



MetalNRG

18th January 2022

Well-positioned to create substantial shareholder value by developing highly compelling green energy, gold & uranium projects

MetalNRG is the previously NEX-listed ZimNRG which in 2016 was rebranded and adopted a new investing policy with greater focus on projects within the natural resources and/or energy sectors. A proven management team has adopted a really sound corporate strategy of investing in advanced stage exploration and development projects where they can use their know how to establish cash flow relatively quickly. Recent months have seen BritNRG become problematic and resolving this issue could free up capital that could be better used elsewhere. In any case, oil had always only been seen by the team as merely a stepping stone on the way towards green energy.

■ Green energy joint venture with leading technology partner EQTEC

MetalNRG is working with EQTEC developing 'shovel-ready' green energy infrastructure projects with the potential to deliver sustainable revenues over the long term. Deal #1 sees MNRG holding a 26.66% interest in an Italian project that is rapidly expected to become a strong dividend payer.

■ Brownfield gold project in Arizona which spans three historic mines

The Gold Ridge Project just begs attention using modern exploration techniques and the latest Au mineralisation models. With a 100% interest, MNRG is in the driving seat as there is clearly scope to joint venture the project to advance exploration and development at no cost to the company.

■ Uranium price surges on green credentials

MetalNRG can gain a 51% stake in a uranium project in Kyrgyzstan by putting in place the funding. In the past, this project had been granted a Mining Licence which looks likely of being re-instated, so the game is on.

■ Financial modelling & industry metrics suggest 250% upside

Our conservative valuation highlights the potential. We initiate coverage of MetalNRG with a target price of 1.2p and **Speculative Buy** stance.

Table: Financial overview. Source: Company accounts & Align Research

Year to Dec	2019 ¹ A	2020A	2021E	2022E
Revenue (£'000)	-	-	88	50
PTP (£'000)	(585)	(810)	(1,136)	(888)
EPS (p)	(0.22)	(0.22)	(0.15)	(0.07)

¹ 10 month period

This investment may not be suitable for your personal circumstances. If you are in any doubt as to its suitability you should seek professional advice. This note does not constitute advice and your capital is at risk. This is a marketing communication and cannot be considered independent research.

SPECULATIVE BUY
Price target – 1.2p



Key data

EPIC	MNRG
Share price	0.335p
52 week high/low	1.225p/0.24p
Listing	LSE
Shares in issue	1,135m
Market Cap	£3.8m
Sector	Investment

12 month share price chart



Analyst details

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IMPORTANT: MetalNRG is a research client of Align Research. For full disclaimer & risk warning information please refer to the last page of this document.

Business Overview

MetalNRG Operations

MetalNRG PLC is a London Main Market quoted natural resources investing company seeking investments in precious and strategic metals, along with green energy. The company is investing in advanced exploration and development projects where the management team can mastermind achieving the goal of gaining a sustained and growing cash flow relatively quickly, or adding substantial value by achieving key milestones. The company has two divisions, a Direct Investment division and an Indirect Investment division.

Direct investments

- **Gold Ridge 100% Arizona (USA)** – A large project area containing three historic mines – the Gold Ridge Mine, the Gold Prince Mine and the Dives Mine. Substantial historical exploration and mining data suggest that there is significant exploration upside potential not only between the three mines but also at depth below these mines. MetalNRG has begun to investigate the potential for an open pit operation.

- **MetalNRG Eco Ltd 100% (UK)** – Business development partnership with EQTEC, that aims to develop ‘shovel-ready’ Green Energy infrastructure projects in the UK and Europe, which have the potential to deliver sustainable revenues over the long term. The joint-venture partner’s first deal has been MetalNRG Eco taking a 26.66% stake in an Italian Green Energy project which is expected to be generating power this year and start paying dividends to MetalNRG in early 2023.

- **BritNRG (UK)** – Onshore conventional oil and gas in the UK where MetalNRG has a significant minority interest. The initial acquisition was Sunswept Enterprises Limited, which has an asset portfolio that includes three producing licences, and three exploration permits in Lincolnshire. This acquisition was identified as the ideal target for a low-cost entry into this sector as, through this move, BritNRG has been able to become a recognised oil and gas operator in the UK, which opens up optionality

Indirect investments

- **IMC Uranium 9.9% (Kyrgyzstan)** – Uranium project where MetalNRG has the option to acquire a 51% interest upon funding the necessary capital expenditure, estimated to be US\$6 million in 2017.

- **Lake Victoria Gold 3.84% (Tanzania)** - Plans to start mining and processing 12,000oz per annum of gold which will fund exploration and an expansion of the Resource and Reserves.

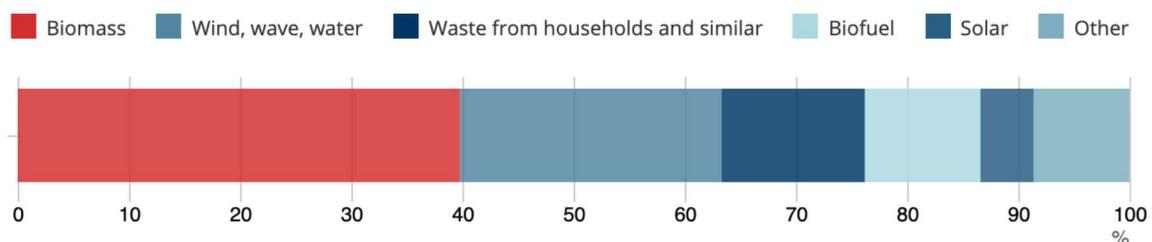
Green Energy

The outlook for Green Energy looks compelling as its share of the world’s energy demand is predicted to rise from 4% in 2019 to 14% by 2050 according to research firm Bloomberg New Energy Finance. Governmental pressure around the world is accelerating the embracing of green energy and decarbonisation to achieve a net-zero future. All this is happening against a backdrop of sharply rising energy consumption, which is expected to double by 2050.

The path to creating a sustainable future energy system lies firmly with renewables. Europe has pushed to remove nuclear energy and seeks alternatives, with both the UK and Europe making green energy central to a post-Covid economic recovery. The global renewables energy market was valued at US\$928 billion in 2017 and is expected to be worth US\$1,512.3 billion by 2025, representing a CAGR of 6.1%.

Biomass

Biomass is a broad term covering virtually all organic material including that from plants, trees, crops and animals. It is seen to be a renewable form of energy production as biomass growth removes CO₂ from the atmosphere and stores it in soil, plants or trees. Across the British countryside the increasing scale of renewable energy is clearly evident with the growing number of wind turbines and solar farms. It may surprise some to learn that almost 40% of energy consumption from renewable and waste sources in the UK is from biomass, the organic material from plants or animals. The global biomass market was worth US\$49.8 billion in 2019 and is forecast to grow by a 9.2% CAGR from 2020 to 2027.



