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# PAKISTAN The Mineral Marvel





Pakistan is poised to become a global mining powerhouse, with its rich and diverse mineral reserves offering immense potential for growth and investment.

The Tethyan Metallogenic Belt makes the country home to one of the world's most significant porphyry copper-gold mineral zones. In addition, extensive geological surveys highlight vast, untapped reserves of rare earth elements, industrial minerals, non-metallic resources, and gemstones across the country.

The government has made a firm commitment to unlocking Pakistan's mining potential at both macro and micro levels. With an attractive legal and fiscal framework designed to foster investment, the country is ready to offer high-return opportunities to investors. This environment coupled with a focus on policy and infrastructure development initiatives provides a solid foundation for long-term partnerships and growth.

Mining promises to be a transformative industry for Pakistan and it is an opportune time for investors to capitalize on this and secure a stake in this sector.

Pakistan has a history of success in the extractive industry with oil and gas upstream businesses being at the forefront.


Key successes such as the discovery of the giant gas field at Sui in Balochistan in 1952 followed by accelerated exploration and production of hydrocarbons in subsequent decades enabled various state-owned companies to grow into sizeable enterprises. Some of these companies with their rich legacy, skilled human resource base, established supply chain systems and robust processes have also entered partnerships in joint venture projects beyond the borders of Pakistan.



These state-owned players are now expanding their experience in extractive upstream segments to focus on growing the mining sector.

With a geology blessed by natural resources, to a government committed to incentivising investors so Pakistan's minerals can be tapped for commercial advantage, to the players in the Pakistan market who are second to none in their experience and man-power – the time for mining to takeoff in the country seems ripe.

Mining promises to be a transformative industry for Pakistan and it is an opportune time for investors to capitalize on this and secure a stake in this sector.





# Tethyan Belt

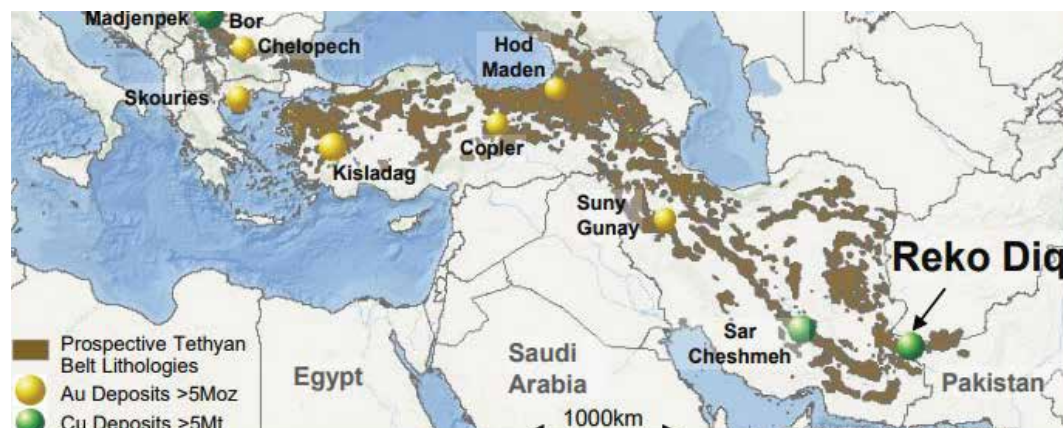
Promise In Pakistan

This mineralized zone endowed by the Tethyan Belt encompasses about 2,200 kilometres of the country.

