



FUTURE MINERALS FORUM

2023

10 January

Ministerial Roundtable

11-12 January

Forum and Exhibition

Riyadh, Saudi Arabia

King Abdul Aziz International Center

FUTURE MINERALS FORUM 2023

CREATING RESPONSIBLE AND RESILIENT MINERALS AND
METALS SUPPLY AND VALUE CHAINS IN AFRICA, WESTERN
AND CENTRAL ASIA

Join us as Saudi Arabia brings together governments, industry, investors, technology suppliers, educators and civil society to develop a minerals and metals value chain roadmap for the region: development, decarbonization, digitization and innovation

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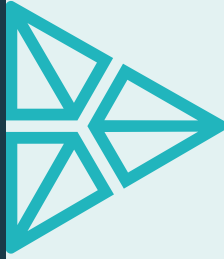
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وزارة الاستثمار
Ministry of Investment



MAIN CONFERENCE DAY 1



Future Minerals Forum 2023
11th January
King Abdulaziz International Conference Centre
(KAICC)

09:00 - 09:10

Master of Ceremonies Welcome Address

Setting the scene

FMF one year on, putting the region's mining and minerals industry in a global context

09:10 - 09:20

**One year on:
Update on Ministerial Roundtable themes and looking ahead/scene setting to the 2023 event**

09:20 - 10:00

Navigating disruption: what global economic, environmental and political developments will impact the region's mineral industrialisation?

- As European governments looking at reducing/eliminating dependence on Russian gas, what impact does this have on global critical minerals, renewable energy and ESG?
- What is the short to medium term outlook for the non-oil sector?
- Where are we seeing economic diversification?

10:00 - 10:40

Regional leaders: developing a roadmap for establishing resilient mineral and metals value chains and establishing centres of excellence

Spotlight on ESG, innovation, geology, skills, finance, national champions

10.40 - 10.50

**Keynote address
Mining and owning the energy transition**

Mineral potential, becoming ESG and climate smart

10:50 - 11:10

Dignitary entrance

11:10 - 11:20

**Keynote address
The role of Saudi Arabia as a global leader in renewable energy supply: 5-10 year outlook**

- What will it take for large-scale solar, hydrogen production using renewable energy to become economic?
- What type of projects make sense and should be supported?
- Interconnection between renewable sources of energy and technology

11:20 - 11:30

**Keynote address/fireside chat
The mining company of the future**

What will it look like in light of high oil prices, the move into new energy & demand changes? Best practise for incorporating ESG into the DNA of a company

The Region: mineral supply/demand and investment reforms

11:30 - 11:40

Keynote address
Saudi Vision 2030: investment and the energy transition

What investment reforms need to be put in place? Which are being prioritized and why?

11:40 - 11:50

Keynote address
ESG: corporation & competition, setting a level playing field across the value chain to create economic prosperity

11:50 - 12:25

Panel
Marrying global supply with demand: the role of the region in bridging the supply/demand gap for critical minerals: reserves, volumes, scale and risk

Supporting the critical minerals market to promote security of supply, balancing differing costs & technologies for different elements of the net zero economies; ensuring future supply chain resilience

12:25 - 13:00

Panel
Deep dive: Where are the potential mineral hot spots in the region and what can be mined?

- Minerals of new interest in the energy transition
- What types of geological features to look for?
- Local resources vs imports