UK energy consumption from renewable & waste sources 2017. Source: ONS 2019

Investing in biomass is very beneficial as there will always be waste that needs to be dealt with. It is a rapidly growing problem as the amount of waste is forecast to increase 70% by 2050 from current levels. In biomass, Europe currently seems to lead the world with an abundance of such technologies. There is little doubt that biomass has already proved itself in continental Europe as a reliable way to generate electricity and deliver predictable recurring income to operators. In the UK, biomass is at an earlier stage of development and so has the scope to offer plenty of opportunities.

A recent study by KPMG pointed out that biomass installations present a more attractive investment than other renewable energies. This well-known professional services firm reckons that biomass plants not only provide higher investment returns than other sources of renewable energy but also have greater production reliability, because they are not weather dependent.

The growing realisation of the environmental, social and economic benefits of biomass, combined with the ever-increasing amounts of waste, underline the significant opportunity that exists in small scale biomass plants for energy generation at a local level.

Corporate Background

MetalNRG plc is the previously NEX market listed ZimNRG plc which was rebranded with the name change in 2016. In that year, the company adopted a new investing policy, with greater focus on projects within the natural resources and/or energy sector. Under this new guise the maiden investment saw MetalNRG invest in the creation of the Palomino Cobalt Project in Western Australia, taking an 83% stake for £55,000. At that time, MetalNRG formed a Cobalt Division to act as a repository for this transaction and anticipated additional cobalt interests.

By early 2018, the company was becoming well-positioned in building up its portfolio with cobalt, lithium and gold opportunities in North America (USA/Canada) and Western Australia (including the Pilbara). At that stage, management had identified a route to secure shareholder value by assisting project owners with access to new investment and application of commercial management. The then CEO Paul Johnson stood down from the Board to mastermind this new development, a move which heralded Rolf Gerritsen to become CEO.

2018 saw further cobalt interests added along with the acquisition of the Gold Ridge Gold Project. The company's interest in US Cobalt Pty was disposed of to provide additional working capital at a particularly important time in the rapid development of the MetalNRG business. In 2019, the company was able to announce a farm-in deal to acquire a 51% interest in the Kamushanovskoye Uranium deposit in Kyrgyzstan which had just been granted the application for a mining license for 3,371.1t U reserves (8.731 million lbs U3O8) with a then in-situ value of c.US\$253.1 million at the prevailing uranium spot prices. That was soon followed by the company announcing an earn-in agreement with Mkango Resources Limited in connection with its Thambani uranium project in Malawi. Due to Kyrgyzstan passing a law that prevented the exploitation and exploration of uranium in country these projects were put on hold and the Thambani project was dropped. Today it would appear that Kyrgyzstan is considering permitting the exploitation of uranium, which would be good news for MetalNRG if confirmed.

In July 2019, MetalNRG gained a standard listing on the Main Market of the London Stock Exchange. Whilst Covid-19 was stalking the planet, in October 2020, the board announced that its then 50% owned special purpose vehicle BritNRG Limited had acquired a 100% interest in Sunswept Enterprises Ltd whose subsidiaries had interests in a number of UK onshore oil & gas licences in the UK Midlands basin.

In March 2021, a Framework Partnership Agreement with EQTEC plc was announced with the purpose to develop sustainable Green Energy projects. There was also news that the company had set up a Special Purpose Vehicle, MetalNRG Eco Ltd, to develop biomass, waste to energy and sustainable green energy projects in the UK and Europe. The plan which was unveiled suggested that EQTEC and MetalNRG would be working in partnership on investments, with EQTEC advising technically, financially, and operationally, becoming MetalNRG's preferred technology partner for Green Energy Projects.

Investors did not have to wait too long to see the first fruits of this relationship with EQTEC as in June 2021, MetalNRG had joined a consortium of co-investors, led by EQTEC, which recently formalised the intention to recommission a 1MW biomass-to-energy plant in Tuscany, Italy. The facility is built around EQTEC technology and EQTEC Italia MDC will transform straw and forestry wood waste sustainably sourced from local farms and forests into green electricity and heat for the local community. MetalNRG invested a total of €700,000 for a 26.66% stake in this project.

The relationship with EQTEC was cemented in December 2021 when MetalNRG entered into a share exchange agreement with EQTEC. MNRG subscribed for 23,600,000 EQTEC shares worth £295,000 and EQTEC subscribed for a similar value of MNRG equity which equated to 100,000,000 shares.

Operations

MetalNRG has a clear growth strategy focused on green energy and metals. In the current year, it looks as though interests in BritNRG and Lake Victoria Gold could be disposed of which will allow funds to be recycled to finance the development of other opportunities.

The Gold Ridge Project

The company has a gold exploration project in the USA at Gold Ridge which lies 85 miles east of Tucson in Dos Cabezas Mining District, Cochise County in Arizona. MetalNRG has a 100% interest in this project which covers an area of 9.3km². The Gold Ridge Project is a brownfield gold exploration play where there are obvious opportunities for redevelopment as this area remains underexplored and looks to have plenty of scope for making new gold discoveries.



Location of the Gold Ridge Project in Arizona. Source: Company

Arizona has a good transportation infrastructure and power grid which is highly important in establishing mining operations. On top of that, the state represents an enviable location for mining projects as Arizona was ranked #2 in Investment Attractiveness Index and #7 in Policy Perception index in the Fraser Institute’s Annual Survey of Mining Companies in 2020.

MetalNRG acquired the project in July 2018 for a total consideration, in cash and shares, of US\$700,000 (£529,942). The project consists of approximately 2,305 acres (9.3km²) of tenement including 343 acres of patented mining claims, 112 company-owned un-patented mining claims and 12 leased un-patented mining claims. The project has a NI43-101 compliant Technical Report dated 30th December 2016.

The Gold Ridge Project spans a large area which includes three historical underground gold mines called Gold Prince, Gold Ridge and Dives. They were each mined over various intervals between discovery in 1877 and 1996. Historical production at the Gold Prince Mine through to 1996 saw a total of around 22,000 ounces of gold mined above the #6 level. This mine was operated from 1984 to 1996 by Phelps Dodge, Queenstake Resources and latterly Western States Mining Corp.



Gold Prince Mine #6 level portal and dump which is estimated to host 2,500t of material. Source: Company

These three historic mines cover a 1.8km strike length that lies within a prospective 5km long vein swarm. The geology of the area suggests that steeply dipping high-grade gold bearing, quartz-sulphide veins are hosted within the 32km long, Apache Pass shear zone, which lies adjacent to a Tertiary plutonic-volcanic centre. Plutonic refers to the resulting intrusive rocks created when magma which never reaches the surface cools to form intrusions (dykes, sills etc).

