

Corporate

 Current price **0.39p**

 Sector **Mining**

 Code **ROCK.L**

 Listing **AIM**

Share Performance


% Change **1m** **3m** **12m**
ROCK.L -3.0 -31.0 -56.3

Source: Thomson Reuters, Allenby Capital

Share Data

 Market Cap (£m) **3.96**

 Shares in issue (m) **1083.7**

 52 weeks (p) **High** **Low**
1.18 **0.36**

 Financial year end **31 December**

Source: Company Data, Allenby Capital

Key Shareholders

Nicholas Walley 5.45%

Michael Somerset-Leeke 4.75%

David Price 1.28%

Edward Fry 1.20%

Patrick Elliott 1.15%

Source: Company Data, Allenby Capital

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Rockfire Resources plc (ROCK.L)

Major project announcements

Rockfire Resources has recently made two major project announcements. These related firstly to a maiden JORC compliant resource estimate for its Copperhead porphyry project in Queensland and secondly a successful tender for the Molaoi zinc project in southern Greece. We believe the Copperhead announcement was particularly encouraging given the size of the resource following inaugural drilling and the potential for a large scale copper porphyry discovery. Molaoi, according to Rockfire, is an 'outstanding high-grade zinc deposit'. Significant drilling was undertaken at Molaoi in the late 1970s and 1980s by a Greek state agency with excellent results in terms of zinc, lead and silver grades. Mineralisation was also widely present. Rockfire has suggested that it will be moving rapidly at Molaoi to a JORC resource assessment. This will probably be followed by a mine feasibility study. According to Rockfire, Molaoi has significant exploration upside and is prospective for copper and gold.

- Copperhead background:** The 100% owned Copperhead project is located about 250 km southeast of Townsville in northern Queensland close to the A1 Bruce Highway which parallels the coast. Geo-physically it lies on the Cambrian-Ordovician East Tasmanide Porphyry Tract. This runs about 100-200 km inland from the Queensland coastline and is generally recognised as having copper porphyry potential. However, as yet there is no copper mining on the Tract. Rockfire has a second early-stage porphyry project at Copper Dome, about 50 km southwest of Copperhead.
- Copperhead drilling results:** Rockfire undertook a five-hole diamond drilling programme in Q4 2021 with the aim of verifying Carpentaria Exploration's positive results in 1972 and providing the basis for a resource assessment. Drilling was undertaken to a depth of around 500m and extends the zone drilled previously. Significantly, all five holes intersected copper over varying intervals. Some of the more interesting results were 501m @ 0.14% CuEq, 357M @ 0.11% CuEq, 185M @ 0.20% Cu Eq and 370M @ 0.20 Cu Eq. The peak reading over individual metre long samples was 2.28% Cu. Grades are relatively low but broadly consistent with earlier Carpentaria drilling. Importantly, Rockfire believes that its drilling results in terms of alteration and visible copper mineralisation supports the hypothesis that it has penetrated the upper phyllic or hydrothermal zone in plutonic rocks. Typically, high-grade copper targets lie below the alteration zone on the flanks of the porphyry ore body. We expect the hypothesis will be tested in the future.
- Resource estimate:** Rockfire's JORC compliant inferred resource estimate for Copperhead is 64M tonnes of ore @ 0.19% CuEq (credits for molybdenum and silver) for 120,000 tonnes of contained copper equivalent. Ore tonnage is considerably greater than Carpentaria's non-JORC compliant resource estimate also based on five holes of 35M tonnes but contained copper is approximately the same. Note that the recent resource estimate is only the first cut. Rockfire has indicated that further drilling is expected to reveal more resources to the north, east and west of the existing drilling zone and at depth.

Year End: December

(£'000)	2018	2019	2020	2021E	2022E
EBITDA	(532)	(546)	(707)	(848)	(988)
NET (DEBT)/CASH	294	763	1,351	1,291	(862)

Source: Company; Allenby Capital. Allenby Capital acts as Nomad & Broker to Rockfire Resources plc (ROCK.L).

Please refer to the last page of this communication for all required disclosures and risk warnings.

How significant is the Copperhead resource base?

Inaugural drilling looks promising

Copperhead remains an early stage copper project but inaugural drilling results and the inferred resource base point is indicative of interesting potential. Compared with historic mining operations based on porphyry deposits, copper grades are relatively low and currently not economic. It should be noted however that the high grade zones of the Copperhead porphyry at depth have probably yet to be penetrated. Copper grades are also trending down in globally significant porphyry mining provinces and for new bulk mining projects grades tend to be below 0.5%

To put Copperhead into context we think it is instructive to look at Phoenix Copper's (PXC: AIM) Empire mine regeneration project in Idaho, USA. This has a NI 43-101 resource base of 33.5M tonnes of ore and contained copper equivalent of 252,199 tonnes of which 69% is in the measured and indicated category and the balance inferred. Significantly, the copper equivalent grade of around 0.75% is much higher than at Copperhead but the ore tonnage is lower. Empirically Copperhead's ore tonnage is already relatively high at 64.5M tonnes for a small to medium scale porphyry project. Assuming that drilling at depth boosts the grade along with the ore tonnage, copper equivalent resources could, we believe, comfortably reach the 250,000 tonnes plus level of Phoenix's Empire project. We suspect that for economic operation a mine/mill would need to have sufficient feedstock for at least a ten year life with a production rate of 20,000 tpy of contained metal. This assumes sulphide ore and flotation beneficiation to produce a typical 30% Cu concentrate.

