	1.20	1.45	1.75							
0.60xNAV	0.60	0.90	1.15	1.45	1.75	2.20							
0.75xNAV	0.70	1.10	1.45	1.85	2.20	2.95							
1.00xNAV	0.95	1.45	1.95	2.45	2.95	4.45							
Valuation (A\$/sh)		Dy: \$350/kg	\$425/kg	\$500/kg	\$575/kg	\$650/kg							
0.50xNAV	0.80	0.90	1.00	1.05	1.15	1.20							
0.60xNAV	0.95	1.05	1.15	1.30	1.40	1.50							
0.75xNAV	1.20	1.35	1.45	1.60	1.75	1.90							
1.00xNAV	1.60	1.80	1.95	2.15	2.30	2.60							
Koppamurra NPV7% (US\$m)		\$100/kg	\$125/kg	\$150/kg	\$175/kg	\$200/kg							
10% discount	41	83	126	168	211	263							
8% discount	62	112	163	213	263	329							
7% discount	75	130	185	240	294	370							
6% discount	90	150	210	270	330	415							
5% discount	107	173	238	304	370	465							
Koppamurra 1xNAV sensitivity to recovery and payability													
Koppamurra NPV7% (US\$m)		Recov: 50.0%	55.0%	60.0%	65.0%	70.0%							
Payability: 60%	82	94	106	118	130	145							
Payability: 70%	161	173	185	197	209	225							
Payability: 80%	240	252	264	276	288	305							
Payability: 90%	319	331	343	355	366	380							
Payability: 100%	398	410	421	433	445	460							
Valuation over time		Jun '22	Jun '23	Jun '24	Jun '25	Jun '26							
Koppamurra NPV (US\$m)	104.1	114.0	124.4	166.5	199.7	263.6							
Downstream	162.0	173.3	185.4	198.4	283.6	370.0							
Exploration and in-situ tonnes	82.4	82.4	82.4	82.4	82.4	82.4							
Cntrl G&A & fin costs (US\$m)	(22.9)	(22.5)	(19.4)	(27.2)	(6.0)	(7.0)							
Net cash at 1Q (A\$m)	9.0	5.9	45.8	1.7	(62.7)	(62.7)							
1xNAV (A\$m)	335	353	419	422	497	497							
P/NAV (x):	0.07x	0.08x	0.08x	0.08x	0.07x	0.07x							
Shares O/S(m)													
1xNAV share px FD (A\$/sh)	2.99	2.37	2.49	2.51	2.95	2.95							
ROI to equity holder (% pa)	1394%	244%	132%	88%	71%	71%							
Sources and uses of cash		A\$10m	A\$100m	A\$17m	A\$7m	-A\$17m	Total uses	A\$117m	Total proceeds	A\$139m			
SCPe evaluation costs	A\$10m	SCPe current cash + options	A\$9m										
SCPe capex (A\$100m)	A\$100m	Debt package	A\$80m										
SCPe contingency	A\$17m	Equity Raised	A\$50m										
SCPe G&A + fin. cost to prodn	A\$7m												
SCPe working capital	-A\$17m												
Production (100%)		Jun '24	Jun '25	Jun '26	Jun '27	Jun '28							
Koppamurra (t REE)	--	--	765	1,500	1,350	1,350							
Koppamurra (t Nd+Pr)	--	--	162	317	286	286							
Koppamurra (t Dy)	--	--	20	39	35	35							
Koppamurra (t Tb)	--	--	4	7	6	6							
Koppamurra revenue (US\$/kg REE)	--	--	62	62	62	62							
Koppamurra cash cost (US\$/kg REE)	--	--	32	27	30	30							
Koppamurra AISC (US\$/REE)	--	--	46	43	47	47							
<i>Source: SCP estimates</i>													

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HOLD:	1
SELL:	0
UNDER REVIEW:	1
TENDER:	1
NOT RATED:	0
TOTAL	55

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