MetalNRG is focused on gaining a complete understanding of the rock types, structures and mineralisation of the mine area. With such knowledge the team is seeking to go on expanding the Mineral Resources and develop Mineral Reserves to support recommencing mining.

Recent exploration work

The company’s goal is to develop the project and thoroughly investigate the opportunity of bringing these old mines back into production. Sampling of dump material on the #6 level has provided results as high as 115oz/t gold, which is an incredible 3,949g/t.



Old vertical stope in the Gold Prince Mine. Source: SKR CPR March 2021



Sampling the old pillars Source: Company

The level 6 waste dump is estimated to host some 2,500t of material and surface sampling over the dump has revealed an average 1.7g/t grade of gravity recoverable gold containing 5.25 kg (169 ounces). These are old room and pillar mines and subsequently, 17 samples were taken from pillars within Levels 6 and 4 within the Gold Prince Mine (which represent 10% of the pillars remaining) which showed grades of 0.05 to 6.5g/t gold.

In addition to the gold that remains unmined in the pillars at the Gold Prince Mine, the company has the firm belief that additional gold mineralisation is located between levels 4 and 6. This potential has yet to be explored and the company has well-developed plans to drill this zone. Field work by well-respected mining and exploration consultants SRK in Q1 2021 not only resulted in the identification of structural continuity between the three mines, but also importantly highlighted a number of areas of potential disseminated gold mineralisation that borders the Apache Pass Shear Zone. Disseminated gold refers to deposits where the host rock itself has become mineralised.

2021 Asset Development Programme

Having gained clear evidence that there is the potential for short term revenue from the waste as well as potential to discover additional resources, the company has moved to embark on an asset development programme. In the first instance this work will involve taking all the extensive historical database collected from past operators and entering this into a modern Geographic Information System (GIS) GIS/3-D Leapfrog platform. This work was completed in 2021 and the company is now working on a Geo Sampling program which will clearly define next steps

Leading this project is the company's Senior Geologist, Bart Stryhas, PhD CPG, who is tasked with providing the board a solid understanding of the history of the project, the potential it could offer and a clear pathway to add substantial value. In this process 446 historic drill holes (totalling 11,000m) with gold and silver analyses and 170 surface rock samples with gold analysis have been located along with compiling 280 soil geochemical assays which come with multi elemental analysis.

In preparation for site work in Q4, MetalNRG's project team has acquired 35 new additional and extremely relevant, public domain documents describing historic mining operations and geologic descriptions of several previously un-recorded mines located within the ownership of the GoldRidge property. This new information hosts a large portion of the data and information that the planned site work was originally designed to obtain and, as a result, the company is now able to accelerate to the next phase of work.

A 1940 Master's Thesis on the Dives Mine, which also hosts details of the Gold Ridge Mine, has provided considerable insight on the structural geology of the operations. Data and information were also obtained for the First Chance Mine, Arizona Klondike Mine, Leroy Mine and Elma Mine, all owned by MetalNRG. This new detail is being incorporated into the current geologic and structural model of the project rather than completing repetitive site work.

Work will now be directed toward initiating the soil geochemical sampling program at the project. MetalNRG's Mining Consultants based in the U.S. have been contracted to collect more than 1000 samples on a 75m grid spacing. The reports have helped to focus on the next phase of work which will cover the South-eastern portion of the claim block where most of the historic mining has occurred.

The soil exploration will provide detailed, multi-element chemical analysis which will be instrumental in refining the mineralogic and structural interpretation of the project. Work is expected to commence shortly and be completed by the beginning of Q1 2022, with results anticipated for late Q1 2022.



*Outcropping quartz veins associated with the Apache Pass Fault System above the Gold Prince Mine.
Source: SRK CPR March 2021*

Green Energy

The company's 100%-owned subsidiary MetalNRG Eco is seeking to develop shovel ready Green Energy infrastructure projects in the UK and Europe which have the capability of delivering a long-term sustainable stream of revenue and profits. Areas of investment focus in Europe and UK include biomass woodchip and refuse derived fuel, anaerobic digestion, gasification, hydrogen and carbon capture.



Green energy project. Source: Company

MetalNRG Eco has partnered up with EQTEC, which is the world leader in gasification, with proven and patented technology in the Green Energy space. Together, the joint-venture partners are seeking to pursue and collaborate on the development of waste to energy projects in the UK and Europe. The strategy is to develop “shovel ready” Green Energy infrastructure projects in the UK and Europe which are capable of delivering a long-term sustainable stream of revenue and profits.

With EQTEC's support, MetalNRG Eco will be looking at waste to energy projects with capex typically in the £1.5 million - £15 million range which can be financed via equity and debt. The proviso is that these projects offer a combination of both short-term revenues and scope for further economic upside in the longer term. To cement this joint-venture, MetalNRG and EQTEC agreed a £295,000 share swap.

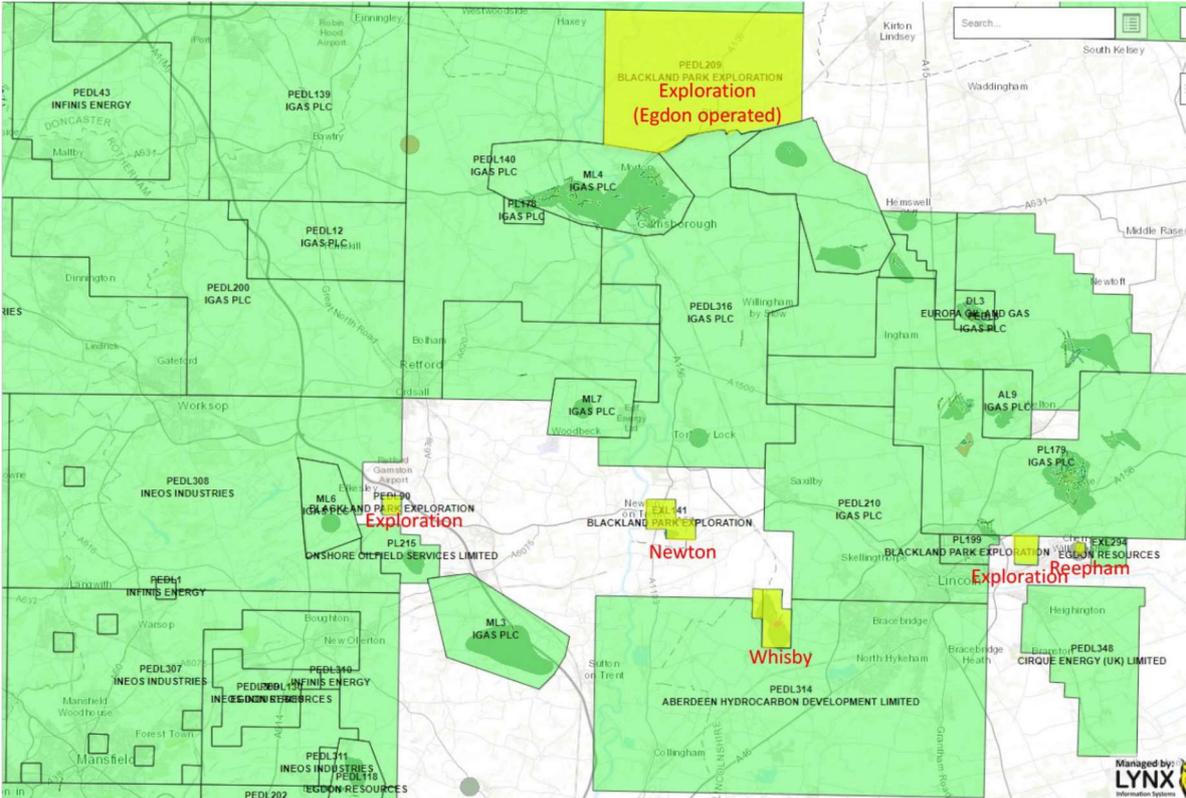
Management recognises that using improved technology at brownfield sites can shorten timelines and improve returns. So, it was little surprise that the first investment announced in May 2021 was such an opportunity.