We believe the parameters for a medium to large-scale copper porphyry project would have an ore tonnage of at least 200M tonnes and contained copper equivalent of about 800,000 tonnes. Truly large scale porphyry projects have contained copper equivalent of several million tonnes. SolGold's (SOLG.L) Alpala project in Ecuador, for example, has an ore tonnage of 2.7M tonnes and contained copper equivalent of 14.0M tonnes based on a grade of 0.53% and a cut-off of 0.21%. It should be noted that porphyries in the Tasmanide Tract tend to be smaller than in the Andes.

Note, to establish even a mid-size porphyry resource with drilling depths of more than 500M and covering an ore body several kilometres long and wide would be an expensive undertaking. Each diamond-drilled hole >500M would, we believe, cost in excess of US\$0.2m. To establish a reserve base of adequate critical-mass we believe it could be necessary to drill and assay over 100 diamond-drilled holes. Potentially heavy development costs in our view probably imply concluding a joint-venture arrangement. Given the enthusiasm for future facing metals such as copper this might not be too difficult once early stage de-risking has been undertaken.

Work programme

Near-term, the emphasis will be on conducting some low level geo-technical work at Copperhead to determine whether the next drilling programme should be directed towards the east or west of the target area.

Copperhead logistics

Uncomplicated highway export routes to coastal terminals

In an Australian context Copperhead is by no means a remote location. We believe the broader region is well endowed with power and has good highway access. From Townsville and coastal towns to the south access to mining and other supplies including diesel should also be uncomplicated. We believe a prospective Copperhead mine/mill would look to export copper concentrate to East Asia smelters. This could be easily achieved by trucking to the port of Townsville. A more economical alternative might be to truck to the Abbot Point coal terminal and deep-water port 25 km northwest of the coastal town of Bowen. The distance from Copperhead would be less than 100 km, a modest trucking distance.

Glencore’s (GLEN.L) Mt Isa smelter may not be a contender for processing any future ore from Copperhead, partly due to distance and complicated logistics and partly the likelihood of closure in the near to medium term. Note, Glencore’s Townsville facility is an electrolytic refining operation that produces high-grade copper cathode using anode feedstock sourced from Mt Isa.

Exhibit 1: Queensland highway map and project locations



Source: World Maps

Queensland is very much a Tier 1 mining location

Queensland ranks very much as a Tier 1 mining location, a view corroborated by the annual survey of the Vancouver-based Fraser Institute. The survey aims to assess the investment attractiveness of various jurisdictions in terms of mineral endowment and public policy regarding such aspects as infrastructure, taxation and the regulatory environment. In 2021 Queensland ranked number 19 out of 84 jurisdictions.

There is little doubt in our view that a significant commercial porphyry discovery in Queensland would be viewed particularly positively in the investment community bearing in mind the benign regulatory and taxation environment. Particularly in a copper context Tier 1 status has arguably become of increasing relevance of late for investment given the election of left wing populist presidents in both Chile and Peru, the number one and two mine copper producers respectively.

Copper Dome

Highly prospective

The Copper Dome prospect was discovered in 1972 by Australian Selection Pty Ltd following the drilling of three percussion and six diamond drill holes over 1,297m. Diamond drilling revealed some interesting grades including 15.2m @ 0.88% Cu, 12.2m @ 0.61% Cu and 24.4m @ 0.27% Cu. In addition, sporadic gold analysis was undertaken which reflected grades up to 1.86 g/t Au.

Rockfire believes Copper Dome is highly prospective. This reflects Australian Selection’s earlier promising drilling results, the scale of the igneous intrusion measuring 2 km long by 1 km wide and evidence of high temperature potassic alteration which is believed to reflect proximity to an intrusion system. Rockfire also notes that Copper Dome has been under explored using modern techniques, previous vertical drilling may have missed copper/gold mineralisation hosted within vertical structures and the outcropping of the deposit at surface which offers the prospect of low-cost exploration.

Rockfire conducted a helicopter aeromagnetic survey in May 2021. High resolution images were obtained and used to identify two main targets showing very strong magnetic responses commencing about 500m below the surface. Given the close proximity of Copper Dome and Copperhead, a joint development programme could be considered once initial de-risking has taken place. A centralised mill, for example, would enhance cost competitiveness.

Planned two-hole diamond drilling

Near-term, Rockfire will be looking to test the prospectivity of the Copper Dome project at depth. We believe a two-hole diamond drilling programme is planned probably for the third quarter of 2022. The geophysical highs identified by the 2021 helicopter magnetic survey will be tested at depths >500m. Significantly a landowner access and compensation agreement has been signed with the owner of the Copper Dome property.

Molai

History and background

Advanced Zn-Pb-Ag project in southern Greece: Molai is an advanced-stage zinc-lead-silver development project located close to a small town (population about 5,000) of the same name in the Peloponnese Province of southern Greece about 250km by highway southwest of Athens. Significantly, the location is a mere 10.5km from the coast by highway. The project is of long standing reflecting the original discovery in the 1960s by an arm of the Greek state, the Greek Institute of Geology and Mineral Exploration (IGME).