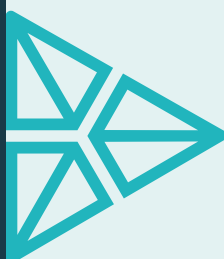
13:00 - 14:00

Networking Lunch

	Auditorium Centres of excellence: finance and exploration	Marketplace 1 Decarbonizing the mining value chain	Marketplace 2 Country spotlights	Venue tbc Tech spotlights
14:00 - 14:40	<p>Debate of the day Generating a new age of exploration in the region</p> <p>What are the different routes to secure exploration rights, a mining licence and operate in SA: where are the risks and opportunities?</p>	<p>Panel Case studies: Innovations for decarbonising the footprint of a mine</p> <p>From ESG to renewables, infrastructure to closing a mine - what initiatives can be set up to ensure the sustainable life cycle of mining</p>	<p>14:00 - 14:05 Welcome remarks</p> <p>14:05 - 14:40 Panel Your country, your future: Mining's contribution towards social transformation</p> <p>14:40 - 15:20 Saudi Arabia workshop on mining law</p> <p>Update and challenges; is the government an enabler or competitor?</p>	<p>14:00 - 14:05 Welcome remarks</p> <p>14:05 - 14:40 Panel Innovative and sophisticated technology</p> <p>What can this look like in the region? Closing the gap between concepts and capability</p>
14:40 - 15:00	<p>Keynote/Fireside chat Investors and customers reimagining mining: Driving change, breaking down stereotypes and investing in the industry</p> <p>Standards, policy and legal framework</p>	<p>Keynote/Fireside chat Resource efficiency, recycling, substitution and the circular economy</p> <p>Showcasing recycling technologies to further circularity in the steps towards net zero</p>	<p>15:20 - 15:30 Country spotlight 1</p> <p>15:30 - 15:40 Country spotlight 2</p>	<p>14:40 - 14:50 Tech talk 1</p> <p>14:50 - 15:00 Tech talk 2</p>

<p>15:00 - 15:40</p>	<p>Panel Innovative types of financing structures to attract and access capital</p> <p>Exploring debt, equity and impact investing for funding projects - exploring sustainability linked loans, the public/private split and potential initiatives to enable investors to take higher risk investments</p>	<p>Panel Bio diversity: the role of mining in protecting & enhancing bio diversity</p> <p>Maintaining habitat integrity, encouraging mining operators to become actors of bio diversity, minimising conflict socially and environmentally</p>	<p>15:40 - 15:50 Country spotlight 3</p> <p>15:50 - 16:00 Country spotlight 4</p> <p>16:00 - 16:10 Country spotlight 5</p> <p>16:10 - 16:20 Country spotlight 6</p>	<p>15:10 - 15:20 Tech talk 4</p> <p>15:20 - 15:30 Tech talk 5</p> <p>15:30 - 15:40 Tech talk 6</p>
<p>15:40 - 16:10</p>	<p>Keynote/Fireside chat Saudi Arabia: developing and growing investment in minerals value chain</p> <p>Creating a vibrant investment platform that is self-sustaining and risk taking; setting up vehicles for investment; creating a carbon credit exchange the Kingdom</p>	<p>Keynote/Fireside chat Water, water everywhere and not a drop to spare</p> <p>What technologies are out there to encourage processing with less/no water? Strategies for procuring more water plants, using sewage water and treating it; relying less on boreholes</p>	<p>16:20 - 16:30 Country spotlight 7</p> <p>16:30 - 16:40 Country spotlight 8</p> <p>16:40 - 16:50 Country spotlight 9</p>	<p>15:40 - 15:50 Tech talk 7</p> <p>15:50 - 16:00 Tech talk 8</p> <p>16:00 - 16:10 Tech talk 9</p>
<p>16:10 - 16:50</p>	<p>Panel Juniors: Attracting and maintaining a vibrant exploration sector</p> <p>Steps to encourage boots on the ground and to establish an ecosystem of investment</p>	<p>Panel Boosting hydrogen in mining</p> <p>Opportunities and challenges for integrating hydrogen into vehicle fleets; (remote) mining microgrids; modelling hydrogen options in mine development; infrastructure costs, technology and electrolyser innovations</p>	<p>16:50 - 17:00 Country spotlight 10</p> <p>17:00 - 17:10 Country spotlight 11</p>	<p>16:10 - 16:20 Tech talk 10</p> <p>16:20 - 16:30 Tech talk 11</p> <p>16:30 - 16:40 Tech talk 12</p> <p>16:40 - 16:50 Tech talk 13</p>
<p>16:50 - 17:30</p>	<p>Panel The biggest issues facing mining that technology can solve in the region</p> <p>Innovations for decarbonization, automation, tailings management, grade recovery, productivity, cost containment connectivity</p>	<p>'Deep dive' on energy and technology minerals and metals: lithium, cobalt, copper, uranium (non-enriching), rare earths</p> <p>Value chain opportunities and challenges in the region</p>	<p>17:10 - 17:20 Country spotlight 12</p> <p>17:20 - 17:30 Country spotlight 13</p>	<p>16:50 - 17:00 Tech talk 14</p> <p>17:00 - 17:10 Tech talk 15</p> <p>17:10 - 17:20 Tech talk 16</p> <p>17:20 - 17:30 Tech talk 17</p>
<p>17:30 - 17:40</p>	<p>Chair: call for action</p> <p>Summaries and calls to action</p> <p>(eg: Regional co-ordination on centres of excellences)</p>	<p>Chair: call for action</p> <p>Summaries and calls to action</p> <p>(eg: Regional co-ordination on centres of excellences)</p>	<p>Chair: call for action</p> <p>Summaries and calls to action</p>	<p>Chair: call for action</p> <p>Summaries and calls to action</p>
<p>17:40 - 17:45</p>	<p>Chair's closing remarks</p>	<p>Chair's closing remarks</p>	<p>Chair's closing remarks</p>	<p>Chair's closing remarks</p>
<p>End of day 1</p>				
<p>Gala Dinner</p>				