Deal number one has been the participation in the acquisition and planned recommissioning of a 1MWe waste-to-energy plant in Italy. This plant was originally commissioned in 2015 and built around EQTEC's proprietary and patented Advanced Gasification Technology. MetalNRG Eco joined a consortium led by EQTEC to repower, own and operate the biomass-to-energy plant in Castiglione d'Orcia, Tuscany.

When it becomes operational, the plant will turn straw and forestry wood waste from local farms and forests into green electricity and heat for use locally. MetalNRG will hold 26.66% equity in the SPV for an investment of €700,000. The plant is expected to generate an unlevered IRR of 20% and annual EBITDA in excess of €750,000.

Onshore UK Oil and gas

MetalNRG has a significant minority stake in BritNRG but the exact size of the holding is a subject of a dispute which at present is being legally resolved. BritNRG has a portfolio that includes three producing licences and three exploration permits in the UK Midlands basin in Lincolnshire. The producing licences are in Whisby, Newton on Trent and Reepham. The Midlands is an area which has seen oil activity since before WWII and the producing licences were first commissioned and operated by BP in the mid-1980s.



BritNRG's UK onshore licences. Source: Company

BritNRG, through the subsidiaries of its 100%-owned Sunswep Enterprises Limited, has interests in the following UK onshore licences: PL199 (95%, Operator); PL215 (50%); EXL141 (100%, Operator); EXL294 (100%, Operator); PEDL090 (50%, Operator); and PEDL209 (28%).

BritNRG was looking to grow a balanced and integrated portfolio of cash-generating oil and gas assets in the UK and overseas. However, in recent months a dispute has arisen with a former director of MetalNRG, Pierpaolo Rocco, and BritEnergy Holdings LLP, the partner in the BritNRG Limited joint venture, in connection with which, apparently Mr Rocco was then currently a "person with significant control". For this reason, the April 2020 transaction entered into by MetalNRG to acquire more shares in BritNRG has not taken place. The end result is that the company remains a significant minority shareholder and is in the process of progressing with legal proceedings.

Uranium Project - Kyrgyzstan

MetalNRG has a 9.9% stake in USA-incorporated International Mining Company Invest Inc. (IMC), a privately held company focused on minerals development in the Kyrgyz Republic. IMC’s flagship project is peat hosted uranium oxide deposit with near-term, near-surface, low-cost, in-situ recovery (ISR) production potential.



Uranium Project in the Kyrgyz Republic and drilling programme. Source: IMC

MetalNRG also has an option to take a 51% interest by funding the capital expenditure required to put this uranium project into production. The option remains in place, but exploitation of uranium in the country is currently banned. However, there are strong indications that the new government will lift the ban in the near future.

This uranium project is located at Kamyschanovskoye in the Kyrgyz Republic and represents a secondary uranium oxide deposit formed with Quaternary alluvial silts which have captured uranium that has been eroded from primary deposits which are granitic igneous rocks in the Ala-Too Range (West Tien-Shan). The uranium is contained within mineralised peat deposits which are mostly exposed at the surface or partially buried beneath a layer of silt.

Category	Million lbs U3O8	U3O8 grade
Indicated	3.657 (2.103)	@ 0.011% at 0.0% U3O8 cut-off grade (@0.056% at 0.024% U3O8 cut-off grade)
Inferred	1.854 (1.546)	@0.015% at 0.0% U3O8 cut-off grade (@0.067% at 0.024% U3O8 cut-off grade)
Total	5.512	
In-situ value	US\$151 million	At 17 September 2018 spot price of US\$27.40/lb U3O8

JORC compliant uranium resource. Source: Company

Exploration has involved drilling 925 holes for 2,721m and the analysis of 4,935 samples. The results have shown strong mineralisation of decompressed peats and weak mineralisation in non-decompressed peats, silts, sands and gravels. Average U grade is 300 ppm with a maximum of 5,960 ppm. The Measured & Indicated Resources total 2,514 tonnes (5.5M lbs) with average deposit radioactivity of 2.6mSv per annum. Attractive returns were highlighted in IMC’s July 2017 presentation.

Uranium production at Kamyschanovskoye is based on using in situ leaching, which is also known as solution mining, using sodium sulphate/bicarbonate. Uranium concentrate (63% U) is planned to be produced by processing the recovered solution which results in no reactive waste or tailings. Refining to triuranium octoxide is planned to be undertaken at the Karabalta Uranium Refinery to produce yellow cake U₃O₈ (83% U).

Financial indicators	July 2017 presentation
NPV(15) post tax	US\$27.28m
Post tax IRR	146%
Life of mine	10 years
Annual production of uranium	250tpa
Return on investment	Year 3
Average annual EBITDA ¹	US\$10.3m
Average annual U sales ¹	US\$18.7m
Capex	US\$6.03m
Cost of production U ₃ O ₈ Equivalent U	US\$13.8/lb US\$16.6/lb
Base price U ₃ O ₈ 25 year average	US\$28.15

¹ at U₃O₈ \$30/lb, 250t uranium pa and \$/Rub 65

Financing opportunity for a near term uranium production at Kamyschanovskoye. Source: IMC

If the government decides to facilitate mining at this site the company will revise the financials of the project based on current uranium prices which are more favourable than when the studies referred to were completed.

