



Ministerial Roundtable: **9 January 2024**
Conference and Exhibition: **10-11 January 2024**
Riyadh, Saudi Arabia, King Abdulaziz
International Conference Center

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Preview

December 2023

CRITICAL MINERALS: AN ESSENTIAL PART OF THE ENERGY TRANSITION

As we meet at this latest Future Minerals Forum to focus on creating the resilient, responsible minerals value chains the world will depend on for the energy transition, Saudi Arabia's Deputy Minister, Mining Development, **H.E. Turki Abdulrahman AlBabtain** considers exactly why the energy transition is so dependent on minerals.

Towards the end of 2023, COP28 met in Dubai and heard from António Guterres, UN Secretary-General, that the availability and accessibility of critical energy transition minerals is crucial to reaching the goals set by the 2015 Paris Agreement.

"COP28 must commit countries to triple renewables capacity, double energy efficiency, and bring clean energy to all by 2030," he said.

One of the primary reasons we are here in Riyadh for the Future Minerals forum is precisely because of these ambitions. Because it is a stark

truth that without minerals the energy transition simply cannot happen.

Copper, lithium, nickel, cobalt, rare earth elements...these are just some of the minerals that are essential in many of today's clean energy technologies - from wind turbines and electricity networks to electric vehicles.

The volumes of minerals required, even in a single electric car, are huge. A typical EV battery requires approximately eight kilograms of lithium, 35 kilograms of nickel, 20 kilograms of manganese and 14 kilograms



H.E. Turki Abdulrahman AlBabtain, Saudi Arabia's Deputy Minister, Mining Development

of cobalt. Beyond that, the charging infrastructure necessary to keep zero emissions vehicles on the road requires vast amounts of copper while so too does cleaner power. Solar panels use copper, silicon, silver and

zinc, while wind turbines are constructed largely from iron ore, copper, and aluminum.

Such minerals are present in vast quantities in the Kingdom and our surrounding Super Region of Africa and Western

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Welcome to the third edition of the Future Minerals Forum

H.E. Abdulrahman Al-Belushi, Saudi Arabia's Assistant Deputy Minister of Mining Enablement



Hosting a global minerals conversation

Ali Al-Mutairi, Executive Director of the Future Minerals Forum



A critical part of mining's growth

Eng. Abdullah Alznaedi, CEO of Saudi Chemical Explosives Sector



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CRITICAL MINERALS: AN ESSENTIAL PART OF THE ENERGY TRANSITION

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and Central Asia meaning that we can play a big role in delivering a sustainable future.

Beneath the Kingdom alone, the Arabian Shield is estimated to contain \$1.3 trillion worth of potential mineral value, across numerous commodities, including copper, phosphate, gold, iron ore and rare earth minerals.

Opportunities exist to achieve very significant growth in minerals that would make Saudi Arabia a global leader in mineral value chains globally. [Increasing phosphate production to over 7.5 million tonnes, for example, would place us among the top three global producers, while there is the opportunity to increase gold mining output by over ten times relative to today. The production of steel could be more than doubled, while the potential exists for expansion into new value chains from uranium, titanium, rare earth elements and niobium/tantalum.]

Global demand for these minerals and metals will grow exponentially in the coming years and decades to enable the energy transition. The very rough expectation is for demand to grow fivefold over the next two decades.

However, that forecast is not clear cut and we need to be able to quantify what the global requirements are for mineral demand.

So, in recognition of these challenges, in 2022 we began a conversation in Riyadh bringing together more than 80 countries from the Super Region of Africa, Western and Central Asia and establishing the Future Minerals Forum, or FMF.

Its purpose is to enable the creation of responsible, resilient mineral value chains in our resource-rich countries.

Alongside the FMF, we held the first Ministerial Roundtable – a government-led initiative, whose aim is to work together to produce the minerals the world will need for the energy transition.



\$1.3 trillion

The Arabian Shield in KSA is estimated to contain \$1.3 trillion worth of potential mineral value, across numerous commodities, including copper, phosphate, gold, iron ore and rare earth minerals

The Roundtable brings together some of the super regions' most eminent government representatives to further regional collaboration on the sustainable development of the industry.

Globally, the Ministerial Roundtable and FMF unique. They form the only platform where governments and industry come together from all over the world to shape the future of minerals.

FMF is an inclusive multi-stakeholder space, a government-led platform that also brings together suppliers and customers worldwide to collaborate.

By collaboration, we do not mean simply by having conversations. The FMF has turned talk into action through

four initiatives that began at the last event in 2023 to build and develop a critical minerals framework; sustainability expectations – so that we move from being rule takers to rule shapers; capacity through centers of excellence; and green metals hubs, enabled by new technologies.

There are many other practical measures that we are taking to cut mining timeframes, making bold advances through new technologies and increasing investment.

Since in Saudi Arabia we have an opportunity to recreate our industry from the ground up, we began with a blank sheet.

Historically, there has been a negative perception of the mining sector and so we set out to reverse that reputation, creating a responsible industry, based on modern best practices.

We explored why it takes so long to develop mines around the world and found that governance and legal structures are complex, and that the destructive mining practices of the past had led to much greater regulation.

Some of the particular characteristics of the Kingdom have helped us reduce complexity and slash timeframes. Saudi Arabia has a single government for the whole country, one entity regulating its entire minerals sector and a world class mining law. We also

have none of the legacy issues faced by other countries.

With a young, tech-savvy population we are also being bold on developing the technology which will help reduce the timeframes of exploration and mine development.

Of course, building an industry from a blank canvas needs investment and so we are incentivizing institutional investors to finance exploration and mineral production and think longer term, aiming to bring in new players such as sovereign wealth funds.

To help them better understand resource potential, we are providing them with extensive geological data. We created the National Geological Database – providing fully transparent, online access to 80 years' worth of geological, geophysical, and geochemical data, including thousands of detailed reports on mining targets and prospects. We have also launched the Regional Geological Survey Program, which is conducting new geophysical and geochemical surveys to produce a detailed map of nearly 700,000 sq km of the Arabian Shield.

Our work is about creating value. We want to create local value from minerals production and beneficiation to industries and the local community.

By taking part in the Future Minerals Forum we believe that you can help us create that value.

Because it is only through collaboration that the Super Region can leverage its vast mineral endowment to develop and prosper sustainably while building trust through demonstrating responsible action.

By adopting a multistakeholder approach we aim to be an inclusive forum that brings together a range of perspectives to find solutions and build trust among all stakeholders, including local communities.

Thank you for joining us here in Riyadh to participate in this crucial work.



WELCOME TO SAUDI ARABIA AND THE THIRD EDITION OF THE FUTURE MINERALS FORUM

His Excellency Abdulrahman Al-Belushi, Saudi Arabia's Assistant Deputy Minister of Mining Enablement welcomes you to the third Future Minerals Forum and discusses the importance of the event to the Kingdom

Welcome to the Future Minerals Forum 2024, the largest gathering of its kind and the only truly global forum to be dedicated to shaping the future of minerals.

In just two years, the Future Minerals Forum (FMF) has firmly established itself as a leading international platform on minerals, bringing together Ministers from around the world, CEOs and senior representatives of some of the world's largest mining companies, many other organizations and around [9,000] delegates from all along the many value chains that rely on minerals.

The FMF is a source of pride for Saudi Arabia, as a showcase of our country's

transformation, as proof of our care for the environment and a sign of our ambition to make a positive contribution to the development of the Super Region and beyond.

Why, then, did Saudi Arabia first convene the Future Minerals Forum in 2022, and what makes the Kingdom the right place to spearhead the world's efforts to secure the minerals and metals value chains we need for a sustainable future?

Allow me to point to many clear and compelling reasons.

The Kingdom of Saudi Arabia is ideally located at a geographically strategic location, and situated at the crossroads of the North, South, East and West. We sit at the apex of two of the world's largest continents - Africa and Asia - something that has sustained Saudi Arabia's



His Excellency Abdulrahman Al-Belushi, Saudi Arabia's Assistant Deputy Minister of Mining Enablement



The Kingdom and our neighbors play host to many of the critical minerals deposits the world needs to enable its transition to cleaner energy

position as a crossroads for trade for centuries, and which is just as true today.

Our geographical position means that we sit at the center of a Super Region that spans Africa, Central and Western Asia and which includes around 41% of world's countries, 33% of the world's land mass, 46% of the world's population, and 11% of the global economy.

That means that in Saudi Arabia we are at the epicenter of an exciting time of growth.

The Super Region's GDP is

among the fastest-growing worldwide, around 45% faster than the global average, and comparable to growth rates in the fastest-growing regions of the world. It is forecast that growth will continue to migrate away from developed markets, meaning that the greatest opportunities lie in these fast-growing markets.

But as well as economic growth, this region's population is also the fastest-growing on the planet. It already represents 45% of the global population



The Super Region's GDP is among the fastest-growing worldwide, around 45% faster than the global average, and comparable to growth rates in the fastest-growing regions of the world. It is forecast that growth will continue to migrate away from developed markets, meaning that the greatest opportunities lie in these fast-growing markets.



80%

Up to 80% of the world's population growth will take place in the Super Region

More specifically when it comes to minerals, the Kingdom and our neighbors play host to many of the critical minerals deposits the world needs to enable its transition to cleaner energy. We are privileged to have a unique geological endowment beneath our feet, with many of the minerals needed for the future, including platinum group metals, tantalum, niobium, cobalt, uranium, manganese, lithium, rare earth elements, diamonds, and gold all present. In Saudi Arabia alone, we are responsible for 7% of the world's global phosphate production and that figure is growing. There is also significant potential to develop gold and copper mining activities.

The reality is that in Saudi Arabia we sit at the center of

a region that is comparatively under-explored and has the lowest exploration spend of any region globally. The opportunity for us to explore this potential is clear.

The Kingdom is ideally positioned, geographically, politically, and economically to be a catalyst for change, a center for mineral processing, and a driver for the development of the mining sector in the Super Region.

In short, we have the innovation, the infrastructure, the processing power, the logistical capabilities and the legal frameworks to support our goal to be a global minerals hub to deliver a cleaner future for everyone.

This is an exciting time to be involved in the minerals industry and I trust that you will find much to interest you here in Riyadh, forging beneficial partnerships that are essential to creating the resilient, responsible minerals value chains that the world needs.

and studies suggest that by 2040, it will be home to more than half of the world's population. Up to 80% of the world's population growth will take place in the Super Region.

Of course, Saudi Arabia and the Gulf region already feature large on the world stage in global affairs. This region's growing importance can be seen in its hosting of major events such as the 2020 World Expo which was held in Dubai, the FIFA World Cup that took place in Qatar last year, and of

course the forthcoming World Expo to be held here in Riyadh in 2030.

Our investment in the form of several giga-projects around the Kingdom continues to raise the Kingdom's profile globally. You only have to look at the scale and ingenuity of projects including NEOM, Qaddiya entertainment city, Red Sea Global, and Amaala to understand the extremely high level of ambition that the Kingdom has to become a world-class destination across multiple sectors.



HOSTING A GLOBAL MINERALS CONVERSATION

Alongside the usual anticipation for this year's FMF, is a keen sense of excitement at the opportunities that are within our grasp, explains Ali Al-Mutairi, Executive Director of the Future Minerals Forum.

The huge numbers relating to the 2024 Future Minerals Forum speak for themselves.

More than 9,000 metals and minerals professionals from over 145 countries will converge in the Kingdom of Saudi Arabia, to hear from the [105 speakers who are joining us from 61 countries]. Alongside them will be [117 world-class exhibitors and sponsors from 31 countries].

The numbers relating to our Super Region are similarly eye-catching. The region consists of [79] countries, covers 33% of the world's land and is home to more than 45% of the world's population, yet it contributes just 11% of global GDP. Crucially though, it is rich in the natural resources that we need for a sustainable planet. It is in recognition of these facts that we established the FMF.

This third edition is not only the largest Forum that we have convened. It is also the gathering of its kind anywhere in the world - and the only truly global gathering that brings such a wealth of expertise together to shape the future of minerals.

Perhaps the most impressive number though is in the thousands - and that relates to the number of opportunities that exist for each participant to drive and deliver collaboration and alignment on our collective mission: to create resilient and responsible mineral value chains in Africa, Western and Central Asia.



Ali Al-Mutairi, Executive Director of the Future Minerals Forum

145 countries

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“The region consists of [79] countries, covers 33% of the world's land and is home to more than 45% of the world's population, yet it contributes just 11% of global GDP.”

We encourage you to make the most of those opportunities, helping to achieve our two goals:

Enabling the development of responsible minerals and metals industries in the Super Region by attracting investment, deploying digital and other advanced technologies, and applying high standards for sustainability performance.

And placing the region at the center of a global conversation on the future supply of critical and strategic minerals.

To achieve those goals we will be focusing this year on two themes in particular. Firstly, working to develop an International Critical Minerals Framework and secondly establishing the pillars of new minerals value chains.

Our largest ever cohort of speakers will lead the discussions on these themes. They represent global and regional businesses and other organizations from across the minerals and mining sector and its value chains, the majority of whom are at CEO-level. Their depth and breadth of expertise is unsurpassed and we know that you will be fascinated, inspired and gain insight from what they have to say on the subject of minerals.

Please also make the most of the many other valuable features of this event such as the International Exhibition, the Market Place and the many, many opportunities you will have for networking with individuals who share the same passion for minerals and their potential.

Our event is a truly multi-dimensional one, the structure of which emphasises how important collaboration and partnership are if we are to achieve the goals of the Super Region.

On behalf of the whole Future Minerals Forum team, we welcome you to Riyadh and look forward to meeting you in the magnificent setting of the King Abdulaziz International Conference Center.


 → FOUNDING PARTNER: **ESNAD** STAND: **FO4**

ESNAD: A FUTURISTIC VISION FOR THE MINING SECTOR

Saudi Mining Services Company ESNAD was established in 2020, under the auspices of the Ministry of Industry and Mineral Resources, as the key enabler of the Kingdom's mining sector. Its mission is to develop the mining sector in a balanced manner through sustainable and collaborative efforts – ensuring the responsible management of natural resources as a foundation for enduring prosperity.

The National Mining Strategy was adopted to advance and boost the mining sector's GDP contribution while reinforcing it as the third pillar of the Kingdom's economy, alongside oil and petrochemicals, supporting the fulfillment of Saudi Vision 2030. In this regard, ESNAD's aim is to develop mining investments, maximize their added value, and enhance financial, environmental and community commitment to achieve sustainable development – through its range of functions and solutions.

ESNAD's Investment Measures: Paving the Way for Growth

ESNAD's aim is to enhance the investor's journey by digitizing the licensing processes using modern technologies, promoting investment, attracting investors and providing a transparent and reliable environment in the mining sector. Their priority is to streamline policies, operate a digital licensing platform (Ta'adeen Mining Platform), and significantly reduce the time required for license issuance.

Working Together for a Sustainable Mining Sector

As the supervisory authority for the mining sector, ESNAD seeks to preserve the environment, enhance



national capabilities, diversify the economy, and cooperate with partners – by optimizing innovative technologies and global partnerships. These partnerships aim to develop sustainable solutions to nurture and develop the mining sector and its areas of operation.

The Keys to Unlocking Mining Value: ESNAD's Functions

■ **Licensing:** ESNAD is committed to creating an exceptional licensing experience for investors through a strategic approach. This includes refining policies, introducing an electronic licensing platform for faster issuance, setting clear controls, enhancing compliance, reducing manual intervention, and studying global best practices to establish precise guidelines for each type of mining license. During 2023, ESNAD has issued 22 building exploration licenses, 184 mining and quarries licenses, 590 exploration licenses and 1,492 quarry material licenses.

■ **Inspection:** ESNAD's focus is on increasing the efficiency and coverage of inspection operations across its 7 inspection and 6 main centers. During 2023, it has conducted over 15,000 inspection visits for construction material licenses and over 750 inspection visits for mining licenses. Other key initiatives include expanding geographical monitoring, enforcing regulations, measuring production quantities, fostering collaboration with resource agencies, conducting educational workshops on violations, and driving resource conservation.

■ **Financial Compliance:** ESNAD upholds financial compliance and collection within the mining sector through a multifaceted strategy. This involves developing robust invoicing and collection mechanisms, addressing investor requests, minimizing financial leakage, increasing investor commitment and awareness, improving collection

ratios, enhancing report quality, and fostering trust. During 2023, over 2,400 financial guarantees, worth more than SAR 939 mn, were archived and recorded. It also successfully linked all active licenses on the Mining Platform with their respective financial guarantees, and automated over 1,800 financial guarantees.

■ **Sustainability:** ESNAD fosters sustainability by reviewing and enhancing regulatory frameworks, including waste management, financial compensation for environmental permits, and mining investment systems. It supervises impactful Environmental Impact Assessment (EIA) projects for 7 mining complexes and initiatives to mitigate negative effects. These functions are provided through optimizing and digitizing operational processes and partnering with leading service providers from the private sector.

■ **Digital Services:** ESNAD's digital services aim to streamline the investor journey, reduce costs, and position the Kingdom as a global mining hub in alignment with Vision 2030's economic diversification goals. The Ta'adeen Mining Platform integrates various digital functions, providing investors a unified experience for completing mining sector procedures.

ESNAD is dedicated to the foundations of mining excellence, i.e., sustainability, excellence, collaboration, innovation, and team members (human capital). Through a progressive vision, mentorship from proficient leaders and a steadfast commitment to sustainable advancement, ESNAD is maximizing the potential of the mining sector. The organization's role as a catalyst in the Saudi mining landscape is underscored by its strategic initiatives, commitment to transparency, and dedication to sustainable practices.

Find out more about ESNAD and its transformative functions at FMF24.



MINISTERIAL ROUNDTABLE: A GATHERING OF GOVERNMENTS FROM THE MINERALS SUPER REGION AND BEYOND

The Future Minerals Forum's third Ministerial Roundtable – the largest-ever gathering of its kind, which is aimed at envisioning sustainable mineral value supply chains for the future – will take place on 9 January 2024. This high-level meeting is an important launchpad for this year's FMF and will see Ministers and other senior national decision-makers setting the agenda for what will follow over the next two days of discussion and planning

At the previous Roundtable, ahead of the FMF 2023 edition, the event brought together more than 60 governments and delegations from the super region covering Africa, Western and Central Asia. Also present were more than 20 international organizations, including multilateral organizations, industry associations and NGOs.

