WH IRELAND CAPITAL MARKETS

31 January 2024

CORPORATE

Share price

0.6p

Ticker	CLA
Index	FTSE AIM
Sector	Mining
Market cap	£15.5m
Shares in issue	2,246m
NAV per share	0.8p

All-Share	Sector	
-15%	0%	
0%	5%	
-48%	-18%	
1.4p /0.5p		
	-15% 0% -48%	



Source: © 2020, S&P Global Market Intelligence

Analyst

+44 (0)113 394 6609 paul.smith@whirelandcm.com

Paul Smith

David Seers +44 (0)113 394 6610 david.seers@whirelandcm.com

Marketing Communication

This document has not been prepared in accordance with legal requirements designed to promote the independence of investment research. Please refer to important disclosures towards the end of this document.

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Celsius Resources

A potential near-term, low-cost copper producer

Celsius Resources (Celsius) is advancing a portfolio of copper-dominant projects that, in production, would help support the continued electrification of global economies to reduce the emission of greenhouse gases. We believe Celsius is well-positioned to benefit from interrupted near- and mid-term copper supply, and strong copper prices. Celsius indicates that, subject to licensing and funding, both the MCB and Sagay copper projects could be brought into production within two years and selling copper concentrates to buoyant markets. Revenues from these projects could provide the funding to advance other projects in the portfolio. A Declaration of Mining Project Feasibility (DMPF) has been submitted to the Philippine authorities for Sagay, while MCB has an approved DMPF, and now awaits approval of its mining permit, which the company believes is imminent. Diversification of commodities and jurisdiction is provided via the Opuwo copper-cobalt project in Namibia – one of the largest undeveloped cobalt resources outside the Democratic Republic of Congo (DRC). We see fair value in Celsius at 4.6p/share (AU\$8.8c/share, based on current exchange rates).

- Clear pathway to production and revenue: The MCB Mining Project Feasibility Study (MPFS) and Sagay have set out mining cases, and have established potential routes to production. The agreement between Celsius and local partner Sodor Inc (Sodor) (ASX release 20.03.23) secured \$43m of an estimated \$255m initial capital to take MCB into production. The company has recently advised that it has several interested parties in providing the capital required to constructing the MCB Project subject to issuance of the mining permit. The MPFS for Sagay suggests that the capital cost required to deliver production is less than \$15m.
- Near-term cashflow and long-lived mine life: Subject to licensing and funding, we believe MCB could be in production by Q1 2026 transforming Celsius from project developer to producer. Studies indicate that the current MCB resource could support mining operations over at least 25 years, and we believe that, with further drilling, this timeframe could increase further, considering the recent addition of the adjacent Botilao tenement. Previous drilling at Botilao generated positive results. The Sagay project offers further near-term production potential, and the MPFS is based on secondary copper mineralisation developed in shallow, weathered zones adjacent to a much larger porphyry system. Celsius has investigated the potential to recover this mineralisation via shallow-surface mining to produce a copper concentrate via simple processing techniques. Studies indicate that initial capital requirements to achieve production at Sagay is less than \$15m. Any revenues generated by Sagay could, in our opinion, help fund the exploration of the adjacent and copper-gold porphyry, a potential second, large-scale project in the Celsius portfolio.
- Accelerating copper demand: The Celsius portfolio is copper-focused, which we consider very positive, given accelerating copper demand. Our outlook is underpinned by interruptions to forecast near- and mid-term supply (i.e. Cobre Panamá, and many projects in Peru and Chile) and forecast growth in copper demand, driven by the electrification of the global economy. Our valuation is based on a long-term copper price of \$8,800/t, compared with the ca.\$8,275 at which it trades today. Copper prices above our long-term price would have a significant impact on our valuation of Celsius.
- Value drivers: We recognise a number of potential near-term (pre-production) events that would lift our valuation of Celsius. As investigations continue and projects are optimised, risk is reduced, which will attribute more of the value of projects to Celsius. Resource growth, driven by further drilling, would also boost our valuation.

WHI view: Celsius has a compelling portfolio of copper projects that offer, subject to funding, the potential to generate near-term revenues that could provide the platform to develop long-lived mining assets. With near-term, low-cost revenue potential, paired with growing copper demand and a lack of new near- and mid-term operations coming online, we believe Celsius is well-positioned to benefit from the next copper boom. We see fair value in Celsius at 4.6p/share (AU\$8.8c/share).

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Important disclosures and certifications regarding companies that are the subject of this report can be found within the disclosures page at the end of this document.

WH Ireland Limited, 24 Martin Lane, London, EC4R 0DR, tel. 020 7220 1666

Celsius Resources	1
A potential near-term, low-cost copper producer	1
Investment case	3
Key risks and other considerations	4
Celsius Resources	5
Valuation	5
MCB project	5
Upside potential	7
Sagay project	8
Upside potential	9
Opuwo project	9
Upside potential	
Botilao prospect	
Upside potential	. 10
Net cash	10
Corporate costs	10
Celsius's assets	11
Maalinao-Caigutan-Biyog project (MCB) – Philippines	11
Botilao prospect – Philippines	13
Sagay project – Philippines	13
Opuwo project – Namibia	13
Copper market outlook	15
Market overview	15
Company matters	16
Environmental, Social and Governance (ESG)	16
Shareholders	16
Celsius team	16
Board members	16



Celsius has a portfolio of copperfocused projects underpinned by resources

Investment case

Celsius is a mining exploration and development company with a portfolio of copper projects in the Philippines and Namibia. The MCB and Sagay projects have been studied extensively, with DMPF studies submitted to the Philippine government. We believe both projects offer potential for near-term production and revenue generation. Celsius has already secured \$43m of the initial funding required to take MCB into production (estimated at \$255m) via a binding deed signed with local partner Sodor. Subject to permitting and raising additional funding which the company has recently advised that it has several interested parties, we believe MCB could be in production and generating revenues by Q1 2026, and that Sagay could be brought into production for less than the \$15m initial capital investment, although this is dependent on licensing and increased copper prices. Once transitioned from explorer to producer, cashflow would help unlock the potential of other projects in the portfolio, and establish Celsius as a long-lived miner, supplying copper to expanding markets. The Opuwo project, one of the largest cobalt resources outside of the DRC (271,000t of cobalt in the indicated and inferred categories), provides diversification.