Lake Victoria Gold Project - Tanzania

MetalNRG has a 3.84% stake in Lake Victoria Gold (LVG), the current owner of the Imwelo Project in northern Tanzania. This project lies in a proven mineral district that hosts AngloGold Ashanti's Geita gold mine and Barrick Gold's Bulyanhulu gold mine. The strategy at Imwelo is to start a small-scale operation mining and processing ore to generate 12,000 ounces of gold per annum. At the same time, the partners will continue to drill the ore zones to expand the Resource and Reserve using the cashflow generated by the gold production.



Project location and visible gold sample from an artisanal pit

Mining is a highly important sector for the Tanzanian economy, with rising mineral exports. After South Africa and Ghana, the country is the third largest gold producer in Africa. Mine production in the country also includes iron ore, nickel, copper, cobalt, silver and diamonds.

The Imwelo Project has a JORC (2012) compliant Total Resource of 4.73Mt @ 1.92g/t gold based on Resource drilling completed in 2016 and a Mineral Resource Estimate in 2017, for a total of 291,600 oz resources. These resources are partially on owned licenses and partially on land the company has options on. In addition, an open-pit mining Pre-Feasibility Study (PFS) and underground mining Scoping Study was completed by Measured Group Pty Ltd for the Imwelo Project in June 2017 (the Pre-Feasibility and Scoping Study Report or 2017 PFS).

The 2017 PFS considered a conventional drill and blast, load and haul open-pit mining operation based on mining open-pit Reserves of 1.362Mt at 2.22g/t gold for a total 87.66koz gold recovered over a 4-year period, based on a gold price of US\$1,250/oz. The Scoping Study considered a transition from open-pit mining to underground mining.

MetalNRG had planned to acquire 100% of LVG in late 2020. However, in January 2021, the company abandoned this transaction as the board believed it was not possible to bring LVG into production, as their plans called for, within 12 months, at close to the budget that had originally been presented. This year MetalNRG looks likely to dispose of this interest.

Strategy for growth

MetalNRG offers investors exposure to gold, uranium and green energy with a growing tally of impressive assets that are either close to producing revenue or where significant value looks about to be added. This is in line with the company's compelling corporate strategy of seeking to invest in advanced exploration and development projects where things can be made to happen relatively quickly. Good progress behind the scenes over recent years has seen MNRG accumulating sensible stakes in a number of outstanding projects across some of the hottest sectors. All this progress has largely been ignored by the market which currently assigns MetalNRG a shell company type of rating.

The game changing elements within the company should be seen as the gold, green energy and uranium plays. The Gold Ridge Project is home to three previously producing gold mines and as we all know the best place to find a new mine seems to be next to an old one. Consolidating nearby previously producing mines in the area looks as though it could become interesting. Initially, the team looked at waste dumps with gold and then gained some impressive assays when sampling the pillars underground. However, the geologists have now taken a step back and are looking at the much bigger picture. SRK reckons that there are much larger opportunities to these 3 small mines, which are not that far apart. Truth is that no one has looked at the overall geology and structure. In the short term they could mine the pillars at Gold Ridge that remain from past operations but that might jeopardise exploiting the full potential as SRK envisages an open pit operation to optimise the full potential.

It is important to realise that with a 100% interest, MNRG is plainly in the driving seat. The geochemical work, along with the substantial amount of existing data, will all be fed into the GIS model. This is going to result in more advanced exploration, with trenching and drilling planned, which could be completed this year if the funding is available. A project with this much potential needs a reasonable exploration budget in order to properly appreciate the true size of the prize, as in the past the miners at the three historic mines might have just been chipping away at the edges of a single large single system. That sort of funding is just not available to a company with such a low market cap. However, having a 100% holding allows the company to successfully enter into a joint venture with a well-funded partner in an earn-in deal. In this manner MNRG could be carried free all the way through further exploration as the project is being rapidly driven up the valuation curve.

In the move into green energy, MetalNRG has come under the wing of EQTEC. The company does not have the technical expertise, while EQTEC has a good reputation in this industry together with reference sites and reference points. EQTEC has been involved in green energy for some time now and has developed a strong international network which provides access to a healthy pipeline of good projects. The Italian project is the company's first entry into this industry and comes with negligible risk as MetalNRG's capital is protected. This initial project is based on a plant which was previously in production, but the parent company went bust. However, there are still some 7-8 years of decent tariffs from the national grid to benefit from. The company invested €700,000 for a 26.6% stake and the plant is forecast to annually generate €2 million in revenue and €750,000 in EBITDA, which equates to €200,000 per annum to MNRG.

The management is seeking to develop a strong partnership with EQTEC which has been cemented with a £290,000 share swap and the first joint venture project in Italy. MetalNRG's goal is to build a strong position in green energy through holding the infrastructure which will generate a long-term sustainable cash flow. The company could not have selected a better partner in EQTEC which has been continuously innovating its technology since 1997. In reducing waste and meeting the growing demand for clean energy, EQTEC has gained an enviable position in helping to drive the global energy transition. EQTEC is seeking to implement and own the technology which allows MetalNRG the opportunity for green energy infrastructure investments. The company has a number of shovel ready projects in Croatia, Italy and Europe. MNRG's will be involved in further such projects and say if the company invests €1 million apiece in two additional projects, this could generate €600,000 – €700,000 of EBITDA per annum for MNRG.

The story concerning IMC's uranium project in Kyrgyzstan looks to be nicely on the boil again. Legislation was passed in the county to ban the exploitation of uranium, but things look like they are about to change. The new President and new government appear to have agreed to remove the ban on the exploitation of uranium. The process to do so requires an update to the mining code but that needs to be ratified by the parliament and there were high hopes for this to happen before the end of 2021 so watch this space. This project has already been granted a Mining Licence and word is that this will be re-instated. It is too much to hope that any compensation could come for the loss of time but given all the delays, there has got to be a good chance of IMC being able to negotiate more favourable terms on government royalties and taxes etc. MetalNRG has a 10% stake in IMC and an option to gain a 51% interest on funding the capex which in 2017 was estimated at US\$6.1 million.

Previously, the company had affordable financial offers for the development investment required at this uranium project based on offtake and project loans. Once the licence gets reinstated it will be interesting to learn how the development will be best financed. Costs will have changed but returns at that time were pretty good. The project financials will be updated as result of the rise in the price of uranium which could make for good reading. At this uranium project, the fields have become impregnated with uranium and in reality, this is a clean-up operation. Such a vehicle could attract a lot of interest as this is Environmental, Social and Governance (ESG) mining which is most sought after. At the same time there are few ways to play uranium on the London market – one of which is Yellowcake (LON:YCA) now capitalised at £633 million following a 60% increase in the share price over the last twelve months. This goes to show how much other such uranium assets are quickly being revalued.