The 2024 meeting is expected to see an even larger gathering of senior representatives meeting to define areas for collaboration. Below, you can find a list of the countries confirmed to be sending a delegation to the Roundtable.

The Ministerial Roundtable is a government-led platform, created by Saudi Arabia, for seeking to work together to produce the minerals the world will need for the energy transition. It brings together some of the super regions' most eminent government representatives to further regional collaboration on the sustainable development of the minerals and mining industry. At the Roundtable they will discuss the huge untapped potential of this emerging area and explore how critical minerals can become a major development driver in their countries.

The super region is broadly defined as 80 countries with vast endowments of minerals



required for the energy transition, food security and economic development.

This area not only has the world's fastest growing population, but also one of the fastest economic growth rates and access to capital.

It is also a region at the geographic center between East and West and will play an important role in the production, processing, manufacturing and trading of critical minerals to ensure reliable and responsible global supply.

The previous Ministerial Roundtable in January 2023



highlighted the need to turn talk into action in four areas, and this latest meeting will take those discussions forward in terms of:

■ Development of a regional critical minerals framework to enable the creation of resilient and responsible value chains, secure the energy transition and foster industrial development in producer countries.

■ Capacity building through the creation of centers of excellence (virtual, physical or hybrid) in the super region covering Africa, Western and Central Asia.

■ Development of a sustainability framework for the region that is fit for purpose based on transparency and certification of supply chains. This will place sustainability, transparency and accountability at the heart of responsible mineral development and will help to overcome any existing negative societal perceptions of mining, helping to attract investment.



■ Creation of green metals hubs and value chains in the super region to enable

the energy transition and provide food security. These will leverage the

region's mineral endowment for industrialization and development and will be enabled by new technologies and powered by renewable energy sources. At the meeting, attendees will explore intra-regional opportunities to establish minerals-specific value chains and financing.

As an important step forward in turning ideas into reality, also present at the FMF 2024 edition of the Roundtable will be leading experts from the King Abdul-Aziz City for Science and Technology (KACST). There, they will present the outcome of a workshop held with a range of authoritative voices to define the scope of work in these four areas and develop an executable working plan for the development of centers of excellence (CoEs) to become part of minerals strategies in the region.

A NEW GLOBAL VOICE

The Ministerial Roundtable brings together more than 60 nations, represented by their government ministers and trade delegations responsible for the minerals and metals development of their countries.

Past Participants include:





FMF: A TRULY INTERNATIONAL MINERALS AND METALS EXHIBITION

Alongside the many illustrious speakers and panellists from the global minerals and metals sector who will contribute to its influential agenda, Future Minerals Forum hosts a unique trade exhibition. This is held in tandem with a number of other features and business lounges providing networking opportunities for the many thousands of professionals attending the FMF.

The exhibition bridges thought leadership with solutions across the entire minerals value chain. It provides a dual opportunity for enablers and innovators of change to drive specialized conversations in a hands-on environment where exhibits include some of the most

cutting-edge technologies and innovations in the minerals and mining industry.

Our aim is to provide thousands of professionals working in the region of Africa, Western and Central Asia with a unique platform to gain insight into advanced solutions and technologies from leading international organizations. These contributions are essential for ensuring a resilient supply of minerals across all phases, from exploration and extraction to the downstream manufacturing and distribution sectors.

We look forward to warmly welcoming you as you join us at the King Abdulaziz International Conference Center (KAICC) in Riyadh for this truly international minerals and metals gathering.



Reasons to Exhibit

- 1

By exhibiting, you join a select number of organizations showcasing live, innovative products and solutions to an engaged audience of pre-approved key decision makers in one exclusive space.
- 2

The event is the first of its kind government led initiative, committed to driving innovation, creating value and helping the value chain to thrive.
- 3

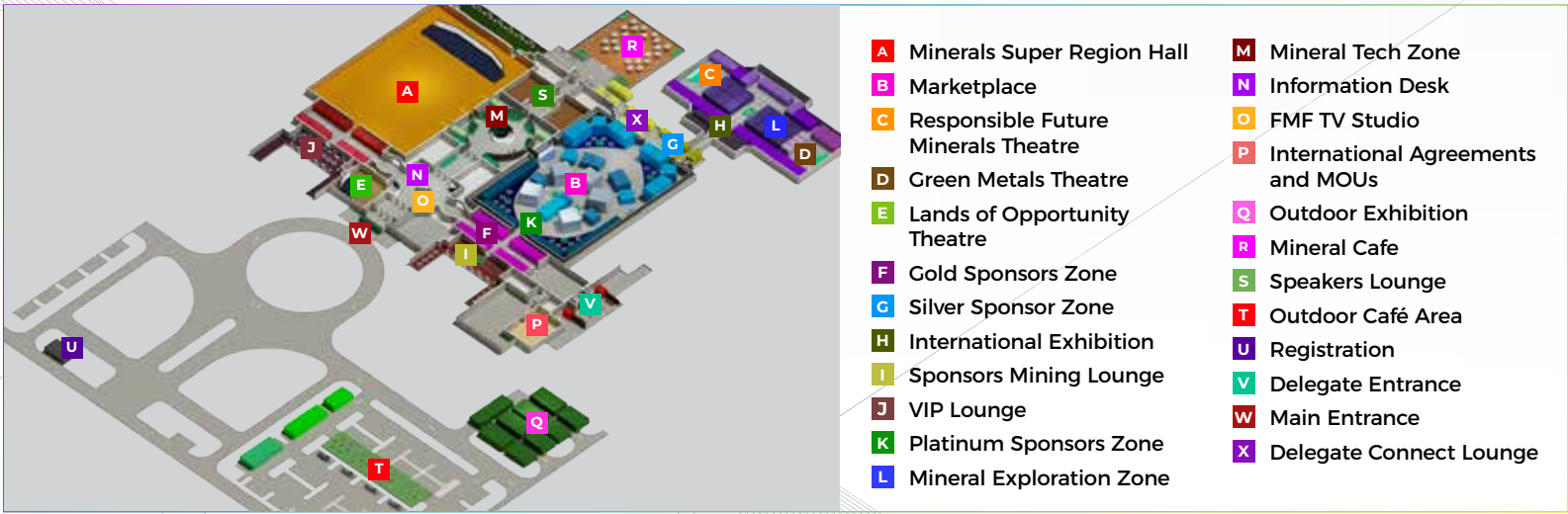
FMF attracts delegations from 145+ Countries and in excess of 9,000+ senior attendees of unrivalled quality, under scoring the delivery of the highest return on your investment
- 4

Exhibiting optimizes your participation and presence in three super regions with rich mineral endowment. Invite and welcome your prospects and potential business partners to showcase your offerings.
- 5

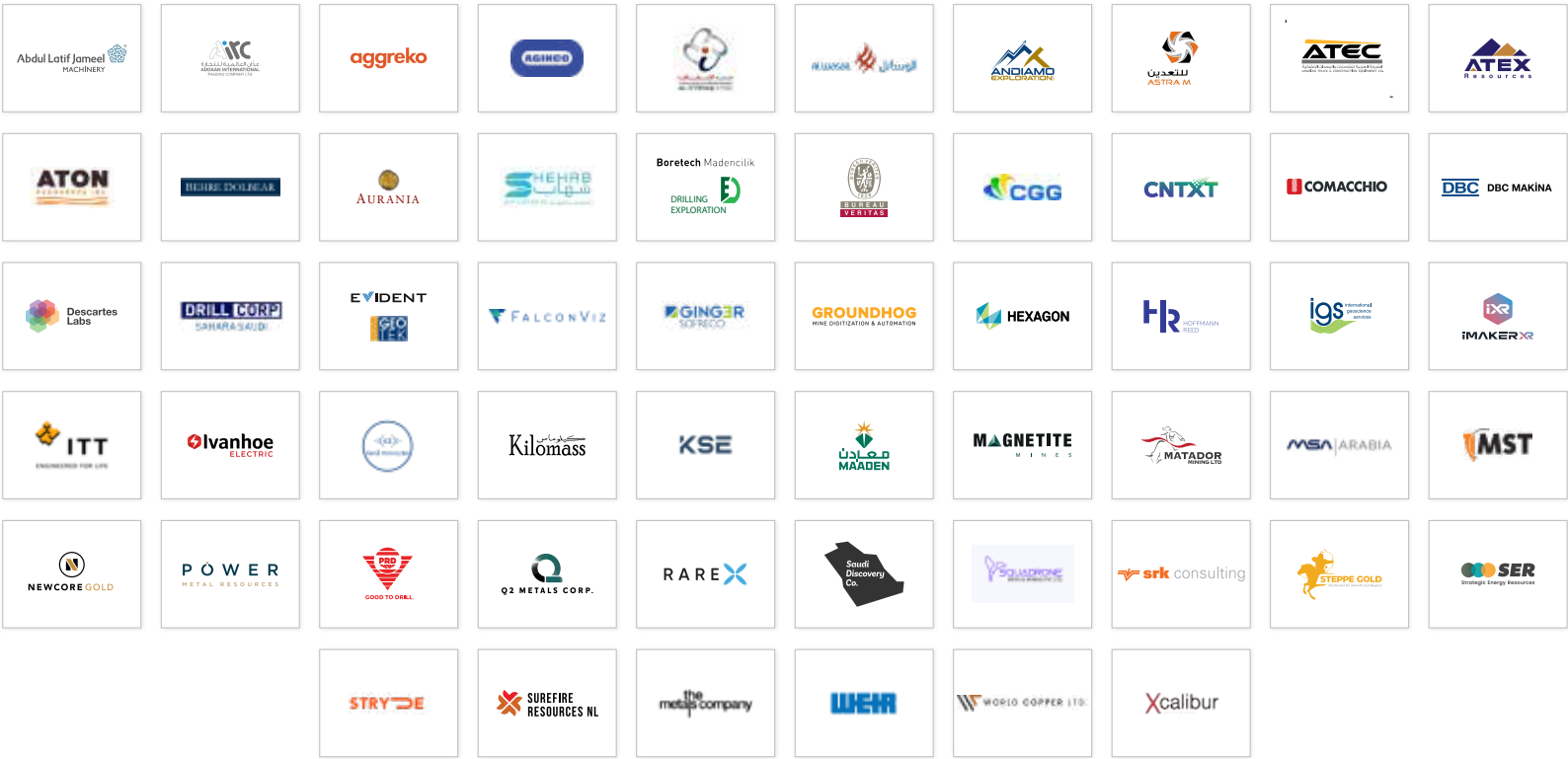
The influential and thought leadership conference agenda and ministerial summit connect the world of minerals and metals and the exhibition brings together all backgrounds and interests providing a wealth of networking and learning opportunities.
- 6

A focused exhibition space to ensure visitors navigate around the event and easily locate your solutions - delivering direct business to your booth.

Venue Map



Confirmed Exhibitors Include



TO RESERVE A BOOTH FutureMineralsForum.com/bookastand



WHAT IS THE FUTURE MINERALS FORUM?

The Future Minerals Forum (FMF) is a government-led, multistakeholder, action-focused initiative, where governments, businesses and other stakeholders from Africa, West and Central Asia, and the rest of the world, come together to enable the development of responsible minerals value chains

The Future Minerals Forum (FMF) is a government-led initiative, where governments, businesses and other stakeholders from Africa, West and Central Asia, and the rest of the world, come together to enable the development of responsible minerals value chains. It has clear goals:

- To enable the development of responsible minerals and metals industries in the region by attracting investment, deploying digital and other advanced technologies, and applying high standards for sustainability performance
- To place the region at the center of a global conversation on the future supply of critical and strategic minerals

The government of Saudi

Arabia created the FMF as part of its efforts to expand sustainable mineral and metal exploration, extraction and exploitation in the Kingdom and around the world in ways that benefit everyone:

- The geological opportunities are great for governments, miners and investors.
- The economic development opportunities are great for countries across Africa, and West and Central Asia.
- The potential is great for adding new, responsible mining jurisdictions to serve the world's growing mineral needs.
- We have a great chance to build a mining sector committed to strict environment, social and governance (ESG) criteria and transparency.

The mineral super-region stretching from Africa to

Central Asia is home to vast, untapped mineral resources that can help meet future demand and create new investment opportunities.

- 79 countries, covering 33% of the world's land.
- Home to >45% of the world's population, yet contributes just 11% of global GDP.
- Highlights the need to accelerate economic development, with large implications as both a commodity supplier and goods producer to global markets.

But there are challenges:

- Few regional champions.
- Infrastructure - roads, rail and ports.
- Financing - access to capital for exploration and mine development.
- Talent - mining is not attractive to many young people.

- This region has high prospectivity but spending per sq km is well below global average.

We have opportunities to collaborate on a range of areas including:

- Developing the skills our young people need to take up the many jobs to be created from minerals and metals industries.
- Financing the development of entire value chains from exploration to manufacturing.
- Leveraging our combined expertise in minerals and hydrocarbon extraction to create centers of excellence to drive innovation and develop future talent.
- Enabling a regional conversation on maximizing the benefits from our collective mineral endowments, by establishing minerals and metals value chains that have local communities at their heart, and ultimately increase the quality of lives around mining operations.

The FMF will promote discussion with countries of the super region on the need to develop strategies for critical minerals used in low-emission technologies, including the establishment of a strategic framework based on agreed principles to ensure the stability



and sustainability of mining supply chains.

At the FMF's second Ministerial Roundtable in January 2023, an initiative was launched to develop regional strategies for critical minerals to meet the expected supply gap due to the high demand for these minerals in the manufacture of low-emission technologies, such as EVs, batteries and clean energy solutions.

Its objectives are:

- To develop a strategic framework founded on agreed principles to ensure stability and reliability of supply.
- To support the global industry scale-up of production to meet demand for the material-intensive energy transition with affordable and sustainable green materials.
- To partner in developing, long-term opportunities locally and globally to close the supply gap.
- To build resilient integrated critical mineral value chains in the super region encompassing Africa, Western and Central Asia.

The FMF will host conversations between countries in the super region to develop standardized regional ESG practices and adapt legislative frameworks to meet regional needs, enabling regional players to adhere to those practices.

The second Ministerial Roundtable also saw the launch of an initiative to support the development of international standards for the sustainability of the minerals sector.

Its objectives are:

- Working to change negative societal perceptions about metals to attract investments, obtain licenses, and produce the metals required for the energy transition.
- Standardizing approaches to ESG practices regionally while adapting legislative frameworks in line with regional needs to enable regional players in the mining sector to adhere to those practices.
- Removing obstacles to investments in new projects and expansions in the value chain by enabling the regional mining sector to meet ESG needs, and



enhancing the supply of metals from responsible sources.

- Partnering with third-party ESG certification agencies to leverage international best practices and expertise.

The FMF is embracing the development of regional centers of excellence by presenting a model for these centers that will contribute to workforce development, access to capital, and innovation.

Another initiative launched at the 2023 Ministerial Roundtable was the development of centers of excellence to become part of minerals strategies in the greater region.

Its objectives are:

- To establish centers of excellence in the region to increase their contribution to future mineral supplies, workforce development, access to capital and innovation.
- To strengthen regional cooperation in knowledge and technical transfer.

This initiative is being implemented in cooperation with the King Abdul-Aziz City for Science and Technology (KACST). In September 2023, KACST held a workshop with experts to define the scope of work for regional centers of excellence, develop an executable working plan, present it at the third Ministerial Roundtable, and invite participating countries to adopt the framework.

The scope of work covers:

- Individual development
- Knowledge sharing



The mineral super-region stretching from Africa to Central Asia is home to vast, untapped mineral resources that can help meet future demand and create new investment opportunities.

79

countries are in the super region which covers 33% of the world's land

>45%

of the world's population lives in the super region, yet it contributes just 11% of global GDP

- Data, transparency, and security
- Operating licenses (environmental and social)
- The mine of the future and how the current technology revolution and innovation contribute to changing current mining methods
- Changing the negative stereotype of the sector in the minds of future generations

The Future Minerals Forum, in collaboration with countries in the super region and global experts, will identify potential future value chains for green minerals that leverage local mining and processing advantages, supported by modern technologies.

The fourth initiative launched at the second Ministerial Roundtable was the establishment of value chains for green metals, supported by modern technologies.

Its objectives are:

- To identify the potential future value chains that could be developed based on local mining and processing advantages.
- To identify the critical enabling factors required to develop value chain opportunities, with a focus on achieving integration in the final stages.
- To identify specific opportunities for countries in the region to cooperate in developing regionally integrated value chains.

Find out more at <http://www.futuremineralsforum.com>



THE FIVE PILLARS OF FMF 2024

At FMF 2024, speakers and panels will focus primarily on five pillars: investment in metals and mineral production; critical mineral strategy development; promoting responsible mining; developing centers of excellence; and developing green value chains.