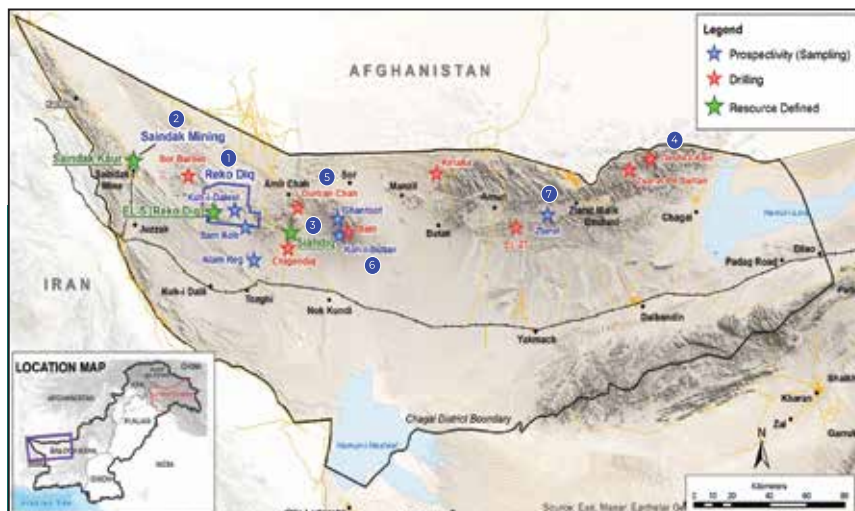


The Tethyan Tectono-magmatic and Metallogenic Belt creates a globally recognized porphyry copper-gold and base metals mineralized zone through the areas it passes. Closer to home, the Tethyan Belt straddles western Pakistan making the country home to one of the world's most significant porphyry copper-gold mineral reserves.

A map of the Tethyan Belt showcasing lithologies with prospective reserves of gold and copper, illustrates that most of the prize is located in the Balochistan province of Pakistan. Consisting of the Chagai Magmatic Arc, this area carries promising geology with commercially feasible prospects through which numerous exploration and development mining projects can be founded.







## Projects in the Chagai Magmatic Arc:

Projects	Approx. Ore (Mt)	Commodity
Reko Diq (incl. Tanjeel)	6,400	Cu, Au
Saindak	400	Cu, Au, Ag
Siahdiq	650	Cu
Dasht-e-Kain	350	Cu, Au, Ag
Durban Chah	300	Cu, Au
Koh-i-Sultan	n.a.	Cu, Au
Ziarat Pir Sultan	200	Cu, Au, Mo

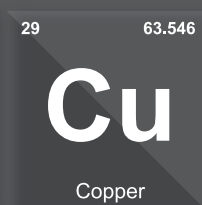
## Estimates of some mineral reserves:

Untapped reserves of Copper stand well in excess of

**7,000  
Metric Tons**

Gold and Silver stand at

**50 Million  
Ounces each**

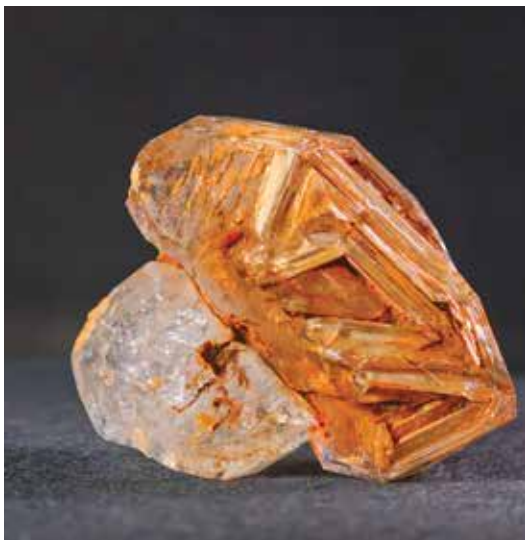
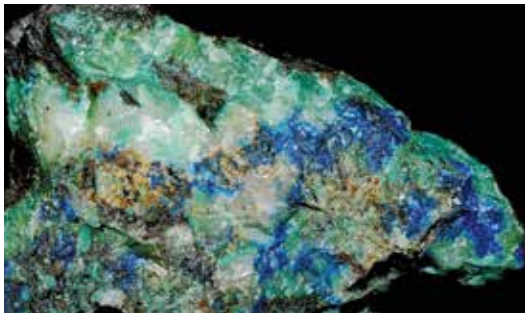
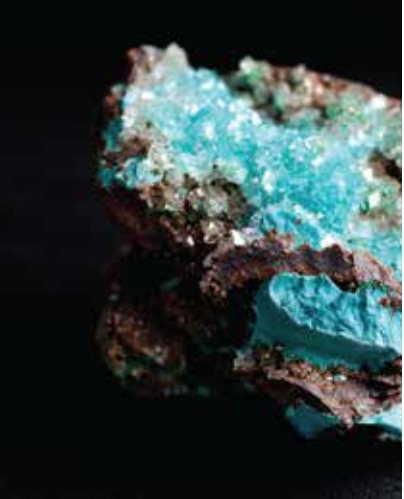