Exhibit 2: Greece highway map and Molai project location



Source: ilovemaps.co.uk

Greek government agency undertook diamond drilling between 1979 and 1987: Only limited appraisal work was undertaken until 1979 when diamond drilling commenced. In the period to 1987 significant drilling activity was undertaken. This resulted in two non-JORC compliant resource estimates. A feasibility study was also undertaken by IGME in 1988 with unknown results. In the late 1980s IGME also constructed an exploration portal along with a 700m decline targeting the upper 50m of zinc mineralisation. Appraisal and development activity ceased in 1989.

Licence and mining rights obtained by Hellenic/Rockfire following an international tender: A Greek privately owned company, Hellenic Minerals IKE, identified Molaoi as a project of interest in 2016 and in 2018 engaged in discussions with the Greek government about development potential. In 2021 the government announced an open international tender for Molaoi in which Hellenic with the technical and financial support of Rockfire participated under an MOU (Memorandum of Understanding). In late March 2022 Hellenic was awarded a 30-year licence granting the exploration and mining rights for the Molaoi project. Under the MOU Rockfire will acquire 100% of the shares in Hellenic by late April. This will also provide a 100% interest in the project.

Currently, modest quantities of zinc are produced in Greece at Eldorado Gold's (ELD: TSX) polymetallic Olympias mine located on the Halkidiki Peninsula in the north of the country. The company also has the nearby Stratoni silver-lead-zinc mine which since the fourth quarter of 2021 has been on a care and maintenance footing pending resource development.

Geology

VMS deposit: The Molaoi project is reportably a volcanogenic massive sulphide (VMS) deposit. Such deposits are accumulations of metal sulphides, such as sphalerite (zinc sulphide) or chalcopyrite, resulting from under-sea volcanic activity. Sulphides are precipitated from magmatic heated hydrothermal fluids containing valuable metallic elements. Typically, VMS deposits appear as polymetallic lenses in the form of pods or sheets. They are a major source of base metals. According to the technical literature, around 25% of the world's zinc is sourced from VMS deposits.

Drilling results

173 cored holes drilled along 7 km of strike: Drilling at Molaoi has been undertaken over a 7 km NW-SE trending line of strike with the bulk concentrated in the lower 1.5 km. In total 173 cored holes have been drilled down to a maximum depth of around 220m. Significantly, mineralisation starts at surface and remains open at depth. Rockfire refers to multiple, stacked zinc-bearing layers having been mapped over the total strike length which it believes provides 'enormous' exploration upside for additional zinc mineralisation.

Exceptionally high Zn eq grades of >12%: The key feature of the drilling results to date is the exceptionally high zinc and zinc equivalent grades. Indicative of this is hole BGXIII where the Zn and Zn eq grades were 26.5% and 27.9% respectively over an interval of 2.8m. Across a wide spectrum of holes zinc equivalent grades were deep into double-digit territory of >12%. More typical zinc grades internationally are around 5% and possibly approaching 10%, including credits for other metals including lead and silver as for Molaoi.

Potential for a sizeable deposit: The combination of high grades and the stacked zinc bearing layers potentially points to a sizeable deposit at Molaoi with the potential for a competitive position on the international zinc cost curve. Arguably Molaoi could evolve as a company maker. Historically copper and gold potential had not been analysed but Rockfire believes these metals could also be present and further boost the zinc equivalent grade. Interestingly, Rockfire has suggested that the critical metals, germanium, gallium and indium could be present at Molaoi. Germanium and gallium are both used in

electronics including as semi-conductor materials. Indium also has semi-conductor applications and additionally has a major use in plasma TV and LCD conductive electrodes.

Development programme

A JORC resource estimate is the key priority: Rockfire has suggested that its key priority at Molaoi will be to establish a JORC compliant resource estimate. This will involve reviewing the existing drill core data and undertaking a programme of infill and extension drilling of the main resource area. Importantly Rockfire has indicated that the historical drill cores have been located. Samples of the cores are being prepared for analysis at the ALS laboratories. Rockfire will investigate the feasibility of reopening the site portal and decline.

We believe a JORC resource estimate could be forthcoming by end third quarter 2022. Following the resource estimate we would expect Rockfire to move quickly to a scoping study or indeed a pre-feasibility study. Assuming that previous drilling results can be validated and a JORC resource with sufficient critical-mass quickly established we believe the lead time to production at Molaoi could be around three years.

Technical and environmental studies are required pre-drilling: Key near-term requirements include submitting a work programme to the Greek government and completing environmental and technical studies. Completion of the studies is required before drilling or other invasive work can commence. Quotes have already been received for the environmental study from three consulting firms in Greece. The project technical report is underway and an initial meeting has been undertaken with the local Molaoi community.

Underground mining to produce a 50% Zn concentrate anticipated: The company has indicated that at this stage it is only envisaging underground mining at Molaoi. Ore processing will be via conventional flotation to potentially produce a 50% zinc sulphite concentrate. Rockfire plans early metallurgical test work to confirm expected recoveries. Shipments of concentrate will prospectively be made to smelters for treatment to produce close to 100% refined zinc.

Key zinc smelter groups in Europe Nyrstar, Glencore and Boliden: Typically, treatment is via an energy intensive hydrometallurgical process involving roasting, sulphuric acid leaching and electrowinning. The principal zinc smelter groups in Western Europe are Nyrstar (Trafigura), Glencore and Boliden. Nyrstar's operations are in Belgium and Netherlands. Glencore has one of the world's largest smelters at San Juan de Nieva in northern Spain while Boliden's operations are located at Odda in Norway and Kokkola Finland.