PILLAR 1
INVESTMENT
IN METALS
AND MINERAL
PRODUCTION

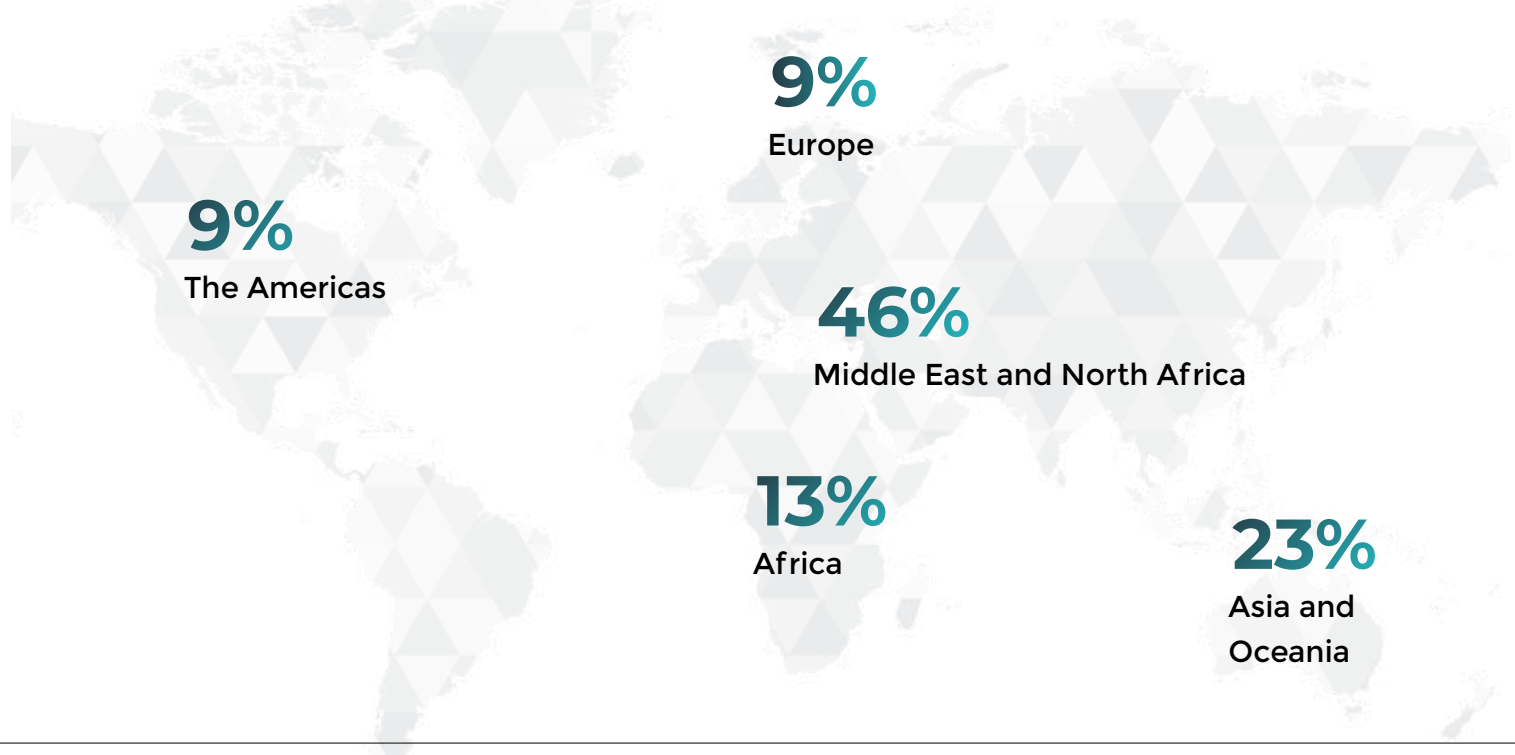
PILLAR 2
CRITICAL
MINERAL
STRATEGY
DEVELOPMENT

PILLAR 3
PROMOTING
RESPONSIBLE
MINING

PILLAR 4
DEVELOPING
CENTERS OF
EXCELLENCE

PILLAR 5
DEVELOPING
GREEN VALUE
CHAINS

MORE THAN 9,000 CONFERENCE DELEGATES CONVERGE IN RIYADH FROM OVER 145 COUNTRIES



NETWORK WITH KEY DECISION MAKERS AND INDUSTRY LEADERS

Attendee Profile

75%

of Speakers
are CEOs

29%

C-Level and
Above

40%

Director and
Heads of
Departments

21%

Experts &
Specialist
Engineers

10%

Independent
& Other

Attendee Sector

23%

Mining &
Energy

20%

Engineering &
Infrastructure

15%

Service
Companies

14%

Manufacturing
& Suppliers

13%

Finance &
Investment

8%

Digital
Transformation
& Technology

7%

Government



SOME OF THE MOST SENIOR FIGURES IN METALS AND MINING WILL SPEAK AT FMF



H.E. Mohammed Al Jadaan
Minister,
Ministry of Finance



H.E. Bandar Al Khorayef
Minister,
Ministry of Industry and
Mineral Resources



H.E. Saleh Al Jasser
Minister,
Ministry of Transport and
Logistic Services



H.E. Khalid Al-Falih
Minister,
Ministry of Investment



H.E. Yousef Al-Benyan
Minister,
Ministry of Education



H.E. Yasir Al-Rumayyan
Governor,
Public Investment Fund
(PIF)



H.E. Khalid Al-Mudaifer
Vice-Minister for Mining
Affairs,
Ministry of Industry and
Mineral Resources



**H.E. Eng. Khalid
Mohammed Al-Salem**
President,
Royal Commission for
Jubail and Yanbu



H.E. Paul Kabuswe
Minister of Mines and
Minerals Development,
Zambia



**H.E. Antoine
N'Samba Kalambayi**
Minister of Mines,
DRC



H.E. Dele Alake
Minister of Solid Minerals
Development,
Nigeria



H.E. Dr Abdirizak Omar
Minister of Petroleum
& Mineral Resources,
Somalia



Samuel Jinapor
Minister of Lands and
Natural Resources,
Ghana



**Hon. Dr. Ruth
Nankabirwa Ssentamu**
Minister of Energy and
Mineral Development
Uganda



Eduardo Bartolomeo
Chief Executive Officer,
Vale



Stuart Chambers
Chairman,
Anglo American



FUTURE MINERALS FORUM 2024: AN OVERVIEW

Venue: Riyadh, Saudi Arabia, King Abdulaziz International Conference Center

The Future Minerals Forum (FMF) is an initiative by Saudi Arabia's Vision 2030. The Kingdom aims to develop mineral supply chains to make mining the third pillar of the Saudi industry by taking advantage of its mineral resources, domestic demand, and taking advantage of global markets to diversify the GDP and job growth.

2,000 confirmed delegations from
113 countries to date

In just two years since being established by Saudi Arabia, the FMF has become a global platform shaping the future of minerals by enabling the creation of resilient and responsible mineral value chains.

105 speakers from 61 countries
confirmed to date

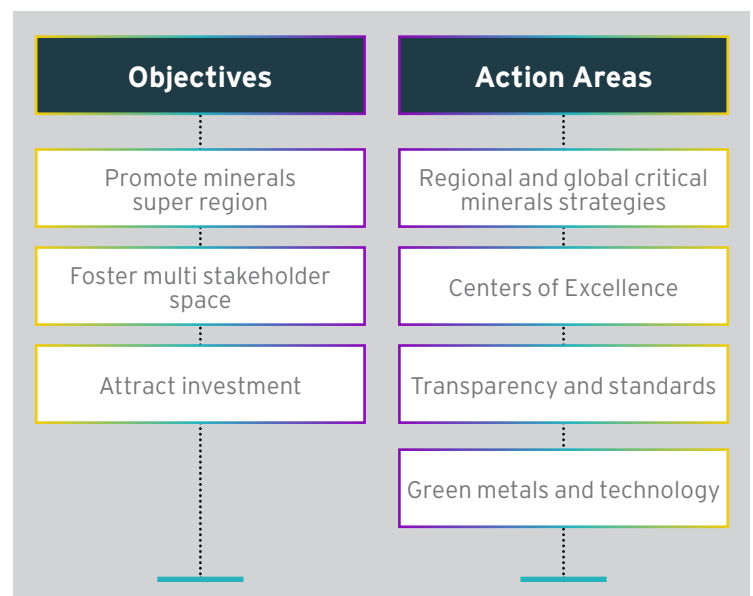
FMF is positioned as a future minerals platform for the super region - with the Kingdom at its center - that covers Africa, Western and Central Asia and has vast mineral and development potential.

117 exhibitors and sponsors
from 31 countries

This super region of 79 countries is a future minerals heartland with growing human capital and market.

FMF is an impact-driven platform, facilitated by Saudi Arabia's Ministry of Industry and Mineral Resources (MIM), which generates initiatives, year-long engagement and thought leadership.

The Ministerial Roundtable is a strategic forum, a key differentiator and influential platform for FMF, providing a voice for the region internationally.



Turning talk into actions by progressing initiatives arising from the Ministerial Roundtable, underscores the impact of FMF beyond the annual gathering and attracts greater interest from global leaders, including investors.

Thousands
of opportunities created through knowledge
exchange, bilateral trade and commerce

Significant achievements at prior editions of the FMF include the signing of over 60 agreements, including a joint venture between Ma'aden and the Saudi Public Investment Fund (PIF). This developed into Manara Minerals, providing investment opportunities for mining assets globally, while securing strategic minerals essential for Saudi Arabia's economic development and global supply chain resiliency.



→ STRATEGIC PARTNER: AJLAN & BROS HOLDING STAND: SP12

AJLAN & BROS: MINING'S PARTNER OF CHOICE FOR STRATEGIC GROWTH

Ajlan & Bros Holding was established to invest in a diversified portfolio of projects across Saudi Arabia's key economic growth sectors. It is expanding its global reach, and as part of the drive towards diversification, is investing in many new verticals.

With more than \$2 billion of revenue and \$15 billion worth of assets, it has over 75 companies around the world, employing more than 15,000 employees across at least 25 countries.

The vision of its Mining & Metals subsidiary (Ajlan & Bros Mining, or ABM) is to become a global player through enduring partnerships in integrated mining and metals industries and to contribute positively to the Saudi society.

Supporting the modernization of the Kingdom, it is contributing to making the mining and metal sector the third pillar of industry in Saudi Arabia. Investments have a positive impact on Saudi society and positive contribution to the economy as per Vision 2030.

Four factors make it a unique partnership value proposition.

With Saudi Arabia's largely under-explored land, there is a geographical KSA Opportunity and the potential for the discovery of significant volumes of commodities. There is also a Market Opportunity, with public equity markets starved of capital, and the potential for a listing on the Saudi Arabian Stock Exchange. There is also a unique investment KSA Opportunity, afforded by the state funding that is available for 75% of mining projects' CAPEX, the very low interest rates, extremely competitive energy



subsidies, and other Government support for high value strategic commodities that support local investment and consumption. Lastly, Ajlan & Bros Mining (ABM) is a unique partner, being a subsidiary of the large, diversified holding company, Ajlan & Bros Holding. It is the most active private company in the Kingdom's mining sector and is actively seeking exploration and mining project investments to provide feedstock for partnership opportunities to build KSA-based smelting, refining and processing.

The Holding will invest \$14 billion with the National Industrial Development and Logistics Program (NIDLP) over the next ten years, has already signed multiple JVs with the world's leading players in the Mining and Metals Industries sectors, and continues to attract foreign direct investment.

Its activities include mining projects, where it is partnering with leading companies as a financial investor in transition metals, and precious and platinum; metals projects,

Ajlan & Bros Mining is to become a global player through enduring partnerships in integrated mining and metals industries and to contribute positively to the Saudi society.

\$15 billion

With \$15 billion worth of assets, it has over 75 companies around the world, employing more than 15,000 employees across at least 25 countries.

where it is partnering with global operators to process high value and critical metals; and mining services, where it is partnering with global leaders to support the growth of industry locally.

MINING AND METALS INVESTMENTS

■ Khnaiguiyah & Moxico

Khnaiguiyah Zinc Project is an advanced stage Zinc and Copper project located 170km west of Riyadh. Ajlan & Bros-Moxico Consortium's bid of US\$68 million, in the first-ever multi-round auction for a Saudi mining license, was recently announced as the winning bid for Khnaiguiyah. The consortium is progressing with the project and engaging with local communities and beginning the construction and development of mining operations.

■ Precious Metals & Valcambi

Valcambi and Ajlan & Bros Mining is building a state-of-the-art refining facility in Saudi Arabia for precious metals and Platinum Group Metals (platinum, palladium, rhodium and iridium) with capacity of 250 tons annually.

■ Mining Cooperation & Chieffing Jelong

Ajlan & Bros Mining and Chieffing Jelong have started exploring for gold and associated minerals on several licenses within the Kingdom, as well as considering additional mineral applications.

■ Mining Cooperation & Norinco Manufacturing Company

Ajlan & Bros Mining and Norinco have agreed to co-operate on exploration and mining activities throughout Africa, as well as several opportunities within KSA.

■ Establishing zinc and copper smelters

Ajlan & Bros Mining and MoxicoCo. started feasibility studies for establishing zinc and copper smelters at Yanbu. The project will produce zinc and copper metals with a capacity of 200KT/Y of zinc and 100KT/Y of copper.



→ STRATEGIC PARTNER: ARAB BASALT FIBER COMPANY STAND: SP03

BFRP REBAR: STRENGTH, DURABILITY AND SUSTAINABILITY

The Arab Basalt Fiber Company produces high-quality Basalt Fiber Reinforced Polymer (BFRP) Rebar – a non-rusting alternative to steel rebar that extends the life cycle of all concrete infrastructures.

This high-quality product is a revolutionary and eco-friendly alternative to traditional steel reinforcement. The company's products come in different diameters ranging from 4mm to 32mm and various lengths to cater to the specific requirements of each construction project.

Benefit & advantages

Basalt is a natural rock that is transformed into high-performance fibers through an environmentally conscious process. When used in the construction industry as reinforcing bars or BFRP, it offers a sustainable and eco-friendly alternative to traditional steel, glass fiber, and carbon fiber reinforcements.

There are several reasons why BFRP Rebar stands out from its counterparts:

1. Reduced Carbon Emissions:

The process of manufacturing BFRP Rebar results in considerably lower CO₂ emissions when compared to traditional steel production. For every ton of basalt, 5.24 tons of equivalent coal emissions are prevented.

2. Energy Efficiency: The production of basalt fibers requires less energy than the production of steel or even the production of glass or carbon fibers. This leads to lower overall energy use, contributing to the reduction of the company's carbon footprint.

3. Waste Reduction: The production process for



BFRP Rebar has a minimal waste output, making it an environmentally superior choice. In contrast, the production processes for both glass and carbon fiber generate significant waste.

4. Durability: BFRP Rebar is non-corrosive, meaning it doesn't degrade over time like steel does. This results in a longer lifespan for structures and fewer resources needed for maintenance and replacements.

5. Use of Natural Resources: Basalt is a naturally occurring resource, plentiful on Earth. Its use for the production of BFRP Rebar is sustainable, in contrast to the use of non-renewable resources needed for the production of steel and other synthetic fibers.

From an eco-friendly perspective, BFRP Rebar has the advantage over traditional steel rebar and other fiber reinforcements like glass and carbon fiber. It allows the construction industry to build

strong, durable structures while significantly reducing their environmental impact. By choosing BFRP Rebar, companies are investing in a greener and more sustainable future.

Wide-ranging Applications of Basalt Fiber Reinforced Polymer (BFRP) Rebar Products

Arab Basalt Fiber Company's BFRP Rebar is a versatile product used extensively in various fields within the construction industry.

1. Asphalt Concrete Roads:

BFRP Rebar lends its strength and durability to concrete pavements, ensuring a long-lasting and robust surface that can withstand high traffic volumes and adverse weather conditions.

2. Road and Canal Protection Works:

BFRP Rebar provides the necessary durability and strength to maintain roads and canals effectively. This is

especially beneficial in regions prone to erosion or heavy rainfall.

3. Road Slope Reinforcement:

It plays a vital role in improving stability and reducing the risk of landslides on road slopes, contributing significantly to safety.

4. Construction of Stadiums and Concrete Floors:

For stadium floors and other concrete flooring applications, BFRP Rebar offers a sturdy and permanent solution, withstanding heavy use over extended periods.

5. Hydraulic Structures: Used to reinforce channels, dams, tanks, and other hydraulic structures, BFRP Rebar ensures the integrity and longevity of these crucial infrastructural elements.

6. Bridge Girders: It enhances the structural strength and durability of bridges, increasing their lifespan and capacity to bear heavy loads.

7. Water Treatment Plants:

BFRP Rebar is used in constructing basins, pipelines, and other infrastructural elements of water treatment plants, contributing to effective and safe water management systems.

8. Civil and Industrial Buildings:

BFRP Rebar provides a strong and enduring solution for construction in civil and industrial buildings, ensuring these structures can withstand time and usage.

9. Coastal Projects: It resists the corrosion that can be caused by seawater, making it an ideal choice for projects near the seashore.

The company's product therefore offers an ideal solution for a broad spectrum of applications within the construction industry, bringing together strength, durability, and environmental sustainability. As we move towards a more eco-friendly construction landscape, Arab Basalt Fiber Company remains committed to delivering quality, reliability, and innovation.

Find out more at
arabbasaltfiber.com


 → STRATEGIC PARTNER: **VALE** STAND: **SP05**

VALE: LEADING THE EVOLUTION TOWARDS SUSTAINABLE MINING

Vale is a global sustainable mining company that exists to improve lives and transform the future. With operations spanning over 20 countries, it employs over 180,000 people (direct and indirect) all of whom work hand in hand to leave a positive economic, social and environmental legacy in the communities where Vale operates.

The company first established its operations in the Middle East in 2007 in the Sultanate of Oman and today it is looking to further expand its presence guided by a vision to decarbonize the mining industry. Together, with Governments, communities, NGOs, corporates and partners, it is committed to building customer-centric Iron Ore Solutions with a clear sustainable goal; to supply the transition to net-zero steelmaking. The company is developing alternative processes to generate value and propel its decarbonization efforts, including the development of innovative projects, like the Mega Hubs, and high-quality products, such as briquettes.

Stemming from its belief that energy transition is a great growth engine of the next mining cycle, Vale has undertaken public commitments to mitigating impacts by implementing more efficient and sustainable processes as well as innovative emissions management technology.

The establishment of Mega Hubs, in particular, is a strategy to foster deeper partnerships between Vale and its clients. An integrated steelmaking ecosystem, the



large industrial complexes will include briquetting plants, operated by Vale, that will produce high-quality agglomerated products to significantly reduce CO2 emissions in the steel industry, supplying both local clients and international markets around the world. Vale will enable its partners to produce HBI using natural gas, which emits around 60% less CO2 than the pig iron production through an integrated BF-BoF route. Working towards becoming a net-zero mining company by 2050, Vale will then support replacement of natural gas by hydrogen and use renewable energy to totally eliminate carbon emissions.

Charting its strategic course towards these greener frontiers, Vale signed a Memorandum of Understanding (MoU) with Saudi Arabia's National Industrial Development Center (NIDC) to jointly study a Mega Hub development at Ras Al Khair Industrial City. The

potential of this Mega Hub is boundless as the Kingdom forges ahead in its strategy to become a world leading industrial powerhouse in line with its Vision 2030.