We see fair value in Celsius at 4.6p/share (AU\$8.8c/sh)

Project of scale: The MCB copper-gold project has the makings of a project of scale. The large copper-gold porphyry deposit lends itself to sub-level, long-hole, open-stoping, a low-cost underground mining method that is used widely in the Philippines. The current resource is estimated at 338Mt grading 0.5% copper and 0.1g/t gold, and remains open. The MPFS for MCB considers a mine life of 25 years, and we believe that this under-represents the potential mine life for the project. If MCB can be taken into production, it could be supplying a buoyant copper market for decades to come, in our view.

Near-term low-cost cashflow: The Sagay copper project offers a potential route to lowcost, near-term copper production. The chalcocite blanket, developed adjacent to a large porphyry system, lends itself to mining via shallow-surface mining. The Sagay MPFS suggests that the initial capital cost to take the project into production is ~\$15m. Simple, low-impact processing (comminution and gravity concentrate) would produce a clean 10% copper concentrate, which we believe would be readily saleable to local and international markets. If this can be delivered, we believe Celsius could readily raise the capital that would convert it from project developer to copper producer.

Platform for further growth, with options: With a producing asset generating cashflow, Celsius has a platform for growth, with various options that would introduce project and commodity diversification: i) exploration and development of the Sagay porphyry system; ii) development of the MCB project, including the incorporation of Botilao; and/or iii) continued development of the Opuwo project in Namibia, which would add country diversification, as well as commodity and revenue diversification, with the introduction of cobalt. In terms of further growth, we believe Celsius has a number of options to explore within its existing portfolio.

In-demand commodities: The Celsius portfolio is centred on copper, an excellent point of focus, with demand continuing to surge, as global electrification accelerates. The backdrop of surging demand, combined with the recent shutdown of Cobre Panamá and interruptions to Peruvian and Chilean mine supply, will support and even elevate copper prices in the near to medium term, in our view. The Celsius portfolio includes diversification with gold at the MCB project and cobalt via the Opuwo project.

	and we highlight the most significant risks, as we see them, below.
Marginal ore – moderate risk	Marginal ore: The MCB mine plan relies on a high proportion of low-grade (marginal) material, based on a mineral resource estimate, not a reserve estimate; resources are not shown to be economically viable, and will need further work to convert them to a reserve. An increase in the cost of mining or a decrease in the metal price (particularly copper) could condemn marginal "ore" as waste. The copper price used in the scoping study is conservative, at \$3.24/lb (\$7,143/t), when compared with the current spot price of around \$3.80/lb (\$8,380/t), which provides some resilience to marginal ore in the face of increased mining costs or reduced copper prices. We consider that copper prices will remain strong against a backdrop of strong demand and restricted supply, and that the risk of marginal ore in the mine plan represents moderate risk.
Copper price – moderate risk	Copper price: Our valuation of the MCB project suggests that it is highly leveraged to the copper price. The MCB resource is based on a copper price of \$3.25/lb (\$7,165/t), below the current spot price; this provides some protection against a fall in the copper price. The copper price considered in the Sagay feasibility study is \$12,000t; this is significantly above today's spot price. At today's copper price, some of the mining inventory considered in the mine plans for Sagay is likely to be uneconomic. However, given forecast demand and restricted supply, we believe spot prices are likely to increase.
Commodity demand – low risk	Commodity demand: The Celsius portfolio is copper-focused. We consider that the outlook for copper is very positive – demand is growing as the electrification of global economies continues, and forecast near- and mid-term supplies have been interrupted (Cobre Panamá, and projects in Peru and Chile), which will have a positive effect on the copper price, in our view.
Licensing risk – low risk	Licensing risk: The realisation of mining projects is dependent on the granting of numerous licences; the granting of licences is not guaranteed, and the timelines are unknown. All mining projects are exposed to licensing risk – this is not unique to Celsius – and although the recent experience of companies applying for mining licences in the Philippines has been difficult, we consider that licensing risk for Celsius is low. Local and regional engagement has proven to be a considerable positive, in our view.
Historical mining – low risk	Historical mining: Mine workings in the vicinity of MCB have not been fully surveyed, and there is a risk that unknown voids could affect mine planning/design, and mine reserves are already being depleted. We consider the risk that historical mining represents for MCB to be low.
Technical risk – low risk	Technical risks: The geotechnical and hydrological characteristics of the MCB project are not studied extensively. Adverse conditions could add to operational costs and reduce planned rates of production; this would impact the viability of marginal ore.
Country risk – low risk	Country risk: A number of mines are in operation in the Philippines, and frameworks are in place for the development of new mines. We consider that country risk is low, although planned engagement at all levels of government and host communities needs to be maintained.
Capital risk – moderate risk	Capital risk: Developers require capital to develop a project. This can be difficult for mining projects, especially in restricted capital markets, as mining is considered high-risk (although it can also offer high returns). The MCB project, the most significant contributor

We consider that funding risk is moderate.

Key risks and other considerations

Investing in Celsius does carry certain risks – many in common with similar companies – and we highlight the most significant risks, as we see them, below.

to our valuation, requires a significant amount (\$250m) of capital to establish operations.

WH Ireland

Our fair value for Celsius is 4.6p per share (AU\$ 8.8c/share)

Key MCB DCF inputs and outputs

Initial capital – \$255m

LOM production – 55.94Mt grading on average 1.03% Cu and 0.47 g/t Au

Metallurgical recoveries – 94.2% Cu and 79% Au

Average annual concentrate production – 84.3kt grading 25.8% Cu and 9.96 g/t Au

LOM metal production – 543.8kt Cu and 673.7k oz Au

Payability – 97% Cu and 90% Au

Long-term metal price – Cu \$8,800t, Au \$1750/oz

Costs – mine \$/t milled = 35, processing \$/t milled = 10, G&A \$1.5m annually

IRR – 39%

NPV10-\$768.6m

Celsius Resources

Celsius is developing a portfolio of copper and gold projects in the Philippines and has an advanced cobalt project in Namibia.

The most advanced projects in the portfolio, and the focus of current development plans, are the MCB and Sagay projects in the Philippines.