The only lead-zinc smelter in SE Europe is the KCM AD facility near Plovdiv in central Bulgaria. Plovdiv is around 1,180km by highway from Molaoi. Glencore's Potovesme smelter in Sardinia could provide an alternative option with an uncomplicated and probably relatively low-cost shipping route by sea.

Molaoi G&A

Modest boost to G&A: Molaoi will inevitably add to G&A as well as project related expenditure. The former relates partly to the need to add technical staff and partly to the administrative costs associated with a new operational and legal entity. Initially however the costs, we believe, look like being modest at perhaps around €0.15m at an annual rate.

World zinc production and applications

Number four metal in terms of tonnage: Zinc ranks number four metal by tonnage produced after steel, aluminium and copper. According to the USGS (US Geological Survey), world primary production in 2021 was 13M tonnes of which China, easily the largest producer, accounted for 32% of the total. The next largest primary producers in

2021 were Peru and Australia with shares of world output of 12% and 10% respectively. Significant quantities of zinc are recycled as for other base metals. Secondary output based on scrap accounts for about 30% of total refined zinc production of around 18.5M tpy currently.

Zinc applications dominated by galvanising: The applications for zinc are dominated by galvanizing which provides a protective coating to steel to prevent corrosion. This application, according to industry sources, accounts for about 60% of usage and is driven by output trends in the construction and automotive fields. The number two application is zinc diecasting which represents about 17% of the total. Diecast components primarily have automotive (largest market), appliance and business equipment applications. The third largest zinc application group is brass alloys (brass is an alloy of copper and zinc). Brass has a 9% share of zinc usage and has a wide array of applications in electrical, plumbing and engineering components. The balancing 14% of the mix comprises miscellaneous applications including electrical conductors, primers/paint and the vulcanization of rubber.

Zinc market

Refined Zn prices near record levels but concentrate market in surplus: The zinc concentrate market currently is in surplus reflecting buoyant mine output and constrained smelter operations due to tight and ultra-high-cost energy supplies. Tolling charges have hence been moving higher. Refined zinc prices by contrast have been at near record levels of about \$4,200/tonne due to depressed smelter/refinery output and apparent supply deficits. Energy cost pressures look like continuing to support refined zinc prices over at least the near-term.

Why Molaoi?

Rockfire's underlying interest in the Molaoi project stems from the earlier experience of the company's CEO, David Price, in the mining industry in Greece. He is familiar with the industry backdrop and has continued to take an interest in the country. We see the key attractions of Molaoi as follows:

- No upfront cash consideration
- A potentially commercially significant zinc-lead-silver deposit with apparently excellent grades.
- Advanced stage project secured by a major cored drilling programme and the construction of a mine portal and incline
- Potential for establishing a JORC compliant resource quickly and possibly within about three months subject to the proviso that earlier drilling results can be verified.
- Potentially relatively short lead time of perhaps three years or so to mine start-up or a trade sale.
- Location of Molaoi project close to the coast.
- Mining rights incorporated in the terms of the licence. This potentially reduces the lead time to production by precluding the need to make separate applications.
- Greece is a Tier 1 Mining location with a well-established mining code and functioning legal system and democracy.

Lighthouse gold tenement

Location and geology

50 km SE of Charters Towers and 120 km SW of Townsville: The 100% owned Lighthouse tenement in northern Queensland contains the bulk of Rockfire's gold interests. The tenement lies about 50 km southeast of the historic mining centre of Charters Towers and 120 km southwest of Townsville. It covers a substantial 31,500 ha in close proximity to the Ravenswood Igneous Complex and to the south of the east-west trending Flinders Highway from Townsville to Mt Isa.

Highly mineralised zone: Northern Queensland is a highly mineralised zone stemming from three phases of Palaeozoic magmatism and volcanism associated with orogenic (mountain building) activity between about 470 Ma and 300 Ma. Economic mineralisation derives from magmatic intrusions and occurs principally as gold in mesothermal vein and porphyry form. Mesothermal veins typically continue at depth along fissures and fractures from the sources of the intrusion. Shallower and smaller high-grade epithermal vein and breccia systems also exist.

Historic gold producing province

Historic gold production around 20m oz: Northern Queensland in the vicinity of the Lighthouse tenement has been a major gold mining province since the 1860s. Cumulative gold production has approached 20m oz principally from the Charters Towers, Ravenswood/Mt Wright, Mt Leyshon and Pajingo mines. Currently, there are two mid-tier gold mines in operation within about a 50 km radius of Rockfire's core Lighthouse tenement interests. These are Ravenswood and Pajingo, both of which have integrated mills. The former is owned by a joint-venture comprising the Hong Kong private equity concern, EMR Capital and the Singapore-based and listed mining group, Golden Energy Resources (AUE:SGX).

Currently two operating gold mines: Ravenswood produced 79,000 oz Au in 2021, according to its website. Significantly, a major expansion is nearing completion which will lift capacity to about 200,000 oz/year Au reflecting development of the open pit and mill. Completion is planned in the first half of 2022. The Pajingo mine owned by Perth-based Minjar Gold which is a subsidiary of the Chinese concern Shandong Tianye Gold Mining.