Catalyzing the Kingdom's ambitions in the mining industry and in energy transition, both regionally and globally, Vale's initiatives will enable the development of a green steel industry in the country by securing the high-grade iron ore for steel producers. This will directly feed into several of the strategic objectives outlined in the National Industrial Development and Logistics Program.

Vale's selection of the Kingdom for the establishment of this multi-billion-dollar investment is founded on several economic, social, geographical and geopolitical advantages including its competitive energy prices, strategic location and entrepreneurial mindset; all of which provide a unique set of conditions to successfully develop the integrated hub.

Since signing the MoU in October 2022, Vale has achieved several milestones on its journey towards making its Mega Hub in Saudi Arabia a reality. This includes signing the first preliminary off-take supply agreement with Essar Group to supply 4mtpy of briquettes or pellets for the production of 'green' steel at the industrial complex.

The Mega Hub in the Kingdom of Saudi Arabia will be supplemented by two other Mega Hubs in the Sultanate of Oman and the United Arab Emirates through which Vale will guarantee the availability of high-grade agglomerated products and foster the expansion of the low carbon steel industry. Together, these Hubs will also contribute to Vale's commitment to reduce 15% of net scope 3 emissions by 2035, while it forges ahead with its own commitment to reduce its absolute scope 1 and 2 emissions by 33% by 2030, leading the evolution process towards sustainable mining.

Vale is working to propel its decarbonization efforts, including the development of innovative projects, like the Mega Hubs, and high-quality products, such as the briquettes

180,000

With operations spanning over 20 countries, it employs over 180,000 people (direct and indirect)


→ STRATEGIC PARTNER: **MANARA MINERALS** STAND: **SP10**

MANARA: FORGING STRATEGIC MINERALS ALLIANCES ACROSS THE VALUE CHAIN

“We are proud to be playing a leading role in the economic diversification and growth of Saudi Arabia, building the talent pool and securing the future for the country, as we help deliver Vision 2030.” Bob Wilt, Executive Director (Acting CEO), Manara Minerals

The formation of Manara Minerals Investment Company (Manara) was announced at the second edition of the Future Minerals Forum in 2023. This new venture between Ma’aden - the Saudi Arabian Mining Company - and the Public Investment Fund (PIF) is investing in mining assets globally, securing strategic minerals that are essential for Saudi Arabia’s industrial development as well as supporting the development of resilient global supply chains.

With a focus on commodities such as iron ore, nickel, copper and lithium, Manara aims to align its investments with the Kingdom of Saudi Arabia’s (KSA) strategic priorities, including Vision 2030, mid-stream industrial development and the global energy transition.

Manara’s investment mandate is global and it sees significant opportunity in connecting Africa and Asia to value chains in the Middle East. Manara invests across the life cycle of an asset, while ensuring a balanced portfolio and together with its partners, seeks to support mid-stream industrial development in the Kingdom and provide access to regional growth markets.

Leveraging its strategic



positioning within the Kingdom of Saudi Arabia to foster strong relationships with key stakeholders, Manara can effectively utilize the country’s diplomatic ties to build mutually beneficial partnerships. By collaborating closely with relevant KSA stakeholders, the company gains the necessary support to access financing, project development assistance and incentives.

In addition to this, Manara actively seeks to co-invest with leading local and international companies, forging strategic alliances across the value chain. These partnerships enable Manara to tap into the expertise of specialists in specific projects, ensuring efficient operations and optimal project outcomes.

By establishing these cooperative ventures, Manara contributes to the development of vertically integrated value chains within Saudi Arabia, creating a solid foundation for the sustainable supply of key materials.

Through such collaborative efforts, Manara Minerals is well-positioned to capitalize on its relationships, resources, and industry knowledge, paving the way for success and playing a



We are proud to be playing a leading role in the economic diversification and growth of Saudi Arabia, building the talent pool and securing the future for the country, as we help deliver Vision 2030.”

Bob Wilt
Executive Director (Acting CEO), Manara Minerals

pivotal role in the growth and development of the mining sector in Saudi Arabia.

Most recently, Manara announced a 10% equity investment in Vale Base Metals Limited (VBM), the holding entity of Vale’s Energy Transition Metals business. Engine No.1, a US investment firm, agreed to purchase an additional 3% of VBM under

the same economic terms. This strategic partnership aims to accelerate growth of VBM, which is one of the largest holders of reserves in key critical mineral jurisdictions such as Brazil, Canada and Indonesia. Capital provided is intended to contribute towards the growth of VBM’s copper production from around 350ktpa to approximately 900ktpa and its nickel production from 175ktpa to over 300ktpa.

Through this transaction, Manara will gain access to high quality supply chains across strategic minerals, including nickel, copper and cobalt, enabling Saudi Arabia to play a growing role in global energy transition supply chains and create significant long-term value for the stakeholders involved.

Manara provides long-term capital in exchange for minority equity positions in investment opportunities that offer both access to offtake as well as attractive returns on investment. Physical offtake of critical minerals ensures that Manara secures critical minerals to support the KSA’s industrial midstream sector. In addition it establishes the Kingdom of Saudi Arabia as a key partner in achieving global supply chain resilience.

In conclusion, Manara Minerals Investment Company represents a significant opportunity for the Kingdom of Saudi Arabia to establish itself in the global mining industry while contributing to the development of resilient global supply chains. Through its strategic focus on commodities aligned with KSA’s priorities and global megatrends, commitment to ESG principles, partnership-driven investment strategy and access to high-quality supply chains, Manara is well-positioned to create long-term value for stakeholders. As Manara continues to expand its portfolio and forge strategic partnerships, it will play a crucial role in supporting the Kingdom’s vision for a sustainable and prosperous future.



→ STRATEGIC PARTNER: SAUDI AUTHORITY FOR INDUSTRIAL CITIES AND TECHNOLOGY ZONES, MODON STAND: SP09

MODON: A TRULY STRATEGIC PARTNER OF THE FUTURE MINERALS FORUM

The Saudi Authority for Industrial Cities and Technology Zones, Modon, will participate in the Future Minerals Forum as a strategic partner in Riyadh from 9th-11th January 2024.

During the event, Modon will showcase its products and services, including industrial land products, ready factory products, supporting units products, and industrial services products.

Additionally, Modon will showcase many investment opportunities in the mining activities sector targeted by the National Industrial Strategy, such as machinery and equipment industry for the mining sector, solid mining industries sector, aluminum mining industries sector, copper mining industries sector, titanium mining industries sector, and building materials sector.

Furthermore, it will showcase investment opportunities by establishing mining testing laboratories and industrial services for mining projects.

Since it was established in 2001, Modon has undertaken the development and supervision of industrial lands and integrated infrastructure across Saudi Arabia. Today, it oversees 36 industrial cities across the Kingdom, in addition to private industrial cities and complexes.

The organization has:

- 36 Industrial cities
- over 209 million square meter of developed industrial areas
- more than 6400 factories and more than 1300 ready units and factories
- 412 billion investments in industrial cities



SAR412 billion

Modon made great progress in its internal partnerships, attracting more than SAR 412 billion in investments to date.

- more than 550 thousand male and female employees in Industrial cities
- These cities manage more than 7000 industrial and investment contracts

Modon's clearly-defined strategy is to fully utilize all the benefits of government-private partnerships. It has successfully offered many incentives in the industrial cities, attracting leading international industrial

Modon has undertaken the development and supervision of industrial lands and integrated infrastructure across Saudi Arabia. Today, it oversees 36 industrial cities across the Kingdom.

companies as well as foreign investments that add value to the Saudi industrial sector.

It has also made great

progress in its internal partnerships, attracting more than SAR 412 billion in investments to date.

In the midst of Saudi Arabia's ongoing global industrial transformation, Modon has formulated many methods of stimulating the participation of small and medium enterprises, entrepreneurs, and major local companies in the Kingdom's industrial development. It has thereby contributed to the realization of Vision 2030's industry-dependent economic diversification goals.

Modon's strategy to enable industry and contribute to increasing local content relies on developing more services and products and is centered around an innovative vision that meets the requirements of private sector partners and enhances their participation in economic diversification in line with Vision 2030.

This includes its initiatives in the National Industrial Development and Logistics Program (NIDLP) as well as the provision of many products, such as industrial lands with developed infrastructure and services, and service lands allocated for investment in the development of facilities and services, ready factories of between 200-1,500 square meters in area, and logistics solutions distributed in the Kingdom's main provinces.

Modon launched its 'Land and Industrial Loan' and 'Factory and Loan' products in cooperation with the Saudi Industrial Development Fund (SIDF), and 'Osos' in collaboration with the Social Development Bank (SDB).

The organization fosters the highest levels of quality and institutional excellence to achieve the expected outcomes of its strategy, which seeks to develop model industrial cities that utilize innovative technologies to meet the needs of partners and enhance their satisfaction, as well as support the growth of small and medium enterprises and entrepreneurs.

Find out more at modon.gov.sa


→ STRATEGIC PARTNER: **SAUDI CHEMICAL COMPANY LIMITED** STAND: **SP08**

SAUDI CHEMICAL COMPANY LIMITED: A CRITICAL PART OF MINING'S GROWTH

Saudi Chemical Company Limited is Saudi Arabia's leading producer of explosives for the mining and minerals industry. As a Strategic Partner of FMF we asked CEO of Saudi Chemical Explosives Sector, Eng. Abdullah Alznaedi, to explain the significance of the Future Minerals Forum to his business, and to the Kingdom.

How has the mining and minerals sector changed in Saudi Arabia?

The mining industry started in the Kingdom in 1930, but at that time focused only on gold and silver at a low-profile. In the 1960s, Saudi Arabia began to invite global companies - from Britain, the US, Canada and Japan - to participate in mineral exploration. Then, in 1972, Saudi Chemical was established with a primary focus on infrastructure projects and providing products to the mining industry.

However, mining's landmark new era was the formation in 1997 of Ma'aden. It began mining in the north part of the Kingdom for phosphate, and in the middle and western parts of the country for other minerals including Gold, Silver, Copper, Zinc, Aluminum and other Industrial minerals. They formed some JVs with other companies in the field to enhance their strength and capabilities.

Since the launching of KSA Vision 2030, the mining industry were identified as the third industrial pillar and there has been a very ambitious program to harness our mining potential and achieve our ambitions, and the Ministry of Industry and Minerals (MIM) and the ministry of Investment (MISA) have been doing a great job to facilitate and support the investments in this field. There has been much work



Eng. Abdullah Alznaedi, CEO of Saudi Chemical Explosives Sector

done to identify the minerals in the Arabian Shield through a geological survey, and this makes it very attractive for mining companies to invest in the country. At the same time, the country is making it easier to invest and has made it much faster to obtain mining licenses in addition to a very structured incentive program.

We are also seeing an auction program for mining sites arranged by MISA. In fact, Saudi Chemical Company Limited (SCCL) has just signed a contract to provide products and services to a local company that has won one of those. There are several other auctions in the pipeline over the next two years and these present huge opportunities for the Saudi Arabian mining industry.

How is SCCL changing as a result?

The development of the mining industry is very important for us because primarily we are a manufacturer of explosive materials and a provider of technical and logistics services to the mining industry. We do



Sustainability is a great focus for us and we look at it from different perspectives. We are evaluating our spending efficiency by making sure that we utilize the right material, recycling as much material as possible and recovering as much as possible to make sure we are minimizing wastes."

serve other industries such as the cement industry, and infrastructure projects for roads, tunnels, new housing

projects - for instance, we are providing products for new vital strategic projects in the Kingdom linked to Vision 2030- but the primary use of our explosives is in the mining sector. We are therefore very happy with the high potential growth that we can see in the industry.

The FMF is part of the development of a modern, responsible mining industry in KSA. How is SCCL incorporating sustainability into its business?

Sustainability is a great focus for us and we look at it from different perspectives. We are evaluating our spending efficiency by making sure that we utilize the right material, recycling as much material as possible and recovering as much as possible to make sure we are minimizing wastes.

We are also ensuring that we have the highest levels of safety and security and an excellent risk management program. Safety is of course critical in our industry, so we provide training free of charge to customers on how to deal with and secure explosives. We also make huge investments in training and education for our people. I am pleased to say that the result of that is that Saudi Chemical Company Limited has an excellent safety record.

What benefits do you hope to see from your company's Strategic Partnership with the FMF?

We are looking forward to having high-level engagement with our supplier, customers and industry leaders. This will be a great opportunity to meet them and learn how we can serve them even better. We will use the opportunities presented by the FMF to promote new products that we are bringing to the market. Lastly, we are committed to building strategic businesses and long-term relationships as well as delivering big impact through our participation in FMF. Please join us there to learn more.

Find out more at
saudichemical.com


 → STRATEGIC PARTNER: **TASNEE** STAND: **SP02**

TASNEE: CONTRIBUTING TO THE DEVELOPMENT OF SAUDI STRATEGIC AND ADVANCED INDUSTRIES

Tasnee, also known as The National Industrialization Company, is the first Saudi industrial joint stock company wholly owned by the private sector. Established in 1985 with the aim of advancing economic diversification in Saudi Arabia, Tasnee has a wide range of interests in petrochemicals, chemicals, plastics and metals manufacturing, industrial services and environmental technologies. As one of the largest industrial and petrochemical companies in Saudi Arabia and one of the largest global investors in the titanium value chain, Tasnee is recognized for its wide experience, skills, efficiencies, state-of-the-art technologies and innovative solutions that add value to its products and services worldwide. Achieving its corporate Vision and Mission across these diverse companies requires incorporating three core aspects of sustainability; environmental, health, safety and security, social responsibility and corporate governance.

Tasnee strives to put the Kingdom's name among the list of countries specialized in strategic and advanced industries. It does this through investing in the titanium metals value chain and cooperating with international partners to localize the technologies of these strategic industries, working to develop national talent and contributing to establishing the aviation industry in Saudi Arabia aligning with the Kingdom's Vision 2030.

Advanced Metal Industries Cluster Co., Ltd. (AMIC)

The company was established in 2014 jointly by Tasnee and Cristal with a mandate to develop the titanium value



Signing with MISA & Boeing.



Celebrating the first shipment of Pig Iron from Jazan to the United States of America.

1985

Established in 1985 with the aim of advancing economic diversification in Saudi Arabia, Tasnee is the first Saudi industrial joint stock company wholly owned by the private sector

chain in the Kingdom. AMIC has so far established upstream projects by setting up a titanium sponge plant in Yanbu Industrial City through a joint venture with Toho - Japan. The company has also established a titanium smelter plant in Jazan City for primary and downstream industries.

AMIC Toho Titanium Metal Co. Ltd. (ATTM)

ATTM is one of Tasnee's affiliates, established as a joint venture between AMIC (65%) and the Japanese Toho Titanium Metal Company



Tasnee is recognized for its wide experience, skills, efficiencies, state-of-the-art technologies and innovative solutions that add value to its products and services worldwide

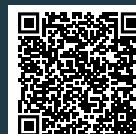
(35%). The company is located in Yanbu Industrial City. ATTM produces 15.6k tons of titanium sponge which represents about 10% of global production. As the first and the only producer of titanium sponge in the Middle East, this puts the Kingdom

among the largest global producers of the product. Titanium sponge is a strategic product which is used mainly in aerospace, aviation and advanced military industries. On Sunday February 26, 2023, in presence of H.E. Minister of Investment Eng. Khalid A. Al Faleh, and H.E. Chairman of Tasnee Eng. Mubarak A. Al Khafrah, and the company executive management, Tasnee has signed a memorandum of understanding (MoU) with both Ministry of Investment (MISA) and BOEING company in the Ministry of Investment Headquarters in Riyadh, to explore the potential investment and development collaboration opportunities in order to advance the aviation grade titanium alloy value chain in the Kingdom for mid and downstream applications.

Advanced Smelting Industries Company (ASIC)

ASIC is one of Tasnee's affiliates 100% owned by Advanced Metal Industries Cluster (AMIC). ASIC owns a titanium smelter in Jazan City for primary and downstream industries. Annually, it produces 500k tons of titanium slag and 250k tons of pig iron by using global technologies and operating smelting furnaces that are the largest of their kind in the world.

On October 2 2023 ASIC succeeded in exporting its first shipment of pig iron to the US. The quantity exceeded 37 thousand tons, from the Jazan City for Primary and Downstream Industries Port. This made ASIC the first exporter to the United States through the port. Dr. Fadi Trabzouni, Tasnee's EVP Metallurgy and AMIC Managing Director, described this as a historic moment in the development of this strategic industry in KSA. He highlighted that, as the first producer and exporter of the product in the Middle East, this was a significant achievement that strengthens the country's national industries, increasing its competitiveness at a global level, and promoting the 'Made in Saudi' slogan.


→ STRATEGIC PARTNER: **TOSYALI ALGERIE** STAND: **SP13**

BUILDING A LEADING GLOBAL IRON AND STEEL PRODUCTION CENTER

Tosyali Holding has been creating economic and social value for 70 years with nearly 40 facilities and approximately 15,000 employees on 3 continents.

In addition to its iron and steel production facilities in Turkey, one of its largest investments is in Algeria. Tosyali Algerie, which has grown through strong investments that transfer Tosyali Holding's knowledge and experience in the iron and steel sector, was started in 2013. Today, with around 4,000 employees, the company is the largest in the industrial sector outside of Algeria's hydrocarbon-based industries and the country's leading exporter.

Within Tosyali Algerie, which exports nearly half of its sales and spans 5 million square meters, there are 11 facilities, including a fully integrated port. Tosyali Algerie, which can produce steel using both scrap and direct reduced iron (DRI), manufactures in four main categories: Rebar, Wire Rod, Spiral Pipe, and Billet. The company serves many sectors including construction, hydrocarbon transportation, automotive and shipbuilding.

