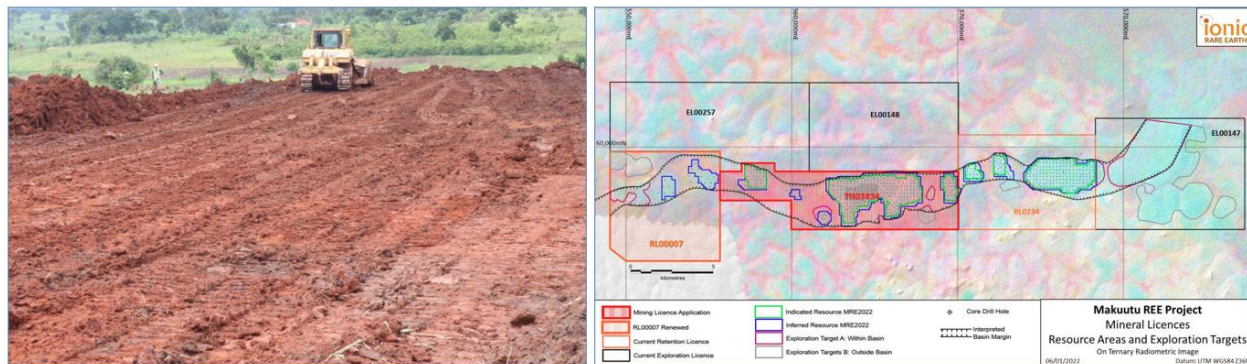


<b>Ticker:</b> IXR AU	<b>Cash:</b> A\$11m	<b>Project:</b> Makuutu
<b>Market cap:</b> A\$87m	<b>Price:</b> A\$0.02/sh	<b>Country:</b> Uganda
<b>REC. (unc):</b> BUY	<b>TARGET (unc):</b> A\$0.05/sh	<b>RISK RATING (unc):</b> HIGH

We're encouraged to see stage I of the Makuutu Demonstration Plant progress on schedule towards 3Q23 operations including column adsorption tests. This could yield material improvements in project economics if recoveries scale well to higher stack heights as this would reduce capex and opex due to smaller footprint per unit of production. We think Ionic has done a good job of prioritizing impactful ways to advance production readiness and credibility with downstream users / OEMs / Governments while managing treasury, which are both key initiatives in this environment. Big picture, we liked and continue to like Ionic because we think the Western democracies need and don't currently have an alternative to Chinese Dy and Tb supply -~3-4ktpa and growing at a high single digit CAGR with Lynas and MP able to provide ~3-5% of that total. However, prices, lights and heavies, have more than halved since mid-2022 and so we think Ionic must balance 1) building OEM/downstream counterparty trust in IXR by advancing their technical capabilities; 2) advancing Makuutu towards production and; 3) managing share count in a tough REE price and tough ECM environment. Updating cash for the quarter end, we maintain our Buy rating and **A\$0.05/sh fully funded/fully diluted price target based on 1% of in-situ value at our LT price estimates of US\$120-400-1500/kg NdPr-Dy-Tb**. Catalysts include Phase I of the demonstration plant by end Q3 (potential to reduce capex/opex), the Makuutu mining license (imminent), ramp up of the Belfast recycling plant, and potential downstream/offtake, all of which further Ionic's plans to become an integrated rare earths supplier to the EV supply chain.

**Figure 1. (A) Demonstration Plant earthworks and (B) Makuutu Project map**



Source: Ionic Rare Earths

### Makuutu Demonstration Plant on schedule ahead of 3Q23 Operation

Ionic provides a progress report on its 60% owned Makuutu project in Uganda. Demonstration Plant earthworks are complete ahead of foundation work and superstructure erection (within next four weeks). The plant will validate metallurgical test work and provide technical information for grade control, mine design, material handling, metallurgical reconciliation, and construction as well as support project financing and strategic partner activity. Additionally, Phase Five exploration drilling is on schedule with 1,663m of RAB complete. Infill diamond drilling is ongoing with 29 holes complete (558m of 4,280m planned) ahead of Makuutu MRE update and second Mining License Application on the western zone (expected before November end 2024). New mining regulations will be published by the Ugandan Ministry of Energy and Mineral Development (MEMD) in the next few weeks related to the Mining License Application (MLA).