Plateau is the most advanced project

Rockfire benchmarks Plateau against historic Mt Wright mine: The most advanced Lighthouse project is Plateau which lies towards the southeast of the tenement. It is located about 20 km northeast of Pajingo and around 47 km southwest of Ravenswood and the Mt Wright mine. Significantly, Rockfire sees Plateau in the upper zones as being analogous in terms of geology, breccia (fragmented rock cemented together by a fine-grained matrix resulting from extreme pressure)-hosted mineralisation, grade and potentially resource base to Mt Wright and uses it for benchmarking purposes. Rockfire classifies Plateau as a breccia/rhyolite hosted gold system. Mt Wright, note, has produced a sizeable 1.5 m oz Au.

Grades similar to Mt Wright at shallow depths-----: Rockfire has undertaken on Plateau a sizeable 9,376m of drilling involving 56 holes of which 50 were RC (reverse circulation) and 6 diamond. The RC drilling results at shallow depths down to about 250m have generally been encouraging. Gold has been present in all holes drilled, as well as highly significant silver assays. In hole BLP027 a grade of over 2.3 g/t Au was encountered over an interval of 11m at 145m below the surface. Overall, grades down to 250m have been in line with the relatively low levels encountered in the near-surface at Mt Wright.

-----but deeper drilling mildly disappointing: The deeper diamond drilling undertaken in July 2020 arguably proved mildly disappointing in terms of grades but there were some positive aspects. At depths greater than 250m, for example, the occurrence of gold grades

>1.0g/t and high grade gold >5 g/t appeared to increase. The deepest hole at BPL040 intersected 2.5 g/t Au over 0.41m at 639m. An impressive gold intercept of 16.9 g/t Au was made by BPL026. Rockfire, has acknowledged that it failed to identify the underlying source of the mineralisation with its initial diamond drilling programme at Plateau. It should be noted, however, that the scope of Rockfire's deep diamond drilling here is still decidedly modest with only two holes, both of which encountered reasonably high grades over narrow intervals.

Exploration upside in all directions and at depth at Plateau: In the second quarter of 2021 Rockfire undertook a high-definition gravity survey on the Plateau prospect to identify concentrations of sulphide at >500m which is within the Mt Wright sweet spot. Two anomalies were identified to the southeast of existing drilling operations at Plateau. The stronger of the two anomalies is in a zone not previously drilled by Rockfire. The two anomalies will probably be targets in the next drilling round. Significantly, Rockfire believes that it has exploration upside at Plateau in virtually all directions and at depth. It also sees exploration potential at shallow depths with infill drilling.

Resource base

Resource base of 141,860 Au at Plateau and Double Event: Following the 2020 drilling programme, Rockfire announced a radical upgrade in its JORC compliant resource base at Plateau in terms of volume and category in late January 2021. The new resource came in at 3.9m tonnes @ 1.1g/t Au and 6.4 g/t Ag for 131,302 oz Au and 800,000 oz Ag. The estimate was made using a 0.5 g/t gold cut-off. Silver is expected by Rockfire to contribute to project economics since the metal is produced simultaneously with gold using the CIP (carbon-in-pulp) extraction process. Resources in the high confidence indicated category were 45% of the total while inferred accounted for the balance. In addition to the Plateau resource, the Double Event prospect, about 25 km north of Plateau, has inferred resources of 10,558 oz Au. This takes the total resource base for the Lighthouse tenement to 141,860 oz Au. Compared with the July 2019 estimate, the current resource is up by about 5X.

Scoping study

Positive scoping study based on a shallow open pit and third party tolling: In early 2021 Rockfire undertook a scoping study for a small-scale Plateau mining operation. The study provided an initial technical and economic assessment and was based on an open-pit mine exploiting the shallow low-grade ore zone in the top 100m. A key assumption was third party tolling of the mined ore which would imply using either the Pajingo or Ravenswood mills. Rockfire has not discussed any potential cooperation with either of these operators. Capital expenditure was therefore marginal. Not surprisingly perhaps, the scoping study showed significantly positive cash flow on five different scenarios. Cash flows ranged from £3.7m to £10.7m based on a gold price assumption of \$1,718/oz.

Other Lighthouse gold prospects

Interesting potential at Double Event, Bell Rock and Jeddah prospects: Lighthouse includes several interesting prospects in addition to Plateau. At Double Event, for example, Rockfire drilling in 2018 revealed some excellent grades. These included: 3m @ 10.04g/t Au, 1m @ 5.09 g/t Au, 2m @ 3.17 g/t Au and 3m @ 2.94 g/t Au. Two promising prospects that surfaced in early 2021 following soil sampling were Bell Rock and Jeddah 3.5 km southeast and 2 km southwest of Plateau respectively. Bell Rock sampling revealed unusually high gold-soil values of up to 1,7g/t Au (1,700 ppb). Evidence of copper was also found. At Jeddah a significant gold anomaly was detected covering an area 250m by 150m. We believe there is a distinct possibility that Bell Rock could evolve as a near-term drilling opportunity.

Rockfire has recently announced that 557 soil samples have been collected from four sites within the Lighthouse tenement. They are being subjected to laboratory testing with the results pending.

Marengo tenement

120 km to the east of Lighthouse in the porphyry belt: Marengo is a gold-copper tenement situated about 120 km to the east of Lighthouse in the porphyry belt about 50km north of Copperhead and close to the A1 Queensland north-south highway. The tenement contains an historic goldfield which was in operation between the mid-19th century and the 1930s. Geologically the Marengo goldfield is based on an intrusion-related gold system (IRGS) where gold mineralisation originates from deep magmatism. Historically, Marengo has recorded bonanza-style grades of 149 g/t Au (5 oz/t Au).