MAIN CONFERENCE DAY 2



Future Minerals Forum 2023
12th January
King Abdulaziz International Conference Centre
(KAICC)

09:00 - 09:10

Master of Ceremonies Welcome Address

The future of mining's contribution to society and the workforce

09:10 - 09:50

Panel

Women in mining: What are the major economic trends that are transforming large-scale mining across the globe and how will they affect women working in the sector and related supply chains?

Rapid technological advances, skills and training, mining more responsibly, rising demand for critical minerals for a low-carbon energy transition

09:50 - 10:10

Fireside chat

How does mining become a development partner to catalyse and accelerate prosperity for communities beyond the mine?

The mining company of the future - a materials provider not just minerals provider?

Creating a resilient and responsible critical minerals value chain

10:10 - 10:20

Keynote/fireside chat:

Hydrogen and renewables: integrating alternate and renewable energies into the value chain

Actions and technology to support climate smart mining

10:20 - 10:50

Panel

Hydrogen as part of mining's decarbonisation pathway

Analyzing the commercial viability of hydrogen applications, green H2 costs, scaling up fast enough to meeting mining's carbon commitments; what will drive the uptake of hydrogen as a part of mining's overall decarbonisation strategy?

10:50 - 11:00

Keynote/fireside chat:

OEMs insight: Investing in the mining supply chain: securing a mid-long term future

Technological innovations, investment, due diligence and meeting electrification targets

11:00 - 11:30

Panel

Creating new supply chains and patterns of trade for minerals

As supply chains are ripe for reorganisation and integration, how can the region contribute towards diversification outside China? Lowering the carbon footprint, the circular economy, cost and controlling the offtake

11:30 - 11:40

Keynote/fireside chat

Topic TBD

11:40 - 12:10

Panel
Towards certification: lifting the bar on sustainability performance in the region

Increasing transparency, accountability and traceability in the critical minerals supply chain - what needs to happen to meet customer and consumer expectations?

Innovations in technology

12:10 - 12:20

Keynote/fireside chat
Emerging transformative technology

Providing low carbon energy to mining and the value chain: jobs & skills, cost savings, storage and community support

12:20 - 13:00

Panel
Technology showcase: the benefits and pitfalls of new technology: will it jeopardize mining's social license to operate?

- Automation and drones, artificial intelligence, the Internet of Things, smart sensors and machine learning– how will they boost productivity?
- Training the next generation of workers