### Why we like Ionic

1. The largest ionic clay deposit available to directly supply HREEs to Western end users
2. Able to get into production by SCPe 2025

3. Excellent infrastructure including highway, hydropower and reagents
4. Opportunity to become an integrated upstream and midstream supplier

**Catalysts**

- 2023: SCPe pilot plant, trial mining
- 2024: SCPe first production and ramp up
- 2025: SCPe steady state production

**Research**

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<b>Ticker:</b> IXR AU	<b>Price / mkt cap:</b> A\$0.02/sh, A\$87m	<b>Market P/NAV:</b> 0.24x	<b>Assets:</b> Makuutu
<b>Author:</b> J Chan / E Magdzinski / K Komp Rec / PT:	<b>BUY / A\$0.05</b>	<b>1xNAV FD:</b> A\$0.07/sh	<b>Country:</b> Uganda

Group-level SOTP valuation	2Q23	3Q23				Resource / Reserve	Mt	ppm	TREO	000t REO	\$m insitu	EV/insitu	
		<b>US\$m</b>	<b>O/ship</b>	<b>NAVx</b>	<b>A\$/sh</b>	Measured, ind. & inf.	532	640	340	21,656	0.24%		
Makuutu (60%) NPV 3Q23		-	60%	0.75x	-	SCPe Mine Inventory	173	856	148	6,024	0.87%		
Makuutu (1.0% insitu value at SCPe LT prices)		196	60%	0.75x	0.05	<b>Commodity price</b>	Jun '22	Jun '23	Jun '24	Jun '25	Jun '26		
<b>Makuutu valuation (1% insitu value)</b>		<b>196</b>	<b>60%</b>	<b>0.75x</b>	<b>0.05</b>	NdPr price (US\$/kg)	143	113	120	120	120		
Downstream		68	100%	0.75x	0.02	<b>Share data</b>							
Central SG&A & fin costs 3Q23		(88)	-	0.75x	(0.02)	Basic shares (m): 3946.1	FD + options (m):	4,119.8	FD/FF	5,603.0			
Cash and restr. cash 2Q23		8	-	0.75x	0.00	<b>Ratio analysis</b>	Jun '22	Jun '23	Jun '24	Jun '25	Jun '26		
Cash from options		6	-	0.75x	0.00	FD shares out (m)	3,873	5,356	5,356	5,356	5,356		
Debt 2Q23		-	-	0.75x	-	EPS (US\$/sh)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)		
<b>1xNAV8% spot fully diluted, pre-funded</b>		<b>190</b>			<b>0.05</b>	CFPS before w/c (US\$/sh)	(0.00)	(0.00)	0.00	(0.01)	(0.00)		
Assumed equity raised		60		0.75x	0.01	FCFPS pre growth (US\$/sh)	0.00	(0.00)	0.01	0.00	(0.00)		
<b>1xNAV8% spot fully funded</b>		<b>250</b>			<b>0.05</b>	FCF/sh (US\$/sh)	(0.00)	(0.00)	(0.01)	(0.02)	(0.00)		
<b>1x fully funded NAVPS sensitivity to Dy price and discount / NAV multiple</b>						FCF yield pre growth (US\$/sh)	3%	(4%)	30%	0%	(2%)		
<b>Valuation (A\$/sh)</b>	<b>Dy:</b>	<b>\$300/kg</b>	<b>\$400/kg</b>	<b>\$500/kg</b>	<b>\$600/kg</b>	<b>\$700/kg</b>	FCF yield (%)	(15%)	(5%)	(44%)	(72%)	(2%)	
0.50xNAV		0.03	0.03	0.03	0.04	0.04	EBITDA margin (%)	-	-	-	(50%)	5%	
0.60xNAV		0.03	0.04	0.04	0.05	0.05	FCF margin (%)	-	-	-	(647%)	(4%)	
0.75xNAV		0.04	<b>0.05</b>	0.05	0.06	0.06	ROA (%)	(9%)	(4%)	(5%)	(7%)	(2%)	
1.00xNAV		0.06	0.06	0.07	0.08	0.08	ROE (%)	(10%)	(4%)	(10%)	(14%)	(4%)	