Valuation

We value Celsius using the sum-of-the-parts approach.

Our valuation considers the MCB, Sagay and Opuwo projects, and the Botilao prospect, which we value using discounted cashflow models (DCFs), comparable transactions and enterprise value per tonne of copper equivalent (EV CuEq). We also consider estimated cash and corporate costs (Table 1).

Unless stated explicitly otherwise, dollar values are given as United States dollars.

We see fair value in Celsius at 4.6p/share (AU\$8.8c/share).

Asset	Valuation approach	Valuation (\$m)	Valuation (£m)**	Owned	Risk*	Valuation (GBPp/sh)#
MCB project (Cu-Au)	DCF	768.6	591.2	40%	40%	4.2
Botilao prospect	Comparable transactions	0.1	0.1	40%	100%	0.0
Sagay project (Cu)	EV CuEq t	3.0	2.3	40%	100%	0.1
Opuwo project (Co-Cu)	EV CuEq t	9.2	7.1	95%	100%	0.4
Net cash	WHIe***	2.0	1.5	100%	100%	0.1
Corporate	3-year DCF estimate	(2.9)	(3.7)	100%	100%	(0.2)
					GBP pence	4.6
					AU\$ cents	8.8^

Source: WH Ireland Research

* Subjective risk. ** WHI est. FX \$:f = 1.3:1. *** WHI est. January 2024. # Based on 2,246,051,662 shares in issue. ^WHI est. FX f:A\$ = 1.9:1.

Our fair value for Celsius is highly leveraged to the copper price, and we base our fair value on our long-term forecast copper price of \$8,800/t (\$4.00/lb), which is above the current spot price of around \$8,275/t (~\$3.75/lb).

If we were to apply today's copper price (~\$3.75/lb) to our valuation of Celsius, our fair value would be 4.1p/share. If we were to apply a 100% Net Asset Value (NAV), with zero risk, at today's copper price, our fair value would be 10.9p/share. This shows the potential for value rerates as Celsius reaches its milestones.

MCB project

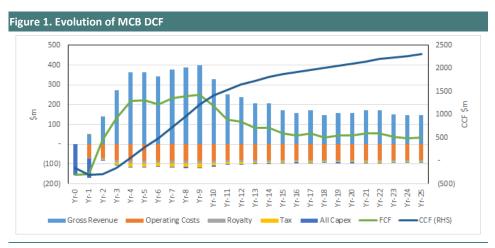
We value the MCB project using a DCF. The inputs for our model are based on the 2021 scoping study and the MPFS, applying our own modifications for such factors as price and treatment charges, when appropriate. Key model inputs are summarised in the left-hand margin.

Our model considers an underground mine, operating over a 25-year period and recovering 56Mt of ore grading on average 1.0% copper and 0.5 g/t gold. The current resource estimate for the MCB project is 338Mt grading 0.47% copper and 0.12 g/t gold.

The 2021 study indicates that MCB could sustain an underground mining operation producing up to 2.3Mt annually, using sub-level open-stoping and paste backfill. Our modelling considers a peak mining rate of 2.28Mt, achieved during year three of operation and maintained until year 22 of operation, before winding down in the final year of operation (Table 2, Figure 1).

		Yr-0	Yr-1	Yr-2	Yr-3	Yr-11	Yr-12	Yr-22	Yr-23	Yr-24	Yr-25
					11.5	11 11	11 12		11 25		11 23
Production								1			
ore mined	kt		1,500	2,000	2,280	2,280	2,280	2,280	2,280	2,280	2,280
ore milled	kt		1,500	2,000	2,280	2,280	2,280	2,280	2,280	2,280	2,280
Cu grade	%		0.40	0.75	1.20	1.10	1.05	0.75	0.75	0.75	0.75
Au grade	g/t		0.03	0.25	0.60	0.55	0.52	0.37	0.15	0.10	0.12
Metallurgical reco	overy					<u>.</u>					
Copper	%		94.2	94.2	94.2	94.2	94.2	94.2	94.2	94.2	94.2
Gold	%		79.0	79.0	79.0	79.0	79.0	79.0	79.0	79.0	79.0
Concentrate											
Tonnage	kt		21.9	54.8	99.9	91.6	87.4	62.4	62.4	62.4	62.4
Copper	%		25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8
Gold	g/t		1.4	7.3	10.8	10.8	10.8	10.8	4.3	2.8	3.5
Payability											
Copper	%		97	97	97	97	97	97	97	97	97
Gold	%		90	90	90	90	90	90	90	90	90
Metal prices											
Copper	\$/t		8,800	8,800	8,800	8,800	8,800	8,800	8,800	8,800	8,800
Gold	\$/oz		1,750	1,750	1,750	1,750	1,750	1,750	1,750	1,750	1,750
Gross revenue	\$m		49.6	140.2	273.3	250.6	239.2	170.8	150.2	145.7	148.0
Net revenue	\$m		49.0 47.5	140.2	275.5	230.0	239.2	166.5	130.2	145.7	148.0
EBITDA	\$m		(23.4)	60.3	174.9	153.7	143.1	79.4	59.6	55.3	57.4
EBIT	\$m		(33.5)	46.9	159.6	138.4	127.8	64.1	44.3	40.0	42.2
Capital costs											
Initial	\$m	(155.0)	(100.0)								
Sustaining	\$m			(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)
Summary						·					
Cashflow	\$m	(155.0)	(151.5)	23.3	133.2	123.7	113.8	54.6	36.2	32.2	34.2
Cumulative CC	\$m	(155.0)	(306.5)	(283.2)	(150.0)	1,535.2	1,649.1	2,205.1	2,241.3	2,273.5	2,307.7

Source: WH Ireland Research. Note: Break in years.