In 2018 Rockfire drilled two prospects, One Mile Mountain and Homeward Bound, following geophysical survey work. The programme involved 10 RC holes covering 940m at shallow depths. Results were mixed. At Homeward Bound gold was discovered below historic mine workings with grades between 0.5 g/t Au over 5m and 2.1 g/t Au over 4m. At One Mile Mountain no significant gold or copper was found.

Joint-venture candidate: Rockfire has indicated that it believes Marengo is a highly prospective project but that it wishes to focus resources on Lighthouse, Copperhead and Copper Dome in Queensland and Molaoi in Greece. It is consequently seeking a joint-venture partner for Marengo.

Financials

We estimate cash of £1.29m at end December 2021----We believe Rockfire is comfortably financed currently for its near-term spending needs thanks to the significant capital raises in May and July 2021. These collectively generated £1.85m gross or about £1.79m net. At end December we estimate that Rockfire had a cash position of £1.29m, which was modestly down on the £1.49m at the interim stage. Cash needs we believe increased significantly between the first and second halves of 2021 reflecting the diamond drilling programme at Copperhead. This, however, was probably broadly matched by the July raise of £1m gross or £0.95m net.

-----**and about £1m at end March 2022**: Rockfire's first quarter cash needs are typically subdued given the slowdown in exploration and particularly drilling activity related to the onset of the wet season in northern Queensland. As of end March 2022, we believe cash might have been around £1m based on our forecast during the first quarter of a cash outflow of £0.31m split G&A £0.21m and capital outlays/exploration £0.10m. During the first quarter this reflects our estimates for G&A of £0.21m and capital outlays of £0.10m.

Cash requirements likely to increase in Q2 and Q3 reflecting planned Copper Dome drilling, consolidation of Molaoi and inflationary pressures: Cash requirements, we suspect, will increase significantly in the second quarter reflecting stepped-up exploration activity as the wet season abates in Queensland, the consolidation of Molaoi and general inflationary pressures. We look for a cash position at the end of the period of about £0.47m. Our estimate of the cash outflow of £0.51m reflects Corporate G&A £0.22m, Molaoi G&A £0.03m, capital expenditure £0.25m of which we have allowed £0.05m for Molaoi. Cash needs could rise again in the third quarter of 2022, if Rockfire goes ahead with its planned Copper Dome deep drilling programme. We look for theoretical net debt before equity raises at end 2022 of £0.86m given our understanding of the work programme and bearing in mind the consolidation of Molaoi from the second quarter. Our forecast of the cash outflow in 2022 of £2.15m is split as follows:

- Corporate G&A (£0.89m)
- Molaoi G&A (£0.10m)
- Queensland capital/exploration expenditure (£1.0m)
- Molaoi capital/exploration expenditure (£0.15m)
- Property plant and equipment (£0.04m)
- Working capital inflow reflecting higher trade payables £0.03

Exhibit 3: Summary financials

INCOME STATEMENT

Year-end December (£000s)	2016	2017	2018	2019	2020	2021e	2022e
EBITDA	-344	-410	-532	-546	-707	-848	-988
Depreciation	0	0	0	-3	-1	-2	-3
Share based payments	-34	-28	0	0	0	0	0
FX gain/(loss)	16	58	-49	0	0	0	0
Other	0	0	0	0	0	0	0
EBIT before impairment	-362	-380	-582	-549	-708	-850	-991
Impairment charge	-5,730	0	-1,437	-87	-12	0	0
Loss before tax	-6,091	-380	-2,019	-636	-720	-850	-991
Tax	0	0	0	0	0	0	0
FX translation gain/(loss)	776	-245	-245	-57	51	0	0
Comprehensive income	-5,316	-626	-2,264	-693	-669	-850	-991
Average shares in issue m	100	243	239	464	726	978	1083

BALANCE SHEET

Year-end December	2016	2017	2018	2019	2020	2021E	2022e
Non-current assets							
Intangibles	1,519	2,237	1,442	1,732	2,655	3,655	4,805
Other	0	0	0	13	26	49	86
Total	1,519	2,237	1,442	1,745	2,681	3,704	4,891
Current assets							
Cash	375	1,257	295	763	1,351	1,291	200
Trade and other receivables	0	0	23	56	39	39	39
Total	375	1,257	317	819	1,390	1,330	239
Total assets	1,895	3,494	1,759	2,564	4,071	5,034	5,130
Current liabilities							
Trade and other payables	134	262	186	146	96	118	143
ST debt	0	0	0	0	0	0	1,062
Total liabilities	134	262	186	146	96	118	1,205
Net assets	1,761	3,232	1,573	2,418	3,975	4,916	3,925
Net cash/(debt)	375	1,257	295	763	1,351	1,291	-862
Equity							
Share capital	5,624	6,339	6,369	6,625	6,828	7,077	7,077
Reserves	-3,863	-3,107	-4,796	-4,210	-2,853	-2,161	-3,152
Total equity	1,761	3,232	1,573	2,415	3,975	4,916	3,925
Equity and liabilities	1,895	3,494	1,759	2,561	4,071	5,034	5,130
End year shares in issue m	152	343	373	629	832	1,082	1,083