<b>Makuutu NPV8% (US\$m)</b>	<b>Dy:</b>	<b>\$300/kg</b>	<b>\$400/kg</b>	<b>\$500/kg</b>	<b>\$600/kg</b>	<b>\$700/kg</b>	ROCE (%)	(10%)	(4%)	(2%)	(4%)	(0%)	
12% discount		-	-	-	-	6	PER (x)	(17x)	(20x)	(10x)	(8x)	(25x)	
10% discount		-	-	-	3	15	P/CF (x)	(26x)	(24x)	(10x)	(8x)	(95x)	
8% discount		-	-	-	13	28	EV/EBITDA (x)	(13x)	(3x)	(5x)	(17x)	39x	
5% discount		-	-	13	34	54	<b>Income statement</b>	Jun '22	Jun '23	Jun '24	Jun '25	Jun '26	
<b>Makuutu 1xNAV sensitivity to recovery and payability</b>							Revenue (US\$m)	--	--	--	13	58	
<b>Makuutu NPV8% (US\$m)</b>	<b>Recov:</b>	<b>20.0%</b>	<b>25.0%</b>	<b>27.0%</b>	<b>30.0%</b>	<b>35.0%</b>	COGS (US\$m)	--	--	--	(15)	(50)	
<b>Payability: 60%</b>		-	-	-	-	-	<b>Gross profit (US\$m)</b>	--	--	--	(2)	8	
<b>Payability: 70%</b>		-	-	-	-	-	Expenses (US\$m)	(3)	(4)	(1)	(2)	(5)	
<b>Payability: 80%</b>		45	32	29	28	29	Impairment & other (US\$m)	--	--	--	--	--	
<b>Payability: 90%</b>		94	78	75	73	74	Net finance costs (US\$m)	0	--	(7)	(8)	(3)	
<b>Payability: 100%</b>		143	125	121	119	119	Tax (US\$m)	--	--	--	--	(1)	
<b>Valuation over time</b>		<b>44,742</b>	<b>45,107</b>	<b>45,473</b>	<b>45,838</b>	<b>46,203</b>	Minority interest (US\$m)	--	--	--	--	--	
Makuutu NPV (US\$m)		(20.7)	(21.7)	16.4	58.2	58.1	<b>Net income attr. (US\$m)</b>	<b>(3)</b>	<b>(4)</b>	<b>(9)</b>	<b>(12)</b>	<b>(1)</b>	
Downstream		57.5	62.1	67.1	72.4	78.2	EBITDA (US\$m)	(5)	(5)	(5)	(7)	3	
Exploration and in-situ tonnes		196.3	196.3	196.3	196.3	196.3	<b>Cash flow</b>	Jun '22	Jun '23	Jun '24	Jun '25	Jun '26	
Cntrl G&A & fin costs (US\$m)		(84.3)	(87.3)	(94.4)	(77.8)	(77.1)	Profit/(loss) after tax (US\$m)	(5)	(5)	(12)	(16)	(5)	
Net cash at 1Q (A\$m)		7.9	105.2	90.7	5.7	3.3	Add non-cash items (US\$m)	1	--	--	1	3	
1xNAV (US\$m)		157	255	276	255	259	Less wkg cap / other (US\$m)	(0)	--	12	(19)	(1)	
P/NAV (x):		0.32x	0.26x	0.28x	0.31x	0.30x	<b>Cash flow ops (US\$m)</b>	<b>(4)</b>	<b>(5)</b>	<b>0</b>	<b>(34)</b>	<b>(2)</b>	
1xNAV share px FD (A\$/sh)		0.07	0.08	0.08	0.07	0.07	PP&E (US\$m)	--	(1)	(52)	(51)	(0)	
ROI to equity holder (% pa)		209%	95%	52%	34%	27%	Other (US\$m)	(2)	(1)	--	--	--	
<b>Sources and uses of cash</b>							<b>Cash flow inv. (US\$m)</b>	<b>(11)</b>	<b>(1)</b>	<b>(52)</b>	<b>(51)</b>	<b>(0)</b>	
SCPe evaluation costs	A\$10m	SCPe current cash + options	A\$20m				Debt draw (repayment) (US\$m)	--	--	102	--	--	
SCPe capex (US\$121m @ 60%)	A\$103m	Debt package	A\$102m				Equity issuance (US\$m)	30	85	8	--	--	
SCPe contingency	A\$63m	Equity Raised	A\$74m				Other (US\$m)	--	--	--	--	--	
SCPe G&A + fin. cost to prodn	A\$16m							<b>Cash flow fin. (US\$m)</b>	<b>30</b>	<b>85</b>	<b>110</b>	<b>--</b>	
SCPe working capital	A\$4m							Net change post forex (US\$m)	16	78	57	(85)	(2)