Source: WH Ireland Research

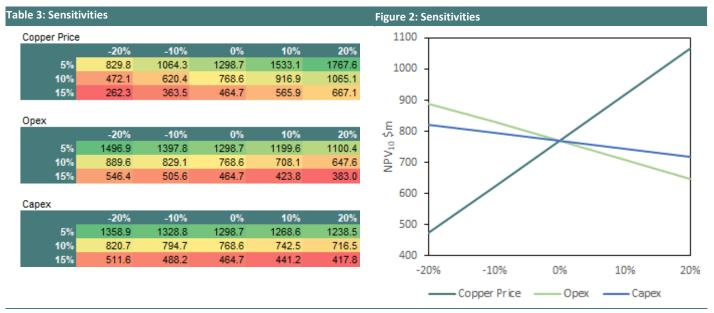
Based on the MPFS, we assume that \$255m upfront capital will be required to achieve first production. We assume that this will be raised through loans payable over four years, attracting an interest rate of 8%. Our DCF indicates that the MCB project has a payback period of three to four years. Celsius entered into a binding deed with local partner Sodor Inc to secure \$43m of the estimated upfront capital requirement. Subject to securing licences, Celsius has been investigating other sources of initial capital with a number of financial partners.

Based on our DCF, we estimate that the MCB project has an NPV₁₀ of \$769m and an IRR of 39%. We apply a consideration for Celsius's 40% interest (307m) and a subjective risk factor of 40% for stage to arrive at a final valuation of \$123m (£95m), the equivalent of 4.2p/share.

Our risk factor is aggressive and reflects project stages, including a reliance on resources (rather than reserves) for mine planning, project location, capital requirements and licensing requirements. As the project advances, we will reduce our risk factor and attribute more of the project value to Celsius.

Sensitivities

We have evaluated the sensitivity of our model to variations in the copper price, the operating cost and the capital cost (Table 3, Figure 2). The MCB project is most leveraged to the copper price; a 20% reduction in the copper price would reduce the NPV₁₀ from \$769m to \$472m (still positive), whereas a 20% increase in the copper price would increase the NPV₁₀ to 1,065m. The MCB project is least sensitive to capital costs.



Source: WH Ireland Research

Source: WH Ireland Research

Upside potential

We recognise multiple opportunities to improve our DCF valuation for MCB:

Improved metal prices: Our DCF is highly leveraged to the copper price; an increase in the copper price would have a significant, positive impact on our valuation, and a reduction in copper prices would have a negative impact on our valuation. We have

applied what we consider to be a conservative copper price to our model (\$8,800/t). Nearand mid-term interruptions to forecast production and continued strong demand would introduce upward pressure to the copper price, in our opinion. An increase in the gold price would also enhance our valuation, although to a much lesser extent (gold is responsible for only approximately 17% of net revenue).

Definition of reserves: Our DCF valuation is based on a mineral resource estimate; mineral resources are not shown to be economically viable (i.e. reserves). With further investigation, we believe that resources will be readily converted into reserves; this would allow us to reduce our risk rating and attribute more of the project value to Celsius.

Optimisation studies: The MCB project has scope for further optimisation during the final design phases. As further information is gathered, we believe further value could be unlocked.

Sagay project

We choose not to develop a DCF for Sagay, because the copper value used in the resource estimate (\$12,000t) is significantly above today's copper price. On current understanding and modelling, the Sangay project requires a higher-price environment to achieve returns. We have valued Sagay based on Enterprise Values (EV) per tonne of copper equivalent (CuEq) resource, determined from a list of peer companies.

We have identified 13 publicly listed companies with copper (plus gold) resources in the Asia Pacific region (Table 4). Based on reported copper and gold grades of measured, indicated and inferred resources, we have determined a copper equivalent (CuEq) tonnage, which we used to determine EV/t of CuEq.

Company	EV (\$m)	MI&I Copper (Kt)	M&I Gold (koz)	Inf Gold (koz)	MI&I Gold (koz)	CuEq Tonnage (kt)	EV (\$/t CuEq)
Golden Cross Resources Limited	6.7	190,000	1,270	450	1,720	190,342	0.04
SolGold Plc	400.8	4,334,300	26,660	2,900	29,560	4,340,178	0.09
Castillo Copper Limited	4.1	69,700	0	0	-	69,700	0.06
Hot Chili Limited	87.8	927,000	2,564	359	2,923	927,581	0.09
Noronex Limited	2.5	11,601	0	35	35	11,608	0.22
Cyprium Metals Limited	54.3	138,280	0	130	130	138,306	0.39
Medallion Metals Limited	15.5	25,081	923	545	1,468	25,373	0.61
Hammer Metals Limited	27.5	39,190	121	223	344	39,258	0.70
RTG Mining Inc.	24.2	12,770	231	74	305	12,831	1.89
Austral Resources Australia Ltd	96.0	55,410	0	0	-	55,410	1.73
Peel Mining Limited	35.9	19,750	170	34	204	19,791	1.82
Revolver Resources Holdings Ltd	14.7	1,623	0	0	-	1,623	9.08
Sandfire Resources Limited	2,365.4	242,500	223	0	223	242,544	9.75
					Ave	rage \$/t CuEq	2.04

Source: WH Ireland research, S&P Capital IQ (note: dollar values are US dollars)

We use the following metal prices to determine our copper equivalent values:

Copper - \$8,000t

Gold - \$1,750oz

The EV/t of CuEq for our peer group ranges between \$0.04 and \$9.75, and averages \$2.04 (~AU\$3/lb). The wide range of values reflects the varied project stages of our peer companies; we are satisfied that the Sagay project falls within this range.

We apply the average EV/t of CuEq (\$2.04) to the CuEq tonnage of the Sagay resource (1,452kt) to determine the value of \$4.5m. We consider the 40% interest that Celsius has in Sagay to arrive at a value of \$1.8m (£1.4m), the equivalent of 0.1p/share.

Upside potential

The Sagay resource is based on an enriched zone of secondary copper developed above a much larger copper (and gold) porphyry system. Further exploration of the wider porphyry deposit is required; with additional drilling, there is significant scope to increase the resource at Sagay, and therefore our valuation.

Opuwo project

We have valued the Opuwo project based on Enterprise Values (EV) per tonne of copper equivalent value (CuEq) resource.

We base our valuation of Opuwo on copper equivalent values (copper, cobalt, zinc, gold,) as copper is the most valuable component of the Opuwo resource

We have identified six publicly listed companies with multi-commodity resources (Table 5). Based on reported copper, gold and zinc resources, we have determined a CuEq tonnage for each of our peer companies.