Those promising developments within the government in Kyrgyzstan, concerning the reinstatement of the Mining Licence, are happening against a backdrop of vastly improving uranium prices which rebounded in 2021 after a decade long trough. Such a prolonged period of low prices in the uranium industry has led to production curtailments and a lack of new discoveries. Recent weeks have seen a further surge in uranium prices amid concerns that the uprising in Kazakhstan will serve to disrupt global supplies of the nuclear power fuel – this is big news as Kazakhstan is the world's top uranium supplier. It has to be pointed out that Germany and Italy might be turning their backs on nuclear power but it's a different kettle of fish in Asia where, despite the Fukushima disaster, Japan has 33 reactors and plans to add another 11. Meanwhile, China is proposing the construction of 168 new reactors.

Investors might be concerned as to how the impressive growth that we are outlining might be funded. On Gold Ridge we have pointed out the opportunity to bring in a partner to invest directly into the project. Whilst MetalNRG will gain a 51% stake in the uranium project on bagging an offtake agreement, which is not as formidable as it sounds, the capex figure for this operation is fairly low and the team already reached the Heads of Agreement stage on this kind of deal some 18 months ago. Accelerating the speed of the move into green energy infrastructure will require the investment of increasing sums but comes with a compelling long-term stream of high-quality earnings.

This year looks as though we will see the sale of the non-core gold interest at Lake Victoria along with the resolution of the situation concerning BritNRG. This could free up more capital to finance green energy projects numbers 2, 3 and 4. As resource investors have witnessed many times, it is amazing how quickly company's share price can turn when there is the first whiff of a really decent return. MetalNRG has three aces to play – gold, uranium and green energy. Today, MNRG remains unloved and the shares trade at a level which provides an attractive entry point in our view. We also note that c.£4 million could come into the kitty from warrants being exercised. That requires a share price clearly north of 1p, which we do not think is that elusive given the planned developments, sound fundamentals and the current outright derisory market cap.

Financials & Current Trading

Recent years have seen the company expanding its interest beyond mineral exploration projects into oil & gas and green energy. Hence, until recently the company's projects were at a pre-revenue stage, with losses arising due to administrative expenses.

Y/E 31 December £'000s	2017 ¹ A	2018 ¹ A	2019 ¹ A	2019 ² A	2020A
Revenue				-	-
Pre-tax profit/loss	(38)	(157)	(238)	(585)	(810)
Net profit/loss	(38)	(157)	(238)	(585)	(810)

¹ years ending 28 February.

²10-month period

MetalNRG five-year trading history. Source: Company accounts

2020 results

The twelve months ended 30th June 2020 marked the company's first full year on the Main Market of the London Stock Exchange having moved from the NEX Exchange Growth market. The team reviewed numerous investment opportunities but decided to focus on three projects in particular: Oil & Gas in Romania, Oil & Gas in the UK and Lake Victoria Gold with its assets in Tanzania. This additional workload saw administrative expenses increase from £0.594 million to £0.829 million which resulted in an operating loss of £0.81 million. With no finance income and no tax payable the loss before and after tax was £0.81 million. The basic loss per share was 0.22p.

2021 interim results

The period saw the management team toying with the acquisition of Lake Victoria Gold Ltd, which did not proceed. Financial support provided was converted into an equity interest in this company. These six months also saw MetalNRG complete a transaction for a distressed UK onshore oil & gas company with operating and exploration licenses. Operating losses in this period were £0.89 million with the basic and diluted loss per share 0.14p and 0.08p respectively.

Recent developments

October 2021 brought news on the progress that was being made on the recommissioning of the EQTEC Italia MDC waste-to-energy plant. The board commented that EQTEC had recently stated that recommissioning of the project is continuing on track, with recent developments including completing engineering surveys and meeting with EPC partners and local stakeholders. Apparently, EQTEC Advanced Gasification Technology and associated technology items, including the syngas filter, water treatment unit, heat exchanges and thermal cracker reactor burner, were planned to start arriving on site in late November 2021.

November 2021 saw the board reporting that a dispute had arisen with a former director of MetalNRG, Pierpaolo Rocco, concerning BritNRG. This has meant that the April 2020 transaction entered into by the company to acquire more shares in BritNRG has not been completed.

In December 2021, MetalNRG entered a share exchange agreement with EQTEC. The company subscribed for 23.6 million EQTEC shares worth £295,000 and EQTEC subscribed for a similar value of MetalNRG equity which equated to 100 million shares.

Risks

BritNRG risk

MetalNRG made a significant investment into onshore conventional oil and as in the UK through BritNRG. Following the dispute which has arisen with a former director of MetalNRG, Pierpaolo Rocco, to resolve the situation, MetalNRG has embarked on legal proceedings and although the company would seem to have a very strong case there can be no guarantees that the company will be successful in its action and may suffer a loss on this investment.

Geological risks

There are a series of technical risk factors concerning the amount of understanding of the geology of the project areas, the mineralisation being targeted and the distribution and magnitude of the indicators that have been identified in exploration work.

Political risk

There are political risks involved in companies operating in Italy, Kyrgyzstan and Tanzania. The mining industry is arguably the most susceptible sector of the market to political risks largely due to its importance to the host country's economy.

Commodity price risks

Metal, oil and energy prices are highly cyclical and changes in these prices could have a negative or positive impact on the valuation of the company's projects and sales revenue.

Exchange rate risks

Movements in the value of currencies will have an effect on the company's accounts on translation from US dollars and Euros into sterling. Fluctuations in the value of such currencies against the pound may have an effect on the valuation MetalNRG is awarded by the UK stock market.

Future funds

The market for raising funds for small cap companies looks to have had improved from the worse conditions a couple of years ago. However, the global spread of the COVID-19 pandemic has meant that equity markets have become extremely difficult. Even ahead of the arrival of this pandemic, some fund raisings in the small cap mining and energy sector have seen share prices being undermined by incoming investors demanding substantial discounts to provide the necessary capital.

Board of Directors

Christopher Latilla-Campbell – Chairman

Christopher Latilla-Campbell is a member of the Institute of Chartered Accountants in Zimbabwe. He has held a number of directorships including on a group listed in Luxembourg and Johannesburg with Southern African investments in mining, agriculture and manufacturing. Christopher was also part of the Afpenn Group that established the existence of Coalbed Methane in Zimbabwe. He is also a member of the Management Committee of Golden Valley Mine in Zimbabwe and sits on a number of family boards and Trusts. Christopher was a founding shareholder and Director of MetalNRG plc.