Total production is 5.25 million tons with twin DRI

Tosyali Algerie has the world's largest DRI production facilities with an annual capacity of 2.5 million tonnes and the world's largest DRI-powered arc furnace. Thanks to the high-tech DRI investment, which broke the world record in production with a single DRI module for two consecutive years in 2020 and 2021, carbon emissions are significantly reduced. Within the framework of the investments that constitute the 4th stage of the 5-stage Tosyali Algerie



investment, the construction of a new DRI plant with the highest technology and rolling mills that will produce high quality flat steel with a capacity of 4 million tonnes/year is ongoing. Globally, such an integrated facility with two DRI plants side by side is unique. In this context, Tosyali is also investing in an innovative new Beneficiation and Pellet Plant, each with an annual capacity of 4 million tonnes, which will increase the efficiency of the plant. When the new DRI plant is completed, Tosyali Algerie will be able to operate with 100% hydrogen. The facility, which will gradually switch to hydrogen production, will reduce DRI emissions to zero.

A fully integrated, independent production complex with its own port.

The key feature of Tosyali Algerie is its completely integrated structure, forming a fully self-sufficient and independent production complex. The BPM port, fully integrated with the facility, provides significant

competitive advantage in terms of logistics. Tosyali Holding recently undertook all the superstructure investments of this state-owned port in the Arzew/Sonatrach region of Algeria, thereby contributing to Algeria. This has offered an alternative logistics center for the global steel industry, especially during times when freight costs have escalated due to disruption, making alternative ports and transit routes increasingly strategic. This port, with its logistical location close to Europe, Asia, America, and West Africa, further strengthens its position.

Before this investment, the highest ship tonnage that could approach Algerian ports was 50,000 DWT. Today, with the country's largest port, which can be approached by ships of 200,000 DWT, Tosyali Algerie has an annual cargo unloading capacity of 12 million tonnes. Thanks to the 12 km pipe-type closed conveyor belt system, which is one of the longest lines in Europe, 4,000 tonnes of iron ore per hour is transported from the port to the raw material area of the complex without using any vehicles, processed and converted into final products. These products are exported to all four corners of the world from this port.

One of the world's most strategic iron and steel production centers

It will emerge as a production facility that uses the world's most advanced technologies and hydrogen, the energy of the future, processing ore from its own mine to its own port to produce various steel product groups, including high-quality green steel. This fully integrated production complex will make Tosyali Algerie one of the most competitive integrated facilities in the region, exporting high value-added products to meet the demands of Europe, America, and Asia. It will not only be one of the most important and strategic iron and steel production centers in the Mediterranean and Africa but also in the world, adding long-term value to Tosyali Holding and its stakeholders.

Tosyali Algerie has the world's largest DRI production facilities with an annual capacity of 2.5 million tonnes and the world's largest DRI-powered arc furnace

4,000

With around 4,000 employees, Tosyali is the largest in the industrial sector outside of Algeria's hydrocarbon-based industries and the country's leading exporter



→ STRATEGIC PARTNER: FOULATH HOLDING STAND: SP11

LEADERS IN SUSTAINABLE STEEL PRODUCTION

As the steel industry evolves, the Kingdom of Bahrain is being increasingly recognized for its commitment to innovation and sustainability. This achievement is largely thanks to the efforts of Foulath Holding and its subsidiaries, Bahrain Steel and SULB. Founded in 2008, Foulath Holding actively supports sustainable development within the steel sector, benefiting the Gulf Cooperation Council (GCC) countries and the broader Middle East and North Africa (MENA) region.

Bahrain Steel is at the forefront of integrating sustainability, ethical practices, and social responsibility into its operations, setting a new standard in the steel industry. The launch of two significant sustainability projects in December 2023 underscores Bahrain Steel's commitment to environmental innovation and responsible growth.

The Stockyard Shed represents a significant investment in environmental and community welfare. Responding to concerns about iron ore dust, the company has initiated the construction of an expansive shed to enclose the iron ore stockpile. Measuring 1.5 kilometres long, 171 metres wide, and 41 metres high, it will be the largest column-free shed in the world. Undertaken in collaboration with Al Namal and Kirby, the project exemplifies Bahrain Steel's proactive approach to exceeding environmental standards and prioritizing the local ecosystem.

In addition, Bahrain Steel is pioneering the transition to decarbonization by embracing renewable energy. In partnership with Bahrain's Electricity and Water Authority (EWA), the company has signed a memorandum of understanding to initiate a 100MW solar energy project—Bahrain's most substantial



solar endeavour to date. The rooftop solar installation on the stockyard shed will be the world's largest, with 73,000 solar panels. Beyond environmental stewardship, it will decrease Bahrain Steel's carbon emissions by 17.3 per cent, a significant stride towards the company's goal of a 46.6 per cent emissions reduction by 2035.

These forward-thinking investments highlight Bahrain Steel's environmental commitment and deliver substantial business value through cost savings, regulatory adherence, and alignment with stakeholders who favour businesses with strong sustainability credentials.

But Bahrain Steel is not alone. SULB is Saudi Arabia's premier Section Mill and a key asset in Foulath's portfolio. Its contribution to infrastructure is undeniable. With an annual output exceeding 1 million tons of structural steel, SULB supports critical industries from power transmission to renewable energy and heavy industry. This capacity reinforces Saudi Arabia's structural development and positions SULB as a central player within the nation's economy.

SULB meets its clientele's needs by providing a wide array of structural steel products. It is the preferred supplier for an extensive range of projects, providing products integral

demands and contributes to the Kingdom's economic diversification.

SULB's contributions extend beyond steel production; the company pioneers technological innovations. Operating with state-of-the-art meltshop and rolling mill equipment from SMS, SMS-Meer, and MIDREX, SULB leverages gas-based direct reduced iron (DRI) and electric arc furnace (EAF) technologies. Achieving carbon emission levels of just 1.12 tons per ton of steel produced—substantially lower than the global average—SULB is working to reduce its carbon footprint. Initiatives include integrating Industry 4.0 solutions, adopting solar power for internal operations, and preparing to potentially use hydrogen as an alternative energy source.

The company excels in product innovation, particularly in developing high-tensile beams that save up to 17 per cent in materials, reducing the construction industry's carbon impact. SULB has become synonymous with section steel through strategic partnerships, notably an MOU with ambitious Giga project Neom.

SULB's steel has been integral to many prominent projects, such as Al Marjan, Aramco CRPO 82 and 83, the Jafurah Gas Project, Advanced Polyolefins (APOC), Zamil Steel, and collaborations with Petrofac and Technicas Reunidas. The benefits of using SULB's products include on-time delivery, a reliable raw material supply, reduced logistics and storage costs, a wide range of structural profiles, compliance with global standards, and exceptional customer service, all while upholding high quality.

The steel industry continues to advance, and with it, Bahrain Steel and SULB are building a strong reputation for sustainability and innovation. Together, they are pushing forward groundbreaking changes beyond economic growth, transforming the steel industry into a leader in progress and responsible practices.

Founded in 2008, Foulath Holding actively supports sustainable development within the steel sector, benefiting the Gulf Cooperation Council countries and the broader Middle East and North Africa region

1m tons

With an annual output exceeding 1 million tons of structural steel, SULB supports critical industries from power transmission to renewable energy and heavy industry

to constructing transmission towers, solar panel frameworks, expansive bridges, industrial complexes, and structures including stadiums, airport terminals, cultural institutions, and commercial centres. This versatility serves construction's



→ STRATEGIC PARTNER: **AL MASANE AL KOBRA MINING COMPANY** STAND: **SP06**

AMAK: A REGIONAL LEADER IN BASE AND PRECIOUS METALS

The Al Masane Al Kobra Mining Company (AMAK) looks forward to attending the Future Minerals Forum in 2024, and continuing to play its part in creating resilient, responsible mineral supply chains.

Founded in 2008, AMAK is one of Saudi Arabia's leading miners of copper, zinc, gold and silver and is registered and licensed by the Kingdom's Ministry of Industry. It has an exploration license area of around 1,000 km², of which 52 km² is covered by a mining license.

AMAK has capital of SAR

900,000,000 and in March 2022 implemented an IPO, successfully listing the company's shares on the Saudi stock market.

The company began commercial production of copper and zinc concentrates in 2012 and started producing gold and silver doré from its Al Masane underground mine in 2018.

Al Masane, at Najran in the southwestern region of the Kingdom, includes three mineralized zones - Saadah, Al Houra and Moyoath - with an estimated 9 million tons of reserves.

In 2020, AMAK constructed



its Guyana gold mine and processing plant with the first smelting taking place in January 2021. There are an estimated 3 million tons of reserves at Guyana.

The company is expanding its activities, having implemented the Moyoath orebody development project to enable increased production at Al Masane. This project was



inaugurated by HE Prince Jiluwi bin Abdulaziz bin Musa'id in Aug 2022. It is expected that the commissioning phase will begin at the end of Q4 2023, with initial commercial production beginning during Q1 2024.

This newly constructed plant project will increase AMAK's base metal production expected to increase Zn by 80% and Cu by 40%.

→ SPEAKER: **VANESSA USHIE**

NEW WAYS OF FUNDING MINERAL EXPLORATION

Speaking at FMF 24, Vanessa Ushie, Acting Director of the African Natural Resources Centre, African Development Bank Group, answers some key questions on minerals and metals investment in the super region

Please tell us about any key investments by your organization in metals and minerals production in the region, and how these fit into your wider business strategy?

The overarching objective of the African Development Bank (AfDB) Group is to spur sustainable economic development and social progress in its regional member countries, thus contributing to poverty reduction. This is achieved by mobilizing and allocating resources for investment in African countries, as well as providing policy

advice and technical assistance to support development efforts.

In line with its development objective, the Bank is currently developing Africa's Green Minerals Strategy in collaboration with the African Union, UNECA and the ALSF. Some of the recent investments in the minerals and mining sector include:

■ **Guinea Alumina Corporation:** Project's total cost: USD 1.4 billion (AfDB's contribution - USD 100m). Project consists of development of a new bauxite mine and rehabilitation of a 143 km-long railway.

■ **OCP Morocco:** Total Cost: USD 490 million (AfDB Contribution: USD 200 million corporate loan). The project aims at locally transforming the bulk of the phosphate produced



into fertilizer and exporting it to regional and global markets. A key expected outcome is increased intra African trade and availability

of fertilizers to address Africa's food security concerns.

■ **The Bank Group is part of the recent MoU signed among USA, AfDB, EU, AFC & Angola, DRC and Zambia to develop the Lobito Corridor.** The improved infrastructure will attract technology providers for the development of the battery and EV value chains. Total funding of US\$1.6 billion - AfDB contributing US\$500 million.

How do we kick-start a new era of exploration in the super

region? Where and how can new sources of capital be unlocked? As projected demand for critical minerals will outstrip supply, there is the need to look for non-conventional sources of funding for mineral exploration. One of such sources is the use of sovereign wealth funds (SWFs) and Pension Funds. An example worth mentioning is the use of SWF by the Angolan government in the Pensana Rare Earths Longonjo project in Angola.

To what extent have ESG pressures constrained investment in critical minerals? Environmental, social, and governance (ESG) criteria are increasingly integrated into investment decisions and financing agreements. Mining companies in Africa are also compelled to align with ESG standards to attract green financing. This is the new criteria of funding institutions, and thus mining companies have no choice other than to comply with the new norm to access green bonds and sustainability-linked loans.


 → PLATINUM SPONSOR: **BOSTON CONSULTING GROUP**

NAVIGATING THE RARE-EARTH CHALLENGE FOR A SUSTAINABLE FUTURE

As a dedicated advocate and strategic thought partner in addressing pressing critical mineral challenges, BCG will engage in dialogues centered on aligning mining sector developments with energy transition targets at panel sessions at FMF24: ‘Reality Check on the Energy Transition – Gradual and Managed’ and ‘Decarbonizing mineral and metal production.’

The global shift toward sustainable energy marks a paradigm transition from fossil fuels to the pivotal role of minerals. Lithium, nickel, copper, cobalt, and rare-earths are instrumental in powering electric vehicles, wind turbines and solar panels, and vital in achieving the ambitious 2050 carbon-emission targets. As mineral demand soars, supply shortfalls come to the forefront, with rare earths serving as a notable example of the challenges in securing these essential minerals.

The impending rare-earth shortage sparks important questions: How to meet surging demand? What opportunities emerge from supply shortages? What does success look like? What role should government play? How will this reshape geopolitics of mining?

At the heart of the rare-earth deficit lies the “tragedy of the horizon.” This concept encompasses challenges that require immediate attention yet lack the urgency they deserve because their impact will primarily affect future generations. The rare-earth shortage receive insufficient attention due to the modest short-term financial returns and historical environmental concerns tied to rare-earth projects.

The Depth of the Shortfall

Neodymium, praseodymium, dysprosium, and terbium, crucial for high-performance magnets in electric vehicles and



wind turbines, constitute about 90% of the rare earth market value. Global demand for these elements is projected to triple by 2035 and reach 466 kilotons.

To avert a shortage by 2030, over 20 rare-earth projects must be initiated. Current projects, however, struggle to secure funding and face lengthy timelines.

Rare-Earth Market Challenges

While more and more nations view access to rare earths as a matter of economic and national security, the sector confronts significant challenges. Meeting surging demand necessitates approximately \$100 billion until 2035, but the current investments total only around \$5 billion.

Midstream processing is complex and time-consuming, while downstream manufacturing remains dominated by a few players. Technical hurdles and uncertain returns deter

major mining companies from rare-earth projects. Smaller companies lead development, but many projects lack the required ore grade.

Policymakers prioritize incentives for midstream and downstream projects; however, achieving a rapid increase in rare-earth volume remains a formidable challenge without a focus on upstream initiatives.

Six Steps to an Efficient Market

Addressing these challenges requires coordinated efforts among governments, investors, and the private sector.

1. CREATE ENABLING CONDITIONS FOR NEW MINES: Governments need to reinforce incentives in upstream operations, streamline permitting, and invest in developing workforces with geological and chemical processing expertise.

2. TARGET MINING INVESTMENTS: Immediate

initiation of mining operations is crucial, given the extended lead times. Public-private partnerships, including development banks and agencies, could be perfect vehicles to employ their lending arms for funding new projects.

3. IMPROVE TRANSPARENCY TO CATALYZE OPPORTUNITIES: Global economies could establish a multilateral agency like the International Energy Agency to enhance transparency in supply and demand dynamics, new and existing projects, and supply chain effectiveness of the rare-earth sector.

4. FORGE PARTNERSHIPS: Collaboration on regional and company levels is vital to ensure a stable supply of rare earths. Downstream companies need assurance of reliable supplies, and upstream players must secure outlets for their mining output. Locking in critical-metal sources now, before the demand peak, will boost new projects and close the supply gap.

5. DEVELOP RECYCLING PROGRAMS: Reuse of rare earths in end-of-life products can create a new source of supply of these scarce commodities.

6. FAST-TRACK EXPLORATION: Even with considerable incentives and investments, exploration and mine development often extend beyond a decade, posing risks to timely delivery. Mining companies must reinvent their exploration approach and embrace AI and field-based technologies to expedite target identification, improve project conversion, and optimize field operations.

In conclusion, addressing impending shortages of critical minerals requires swift and coordinated actions. Governments, in partnership with public-private coalitions, must lead initiatives to ensure a stable supply of the essential resources. We extend our invitation to engage in ongoing discussions with esteemed regulators and industry leaders during the FMF24. Together, let's shape a path toward a sustainable future.


→ PLATINUM SPONSOR: **ERG** STAND: **P14**

ERG'S SMART EXPLORATION TECH LEAP TOWARDS VISION 2030

As a growing supplier of critical raw materials that are enabling the global energy transition, Eurasian Resources Group (ERG) knows that the minerals extracted from the depths of the earth are not just the building blocks of the modern world, they're also the cornerstone of a smarter, greener and more sustainable economy.

The linchpin of a mining sector that is smarter and more responsible lies in technological innovation. The Kingdom of Saudi Arabia, through Vision 2030, has positioned itself uniquely to embrace modern technologies, encourage sustainable practices, and partner with those who are embodying these principles wholeheartedly.

It is for this reason that when

ERG committed more than \$50 million in investment in the Kingdom, it did so with an agenda: to double down on its commitment through a deep and focused effort into high-tech research and development for smart exploration efforts.

As of this month, this commitment has turned to action: ERG's NOMAD landed on the shores of the Kingdom, to be unveiled and introduced to the world at the Future Minerals Forum.

The robot, based on Mars rover technology, has been purpose-built for early-stage exploration in harsh terrains, as those found in the Kingdom.



With temperatures rising and early exploration geological work becoming more arduous than ever before, the NOMAD exemplifies smart exploration tech: it enhances safety by reducing human involvement in perilous operations, while minimising environmental disturbance.

The world-first NOMAD will be accompanied by a remote, mobile analysis station that will facilitate rapid sampling

and on-site analysis. This will form part of an end-to-end sampling and analysis solution that will boost efficiency during the exploration stage by more than 200%: key to sustainable exploration. Enabling expedited analysis, and enhancing ongoing and continuous decision-making, reduces the risk of fruitless exploration efforts, which in turn, significantly decreases resource wastage and lowers the environmental impact.

Smart tech, smartly deployed, will not only support ERG's regional projects, or even the Kingdom's Vision 2030, it will also propel innovation across the sector towards the common goal and global targets.

During the Future Minerals Forum, ERG will be showcasing the first NOMAD in its fleet and is looking forward to discussing partnerships to leverage this important technology.

Find out more at
www.ergarabia.com

→ STRATEGIC PARTNER: **WORLEY** STAND: **P16**

HELPING SAUDI ARABIA BECOME THE WORLD CENTER OF ENERGY TRANSITION MINERALS

A new age of mining is dawning, and Saudi Arabia stands to benefit.

The growing demand for energy transition materials comes at a key time for Saudi Arabia, as it undergoes the most significant and economic transformation in its history. However, mining's future will look very different from what we see today. Emerging technologies, mega trends, and social expectations will transform our mining practices.

The industry needs new thinking

Visions are being set. But charting these future pathways will take sustained effort.

Worley has completed more than 4,430 energy transition projects across the world. We combine our mining experience with our digital expertise, sustainability and new energy to help our customers find the most economic solutions to reduce emissions while unlocking new supply.



Our Saudi Arabia office

For almost 50 years, we have provided world-class consulting, engineering, procurement and construction expertise. Our 2,000-strong team is committed to Vision 2030 to diversify the economy by mining and refining materials into high value products.