Company	EV (\$m)	MI&I Copper (kt)	M&I Zinc (kt)	Inf Zinc (kt)	MI&I Zinc (kt)	M&I Gold (koz)	Inf Gold (koz)	MI&I Gold (koz)	Tonnage (CuEq)	EV (\$/t CuEq)
Asara Resources	2.8	-	1,106	1,280	2,386	322	2,141	2,464	1,086	2.6
Cobre Limited	5.6	272	-	-	-	-	-	-	272	20.7
KEFI	46.8	29,000	12,400	16,500	28,900	1,781	259	2,041	36,631	1.3
Orion Minerals	41.8	46,800	21,780	16,056	37,836	3	9	12	56,261	0.7
Platinum Group Metals	118.8	309,104	-	-	-	858	365	1,222	309,347	0.4
Trigon Metals	19.5	14,160	-	-	-	-	-	-	14,160	1.4
-								Ave	erage \$/t CuEq	4.5

Source: WH Ireland research, S&P Capital IQ

We use the following metal prices to determine our copper equivalent values: Copper - \$8,000t Zinc - \$ 2,200t Cobalt - \$25,000t Gold - \$1,750oz The EV/t of CuEq for our peers ranges between \$0.4 and \$20.7, and averages \$4.5. The wide range of values reflects the varied project stages of our peers; we are satisfied that the Opuwo project falls within this range.

We apply the average EV/t of CuEq (\$4.5) to the CuEq tonnage of the Opuwo resource (2,043kt) to determine the value of \$9.2m. We consider the 95% interest that Celsius has in Opuwo to arrive at a value of \$8.8m (£6.7m), the equivalent of 0.3p/share.

Upside potential

The Opuwo resource remains open for growth, which would increase our valuation.

Botilao prospect

We value Botilao based on its size. We use recent transactions (within the last four years) for early-stage copper-gold properties in the Asia Pacific region to determine an average value per hectare.

We have identified six transactions where the size of the property and total consideration are provided (Table 6). The average price paid per hectare for early-stage copper-gold properties in the Asia Pacific region is \$149.

Table 6: Comparable transactions							
Target company	Transaction date	Transaction value (\$m)	Area hectares	\$/hectare			
Challenger Mines Pty Ltd.	15/05/2020	0.90	7,150	126.3			
Kingwest Resources Limited	23/12/2022	1.04	30,000	34.8			
Grand Port Resources Pty Limited	24/02/2022	2.61	114,000	22.9			
Andy Well Mining Pty Ltd	21/12/2020	6.23	34,300	181.6			
Westernx Pty Ltd	25/10/2021	7.09	39,500	239.2			
Masterson Minerals Pty Ltd	07/02/2022	11.25	51,500	291.3			
			Average \$/t CuEq	149.4			

Source: WH Ireland, S&P Capital IQ

We multiply the average price paid per hectare by the size of the Botilao prospect (947 hectares) to determine a value of \$141k. We add a consideration for Celsius's 40% interest to arrive at a value of \$0.1m (£0.1m), the equivalent of 0.0p/share. This is a conservative input, given its proximity to the MCB project.

Upside potential

Botilao is adjacent to the MCB project, and is hosted in similar geology.

Historical exploration work conducted by Lepanto Consolidated Mining Inc. in the 1970s includes drilling diamond bore holes and geochemical sampling along exploratory tunnels. A 1973 inspection and verification report by the Bureau of Mines indicated that Lepanto was able to delineate two major northeast striking zones of mineralisation. Drilling and exploration tunnel works were concentrated around Botilao Creek, south of Pasil River. The report indicated tunnel samples with copper grades up to ~1%.

Successful exploration of the project, and the reporting of a resource, would allow us to adjust our valuation approach, which could increase our valuation of the project.

Any resources defined at Botilao could lean on infrastructure established at the adjacent MCB project; this could be a boost to the economics of both projects.

Net cash

Based on recent reports, we estimate (WHIe) that Celsius has a cash balance of approximately $\pm 1.5m$; this is equivalent to 0.1p/share.

Corporate costs

We have developed a three-year DCF, based on reported numbers, to estimate corporate costs of -£3.7m, the equivalent of -0.2p/share.

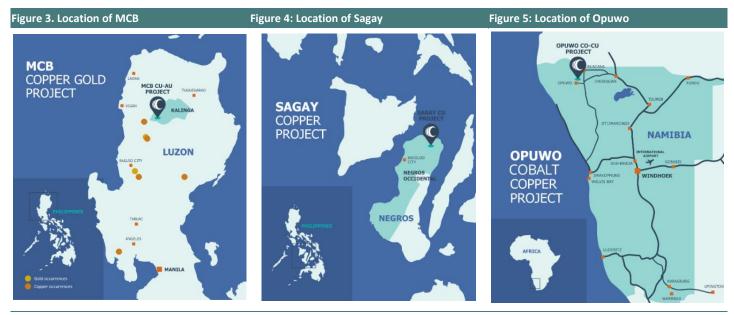
Celsius's assets

Celsius is an exploration and development company with a portfolio of copper-gold assets in the Philippines, together with an advanced cobalt asset in Namibia (Figure 3, Figure 4, Figure 5).

The company's flagship project, Maalinao-Caigutan-Biyog (MCB) is situated on the country's main island of Luzon, just 320km north of Manilla, with good access to key transport and export infrastructure. The deposit was previously held and explored by Freeport McMoRan.

Celsius also owns two additional copper-gold projects: the Sagay project and the Botilao prospect, also located in the Philippines.

Celsius has a 95% interest in the highly prospective Opuwo cobalt project in northern Namibia. The project is large-scale, and is located in a mining-friendly, politically stable and safe location, with excellent infrastructure. It has ample access to grid power, water and services, allowing a range of development options.



Source: WH Ireland Research, Celsius Resources

Maalinao-Caigutan-Biyog project (MCB) – Philippines

The MCB copper-gold project extends over 2,500 hectares in the Kalinga province, in the north of the Philippine archipelago, approximately 320km north of Manila. The topography of the area is typified by sharp ridges and steep slopes (Figure 6).

MCB has been studied to a high level of investigation; over 30,000m have been drilled, and a study was reported in October 2021. The latest Mineral Resource Estimate (MRE), reported in December 2022, contains 1,578kt of copper and 1,340Moz of gold (Table 7). The study is based on resources that have not been shown to be reserves (i.e. economically viable).