**This is also where Reko Diq, one of the largest global copper-gold fields is located.**

**Endowed with huge mining potential Pakistan holds one of the world's largest copper fields, apart from gold, lead, nickel, barite, iron ore, bauxite, graphite and endless other minerals.**







# Beyond the Belt

More than Metals

**Extensive geological surveys across all provinces of Pakistan reveal vast, untapped reserves of rare earth elements, industrial minerals, non-metallic resources and gemstones across the country.**

These rich and diverse mineral reserves offer immense potential for investment in operations focused on extraction and possibly large-scale processing of minerals used by domestic and regional industries.

Despite the abundance of sub-surface mineral wealth, Pakistan has not earned proportionate commercial benefits from the exploration or production in its mining sector. Mining remains an open playing field today – promising to work for the mutual benefit of investors and operators.



# Key Minerals



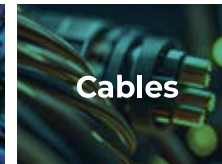
## Industrial

Rock Salt, Limestone, Gypsum, Dolomite, Barite, Bentonite, China, Clay, Fireclay, Phosphate, Silica Sand



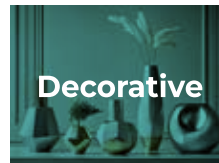
## Metallic

Chromite, Copper, Gold, Silver, Iron, Lead-Zinc



## Dimension Stones

Marble, Granite, Sand Stone



## Gemstones

Emerald, Ruby, Tourmaline, Topaz, Aquamarine



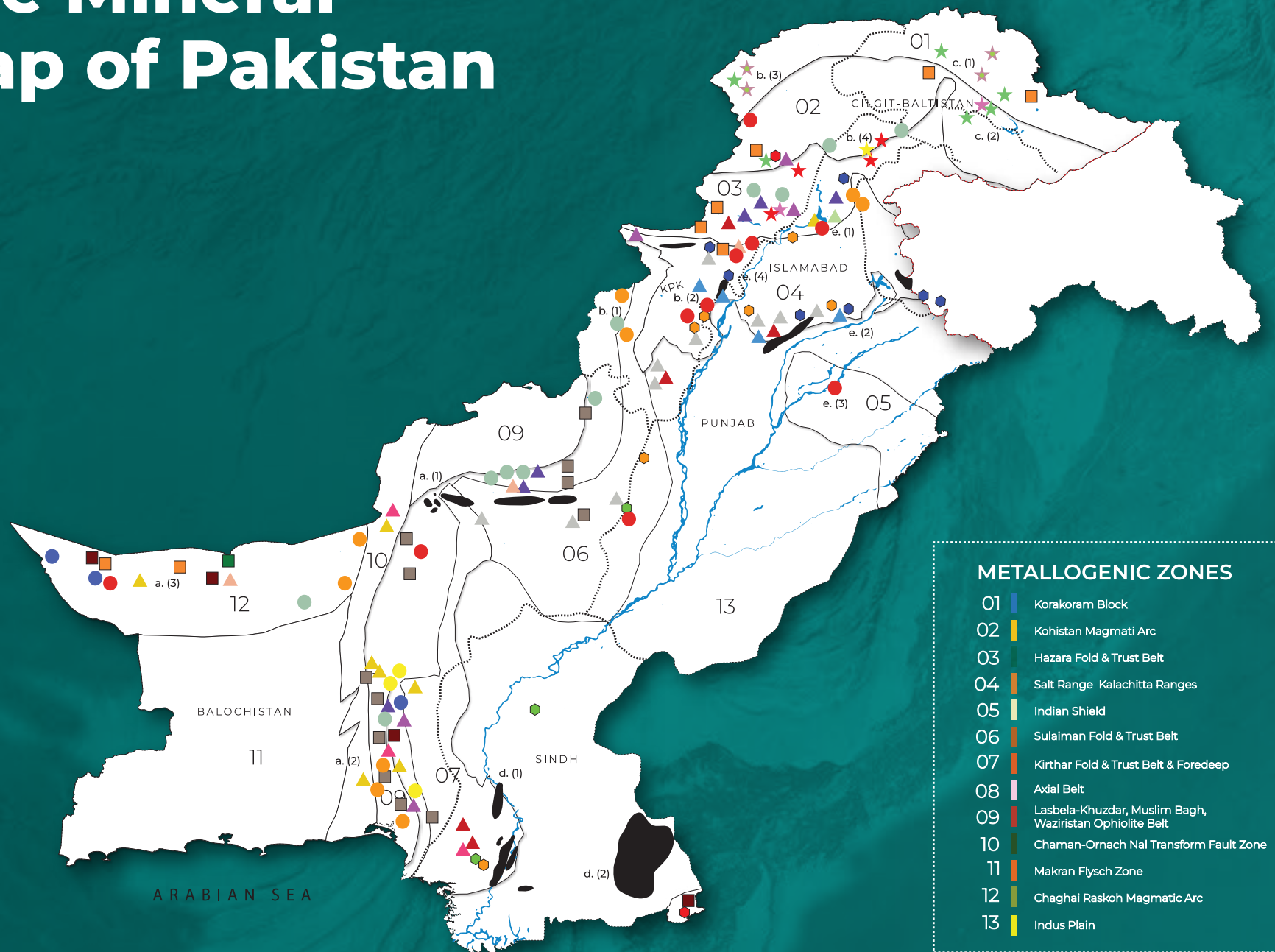
## Energy

Coal









# The Mineral Map of Pakistan












## METALIC MINERALS

-  Chromite
-  Manganese
-  Iron ore
-  Copper / Gold
-  Zinc-Lead

## NON-METALLIC MINERALS DIMENSION STONES

-  Aragonite / Marble
-  Granite
-  Onyx marble
-  Fossiliferous/re-crystalized Limestone

## CHEMICAL, FERTILIZER & INDUSTRIAL MINERALS

-  Barite (Barytes)
-  Dolomite
-  Feldspar
-  Gypsum (including anhydrite)
-  Magnesite
-  Phosphate
-  Rock salt
-  Silica sand
-  Soapstone / Talc

## CLAYS

-  Bentonite
-  China clay
-  Fire clay
-  Fuller's earth

## GEMSTONES

-  Emerald
-  Peridot
-  Ruby
-  Topaz
-  Tourmaline
-  Aquamarine

## FUELS

-  Coal

- a. (1) **Qilla Saifullah/  
Muslim Bagh:**  
Metallic/Industrial
- a. (2) **Lasbela/Khuzdar:**  
Metallic/Industrial
- a. (3) **Chagai:** Metallic

### Balochistan Mineral Resource Corridors

**Copper:**  
6.5 Billion Tons Reserves  
• Saindak Copper  
**Potential : 400 Million Tons**  
• Reko Diq Copper/Gold  
**Potential : 5.5 Billion Tons**