Playing a role in Saudi Arabia's next industrial revolution

Ma'aden recently awarded Worley and Morocco's JESA International the first phase of

its Phosphate 3 project. The integrated greenfield complex aims to generate 1.5 million metric tons of phosphate fertilizers a year. The project consists of the design and construction of new process plants in the cities of Wa'ad Al Shamal and Ras Al-Khair. Implementation will take place through Worley's offices in Saudi Arabia and India, and JESA's facility in Morocco.

With deposits of crucial materials for the energy transition beneath the surface, we believe Saudi Arabia can diversify its economy and supply an entirely new set of customers focusing on decarbonization. And it can fast-track carbon neutrality by supplying the vital resources from the Tethyan belt to the world.

We are proud of history in Saudi Arabia, and are proudly supporting Future Minerals Forum 2024.



→ PLATINUM SPONSOR: **NESMA & PARTNERS** STAND: **P15**

SETTING A BENCHMARK FOR EPC CONTRACTING IN KSA

Nesma & Partners is the leading contracting company in KSA, delivering innovative solutions to some of the biggest energy and infrastructure challenges in the Middle East.

Formed 42 years ago, it has long-standing relationships with public sector clients. Through its services and strategic partnerships with local stakeholders, it serves key industries to build sustainable mega projects that are aligned with Vision 2030.

With 200+ projects completed, employing 38,000+ people, and owning 8,000+ pieces of equipments and vehicles, the energy sector is a focus area and the company has

long been the EPC partner of choice for its major players.

Key projects for Ma'aden include:

- Rail Shunting Facilities & Rail/Truck Washing Facilities Project at Ras Al Khair
- Um Al Wa'al Field Erected Tanks Project
- Structural & Electromechanical Works at the Raz Al Zawr Facility

In August 2023, it signed an initial agreement to acquire global energy services provider Kent. This will enhance its capabilities, elevating the value it brings to projects and offering even more innovative solutions across the energy project



lifecycle, from consulting to designing, building, commissioning, and startup through to operations and maintenance.

To help Saudi youth achieve professional and vocational success, its Nesma High Training Institute (NHTI) provides development and training with over 1.3 million hours of training completed at

its two branches, in Dhahran and NEOM.

The company takes a holistic approach to sustainability, focusing on minimizing environmental impacts, promoting social responsibility, and maintaining strong governance practices while strengthening relationships with local partners and suppliers. Its Local Supplier Development Program aims to foster economic growth and support the community by partnering with and nurturing local suppliers. The Program won 'Highest Overall Performance' in the Construction Industry at the 2022 IKTVA Excellence Awards recognition event held by Saudi Aramco.

Its services are considered a benchmark in the management and execution of energy, infrastructure and building projects across Saudi Arabia.

→ VIP LOUNGE SPONSOR: **FRONT END**

BUSINESS VALUE VIA INSPIRATION AND INNOVATION

Front End is focused on oil field services and renewable energy, information and communication technology services, building materials, infrastructure, industrial, maritime services, and manpower supply in KSA and neighboring countries.

FRONT END COMPREHENSIVE RANGE OF SERVICES:

Multi-Geophysical

Methods: Conducting marine, airborne, and ground surveys utilizing advanced techniques such as LIDAR, radiometric, electromagnetic, magnetometry, gravimetry, and seismic methods. We prioritize sustainability and environmental responsibility in our geophysical solutions, providing eco-friendly project

design and management. Our services cater to various applications, including structure mapping, basin identification, sub-salt mapping, hydrocarbon & mineral exploration, hazard studies, pipeline corridor engineering, groundwater, and geothermal exploration.

Geophysical Imaging: offering a wide range of acquisition solutions for diverse imaging challenges, including 2D/3D/4D surveys in both land and marine environments. We provide Distributed Acoustic Sensing (DAS) VSP solutions for reservoir and carbon storage monitoring. We specialize in advanced processing and imaging services to enhance the interpretability and value of seismic/non-seismic data. Our expertise includes Full Waveform Inversion (FWI), PS



imaging, tomography, and map production services

AI, Autonomous, Space, Geo Data Verse, & Analytics:

Focuses on delivering cutting-edge solutions to various industries, including Oil & Gas, Renewables, Mining, Healthcare, Finance, Public Relations, and Space. We offer AI-Powered Analytics and Optimization, Cognitive Intelligence for Production Optimization and Risk Reduction, Data-Driven Insights and Business Intelligence Solutions, Satellite Imagery Analytics for Asset Monitoring and Change Tracking, Digital Twin optimizing performance, and Autonomous Systems for Enhanced Operational Efficiency. Our Data Verse, Analytics, and AI/ML services, offers centralized, secure, and scalable data management solutions. We leverage AI/ML approaches to

improve prediction accuracy and decision-making in the energy sector.

New Energy Solutions:

providing data, insight, and software solutions for wind, carbon capture and storage (CCS), geothermal, and solar energy sectors.

Our services range from resource assessment and market intelligence to asset management and real-time data management software.

Marine Energy and Infrastructure Geo-Services:

offering engineering, commercial, and environmental expertise for the renewable, offshore construction, and oil and gas industries. Our services include marine surveys, site characterizations, construction survey support, geophysical, and geotechnical investigations. specialize in laser scanning, and modeling services. Our metrology offerings assist in dimension control, spare parts manufacturing, as-built engineering, clash checks, deformation analysis, and 3D documentation.



→ GOLD SPONSOR: **SAMIR ODEH GROUP** STAND: **G23**

UNLOCKING EXCELLENCE IN MINERALS, MINING AND METALS MANAGEMENT

Embark on a journey of innovation and legacy with the Samir Odeh Group (SOG), a stalwart in minerals, mining and metals since its inception in 1968. As a privately owned Saudi family business headquartered in Riyadh, KSA, SOG has evolved into a regional powerhouse over 55 years, cementing its commitment to excellence.

Its expansive network spans 7 branches in KSA and 16 in the GCC, supported by a dynamic team of more than 450 professionals dedicated to serving over 7,000 end users. Powered by SAP's ERP, SOG optimizes stocking processes to ensure seamless operations and timely deliveries.



Aligning with the visionary goals of Vision 2030 championed by His Royal Highness Prince Mohammed bin Salman bin Abdulaziz, SOG continues to support the country's economic growth through planning innovative projects for local spare parts manufacturing, bolstering new job opportunities and enhancing the economy's diversification.



SOG is an industrial solutions provider offering spare parts and condition monitoring services, supporting critical

sectors such as minerals, mining and metals. Proudly representing global giants such as Schaeffler, Dunlop CB, Optibelt, and RegalRexnord, SOG offers comprehensive solutions that transcend traditional product offerings.

At the heart of its client-centric approach are cutting-edge initiatives including Vendor Managed Inventories (VMI) and Consignment (CNMT) sales, ensuring continuous spare part availability and enhancing manufacturing uptime and profitability for its esteemed clients.

Join SOG at the 'Gold Sponsors Zone' during the Future Minerals Forum and immerse yourself in the expertise that has propelled SOG to industry leadership, where tradition seamlessly integrates with innovation in minerals, mining and metals management.

Find out more at www.samirodeh.com

→ GOLD SPONSOR: **FLSMIDTH** STAND: **G07**

FLSMIDTH LEVERAGES GLOBAL TECHNOLOGY FOR LOCAL IMPACT

Driving its leading technology through a pure play mining strategy, FLSmidth has been optimising its footprint to be closer to customers with local solutions and expertise.

Alistair McKay, Head of Site and Service Sales Sub Saharan Africa, Middle East & South Asia (SSAMESA), highlights the CORE'26 mission at the strategy's centre, based on sustainability, technology, service and performance.

"We go to market through five regional structures around the world, delivering sales, service and order execution. The regions are supported by our global organisation and its leading product lines. Global resources are strategically located in countries such as the US, Denmark, Germany, India

and South Africa, where our expertise can provide support."

As part of footprint optimisation, resources have been deployed and infrastructure investments made in key areas, with Johannesburg as the SSAMESA mining hub. World-class facilities in the region include the Stormill service center - for KREBS® pumps, valves and cyclones - and the Delmas manufacturing facility for vibrating screens and other equipment. There is also the fully integrated engineering facility and service center at Chloorkop, a center of excellence for refurbishing high pressure grinding rolls.

The manufacturing, assembly and refurbishment capacity of these centers caters for regional product lines and

FLSmidth globally.

The regional footprint includes local sales and services offices in Ghana, Saudi Arabia and India. "Our strategy allows us to get closer to our customers in SSAMESA, while building the local manufacturing base as part of our global supply chain," says McKay.

Technical knowledge is important in successfully building the SSAMESA footprint with relevant expertise and know-how remaining important enablers to customers for projects and broader development.

A focus on local manufacture in countries like South Africa also means the domestic economy is supported while local skills are developed. FLSmidth contributes to the training of customers'



Alistair McKay, Head of Site and Service Sales Sub Saharan Africa, Middle East & South Asia

staff, while pursuing talent development through learnerships, apprenticeships and scholarships.

"As a technology provider of world-class sustainable offerings across the full flowsheet, regional expertise is key," says McKay. "We also prioritise R&D that supports both our sustainability ambitions and our customers'."



→ GOLD SPONSOR: ROYAL ROAD ARABIA STAND: G16

FMF HELPS ROYAL ROAD MOVE FROM CONCEPT TO REALITY

Dr Tim Coughlin, President and CEO of Royal Road Minerals, describes how a business 'speed dating' event at FMF23 was the launchpad for its exciting exploration JV with MSB Holdings.

In late November of 2022 our Board and management team convened in London to consider and address what we believe is a watershed moment for the mining sector. We perceived strong geopolitical signals and indications from the market that required us to reconsider, step out of our comfort zone and take a broader view; one which satisfies the needs and demands of planet and people whilst generating robust tangible value.

One outcome of that meeting was to purposefully shift our operational focus to supportive jurisdictions with long-term policy-driven visions for mineral exploration and mining. Realistic environments, where we can apply our skills, conduct exploration, discover new modern mines and build them.

An obvious candidate was the Kingdom of Saudi Arabia (KSA). The country is undergoing an exciting transition and has a vivid and ambitious vision for its place in a sustainable and decarbonizing world; Vision 2030. Most importantly, KSA has made it very clear in policy documents that mining is to be a key pillar of Vision 2030. The Kingdom had set about adapting policy accordingly and is actively promoting investment in the mining sector with the epicenter of this campaign being the Future Minerals Forum.

Consequently, we quickly decided to attend FMF 2023. As a management team, we had completed seven new



country-entries over a period of fifteen years and so we arrived in KSA informed, but with no preconceptions and eager to learn. Apart from the jaw-dropping impact of the expansive King Abdulaziz International Conference Center, we were immediately struck by the atmosphere at FMF. The environment was distinctly positive, there was an air of friendly excitement, anticipation, and serious intent. "Shoulder bump" engagements were common and if there is a record for the most amount of business cards exchanged in the shortest time possible, I think we came close to breaking it!

We were invited to attend a

series of one-on-one meetings structured as a "speed-dating" event where junior exploration and mining companies were provided with 5-minutes each, to pitch their plans and potential to local businesses and high net worths. It was at this event that we met with MSB Holdings, one of KSA's largest diversified investment holdings companies; six weeks later, after understanding each other's objectives, we had a letter of intent executed for a 50-50 incorporated exploration joint-venture over KSA and elsewhere as agreed. It was clear to us that we had found an excellent partner. We finalised our agreement in June of 2023

and registered Royal Road Arabia in August of that year. Since meeting at FMF, we have shared some laughs, resolved some challenges and fine-tuned what we think is a formidable approach to mineral exploration in KSA.

Royal Road Arabia has since conducted an extensive target generation exercise across KSA, designed and acquired two bespoke reconnaissance support vehicles, acquired its own high pay-load drone, together with airborne magnetometer, spectrometer and hyperspectral scanner and set about conducting reconnaissance work across the shield reviewing targets and submitting license applications.

The new strategy we had developed in London during November of 2022 has moved quickly from concept to reality. That in itself, is proof that better plans meet with the least resistance but without KSA's unparalleled enthusiasm for our sector, without FMF and the innovative "speed-dating" event, we may not be where we are today.

As plans became process and as process engendered progress we felt more comfortable formerly engaging with the wider investment and mining community in order to explain and now evidence the results of our important strategic pivot. We completed various one-on-one style meetings in the United States, UK and Europe where we met and discussed plans with over 80 investors and corporates. Remarkably, almost all of the investment interest was focused on KSA, despite the fact that for the most part, it is a very early stage, "grass roots" exploration environment. We found this to be highly encouraging and look forward to meeting many of those investors again, engaging with other interested parties, corporates and government representatives at the Royal Road Arabia booth during FMF 2024.

Find out more at
www.royalroadminerals.com


→ SILVER SPONSOR: **FLUOR** STAND: **SS02**

ENGINEERED SOLUTIONS FOR TODAY'S MINING CHALLENGES, TOMORROW'S OPPORTUNITIES

Fluor is a global leader in executing the most complex projects in the mining, metals, and fertilizer industry. With a long history of delivering capital efficiency and project certainty, Fluor has earned the trust of clients to develop innovative solutions to large, complex challenges around the world.

Fluor provides full project life cycle services, consolidating the subject matter expertise required to meet clients' objectives in building mining solutions from pit to plant to port.

- Studies
- Engineering, procurement, construction management
- Program management consulting



- Commissioning
- Maintenance

Fluor is a leader in the natural resources sector, with an unmatched volume of installed production capacity for the extraction of volume commodities and metals production.

- Bauxite, alumina & aluminum
- Copper
- Diamonds
- Gold
- Iron ore & steel
- Lithium, nickel, rare earth elements and other critical minerals
- Magnesium, mineral sands, zinc and other mined commodities

- Potash, phosphates and other fertilizers.

Sophisticated mineral processing solutions are instrumental in improving technoeconomic feasibility, optimizing recovery grades, operational efficiency, and minimizing waste. Fluor's subject matter experts are recognized as industry leaders in critical areas of mineral processing and metallurgy and metals processing.

Mineral processing & metallurgy

- Hydrometallurgy
- Pyrometallurgy
- Electrometallurgy
- Comminution
- Smelting
- Refining

Metals processing

- Flat products
- Rolled products
- Forgings, extrusions, engineered products
- Recycling

Find out more at www.fluor.com

→ EXHIBITOR: **ARABIA MINING SERVICES (AMS) & QL SPACE** STAND: **SS05**

A NEW LEVEL OF EFFICIENCY

With a proven track record in delivering projects safely, within timeframe and budget, ARABIA MINING SERVICES (AMS) has become a leading mining contractor within Saudi Arabia.

AMS Mining is a specialist mining services provider, committed to delivering effective mine-to-mill solutions through the use of modern equipment and operating techniques.

We offer highly experienced project management teams, in-house drill & blast services and a self-owned fleet of high-quality mining plant and equipment. We can successfully deliver open cut mining projects across a range of commodities including gold, lead, iron ore, nickel and lithium.



Our Mining division operates throughout Saudi Arabia and internationally, delivering an extensive range of services.

Find out more at www.arabminingservices.com

QL SPACE is an Earth observation company at the forefront of transforming the mining industry in the Kingdom of Saudi Arabia. Leveraging state-of-the-art high-resolution

satellite imagery, remote sensing technology, smart sensors, machine learning, AI, and edge computing, QL Space specializes in providing analytics tailored to the mining sector in the Kingdom. These analytics focus on enhancing resource efficiency, minimizing environmental impact, and supporting sustainable mining practices, directly aligning with the specific goals and needs of mining businesses. Their applications include unparalleled solutions for mineral exploration and extraction, as well as sustainability, ESG reporting, supply chain mapping, weather forecasting and infrastructure planning.

Find out more at www.qlspace.com.au


 → BRONZE SPONSOR: **BECHTEL**

RESPONSIBLY UNLOCKING RESOURCES FOR A CLEANER FUTURE

The mining sector is on the critical path for the energy transition as the world aims to reach net zero. The shift to clean energy is set to drive a huge increase in the need for the commodities that Bechtel's customers produce. The industry is looking to unlock these vital resources to support net zero in a way that is more sustainable than the past - more attuned to local stakeholders and traditional landowners, and more focused on net zero carbon emissions and reduced water usage.

Bechtel has five globally focused Centers of Excellence (CoEs) - Battery Minerals,

Chemicals & Fertilizers; Aluminum & Alumina; Bulk Materials Handling; Base & Precious Metals; and Net Zero Solutions - to support the delivery of these commodities in a way that can meet the world's ESG expectations - more efficiently and responsibly - while also laying the foundation for a resilient energy transition.

Delivering on its purpose to "responsibly unlock the resources needed for a cleaner, greener future", Bechtel's focus is on supporting customers to develop innovative and industry leading solutions that convert prospects into financially sound and environmentally



sustainable projects.

As miners sharpen their focus on reducing carbon emissions, optimizing the project design plays a key role in success. The Carbon Comparator, a new tool developed by Bechtel, enables the company to perform a detailed assessment of design criteria that allows their customers to select the best technology and equipment options to meet their carbon-reduction programs.

In the field, one of Bechtel's

Mining & Metals' division's most recent projects, Teck's Quebrada Blanca 2 in Chile, is the first mining project in Tarapacá region to utilize 100% desalinated water; and by 2025 it will use 100% renewable power. Bechtel is also completing a desalination plant to supply Antofagasta Minerals' Los Pelambres mine. Both projects are located in extreme desert climate zones.

Find out more at [bechtel.com](https://www.bechtel.com)

 → EXHIBITOR: **AGINCO** STAND: **FMF35**

AGINCO'S SUSTAINABLE MINING QUEST

Looking ahead to Aginco's presence at FMF24, the company's Chief Executive Officer, Eng. Tarek Kamil Sindi, has spoken of the strong alignment between Aginco's activities and the mining ambitions of the Kingdom: "Under the leadership of HM King Salman Bin AbulAziz and HRH Crown Prince Muhammad Bin Salman, Saudi Arabia is making a remarkable shift towards sustainable mining. Aginco, with 40 years of service of the mining and tunneling industry, proudly contributes to this development. Committed to a greener future, we collaborate closely with partners to introduce an electronic fleet, forging a path of success and sustainability guided by God and our shared vision."