Source: WH Ireland Research, Celsius Resources

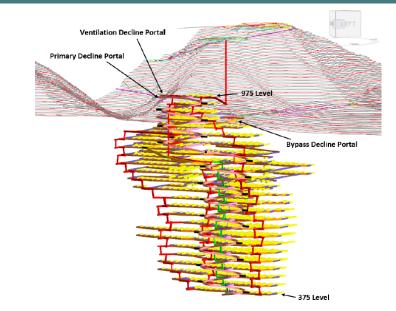
Table 7. JORC MRE – MCB project (December 2022)

Classification	Tonnes (Mt)	Copper grade	Gold grade (g/t)	Copper metal (kt)	Gold content (koz)
Measured	47	0.59%	0.19	275	282
Indicated	249	0.44%	0.11	1,085	904
Inferred	42	0.52%	0.11	219	154
Total	338	0.47%	0.12	1,578	1,340

Source: WH Ireland Research, Celsius Resources

The deposit is described as a copper-gold porphyry deposit with a central high-grade core.





Source: WH Ireland Research, Celsius Resources

The study considers underground mining (Figure 7), using a sub-level, long-hole, openstoping method with paste backfill. Over a 25-year mine life, 49.4mt of material with a copper equivalent grade (copper plus gold) of 1% would be mined; mine sequencing targets high grades in the early years of operation.

Scheduled mine production ramps rapidly, from around 200kt in year 1 to 1,400kt in year 2. Years 3 to 22 of the mining schedule would produce around 2,250kt annually – the peak

production rate of the mine design considered in the study. The mine layout considered in the study is presented in Figure 7. Production in years 23 to 25 is less than 1,000kt. It is our opinion that, with drilling, the life of mine could be extended beyond the 25 years.

Mineral processing and recovery consider a standard process – ore to be delivered by truck from the mine, front-end loaders feeding ore through screens, and jaw crushers reducing ore to 150mm. A closed-circuit SAG mill operates in conjunction with hydro cyclones to produce 150micron feed for copper recovery by flotation. A filter press is planned to dewater the concentrate.

The Study estimates all-in capital costs to first production of approximately \$255m with an estimated accuracy of 30%.

Botilao prospect – Philippines

The Botilao copper-gold porphyry prospect is adjacent to the MCB project.

The prospect lies along the same northeast structure that hosts MCB, and drilling completed in the 1970s confirmed the presence of copper-gold mineralisation related to a porphyry deposit.

Very limited work has been completed at Botilao since the 1970s. Celsius plans to conduct exploration programmes designed to delineate mineralising controls.

Any resources defined at Botilao could support future operations at MCB.

Sagay project – Philippines

The Sagay project is based around a copper-gold porphyry deposit and supergene chalcocite blanket.

To date, investigations have considered a surface mine producing 900kt of ore annually, to produce 25kt of copper concentrate grading around 10% copper. Metallurgical test work indicates that concentrate would be highly saleable: relatively clean, with low levels of chlorine, fluorine and arsenic. The Philippine Associated Smelting and Refining group has been identified as a potential buyer of the concentrate.

The mineral processing plant is designed to process 900kt of ore annually. The Chalcocite blanket is, on average, within 50m of surface, making recovery via shallow-surface mining the most viable approach.

Mineral processing and recovery designs are based on gravity recovery, a novel and environmentally considerate approach, avoiding the use of sulfuric acid. Comminution should achieve two streams of 1500mm and 106 microns. Falcon concentrators (gravity) concentrate ore. Regrind of rougher concentrate to 50 microns. Filtering for dry-stack tailings storage was preferred over conventional tailings dam, with the dry stack material to be utilised for environmental rehabilitation.

Mine plans consider 7.16Mt of ore to be recovered over a 10-year mine life.

Initial capital investment, including mine development, construction of processing plant, associated infrastructure, utilities, mine camp and contingencies, is estimated at \$15m (December 2023).

Opuwo project – Namibia

Celsius has a 95% interest in the Opuwo cobalt-copper project, which is located in northern Namibia, approximately 730km northwest of the capital city, Windhoek. The remaining 5% share is held by a local partner.

Key inputs for MCB study **Metal prices** Copper \$3.25/lb, gold \$1,695/oz **Metallurgical recoveries** Copper 85%, gold 65% **Maximum production rate** 2.25Mtpa The project is formed of prospecting licences, with a footprint of approximately 917km².

Cobalt-copper mineralisation has been defined over 25km of strike and remains open; only 13km of the trend has been tested to date. Opuwo is one of the largest undeveloped cobalt resources outside of the DRC.

Mineralisation is shallow, and potentially lends itself to low-cost mining.

A mineral resource is reported for Opuwo (Table 8). Over 95% of the resource is sulphide mineralisation, and 80% is categorised as indicated.

Table 8: Opuwo resource estimate (July 2021)								
Classification	Tonnes (Mt)	Copper grade	Copper metal (kt)	Cobalt grade (%)	Cobalt metal (kt)	Zinc	Zinc metal (kt)	
Indicated	45	0.44%	199	0.11	48	0.51%	231	
Inferred	180	0.43%	775	0.12	211	0.55%	991	
Total	226	0.43%	970	0.12	259	0.54%	1,218	

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Source: WH Ireland Research, Celsius Resources

Celsius is progressing trade-off studies that are focused on determining the viability of Opuwo. Ongoing trade-off studies include production rates, mineral processing routes and mining costs.

Copper market outlook

Market overview

Copper is the third most commonly mined metal, and is a massively traded commodity. It is used widely in construction, and is increasingly in demand as global economies shift towards an increasingly electrified and decarbonised future. It is copper's use in electrical motors, wires, cables, wind and solar power facilities that will see demand for the red metal surge.

In 2021, over 60% of global copper was sourced from five countries: Chile, Peru, China, Congo and the USA. Production in Chile is becoming increasingly expensive, as mines deepen, and social and political unrest in Chile and Peru has seen a number of major development projects delayed, with negative impacts on forecast copper supply. The recent suspension of operations at Cobre Panamá has also had a negative impact.

Against a backdrop of surging demand and uncertainties around some forecast supply, deficits look set to grow, which we expect to support future copper prices. Copper pricing and LME stocks are presented in Figure 8.