Rolf Gerritsen – CEO

Rolf Gerritsen is an entrepreneurial executive, with outstanding strategic, organisational, commercial and financial skills with an exceptional delivery record developed over the last 30 years with specific focus on the Natural Resources sector. Core strengths included strategy development, strategy implementation and sourcing capital for growth companies, special situations and restructuring. Proven ability to develop creative solutions to complex business issues. International experience with 4 languages spoken fluently, worked in Europe, The USA, Africa, Australia, Middle East, the Far East and South America. Over the last few years Rolf has been working with boards of listed and private mining companies developing, designing and implementing growth strategies while ensuring the appropriate capital is sourced to deliver the plan.

Christian Schaffalitzky – Non-Executive Director

Christian Schaffalitzky, EurGeol, FIMMM, PGeo, CEng has over 40 years' experience in minerals exploration working for companies and also as founder and principal of the geological consultancy CSA. Christian co-established Ivernia West PLC, where he led the exploration, discovery and development of the Lisheen zinc deposit in Ireland. Currently he is active in precious and base metals minerals exploration and development in Russia and the former Soviet Union as Chairman of Eurasia Mining plc (LON:EUA). He is also Chairman of Kibo Mining plc (LON:KIBO).

Forecasts

We initiate coverage of MetalNRG with forecasts for the financial years ending 31st December 2021 and 2022. Forecasts for 2021 show the initial oil revenue from the company's interest in BritNRG and the associated cost of sales. Administration costs rise to £0.9 million and there are IPO expenses of £0.257 million as the company relisted on the Main Market and a further prospectus was needed. The pre and post-tax loss for 2021 comes out at £1.136 million, resulting in a loss per share of 0.15p.

In 2022, the first alternative energy operation is expected to start generating electricity. This plant in Italy is expected to be in operation late in Q2 2022 and as it will always retain six months operating cash, it is unlikely to start paying any profit share to MetalNRG until early 2023. Revenue shown is forecast to come from BritNRG in the months running up to the settlement of current issues. The pre and post-tax loss is expected to be £0.888 million with a 0.07p loss per share.

Year End 31 December (£'000s)	FY 2019 ¹ a	FY 2020a	FY 2021e	FY 2022e
Revenue	-	-	88	50
Cost of sales	-	-	(67)	(38)
Gross profit /(loss)	-	-	21	12
Administration expenses	(594)	(829)	(900)	(900)
Other operating income	9	19	-	-
IPO expenses			(257)	-
Operating loss	(585)	(810)	(1,136)	(888)
Finance income	-	-	-	-
Profit /(loss) before tax	(585)	(810)	(1,136)	(888)
Taxation	-	-	-	-
Profit/(loss) for the period/year	(585)	(810)	(1,136)	(888)
Non-controlling interest				
Attributable to:				
Equity holders of the parent company	(585)	(810)	(1,186)	(916)
Non-controlling interests			(50)	(28)
			(1,136)	(888)
Earnings per ordinary share				
Basic (p)	(0.22)	(0.22)	(0.15)	(0.07)
Weighted average number	260,741,282	363,554,242	807,288,752	1,285,356,446
Total shares plus options and warrants	487,026,093	461,576,093	1,526,219,459	1,526,219,459

¹ 10 month period to 31 December

Source: Company/Align Research

Valuation

We have set out to determine a meaningful valuation and target price for the stock by individually evaluating the key business interests.

MetalNRG Eco

In seeking to value the new MetalNRG Eco business, we used the first deal in this space as a blueprint for further plants. The first deal is the participation in the acquisition and planned recommissioning of a 1Mwe waste-to-energy plant in Italy. This plant was originally commissioned in 2015 and built around EQTEC's proprietary and patented Advanced Gasification Technology. MetalNRG joined a consortium led by EQTEC to repower, own and operate the biomass-to-energy plant in Castiglione d'Orcia, Tuscany.

MetalNRG will hold 26.66% equity in the SPV for an investment of €700,000. The plant is expected to generate an unlevered IRR of 20% and annual EBITDA in excess of €750,000. After 12 months commissioning, the plant is expected to start in Q2 2022. The operator will always keep 6 months of cash but after 18 months MetalNRG should get €200,000 (26.66% of €750,000) on an annualised basis. Initially, we have modelled three such projects being identified and invested in over the next 12 months which would generate €600,000 – €700,000 per annum moving ahead. It is undemanding to suggest that these earnings might command a PE multiple of at least 6, to remain conservative, which would suggest a valuation of €3.6 million – €4.2 million or £3.25 million.

Gold Ridge

MetalNRG acquired the Gold Ridge Gold Project in July 2018 for US\$700,000 in cash and shares (US\$500,000 in shares at 1.75p each). It does look as though the management did a good deal. No compliant Mineral Resource Estimate exists for the Gold Ridge properties. SRK in its CPR (March 2021) pointed out that there was an historic estimate produced by Queenstake in 1996 of 35,000 – 40,000oz of gold at a grade of 11.5g/t.

We sought to value Gold Ridge by looking at another project within this major regional mineral belt that runs from Arizona into Nevada. Gold Basin Resources Corporation (TSXV:GXX) is advancing its 100%-owned Gold Basin Project which is located Mohave County, NW Arizona. Gold Basin is a 31km² property containing multiple near-surface, oxide gold deposits the most significant historical deposits are the Cyclopic and Stealth, plus more than 10 other high priority drill targets occur throughout the property. Recent drilling has provided good results and more drilling is planned to focus on testing and expanding the known mineralised areas.

Gold Basin is more advanced in its exploration than MNRG's Gold Ridge, but both have been the site of previous gold mining activity. However, at Gold Ridge work by SRK's has already defined a 100,000-ounce target figure. For these reasons we believe it is valid to value Gold Ridge on a similar Enterprise Value per km² basis using Gold Basin Resources as a peer comparison.

Gold Basin Resources currently trades at C\$0.24 per share giving the stock a market cap of C\$22.82 million and an Enterprise Value of C\$18.19 million (US\$14.29 million). Based on its 31km² property the EV per km² comes out at US\$0.46 million. MNRG's Gold Ridge Project consists of 9.3km² and on this basis is valued at US\$4.28 million or £3.17 million.