13:00 - 14:00	Networking Lunch			
	Auditorium Value chain development & ESG	Marketplace 1 Digital and technology insights	Venue tbc Mining Hubs Showcase	Centres of excellence: Communities, skills and the future workforce
14:00 - 14:40	<p>Panel Supply chain innovation in an inflationary, decarbonising environment</p> <p>What shifts need to happen to meet governmental climate targets, efficiencies, cost, supply/demand and ESG?</p>	<p>Panel Disruptive technologies to drive the mining revolution</p> <p>How is the coming wave of tech different in speed and quality? From making pellets for steel without heat to technologies that use less water, are cheaper and modular</p>	<p>14:00 - 14:10 Welcome remarks</p> <p>14:10 - 14:25 Keynote presentation</p> <p>14:25 - 14:40 Investor presentation</p> <p>14:40 - 14:50 Mining hub 1</p>	<p>Panel Where are the benefits of mining for communities?</p> <p>Exploring the positive and negative impact an efficiently run, sustainable mine has on a community: jobs, health, education</p>
14:40 - 15:00	<p>Fireside Chat The downstream value chains</p> <p>Beneficiation, resource nationalisation and becoming more self-sufficient: finding common ground between government and private sectors</p>	<p>Fireside Chat Digital insight: understanding how AI improves exploration efficiency by leveraging big data</p> <p>Generating the highest probable drill targets: costs, benefits, safety and challenges - closing the gap between concept and capability</p>	<p>14:50 - 15:00 Mining hub 2</p> <p>15:00 - 15:10 Mining hub 3</p>	<p>Fireside Chat Balancing the triangle of trust between communities, government and investors</p> <p>Community empowerment, participation and ownership. Local content and procurement, indirect job opportunities for women in regional communities</p>
15:00 - 15:40	<p>Panel Building out the battery supply chain</p> <p>Capitalising on the electrification revolution - ensuring efficiency, reliability, costs and durability</p>	<p>Panel Tech insight: The application of satellite remote sensing in the mining sector</p> <p>Understanding the technology and benefits; ensuring water resources and evaporation are efficiently monitored and how it can complement TSF monitoring programs</p>	<p>15:10 - 15:20 Mining hub 4</p> <p>15:20 - 15:30 Mining hub 5</p> <p>15:30 - 15:40 Mining hub 6</p> <p>15:40 - 15:50 Mining hub 7</p>	<p>Panel The Saudi workforce of the future: where will people come from?</p> <p>Diversity, inclusion & equality: supporting Saudization. Universities creating career pathways; increasing access to courses for women and non-urban young people;</p>

<p>15:40 - 16:10</p>	<p>Fireside chat Digital insight: providing low carbon energy to mining and the value chain</p> <p>Storage, cost savings and community support</p>	<p>'Deep dive' on bulk commodities: iron ore, 'green steel', aluminium</p> <p>Value chain development opportunities and challenges in the region</p>	<p>15:50 - 16:00 Mining hub 8</p> <p>16:00 - 16:10 Mining hub 9</p> <p>16:10 - 16:20 Mining hub 10</p>	<p>Fireside chat Show stopper</p> <p>10-year analysis report: Demonstrating the contribution of women to the mining sector: Enhancing diversity and inclusion in companies; identifying direct and indirect jobs; learning from women's experiences in other mining countries</p>
<p>16:10 - 16:50</p>	<p>Panel Steps for encouraging the growth of mining services companies in Saudi Arabia</p> <p>What role will they play to uplift the mining sector?</p>	<p>Panel Tech insight: airborne geophysical methods</p> <p>Innovative technology to minimize environmental impacts of mining and to provide geotechnical engineering and environmental solutions to the industry</p>	<p>16:20 - 16:30 Mining hub 11</p> <p>16:30 - 16:40 Mining hub 12</p> <p>16:40 - 16:50 Mining hub 13</p>	<p>Panel What skills are needed as the region transitions away from oil & gas?</p> <p>From senior management to mine operations - how to train the labour force of the future</p>
<p>16:50 - 17:00</p>	<p>Chair: call for action</p> <p>Summaries and calls to action</p>	<p>Chair: call for action</p> <p>Summaries and calls to action</p>	<p>Chair: call for action</p> <p>Summaries and calls to action</p>	<p>Chair: call for action</p> <p>Summaries and calls to action</p>
<p>17:00 - 17:15</p>	<p>All speakers and delegates to head back into the Auditorium for future predictions and closing remarks</p>			
<p>17:15 - 17:50</p>	<p>Spotlight on: predicting the future</p>			
<p>17:50 - 18:00</p>	<p>Chair's closing remarks 2 x ministers</p>			
<p style="text-align: center;">End of day 2 Future Minerals Forum</p>				

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FUTURE MINERALS FORUM

10 | 12

January 2023
Riyadh, Saudi Arabia

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