Company matters

Environmental, Social and Governance (ESG)

Celsius's Board of Directors is composed of finance/market, geology, mining, social and environmental specialists/experts. Notably, the chairman of the board is an Environmental and Human Rights Lawyer. This diverse and dynamic leadership team drives sustainable development practices throughout the organisation.

In developing its portfolio of assets, Celsius has adopted a sustainable approach to mining that minimises and mitigates social and environmental impacts. Technical and social teams work hand-in-hand when designing and implementing exploration programmes.

Celsius has been effective in working with its host communities, and has earned social licences, such as the Free Prior and Informed Consent, from the tribal communities, as well as barangay and local government project endorsements.

The project development plans for Sagay and MCB are complemented with a robust Environmental Protection and Enhancement Plan, a Social Development Management Plan and a Final Mine Rehabilitation/Decommissioning Plan, supported with extensive environmental and social baseline studies.

Shareholders

A total of 2,246,051,662 shares are in issue. Shareholders with more than a 3% equity interest are summarised in Table 9.

Table 9: Celsius's significant shareholders (04 January 2024)							
Holder name	Shares	Percentage holding					
HSBC Custody Nominees (Australia) Limited	312,759,866	13.92%					
Computershare Clearing Pty Ltd	156,398,771	6.96%					
BNP Paribas Nominees Pty Ltd	147,279,015	6.56%					
Citicorp Nominees Pty Limited	104,702,365	4.66%					
Total >3% equity holding	721,140,017	32.10%					
Total	2,246,051,662	100.00%					

Source: WH Ireland Research, Celsius Resources

Celsius team

Board members

Peter Hume – **Managing Director.** Peter has more than 40 years of substantial and practical experience in major mining and construction development projects in lead roles throughout Australia and internationally.

He has worked with companies such as Porgera Joint Venture, Xstrata Copper, Xstrata Coal, Anglo Coal, Glencore, Newmont Mining Corporation, BMA Coal, Kaltim Prima Coal and Dyno Nobel, among others. While working with these companies, he had the opportunity to mentor young and dynamic professionals, and this has been a key driver in his career, ensuring that knowledge, experience and core values gained through the years are passed on.

Julito Sarmiento – Executive Chairman. Julito is a Philippine national and resident, admitted to the Philippine Bar and the New York State Bar. He has 30 years' experience as a lawyer in the areas of mining, environment, social licences, renewable energy and government relations in the Philippines. He has an excellent relationship with the Balatoc indigenous cultural community, the host community of the Makilala Mining Company for the Maalinao-Caigutan-Biyog (MCB) Project in Kalinga Province, Northern Luzon. He has

also played a key role in the successful operations of several significant mining companies throughout the country. He led the acquisition by Glencore of the Philippine Associated Smelting and Refining (PASAR) Corporation in Leyte Province, Visayas, where he subsequently served as Board Director, Vice President and General Counsel. He was Senior Partner and Head of the Natural Resources, Environment and Social License Practice Group for 16 years, one of the leading law firms in the Philippines.

Julito is currently the President of each of Celsius's operating subsidiaries, namely Makilala Mining Company, Inc. (MCB Copper Project), Tambuli Mining Company, Inc. (Sagay Copper Project) and PDEP, Inc.

Michael Hulmes – non-executive director. Michael is a mining engineer by profession, with over 35 years' experience in base metal and gold mines in Australia, Papua New Guinea, Portugal, Spain, China, South Africa, Tanzania, Brazil, the US and the UK. In his career, he has had significant involvement in the development and operation of underground mines. These have been mainly modern mechanised operations, employing a variety of mining methods, in a range of geological settings. He was most recently the COO of Appian Capital, Brazil, overseeing the restart of the Mirabela Nickel Mine and the construction of the greenfield Serrote Copper Mine. Prior to this, he was the Managing Director of the Iberian Operations for Lundin Mining, with responsibility for the Neves-Corvo and Aguablanca base metal mines in Portugal and Spain, respectively. He was General Manager of the Ok Tedi Mine, which exploits a porphyry copper/gold deposit in Papua New Guinea, and COO of Citadel Resources during the development of the Jabal Sayid Copper/Zinc Mine. In Australia, he was the General Manager of the Australian Operations for Barrick Gold, with responsibility for five mines, three of which had underground operations. He was the General Manager of the Plutonic Gold Mine, and, during his tenure there, he oversaw the transition of the mine from a predominantly open pit to a predominantly underground operation. Mr Hulmes holds a BSc (Eng) in Mining Engineering from Imperial College, London, and an MBA from Deakin University. He is a Fellow of the Australasian Institute of Mining and Metallurgy, and is currently a nonexecutive director of TSX-listed Transatlantic Gold Corporation.

Simon James Farrell – non-executive director. Simon obtained his Bachelor of Commerce at the University of Western Australia and his Masters in Business Administration at the Wharton School, University of Pennsylvania. Simon has more than 40 years' experience in both the finance and mining industries.

He was CEO of Consolidated Minerals. Three years after he left Consolidated Minerals, the new controlling entity sold the assets acquired under his management for over AU\$1bn. Simon also worked as a consultant to the Minproc Engineering group for a short period, before taking the position of CEO of what became Coal of Africa Limited (CAL). When he started at CAL, it had a market cap of AU\$3m; he grew this to in excess of AU\$1.5bn. He left CAL in 2017 as Deputy Chairman.

Paul Dudley – non-executive director. Paul has over 25 years' business experience, working across various sectors, including the areas of Natural Resources, Corporate Finance, Regulatory and Financial Services. Paul is a Fellow of the Chartered Institute of Accountants of England and Wales, and a Member of the UK's Chartered Institute of Securities and Investment. He qualified as a Chartered Accountant at PwC. During his time at WH Ireland plc, he worked as a Qualified Executive for the purposes of AIM Rules, acting as a Nominated Adviser from 2004-07.

Attilenore Manero – non-executive sustainability director. Nene has extensive experience developing social, cultural, environmental and technical compliance documents in accordance with Philippine statutory approval requirements, having worked with major public infrastructure, mining and hydropower projects, and being involved with indigenous communities for more than 15 years.