Aginco's main activities are in the supply of mining, exploration, and tunneling solutions



and machinery. To support and complement its trading activities, Aginco has a technical department and specialized team of qualified personnel whose role is to provide professional services and solutions to its clients.

The company has developed an excellent reputation for being extremely customer service oriented. Through close collaboration with its partners, Aginco is diligently working towards introducing an electronic fleet of machinery



and vehicles to the market.

Its collaborative partners include Normet, a world-leading, innovative technology company, who provide the SmartDrive® system, delivering enhanced performance with zero local emissions. This is a modular battery-electric vehicle BEV System for mining efficiency which enables Aginco's machinery to boost productivity, reduce costs, and ensure zero local emissions in underground mining and tunnelling.

The SmartDrive Architecture uses fast-charging Li-ion batteries and high-torque electric motors for instant, emission-free operation. Energy recuperation technology maximizes regenerative braking, supported by efficient dual-circuit and oil-immersed hydraulic brakes for added power.

Another partner is drilling specialist Boart Longyear who provide Aginco's exploration rigs.

Boart Longyear offer an innovative range of underground diamond coring equipment for mineral development and exploration. Providing reliable, high-performance deep hole drilling with economical maintenance costs, its LM™ Modular Diamond Drill System is used extensively all over the world under varying climate conditions.

Find out more at [aginco.com.sa](https://www.aginco.com.sa)



→ EXHIBITOR: **EVIDENT/GEOTEK** STAND: **FMF25**

ADVANCING GEOCHEMICAL ANALYSIS WITH VANTA™ PORTABLE XRF ANALYZERS

In mining and geochemistry applications, Vanta™ portable XRF analyzers are indispensable tools, revolutionizing the acquisition of elemental measurements across various stages of the mineral resource cycle. From initial exploration to process control and environmental monitoring, these devices offer unparalleled flexibility and efficiency.

Mining and exploration demand fast and accurate data acquisition. Vanta analyzers deliver immediate, on-site elemental measurements, enabling real-time decision-

making that's much faster than using conventional laboratory techniques. This agility not only accelerates project timeframes but also optimizes exploration budgets, maximizing the effectiveness of field time.

The significance of decision-quality geochemical data cannot be overstated. It empowers mining professionals to make informed choices, which is important in shaping the trajectory of a project. Vanta analyzers not only expedite this decision-making process but also deliver the reliability and accuracy required to make critical decisions.



What sets Vanta analyzers apart is their ruggedness and reliability. Developed in collaboration with mining and geochem experts, the analyzers are designed to pass a drop test (MIL-STD-810G), reducing the risk of costly repairs if they're dropped or jostled. They're also built to withstand temperatures

up to 50 °C (122 °F) at full duty cycle, so you can spend more time working and less time waiting for the analyzer to cool down. The inclusion of integrated GPS functionality facilitates georeferencing of samples, while wireless LAN and Bluetooth® connectivity enable seamless real-time data transmission and integration with third-party software using cloud technology.

In summary, the Vanta handheld XRF analyzers have significantly elevated the standards of geochemical analysis in mining and related fields. Their speed, accuracy, and seamless integration capabilities not only expedite processes but also enhance the quality and depth of decision-making throughout the green minerals value chain.

Find out more at evidentscientific.com

→ EXHIBITOR: **STRYDE** STAND: **FMF22**

LAND SEISMIC SOLUTIONS FOR MINING EXPLORATION IN THE MIDDLE EAST

STRYDE provides a low-cost subsurface imaging solution for the mining sector, allowing mining companies to de-risk exploration drilling decisions and mine expansion with high-resolution seismic images.

From seismic survey design to data acquisition, fast-track data processing, and interpretation, STRYDE provides the rapid and affordable end-to-end subsurface geological mapping the mining industry has been waiting for.

At the core of STRYDE's offering is the world's smallest and most affordable onshore seismic sensor. In the last 3 years, STRYDE's solution has been deployed on over 30 mining projects and has proven



to drastically reduce seismic survey costs and deliver a subsurface image in the fastest way possible for mining operators across the globe.

STRYDE's latest development, STRYDE Lens™ is an in-field seismic processing solution and has

been designed to overcome data export restrictions and lengthy processing times by transforming their seismic system into a processing environment that can be accessed remotely by best-in-class seismic data processing experts. This solution was

recently deployed for a project in Saudi Arabia where STRYDE was able to deliver the seismic image within a record-breaking 8 weeks to help their client make key and well-informed drilling decisions far sooner than ever experienced before.

To date, STRYDE has supplied the onshore seismic market with over 685,000 seismic sensors and has enabled over 185 projects across multiple sectors including mining, oil and gas, geothermal, and academia. This has resulted in STRYDE becoming the unquestioned market-leading onshore nodal technology provider by volume in just 3 years since its inception.

Step into the future of subsurface imaging to de-risk exploration drilling decisions and mine expansion by joining the growing network of forward-thinking exploration professionals using STRYDE.

Learn more at strydefurther.com


 → EXHIBITOR: **MSA ARABIA** STAND: **FMF41**

NEW MINERALS CONSULTANCY WITH A FOCUS ON KSA

MSA Arabia - a joint venture between MSA and The Al-Rushaid Group - will be joining those present at the third edition of the FMF.

"We are very excited to launch MSA Arabia at the Future Minerals Forum, 2024. KSA is shaping up to become the centre of one of the world's most important regions for mineral exploration and mining, and we are privileged to play a small part in this success story", said Dr Ian Haddon, Managing Director of The MSA Group.

MSA Arabia is a proudly Saudi Arabian technical consultancy that was established to support the rapidly growing exploration and mining sector in KSA. We provide consulting services

throughout the exploration and mining life cycle to our clients in the region. Our specialist solutions include geological and exploration program planning and execution, mineral resource estimation, competent person code-compliant reporting, technical Due-Diligence and multi-disciplinary mining studies.

MSA has been providing high-quality technical consulting services to the Saudi Arabian mining sector since 2013 and has a well-developed understanding of the geological and mining landscape and potential. MSA has worked on well over individual 100 mineral occurrences in KSA, on projects ranging from greenfields exploration to operating



mines, and on a wide range of commodities including Precious and Base Metals and Critical and Industrial Minerals.

MSA Arabia is a joint venture between leading Saudi conglomerate The Al-Rushaid Group (ARPIC) and the internationally respected mining technical consultancy The MSA Group (MSA).

The Al-Rushaid Group was established in 1978 and is involved in mining, manufacturing, construction, engineering, trading, commercial real estate, and technology. It is headquartered in Khobar, KSA and has offices in the UAE, the United Kingdom and the USA.

The MSA Group was established in 1983 and has consulted to mining clients in over 50 countries worldwide. MSA's client base includes the largest multi-national mining companies, private equity and sovereign wealth funds, governments, SOEs and listed junior explorers throughout the world.

Please contact us at info@msaarabia.com for more information on how we can assist you advance your exploration and mining projects in Saudi Arabia.

Find out more at www.msagroupservices.com

 → EXHIBITOR: **BEHRE DOLBEAR** STAND: **FMF36 / S03**

BRINGING IDEAS TO REALITY SINCE 1911

Behre Dolbear (BD) is one of the world's oldest mineral industry consultancies. Since 1911 it has provided studies and consulting for commercial and multi-lateral financial institutions, mining companies, governments and governmental agencies, legal firms, and others with interests in the industry.

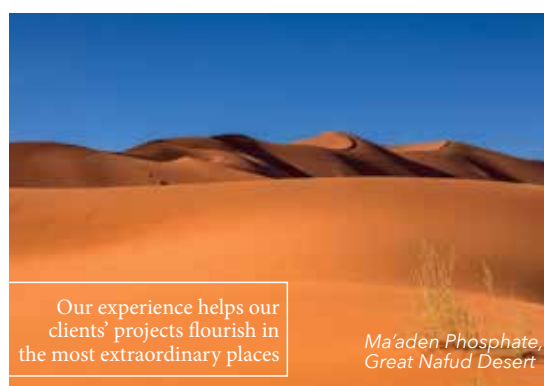
Its services support project delivery from mine to metal through conceptual engineering, pre-feasibility phase, final bankable study phase, and then detailed engineering design, procurement, construction management, training and maintenance planning.

Many of BD's qualified professionals are international leaders within their specialisation. This wealth of expertise and experience is

structured to enable BD to play a balanced, multidisciplinary role, fully supportive and complementary to its studies and engineering project work.

BD evaluates, designs, plans and manages projects in commodities including base and precious metals, coal, industrial minerals, fertilizer minerals, diamonds and gemstones, ferrous metals, and construction materials together with associated infrastructure. Its teams interpret clients' concepts into viable operations and, according to project needs, work alongside in-house capability, process licensors, specialist groups, or on a total technical and project management basis.

With no affiliation to suppliers its choice of process, technology and equipment is entirely impartial.



secondary metal recovery, hydrometallurgical processing, solvent extraction, electrowinning, electrolytic refining, casting and finishing. Where required, BD services

Geology and mining expertise covers all types of metalliferous and industrial mineral deposits and everything from initial economic appraisal to orebody evaluation, and management of production, including mine design and equipping, mine planning, mine development and operational management and consultancy.

BD's metallurgical services for base and precious metals include mineral dressing, extractive metallurgy, refining and secondary processing. Specific expertise covers concentrating, roasting, smelting, gas treatment,

include the organization of laboratory and pilot-scale testing and the design, commissioning and operation of full-scale processing installations.

BD's design capability covers the major engineering disciplines, civil, structural, mechanical fluids, electrical and instrumentation. Activities include conceptual engineering, feasibility studies, "bankable documents" and detailed engineering for procurement and construction management.

Find out more at www.dolbear.com


→ EXHIBITOR: **BIN SHEHAB** STAND: **FMF39**

GEAR UP TO CONQUER OBSTACLES

For over forty years Bin Shehab has provided high-quality spare parts, sales, and after-sales services to meet mining sector demands in the Gulf and Saudi Arabia where it is the exclusive agent for Epiroc mining equipment.

Epiroc develop and provide innovative and safe equipment, such as drill rigs, rock excavation and construction equipment and tools for surface and underground applications. Through Bin Shehab, world-class service and other aftermarket support are offered as well as solutions for automation, digitalization and electrification.

Its products are present in all Saudi Arabian mines, with more than 100 machines drilling, blasting, RC drilling or diamond drilling.

The company is leading the



charge towards sustainability in mining through battery-electric, zero-emission equipment. Based on long experience, it has expanded its proven battery offering and zero-emission underground fleet with the second generation in loaders, mine trucks and rigs for face drilling, production drilling and



rock reinforcement.

Epiroc has set itself bold, ambitious targets to deliver a greener, more sustainable future through electrification and pledged to offer a complete range of underground equipment in battery-electric form by 2025. By 2030 it intends to provide a battery-

electric version of its entire portfolio of mining equipment.

Epiroc becomes the first company in the mining industry to sign a delivery agreement with Swedish steelmaker SSAB for SSAB Zero™ - a fossil carbon emission-free recycled steel produced using fossil-free energy sources. The steel will be used in Epiroc's battery-electric range of underground mine trucks and loaders.

Bin Shehab also supply Brokk remote-controlled demolition robots for safe, efficient, powerful and profitable demolition. While the original concept is kept unchanged - safe, time-saving and cost-effective quality demolition - Brokk has been adapted to new market demands, new challenges and new application areas. This ensures maximum durability, improved ergonomics and safety and efficient and profitable projects.

→ EXHIBITOR: **IGS** STAND: **S01**

IGS: TECHNICAL PARTNER TO THE SAUDI GEOLOGICAL SURVEY

International Geoscience Services (IGS) is a UK-based specialist consultancy that supports and promotes the mineral resource sector by collecting, quality control, defining technical specifications, compilation, value adding, interpreting and serving of geodata.

ITS MINERAL PROMOTION SERVICES INCLUDE:

■ National Mapping

Programmes: IGS implements large geological, geochemical and geophysical mapping programmes used by governments and industry to support and stimulate mineral

exploration. It supervises, monitors and signs-off on the quality of geological and geochemical mapping and airborne geophysical data.

■ Institutional

Strengthening: IGS provides a wealth of strategic management knowledge and experience to assist national geological survey organisations to transform and realign their strategic objectives and operations.

■ **Geodata Management:** IGS are experts in the collection, interpretation, management, and serving of geodata typically held by geoscience survey organisations e.g.,



processing and interpreting geophysical data, setting up geoportals, compiling prospectivity maps and integrating geological map data on GIS platforms.

■ Training and Capacity

Building: IGS is experienced in delivering training and capacity building projects around the world in a variety of geoscientific disciplines.

■ **Target Generation:** We help to identify prospective areas for mineralisation using innovative approaches by applying semantically driven technology

and AI technologies for regions, countries or discrete geological terranes.

PROJECT EXPERIENCE

IGS is internationally renowned for its supervision and quality control of large geodata acquisition programmes commissioned by governments, worldwide - funded by the World Bank, national governments and other agencies.

IGS is the lead party as Technical Partner to the Saudi Geological Survey for the surveying of the Arabian Shield in Saudi Arabia (600 000 km²). This multi-year project provides quality control for the geological mapping, geochemical sampling programme, airborne geophysical survey, upgrading the National Geodatabase and the National Core Library of contractors.


 → EXHIBITOR: **HOFFMANN REED** STAND: **FMF07**

BUILDING FUTURES IN THE MINING & METALS INDUSTRY

Hoffmann Reed is a global executive search and talent advisory group, providing holistic leadership solutions that accelerate and optimise business performance.

Adam Ginster, Co-Founding Director Middle East Africa, says: "We are delighted to be exhibiting at FMF and to announce we are relocating our regional headquarters to Riyadh in 2024, such is our commitment to the Kingdom of Saudi Arabia."

"We encourage you to visit our stand to discuss how our services can support your organization's growth, diversification and development. We cover Executive Search (appointing Board Directors, Executive Committee and Senior Management), Board Evaluation (to drive Board



Adam Ginster
Co-Founding Director
Middle East Africa

performance and governance), and Talent Assessment and Talent Development (so that you can get the best out of your internal talent)."

Expertise: Hoffmann Reed specializes in the mining and metals industry where the team combines years of experience to address the unique challenges and opportunities.

Global Reach, Personalized Approach:

What sets Hoffmann Reed apart is its global reach paired with a personalized approach. Understanding that each organization has its own culture and specific needs, we tailor our services to align with our clients' strategic goals. With offices in 15 cities

across 5 continents, Hoffmann Reed is able to source the best talent anywhere in the world.

Commitment to Excellence: At Hoffmann Reed, excellence is not just a goal, but a standard. The business is committed to upholding the highest levels of professionalism and confidentiality, ensuring that both clients and candidates receive a service that is effective, respectful and ethical.

Building Futures: The company is dedicated to building lasting relationships, supporting leaders in their growth, and contributing positively to the industries and communities they serve.

Ready to Deliver: Whether you're looking to appoint a Board Director or Chief Executive Officer, fill an interim leadership gap, or conduct an Evaluation of your Board or Executive Committee, our team is ready to deliver solutions that drive your success.

Find out more at
<https://hoffmannreed.com/>

 → EXHIBITOR: **GINGER SOFRECO** STAND: **FMF19**

DELIVERING MINERALS INFORMATION YOU CAN TRUST

For more than 30 years, Ginger SOFRECO has built a solid track-record of successful exploration campaigns, mineral resources estimate and mining operations in various countries and for various commodities. The collaboration between international, recognized experts and a local workforce has allowed Ginger SOFRECO to provide its clients with optimized, trustworthy information and reports. Its expertise extends to:

■ **Mineral Exploration** - from the realisation of a prospection program, tailor-made to target specific commodity and type of deposit, executed with rigorous QA/QC procedures in compliance with international



standards and codes (CIM, JORC).

■ Geological Modelling and Mineral Resource Estimates

- Ginger SOFRECO's approach to geostatistical analysis is adapted to each deposit and commodity.

■ Geological Infrastructure

- assisting governments and multilateral banks in geological mapping, geochemical surveys, geotechnical mapping, and setting up of geological information systems.

■ **Mine engineering** - at all stages

of project development: scoping, pre-feasibility and feasibility.

■ Mine planning and optimization

- designing practical solutions based on its clients' objectives: stability of the RoM, profitability.

■ Mine economics and ore reserve estimates

- its combined technical, market, organizational and financial expertise has enabled Ginger SOFRECO to successfully complete a number of mine economic studies and financial audits of mining companies.

■ **Mine operational support** - it

accompanies its clients in setting up of grade control, blasting, reconciliation, excavation and loading through establishment of standard operating procedures, installation of systems and recruitment and training of staff.

■ Environmental and social studies

- Ginger SOFRECO provides services in social and environmental impact assessment and management.

Ginger SOFRECO is fully committed to the formation and transfer of skills and knowledge to young future talents in Saudi Arabia, offering apprenticeships and professional opportunities. Our team offers a formation program including direct on-site training, the implementation of safety and technical procedures for the local teams as well as the supervision and monitoring of the activities.

Find out more at
groupeginger.com



→ EXHIBITOR: **AGGREKO** STAND: **FMF06**

POWERING THE JOURNEY TO SUSTAINABLE AND RESILIENT MINES

In the dynamic landscape of global mining, the industry is recognizing the imperative to transition towards sustainable and resilient energy solutions. Mines must emphasize the urgency of redefining the sector's energy reliance, particularly in regions like the Middle East, Asia, and South Africa, where the demand for power in mining operations is substantial.

It is predicted that the Middle East's power demand will increase by 3.3% year on year until 2030. The push for cleaner and greener energy solutions is not merely an environmental concern; it's a strategic move to enhance mining resilience and

reduce operational costs.

Mining companies are increasingly investing in long-term energy solutions to mitigate their dependence on grid-based power. Deloitte research reveals that effective energy management and strategic mine design can lead to a measurable reduction of up to 20% in energy costs, a significant factor considering it constitutes around 30% of total cash operating costs.