Total uses	A\$196m				Total proceeds	A\$196m	<b>FCF (US\$m)</b>	<b>(13)</b>	<b>(6)</b>	<b>(52)</b>	<b>(85)</b>	<b>(2)</b>	
<b>Production (100%)</b>		<b>Jun '24</b>	<b>Jun '25</b>	<b>Jun '26</b>	<b>Jun '27</b>	<b>Jun '28</b>	<b>Balance sheet</b>	Jun '22	Jun '23	Jun '24	Jun '25	Jun '26	
Makuutu (t REE)	--	281	1,244	1,635	1,547		Cash (US\$m)	27	105	163	78	75	
Makuutu (t Nd+Pr)	--	50	196	437	414		Accounts receivable (US\$m)	1	1	1	5	7	
Makuutu (t Dy)	--	5	31	65	64		Inventories (US\$m)	--	--	--	5	6	
Makuutu (t Tb)	--	1	5	10	10		PPE & exploration (US\$m)	13	14	66	117	114	
Makuutu revenue (US\$/kg REE)	--	55	55	59	60		Other (US\$m)	9	9	9	9	9	
Makuutu cash cost (US\$/kg REE)	--	59	45	38	40		<b>Total assets (US\$m)</b>	<b>49</b>	<b>129</b>	<b>239</b>	<b>214</b>	<b>212</b>	
Makuutu AISC (US\$/REE)	--	79	68	52	54		Debt (US\$m)	--	--	102	102	102	
Refinery (TREO produced)	--	--	--	--	--		Other liabilities (US\$m)	1	1	13	4	6	
Refinery (t Nd+Pr)	--	--	--	--	--		Shareholders equity (US\$m)	77	162	170	170	170	
Refinery (t Dy)	--	--	--	--	--		Retained earnings (US\$m)	(29)	(34)	(46)	(61)	(66)	
Refinery (t Tb)	--	--	--	--	--		Minority int. & other (US\$m)	--	--	--	--	--	
Refinery share of Makuutu feed (%)	--	--	--	--	--		<b>Liabilities+equity (US\$m)</b>	<b>49</b>	<b>129</b>	<b>239</b>	<b>214</b>	<b>212</b>	
Refinery EBITDA margin (%)	--	--	--	--	--		Net cash (US\$m)	27	105	61	(24)	(27)	
Refinery revenue (US\$/kg REO)	--	--	--	--	--		Net debt to NTM EBITDA (x)	5.4x	21.0x	9.2x	8.2x	1.3x	

Source: SCP estimates

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**BUY:** The stocks total returns are expected to be materially better than the overall market with higher return expectations needed for more risky securities markets

**NEUTRAL:** The stock's total returns are expected to be in line with the overall market

**SELL:** The stocks total returns are expected to be materially lower than the overall market

**TENDER:** The analyst recommends tendering shares to a formal tender offering

**UNDER REVIEW:** The stock will be placed under review when there is a significant material event with further information pending; and/or when the research analyst determines it is necessary to await adequate information that could potentially lead to a re-evaluation of the rating, target price or forecast; and/or when coverage of a particular security is transferred from one analyst to another to give the new analyst time to reconfirm the rating, target price or forecast.

**NOT RATED ((N/R):** The stock is not currently rated

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Summary of Recommendations as of July 2023	
BUY:	51
HOLD:	0
SELL:	0
UNDER REVIEW:	0
TENDER:	0
NOT RATED:	0
TOTAL	51

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