Prior to joining the natural resource industries, Nene had more than 10 years of development work with the World Bank and EU-funded integrated rural development programmes in the Philippines, in collaboration with the national government agencies, LGUs and NGOs, as well as the private sector.

Nene plays an active role overseeing ESG and community elements, as well as various regulatory related approvals for the company's flagship assets in the Philippines, and thus forms part of the Senior Management of the group.

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Recommendation	Total Stocks	Percentage %	Corporate	Percentage %
Corporate	66	100	66	100.0
Buy	0	0.0	0	0.0
Speculative Buy	0	0.0	0	0.0
Outperform	0	0.0	0	0.0
Market Perform	0	0.0	0	0.0
Underperform	0	0.0	0	0.0
Sell	0	0.0	0	0.0
Total	66	100.0	66	100.0

Valuation and Risks

For details relating to valuation and risks for subject issuers, please refer to the comments contained herein or in previously published research reports or sector notes.

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Company/Issuer Disclosures

Company Name	Table of interest number	12-month recommendation history	Date
Celsius Resources (CLA)	2,4,5	Corporate	22.12.23

https://www.whirelandplc.com/capital-markets/research-recommendations

Companies Mentioned

Company Name	Rec	Price	Price Date/Ti	ime	Company Name	Rec	Price	Price Date/	Time
Golden Cross Resources LTD (ASX:GCR)	No Rec	AUD 0.003	18/01/2024	16:30	Awalé Resources Limited (TSXV:ARIC)	No Rec	CAD 0.11	18/01/2024	16:30
SolGold Plc (LSE:SOLG)	No Rec	GBP 0.079	18/01/2024	16:30	Cobre Limited (ASX:CBE)	No Rec	AUD 0.043	18/01/2024	16:30
Castillo Copper Limited (ASX:CCZ)	No Rec	AUD 0.006	18/01/2024	16:30	Kavango Resources Plc (LSE:KAV)	No Rec	GBP 0.007	18/01/2024	16:30
Hot Chili Limited (ASX:HCH)	No Rec	AUD 0.98	18/01/2024	16:30	KEFI Gold and Copper Plc (AIM:KEFI)	No Rec	GBP 0.006	18/01/2024	16:30
Noronex Limited (ASX:NRX)	No Rec	AUD 0.01	18/01/2024	16:30	Orion Minerals Limited (ASX:ORN)	No Rec	AUD 0.013	18/01/2024	16:30
Cyprium Metals Limited (ASX:CYM)	No Rec	AUD 0.023	18/01/2024	16:30	Platinum Group Metals Ltd. (TSX:PTM)	No Rec	CAD 1.43	18/01/2024	16:30
Medallion Metals Limited (ASX:MM8)	No Rec	AUD 0.06	18/01/2024	16:30	Prospect Resources Limited (ASX:PSC)	No Rec	AUD 0.082	18/01/2024	16:30
Hammer Metals Limited (ASX:HMX)	No Rec	AUD 0.042	18/01/2024	16:30	Rome Resources Ltd. (TSXV:RMR)	No Rec	CAD 0.24	18/01/2024	16:30
RTG Mining Inc. (TSX:RTG)	No Rec	CAD 0.025	18/01/2024	16:30	Trigon Metals Inc. (TSXV:TM)	No Rec	CAD 0.215	18/01/2024	16:30
Austral Resources Australia Ltd (ASX:AR1)	No Rec	AUD 0.16	18/01/2024	16:30	Challenger Mines Pty Ltd. (PRIVATE)	No Rec	PRIVATE	18/01/2024	16:30
Peel Mining Limited (ASX:PEX)	No Rec	AUD 0.11	18/01/2024	16:30	Kingwest Resources Limited (PRIVATE)	No Rec	PRIVATE	18/01/2024	16:30
Revolver Resources Holdings Ltd (ASX:RRR)	No Rec	AUD 0.099	18/01/2024	16:30	Grand Port Resources Pty Limited (PRIVATE)	No Rec	PRIVATE	18/01/2024	16:30
Sandfire Resources Limited (ASX:SFR)	No Rec	AUD 6.57	18/01/2024	16:30	Andy Well Mining Pty Ltd (PRIVATE)	No Rec	PRIVATE	18/01/2024	16:30
Alpha Exploration Ltd. (TSXV:ALEX)	No Rec	CAD 0.55	18/01/2024	16:30	Westernx Pty Ltd (PRIVATE)	No Rec	PRIVATE	18/01/2024	16:30
Apollo Minerals Limited (ASX:AON)	No Rec	AUD 0.032	18/01/2024	16:30	Masterson Minerals Pty Ltd (PRIVATE)	No Rec	PRIVATE	18/01/2024	16:30
Asara Resources Limited (ASX:AS1)	No Rec	AUD 0.012	18/01/2024	16:30					

Date
31.01.24

Recommendation	From	То	Analyst
Corporate	22.12.23	present	CA

Current Analyst (CA), Previous Analyst (PA)

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Contacts

Research			
Charlie Cullen		020 7220 1678	charlie.cullen@whirelandcm.com
John Cummins		020 7220 1755	john.cummins@whirelandcm.com
Matthew Davis		0113 394 6620	matthew.davis@whirelandcm.com
Brendan Long	Oil & Gas	020 7220 1694	brendan.long@whirelandcm.com
Paul Smith	Mining	0113 394 6609	paul.smith@whirelandcm.com
David Seers	Mining	0113 394 6610	david.seers@whirelandcm.com
Nick Spoliar		020 7220 1761	nick.spoliar@whirelandcm.com
Emma Ulker	Healthcare	020 7398 1141	emma.ulker@whirelandcm.com

Harry Ansell	020 7220 1670	harry.ansell@whirelandcm.com
Dan Bristowe	020 7220 1648	daniel.bristowe@whirelandcm.com
Stephen Frohlich	020 7220 0492	stephen.frohlich@whirelandcm.com
Beverley Gibbons	020 7220 0479	beverley.gibbons@whirelandcm.com
George Krokos	020 7398 1106	george.krokos@whirelandcm.com
Fraser Marshall	020 7220 0484	fraser.marshall@whirelandplc.com

Investor I	Relations
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Sales & Trading

Laetitia B	radamante
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020 7398 1136

laetitia.bradamante@whirelandcm.com