The shift towards alternative power options is not just a cost-cutting measure; it aligns with global sustainability goals. By adhering to environmental, social, and governance (ESG) guidelines, mining companies



can make substantial progress in reducing their carbon footprint. However, achieving this transformation requires careful consideration of factors such as fuel sources, speed to market expectations, and fuel requirements.

Aggreko has emerged as a key player in supporting mining companies on their journey towards sustainable power supplies. The company's success stories include collaborations with Gold Fields mine in Chile and Resolute Mining in Mali, where tailored hybrid solutions combining

thermal, solar, and battery power led to significant cost savings and emission reductions.

The key to a successful transition lies in understanding the priorities, developing a strategic approach, determining the speed of adoption, and assessing the risk profile. Aggreko's expertise in designing customized hybrid solutions for diverse mining environments underscores the potential for fundamental changes in power portfolios, costs, and environmental impacts.

→ MINERAL EXPLORATION ZONE: **SUREFIRE RESOURCES** STAND: **MH02**

LOW COST, LOW EMISSION MINING IN WESTERN AUSTRALIA

Surefire Resources is an Australian mineral exploration company based in Perth, Western Australia (WA). The company holds mineral exploration licences over vanadium, magnetite and gold projects located in WA.

The company's projects are aligned with the pillars of the Future Mineral Forum with a focus on progressing its critical minerals strategies for its flagship Victory Bore Vanadium and High Purity Alumina projects.

The company promotes

responsible mining and processing by having a low cost and low emission mining project in Australia, transporting concentrates to a state-of-the-art processing facility in Saudi Arabia. The vanadium products also form part of a green minerals value chain where vanadium electrolyte can be extracted for the emerging Vanadium Redox Battery market.

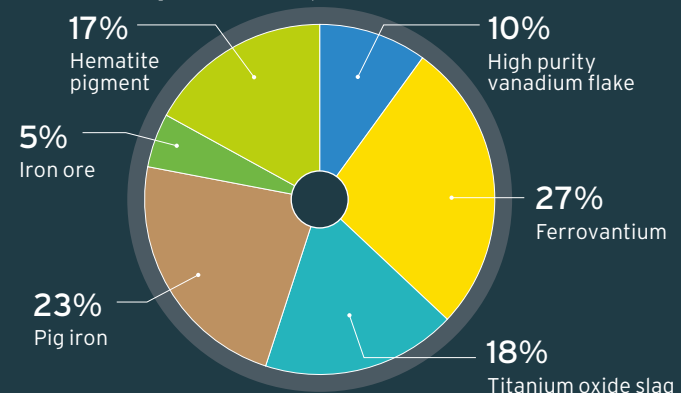
Surefire plans to operate the downstream processing plant in KSA to produce high value vanadium products and battery minerals.

OUTSTANDING PRE-FEASIBILITY RESULTS FOR SUREFIRE'S FLAGSHIP CRITICAL MINERALS PROJECT

- NP V10%: \$1,110m
- IRR: 42.22%
- Payback: 2.4 years
- Capital cost: \$498m
- Initial mine life: 24 years
- LOM strip ratio: 0.83

A maiden probable ore reserve of 93 Mt@0.35% V2O5, 5.2% TiO2 and 19.8% Fe

Commodity revenue split



Opportunities exist for investment. Please visit us at the FMF booth.

Find out more at surefireresources.com.au


 → MINERAL EXPLORATION ZONE: **POWER METAL RESOURCES PLC** STAND: **MH10**

FAST-TRACKING MINERALS OPPORTUNITIES IN KSA AND OMAN

Power Metal Resources plc is a London-listed metals exploration company and project incubator.

The company has a principal focus on opportunities offering district scale potential across a global portfolio currently including energy, base and precious metal exploration in North America, Africa and Australia.

Power Metal Resources will undertake the development of projects internally or through strategic joint ventures until a project attains a level of

maturity suitable for strategic disposal. This may involve an outright sale or a separate listing on a recognised stock exchange, ultimately crystallising the value derived from its dedicated internal exploration and development efforts.

The company's strategic vision is to support Saudi Arabia and Oman's respective Vision 2030 and 2040 goals through exploration. The vision anticipates significant new discoveries of critical and essential minerals within the Arabian Shield, a region which



is believed to be one of the most under-explored but prospective geological terrains globally.

New deposits are required to satisfy future demand for the critical minerals essential to support Saudi Arabia and Oman's planned industrial development, and early-stage

exploration is the key to those discoveries. Both countries are supportive of new exploration initiatives and Power Metal Resources anticipates an increase in the region's annual exploration spend in order to achieve their planned goals.

With highly experienced in-house technical and corporate teams, and a track record of success across multiple key project packages in mining-friendly jurisdictions, Power Metal is ideally placed to fast-track the opportunities that the region offers.

For more information on Power Metal Resources and its exciting exploration projects, meet the team at Booth MH04.

Find out more at
powermetalsresources.com

 → MINERAL EXPLORATION ZONE: **ANDIAMO EXPLORATION** STAND: **MH01**

EXPLORING NEW FRONTIERS AND UNCOVERING CRITICAL MINERALS IN THE ARABIAN NUBIAN SHIELD

Andiamo Exploration is delighted to be attending the Future Minerals Forum in 2024 and continuing to play its part in discovering the critical minerals needed to fuel the green economy.

Andiamo is a trailblazing mineral exploration company, leading the way in revealing the mineral riches of the Arabian Nubian Shield. Its experienced team has developed projects from grass roots exploration into commercial production and is notable for its contributions to the initial discoveries at Bisha, Zara, and Asmara in Eritrea.

Since 2008, Andiamo has



concentrated on uncovering and developing both precious and base metal resources in Eritrea. The Haykota license, a key asset, extends 55 kilometres along the

Bisha metallogenic belt and hosts multiple copper and gold prospects. The Jacob Dewar target, Andiamo's most advanced prospect, showcases a geological profile

akin to Bisha, featuring a high-grade oxide gold deposit at the surface, underlain by supergene copper mineralisation, leading to deeper copper and zinc mineralised Volcanogenic Massive Sulphides (VMS). The company's objective is to fast-track the gold production in collaboration with a partner, while also continuing to explore the deeper, copper and zinc-rich VMS mineralisation. Within the Haykota license, Andiamo has identified multiple other gold, copper, and zinc VMS and orogenic gold targets that could potentially augment the development at Jacob Dewar. Additionally, it has identified and is applying for licenses for other critical minerals within Eritrea.

In line with the company's expansion goals, it is extending its exploration activities beyond Eritrea. Andiamo has commenced exploratory projects in Saudi Arabia and is in pursuit of a local partnership to further its endeavours in this new and exciting region.


→ MINERAL EXPLORATION ZONE: **WEALTH GROUP** STAND: **MH03**

A WEALTH OF POTENTIAL IN BATTERY METALS

Wealth Group is a Vancouver-based asset management team, led by professionals and advisors from the mining and financial sectors.

The use, storage and transportation of energy is being transformed by new technology and applications. Wealth Group intends to play a key role in delivering metals fundamental to electrification and emissions reduction and is developing and de-risking base and precious metals projects in safe, stable, mining-friendly jurisdictions in North and South America.

Wealth Minerals

Wealth Minerals is focused on acquiring and developing lithium projects and is currently

advancing two battery metal projects in Chile: **Ollagüe** - a maiden resource estimate includes a total indicated resources of 741,000 tonnes LCE grading 175 ml/L and total inferred resources of 701,000 tonnes LCE grading 185 ml/L.

Exploration and drilling have defined four hydrogeologic units, featuring medium to high permeability, that are amenable to recovering brine to the surface. Deeper drilling may encounter additional lithium brine, adding to the overall resource.

Atacama - located within the prolific, lithium-producing Atacama Salar, the southern part of which produces approximately one-quarter of the world's current lithium supply.



Wealth's assets cover 46,200 hectares within the northern part of the Salar. The geology and hydrogeology of the project have been extensively studied by third parties and government agencies, with indications that the underground basin of resources being tapped to the south is the same as in the north.

World Copper

World Copper is focused on exploring and developing its

advanced PEA-stage copper porphyry projects; Escalones (Chile) and Zonia (Arizona). Both have estimated copper oxide resources which allow on-site copper cathode production, using a more environmentally friendly process of heap leaching, solvent extraction and electrowinning. Each project also has peripheral copper porphyry exploration targets with potential to expand the established resources.

Gelum Resources

Gelum Resources is focused on high-potential gold exploration assets in stable jurisdictions. Currently, the company's objective is to define a multi-million-ounce economic gold deposit on the Eldorado Gold Project, located within the Bralorne-Bridge River gold district in BC.

Find out more at wealthminerals.com

→ MINERAL TECH ZONE: **IMAKERXR** STAND: **DT08**

YOUR TRUSTED INNOVATION PARTNER

The mission of iMakerXR is to pioneer innovation through immersive technologies. It empowers mining, oil and gas, automation, utilities, alternative energy, heavy industry, and heavy machinery manufacturing companies with cutting-edge industrial 3D animation, metaverse, and digital twinning solutions, virtual worlds, interactive applications, virtual reality, and augmented reality experiences. The results enable its clients to visualize, strategize, and optimize their operations for a sustainable and efficient future.

The company elevates industrial experiences with cutting-edge technology and has a commitment to "Your Vision, Our Expertise",



transforming its customers' concepts into immersive realities. From interactive presentations that engage and inform, to Virtual Worlds that consolidate customers' products, and the power of AR, VR, MR, and the Industrial Metaverse, it tailors solutions to suit unique needs. Its Digital Twining expertise ensures real-time asset management and optimization.

The iMakerXR team, which includes skilled engineers, programmers, animators, and designers, has been providing top-tier services to over 250

organizations for two decades. At its heart are the unwavering values of innovation, problem-solving, and customer-centricity. These principles steer its work, propelling it to create dynamic and innovative solutions, pioneering a futuristic approach to meet business needs.

Mining industry use cases include:

■ Mining Metaverse

Exploration: Facilitating immersive exploration with unprecedented detail.

■ Interactive Training

Simulations: Enhancing safety with realistic training simulations.

■ Digital Twinning for Asset

Management: Real-time monitoring and optimization of mining assets.

■ VR-based Site Planning

and Design: Virtual Reality

aids site planning and informed decision-making.

■ AR for On-site Guidance:

AR applications provide real-time information and enhance precision.

■ Health and Safety Training:

Immersive solutions simulate hazardous scenarios for proper protocol understanding.

■ Precision 3D Modeling of

Mining Processes: Detailed 3D models aid in comprehensive analysis and optimization.

Benefits include:

- Enhanced safety
- Optimized operations
- Improved decision-making
- Cost savings
- Increased productivity
- Environmental impact assessment

Find out more at imakerxr.com


 → MINERAL TECH ZONE: **DESCARTES LABS** STAND: **DT04**

HARNESS THE POWER OF EARTH OBSERVATION DATA

Powered by dynamic remote-sensing, Descartes Labs harnesses the power of Earth observation data to drive mining endeavors from greenfield exploration through operational efficiency and safety, and ultimately to sustainable mine closure and rehabilitation. Visit Descartes Labs at Future Minerals Forum at Booth DT04 in the Mineral Tech Zone.

Assess More Mineral Targets, More Rapidly

Accelerate your time to discovery with Marigold, our GIS-like user interface. Built for the exploration geologist, Marigold enables common remote sensing workflows including lithological and mineral mapping, advanced spectral mapping, and

lineament analysis without requiring an advanced understanding of remote sensing. The power of Marigold will increase the productivity, speed, accuracy, and confidence of greenfield exploration.

The World's Fastest Hyperspectral Processing Technology

What traditionally took days, now takes minutes - The world's most advanced hyperspectral processing capabilities are now available within Marigold! Our technology delivers the most accurate and rapid processing of hyperspectral data in the world. Improved spectral analysis and unique spectral signatures empower geologists to identify deposits more quickly and accurately. Reduce exploration costs through improved prioritization for



Image from Marigold, Descartes Labs' advanced remote sensing processing tool. This depicts a regional scale principle components analysis, utilising Sentinel-2 data, for lithological discrimination and mapping over Namibia.

field planning and experience organizational growth.

Mitigate Geohazard Risks

Improve infrastructure stability monitoring with our InSAR-based Global Deformation System (GDS), which automatically and remotely monitors millimeter-

scale deformation anywhere on Earth. With its seamless integration of cutting-edge technology, GDS is an indispensable tool for proactive risk management, precise decision-making, and the preservation of critical assets.

Reduce Environmental Costs and Create an Ecological Index

Transform your approach to mine restoration with the Mine Site Ecological Index. Cut environmental monitoring costs, track restoration remotely, and monitor ecological succession at any site. Compare efforts to historical baselines, streamline monitoring, prioritize effectively, and uncover key drivers for site rehabilitation. Unearth the future of mining and transform your operations through powerful Earth observation technology and AI-driven analytics.

Find out more at <https://descarteslabs.com/events/fmf-2024>

 → MINERAL EXPLORATION ZONE: **STRATEGIC ENERGY RESOURCES (SER)** STAND: **MH12**

SCIENCE DRIVEN APPROACH TO EXPLORATION

Strategic Energy Resources (SER) is an Australian based mineral exploration company focused on the discovery of world class critical minerals deposits that will be a part of the world's transition to net zero. We understand that the search for, and discovery of, critical minerals are central to supporting the world's energy transition and support a more sustainable future.

Our search for these much-needed deposits starts with the interpretation of geological datasets held by governments, academia and research agencies which span long forgotten regions. We are often the first to access, interpret and act on these datasets allowing



us to secure prospective ground well before other explorers. This approach leads to the ongoing generation of highly prospective early-stage exploration projects at low-cost, maximising value creation for shareholders.

As we begin to build an understanding of the



mineral potential of these underexplored regions through our science driven approach, we narrow the search space and define significant high priority targets that are often hidden thousands of metres below the surface under barren soil. The scale of deposits we are targeting attracts the interest of major mining companies and we actively seek funding partners to share the risk and reward associated with making a significant discovery.

SER is currently exploring for copper and gold, two minerals that are central to the energy revolution, at the Canobie and Isa North projects in far north Queensland and in outback New South Wales in Australia. We believe that our unique science driven approach to exploration is the key to unlocking the significant mineral potential and are focused on making discoveries that progress the world's transition to a greener future.



→ MINERAL EXPLORATION ZONE: **MAGNETITE MINES LIMITED** STAND: **MH08**

DEVELOPING SOUTH AUSTRALIA'S BRAEMAR FOR OUR DECARBONISED STEEL FUTURE

Magnetite Mines Limited is an ASX-listed iron ore company focused on the development of magnetite resources in the expansive Braemar iron region of South Australia.

MGT's 100%-owned leases host six billion tonnes in iron ore mineral resources, including two billion tonnes in ore reserves. The company is developing the Razorback Iron Ore Project, located 240km from Adelaide, to meet the accelerating demand for premium iron ore products created by iron and steel sector decarbonisation, with the intent of producing rare, high-value Direct Reduction (DR) grade magnetite concentrates.

Demand for DR-grade concentrates is set to increase



significantly over the coming years with the product required to feed low-carbon steelmaking technologies, for which currently used lower-grade hematite ores are not suitable. Razorback boasts

the ability to produce some of the highest quality magnetite concentrates currently on the market globally, with a targeted specification of 68.5% Fe, <2.5% silica & 0.4% alumina. With an initial output of

5Mtpa, expanding to 10Mtpa, the Razorback Project stands out as a potential new long-term contributor to the future iron ore market with a number of unique features.

Razorback's iron ore is hosted in siltstone which is relatively soft compared to Western Australian magnetite ores and the resource outcrops, which means minimal overburden removal is required ahead of ore mining.

The project benefits from access to existing logistics infrastructure including open-access rail, roads and operating ports, a rare feature for projects located within greenfield iron ore provinces.

Electricity to power the project is available from the South Australian grid, which is forecast to be 100% renewables-powered by 2030. The project's access to grid-scale renewables gives it a distinctive advantage in reducing, and possibly eliminating, the carbon footprint associated with its operations.

→ MINERAL EXPLORATION ZONE: **Q2 METALS CORP** STAND: **MH14**

Q2 METALS CORP: AN EMERGING LITHIUM EXPLORER IN AN EMERGING LITHIUM JURISDICTION

Q2 Metals Corp is a Canadian mineral exploration company currently advancing the exploration of its 8,668-ha flagship Mia Lithium property in the Eeyou Istchee James Bay Territory of Quebec, Canada.

The Mia Lithium Property is a highly prospective property for lithium and is host to several lithium occurrences. Through its geological fieldwork, Q2 Metals confirmed the historical occurrences and has defined 11 mineralized zones on the property to date. The target



areas of the property are located on a nearly 10-kilometre long trend on a greenstone belt called the Mia Trend. The mineralized zones are approximately 10 kilometres from the nearest highway and proximal to major hydro-

powerline and all-season road infrastructure.

The Company's inaugural drill program commenced on October 23, 2023, with two drill rigs testing the Mia Trend. Phase 1 of the drill program paused in December 2023 for winter freeze-up. Phase 2 of the drill program will resume in late January 2024.

The Company announced the details of the 31 holes drilled during Phase 1 and the multiple mineralized zones that have been defined. In one of the mineralized zones, the company

has discovered a significant continuous spodumene pegmatite zone. All core sample assays for Phase 1 of the drill program have been shipped to the analytical lab and Q2 Metals anticipates it will begin receiving analytic results in early 2024.

Q2 is well funded, allowing the company to focus on advancing its new lithium pegmatite discoveries at the property. The objective of the company is to find the next great lithium discovery to support the lithium supply chain for a greener future. Because of the abundance of battery metals and cheap hydroelectric power, Quebec, Canada is uniquely positioned to become a world-class battery metals hub. From mining to manufacturing, Quebec will be a major player in the worldwide supply chain of lithium.

Find out more at q2metals.com

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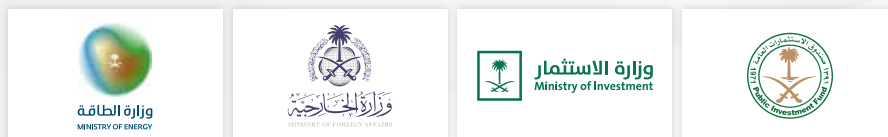
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