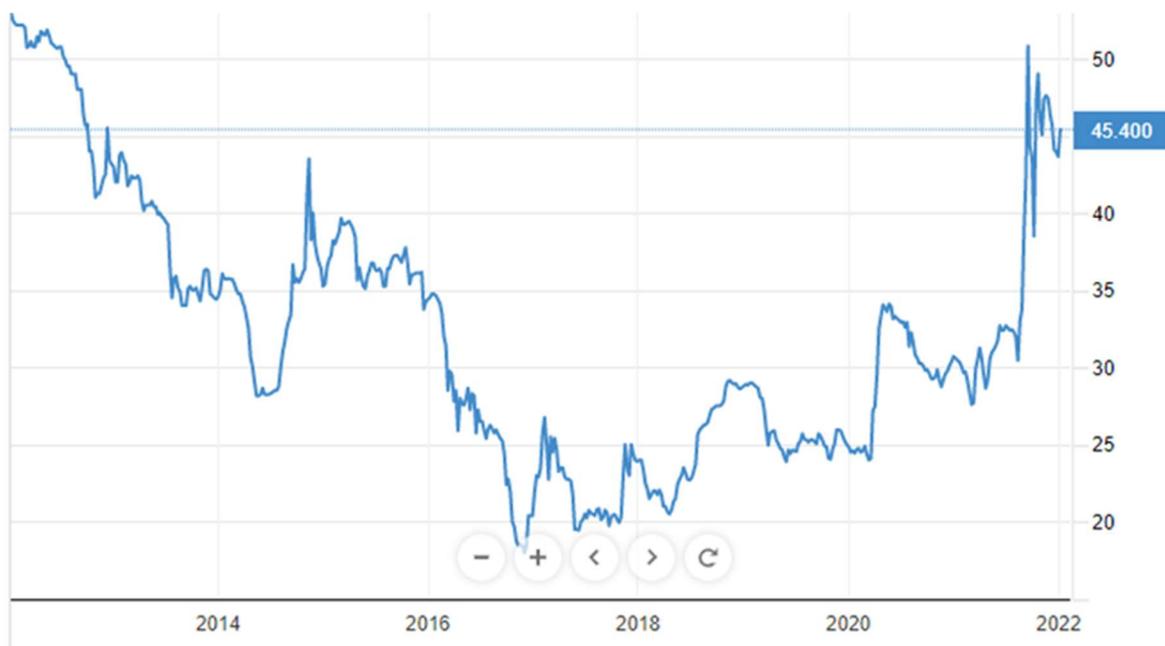
Uranium

The financial modelling in 2017 was based on the results of the feasibility studies and showed a NPV(15) of US\$27.28 million.

Financial indicators	July 2017 presentation
NPV(15) post tax	US\$27.28m
Post tax IRR	146%
Life of mine	10 years
Annual production of uranium	250tpa
Return on investment	Year 3
Average annual EBITDA ¹	US\$10.3m
Average annual U sales ¹	US\$18.7m
Capex	US\$6.03m
Cost of production U3O8	US\$13.8/lb
Equivalent U	US\$16.6/lb
Base price U3O8 25 year average	US\$28.15

¹ at U3O8 \$30/lb, 250t uranium pa and \$/Rub 65

Financing opportunity for a near term uranium production at Kamyshevskoye. Source: IMC



10-year uranium prices (US\$/lb). Source: Trading Economics

However, since that time the uranium price has increased significantly but over the last four years capex and opex will also have probably risen. A 15% discount rate serves to risk the project quite substantially than the more normally applied 5%, 8% or 10% figures commonly used. We tend to use a 12% discount rate and have repeated the same analysis on that basis and determined a NPV(12) figure of US\$33.74 million.

This project has passed through feasibility studies and has a mining licence in place and our rule of thumb suggests that at this stage of development the project ought to be risked by 45-55%, which suggests a valuation of US\$16.87 million. For providing the financing Metal NRG can gain a 51% holding, which would equate to US\$8.6 million (£6.37 million), which is the figure that has gone into the SOTP table.

Lake Victoria Gold

LVG owns a 100% interest in Tanzoz Minerals Ltd (TML) a private Tanzanian Company that holds Gold Prospecting Licences (PLs) in Tanzania. TML now owns mining licence 538, (ML538) which has a Resource of 291,600oz including a Reserve of approximately 90,000 oz. A pre-feasibility study completed in 2017 confirmed that this is sufficient to commence economic mining operations at Imwelo in Tanzania.

The value per ounce figure for gold in the ground varies from jurisdiction to jurisdiction. For a project located in East Africa, an EV/oz figure of US\$50 per ounce would seem appropriate, which would suggest a valuation of US\$14.58 million, with MetalNRG's 3.84% stake equating to US\$0.56 million or £0.41 million.

Total

Our SOTP valuation totals £15.02 million. Based on the number of shares currently in issue (1,135,219,460) the per share valuation would come out at 1.26p. On a fully diluted basis (1,526,219,459), we have added in the funds that would result from warrants being exercised of £3.91 million, which gives a total of £18.93 million. This equates to 1.2p per share, which we have chosen to use as our target price.

Asset	£ million
MetalNRG Eco	3.25
Gold Ridge	3.17
Uranium project	6.37
BritNRG – valued at level of investment	1.20
Tanzanian gold	0.41
Cash	0.30
Debt	(0.36)
Sub-total	14.34
Per share	
Based on the number of shares in issue (1,135,219,460)	1.26p
Fully diluted basis	
Funds coming from warrants and options being exercised	3.91
Total	18.25
Based on the number of shares on a fully diluted basis (1,526,219,459)	1.2p

Sum-of-the-parts valuation. Source: Align Research

Conclusion

There are plenty of good reasons to invest in MetalNRG. We believe the shares are very lowly priced and so all the opportunity looks to be pretty well on the upside. The company is involved in two very interesting metals along with green energy. The board seem to be masters of getting deals financed and looking at sectors where there are good business drivers for value creation. Gold looks extremely interesting in the coming years with mounting inflationary pressures, with the uranium price just beginning to show its spurs after a decade in the doldrums. Meanwhile, green energy is seeing a lot of money coming into the sector and all the leading technology seems to be in Europe, which is ahead of the game.

MetalNRG's road to obvious value creation looks likely to be paved with a series of announcements. Lots of activity means lots of news, so there is no doubt that an impressive news flow is on the cards. Over the coming months it is expected that the company will be able to advise the market on growing potential for Gold Ridge with news on the results of the geochemical sampling programme and the next steps as the project heads towards the identification of drilling targets and drilling.

At the same time, news could erupt any time from Kyrgyzstan, but is dependent on the government action concerning the reinstatement of the mining licences which were suspended by the previous government. The developing story here seems to be that the new government has a greener agenda and sees this project as environmental clean-up of farmland allowing the land to be rehabilitated. All of which ought to see a reappraisal of IMC in light of its rapidly changing fortunes.

Further announcements are expected on progress at the EQTEC Italia development which is expected to come on stream this year with the prospect of the first dividend being received by the company in early 2023. This is expected to be followed by MetalNRG outlining its planned involvement in further EQTEC projects across Europe. A resolution of the BritNRG issues would reduce uncertainties and potentially also free up capital to accelerate the move into green energy which is likely to be well received by investors.

We look forward to being given the chance to update our valuation going forward as more flesh gets put on the bones of the company's out and out growth structure. **We initiate coverage of MetalNRG with a Speculative Buy stance and a share price target of 1.2p.**

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