CASH FLOW STATEMENT

Year-end December (£000s)	2016	2017	2018	2019	2020	2021E	2022E
Comprehensive income	-6,091	-380	-2,019	-693	-669	-850	-991
Impairments	5,824	0	1,437	88	12	0	3
Share-based payments	34	28	0	0	142	0	0
FX translation	13	-36	-20	0	-112	0	0
Other	0	0	0	0	0	0	0
	-222	-388	-602	-602	-626	-848	-988
Receivables (inc)/dec	12	0	-23	-33	18	0	0
Payables inc/(dec)	-48	80	-76	-40	-56	22	25
Total operational cash flow	-257	-308	-700	-675	-663	-826	-963
Share issues net	755	1,454	379	1,535	2,087	1,791	0
Exploration expenditure	-325	-215	-642	-378	-817	-1,000	-1,150
Acquisition of BGM Investments	0	-50	0	0	0	0	0
Other	0	0	0	0	0	0	0
Net cash flow	173	882	-963	469	588	-60	-2,153
Net cash/(debt)	375	1,257	294	763	1,351	1,291	-862

Source: Company; Allenby Capital

Risks and challenges

Projects are still at an early stage of development and Molaoi needs validating

Much as for other junior resource plays with early stage exploration projects the key issue facing Rockfire concerns proving the prospectivity of the projects. Each of Rockfire's projects is based on a hypothesis which needs to be tested ultimately with drilling. The key hypotheses in broad terms are that Lighthouse/Plateau is analogous to Mt Wright, Copperhead and Copper Dome are potentially large scale copper porphyry projects and Molaoi is an industrially significant VMS zinc deposit.

Although we believe Rockfire has made encouraging progress in de-risking its Queensland gold and copper porphyry projects, it is still at a relatively early stage in the de-risking process. As far as we are aware, Rockfire is not planning a near-term deep drilling programme for its Plateau to support its Mt Wright analogy hypothesis. At this stage the potential scale of Molaoi is unknown, although we note that the results of the historical drilling activity in terms of zinc grade point to a promising project. Much here will depend on Rockfire rapidly validating the results of earlier drilling activity and providing a JORC resource assessment pointing to a commercial project.

Arguably, the most promising development of late has been the inaugural JORC resource estimate at Copperhead. If the planned drilling programme at Copper Dome also yields promising results, we believe that it is conceivable that Rockfire will have revealed a new copper porphyry province in northern Queensland. Assuming positive results from pending exploration/development activity at Molaoi, Rockfire could emerge as a base metal rather than a gold play.

Financing is a related issue

Financing is a key issue for Rockfire as for other resource juniors. Without finance, which inevitably has to be equity based, hypotheses cannot be tested and G&A underpinned. Our key concern on the financing front is the more than 50% plunge in the share price since the third quarter of 2021 to practically a five-year low. Ironically this has been despite a very positive commodity market backdrop and in the absence of overtly negative news. In fact, on the contrary the news flow has been broadly positive although market participants may have taken fright of late concerning the potential financing implications of Molaoi.

Clearly, investor risk aversion surrounding resource juniors could constrain Rockfire's ability to aggressively de-risk its projects. This could become even more pronounced if, as seems likely, interest rates and bond yields continue to trend higher in the coming months. Rising interest rates will tend to dampen investor sentiment for perceived high-risk assets.

Valuation

Riskd sum-of-the parts calculation: Our valuation methodology continues to be based on a riskd sum-of-the-parts calculation. The parts are the Lighthouse tenement, of which Plateau is the key component, the residual gold interests and the two copper projects, Copperhead and Copper Dome. Clearly, Lighthouse is the major valuation contributor given that it contains the most advanced projects. We have not included any allowance for cash on the balance sheet given that it is assumed that this will either be rapidly consumed as G&A or converted into intangible assets.

Success case assumed for Plateau based on achieving pre-feasibility status-----: For the purpose of the exercise, we assume a success case for the exploration of Lighthouse Plateau project. We define success as completing a pre-feasibility study for one or more projects on the tenement confirming viability. At this stage a project will have been de-risked technically and financially and contain a sufficiently large resource base, preferably in the indicated category, to either undertake mine development or monetisation through a trade sale. Our definition of sufficiently large in this context is 1.5m oz Au, or the same

as Mt Wright's cumulative production. Resources of this size would be adequate for a 10 to 15-year mine life, assuming annual production of 100,000-150,000 oz. This level of production is typical for a mid-tier gold mine and depending on grade, would probably imply a competitive position on the cost curve for such facilities.

-----assuming Mt Wright resource base, \$35/oz valuation quotient and 45% risking factor: Our key valuation metric for gold plays is dollars/oz of resources using corporate deals or listed benchmarks. In the case of Plateau, we have used \$35/oz which is similar to the implied valuation for Resolute Mining's disposal of the Ravenswood operations in early 2020. Given that Lighthouse Plateau is still a long way from pre-feasibility study status and remains well short of 1.5m oz Au the valuation needs discounting for project risk. To allow for this factor we have previously assumed a 45% chance of success. We continue to do so as there has been no major change in project status since early 2021 when the resource was upgraded. The implied valuation for Lighthouse Plateau therefore remains at \$23.6m. For the remaining gold projects, we continue assign a nominal valuation of \$2.0m reflecting the early stage of appraisal.

Copperhead valuation of \$3m reflecting a valuation quotient of \$25/tonne and an inferred resource of 120,000 t Cu eq: In the case of the two copper projects, we had assigned a nominal valuation of \$3.0m for early stage geotechnical work. For Copperhead we now propose a change in methodology following Rockfire recently announced maiden JORC contained resource of 120,000 tonnes Cu eq. We believe based on copper exploration benchmarks a valuation quotient of \$25/tonne is appropriate bearing in mind the still early stage of exploration. This would imply an absolute valuation for Copperhead of \$3.00m.

Exhibit 4: Copper play valuations

Stock	Symbol	Price	EV US \$m	Operations	Resource based		Status	EV/t US\$ Cu eq
					Cu eq (000)	% m/ind		
Nevada Copper	NCU: TSX	C\$0.64	425	Nevada	3175	63	Development/production	134
Phoenix Copper	PXC: AIM	62.0p	86	Idaho	247	70	Development	348
SolGold	SOLG: LN	38.0p	1194	Ecuador	14170	99	Advanced exploration	84

Source: Allenby Capital; Refinitiv

Note: Prices are April 6, 2022. Under Resource 'm' and 'ind' refer to measured and indicated respectively

Large scale late-stage copper projects could justify >\$100/tonne: For comparison, we believe that a late stage large-scale copper exploration/development project at Copperhead could justify a valuation of \$100/tonne Cu eq or above. We note that AIM-listed Phoenix Copper sells on a valuation of \$348/tonne Cu eq based on the resource for its Empire open-pit mine project exploiting oxide ores in Idaho. Production start-up here is scheduled for the first half of 2023. Phoenix, however, also has a large-scale porphyry exploration opportunity at the same location and a further five cobalt, gold and polymetallic projects.

At the opposite end of the valuation spectrum is London and TSX-listed SolGold which is focused on its giant Alpala porphyry project in Ecuador and valued at \$84/tonne Cu eq. Arguably this is on the low side given the world class scale of the >14M tonne Cu eq resource identified, the involvement of mining heavyweights as shareholders and the pending release of the Alpala pre-feasibility study. Tending to keep a lid on the share price has been uncertainty concerning mine development along with the hefty costs involved. From a valuation perspective TSX-listed Nevada Copper is an intermediate play selling on \$134/tonne Cu eq. The has a large resource base of over 3M tonnes Cu eq and is focused on its Pumpkin Hollow mine development project close to the historic Anaconda copper mining centre of Yerington, Nevada. Underground production has recently commenced and is likely to be followed by an open-pit.

Nominal valuations of \$1.5m for Copper Dome-----: For Copper Dome we have assigned a nominal valuation of \$1.5m: As far as Copper Dome is concerned which is presently devoid of a resource, we continue to apply a nominal valuation based on early stage geophysical work. For this purpose, we propose a valuation of \$1.5m. This would take the combined copper project valuation to \$4.5m, a significant upgrade compared with the \$3.00m used previously.

-----**and \$2.0m for Molaoi:** Clearly Molaoi is a new element in the valuation equation. Given that there was no cash consideration for the asset and in the absence of a resource we propose applying a nominal valuation to account for what appears significant historical development work. We have allowed \$2m for this purpose. Once Rockfire has completed its JORC compliant resource assessment we would expect to upgrade this valuation.

The absolute corporate valuation has been upgraded from \$28.6m to \$32.1m: Our new Rockfire corporate valuation is US\$32.1m or £24.5m at an exchange rate of £1=US\$1.31. The former reflects a 12% upgrade compared with the US\$28.6m in our September 2021 report following the interims. The variance stems from a reassessment of the copper project valuation following the release of the inaugural Copperhead JORC resource estimate and the consolidation of the Molaoi zinc project.

On an undiluted per share basis (1,083.7m) our new valuation is 2.3p/share, an increase of 21% compared with our September 2021 assessment. The variance in sterling has been boosted vis-à-vis that in dollars by a change in exchange rate assumption from £1=US\$1.39 to £1=US\$1.31 slightly offset by a higher number of shares outstanding.

Exhibit 5: Rockfire valuation

Project	Resources	Valuation quotient	Risk factor	Valuation		Valuation/share
	Au m oz	US\$/oz Au	COS	US\$m	£m	£
Lighthouse	1.50	35	0.45	23.63	18.03	0.017
Other gold projects				2.00	1.53	0.001
Copperhead				3.00	2.29	0.002
Copper Dome				1.50	1.15	0.001
Molaoi				2.00	1.53	0.001
Total				32.13	24.52	0.023

Source: Allenby Capital

Note: Exchange rate £1=US\$1.31

Undiluted valuation/share based on 1083.7m shares outstanding.

COS is chance of success.

Share price catalysts

We significant potential for some interesting high-impact news flow in the coming months as follows:

- Initial findings of a review of the drilling data at Molaoi along with visibility on the near-term work programme. We believe an announcement could be made in the May/June time frame.
- An announcement on a JORC resource for Molaoi possibly early in the third quarter of 2022.
- An announcement possibly over the next month or two concerning deep diamond drilling at the Copper Dome project in Queensland. Rockfire has suggested that intends to drill two holes probably in the third quarter of 2022.
- Results of the Copper Dome drilling possibly early in the fourth quarter of 2022.
- The work programme for the Plateau and Copperhead projects. An announcement could be made over the next month or two in time for the start of the pending dry season in northern Queensland.
- Results of the Lighthouse soil sample laboratory analysis. We believe these could be released over the next month or two.

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