**Barite:**  
14 Million Tons Reserve

**Limestone:**  
3 Million Tons per year  
Production

**Chromite:**  
500 Million Tons Reserves

**Lead/Zinc:**  
• Duddar Project  
**GoB/PMDC/MCC China**  
• BME Lead/Zinc Feasibility  
Study on-going

- b. (1) **South Waziristan:**  
Metallic
- b. (2) **Karak:** Industrial
- b. (3) **Chitral:** Metallic
- b. (4) **Swat:** Gemstone/  
Industrial

### Khyber- Pakhtunkhwa Mineral Resource Corridors

**Gemstone:**  
• Swat Emerald Mines –  
Best Emerald in the  
world.

**Granite:**  
Reserves: 3 Billion Tons

**Limestone:**  
• 7 Cement Plants  
• 5 new blocks auctioned  
for new Cement Plants

**Metallic:**  
• Geo Chemical Survey in  
Malakand & Chitral has  
indicated vast potential

**Copper:**  
• Reserve under  
exploration

### GB & AJK Mineral Resource Corridors

**Gemstone:**  
• Great Potential of multiple  
Gems in Rakaposhi, Hunza,  
Skardu, Sost, Neelam  
Valley, Muzaffarabad.

**Metallic:**  
• Rock Gold Potential  
• Placer Gold Potential  
• Antimony Potential &  
Molybdenum

**Limestone:**  
• Good Potential for Cement  
Raw Material

- c. (1) **Gilgit:** Gemstone
- c. (2) **AJK:** Gemstone & Industrial

### Sindh Mineral Resource Corridors

**Coal:**  
Reserves: 185 Billion Tons  
Annual Production: 4 Million

**Granite:**  
Reserves: 26 Billion Tons

**Limestone:**  
5 Cement Plants

- d. (1) **Lakhra:** Energy
- d. (2) **Thar:**  
Energy/Dimension Stone

### Punjab Mineral Resource Corridors

**Limestone:**  
Reserves: Inexhaustible

**Rock Salt:**  
Reserves: Inexhaustible

**Iron Ore:**  
Reserves: Inexhaustible

**Silica:**  
134 Million Tons Reserves

- e. (1) **Attock:** Industrial
- e. (2) **Salt Range:** Industrial
- e. (3) **Chiniot:** Metallic / Iron Ore
- e. (4) **Kalabagh:** Metallic / Iron Ore



# Pink Salt Resources

**Pakistan's salt range contains the world's second largest salt mine at Khewra.**

- Salt is a naturally occurring crystalline mineral that forms in sedimentary environments, typically in dry lake beds, salt flats, and underground deposits.
- Rock salt, also known as halite, is a type of salt mineral composed primarily of sodium chloride (NaCl).

• Pink Rock salt, also known as Himalayan salt, is a type of salt that is primarily mined in the Khewra Salt Mine in Pakistan.



**Estimates of Pink Salt reserves in the country stand at over 50,000 Metric Tons.**

- Salt is a widely traded commodity, and various types of salt are traded internationally.
- Pakistan's Pink Rock Salt is unique due to its natural pink colour having calcium, iron, potassium and magnesium contents in its composition as compared to other rock salts
- Pink rock salt can be used in food, making decorative items, de-icing roads, and for industrial purposes.

**Pakistan is looking to grow its share within the**

**\$12 bn** rock salt global trade through entering into JV's with established players.



## Projects Awaiting Investment

### Pink Salt Crushing and Packaging facility

This is a proposed joint venture project to set up a state-of-the-art pink rock salt crushing and packaging facility for export products. With an expected output of 100,000 tonnes per year this facility will be located in the Special Economic Zone (SEZ) and would be the first advanced facility created through a public-private partnership. This crushing and packaging facility promises high-returns with guaranteed incentives. An estimated capital cost of US\$ 60 at initial stage is required.



### Soda Ash plant

Another project ready for investors is the establishment of a soda ash plant with an estimated capital cost of US\$163 million. This plant shall meet the demand of soda ash in the local and international market. Soda ash is utilized in glass, paper, detergent manufacturing and in the textiles, chemical and culinary industries. One of the many plus points for this project is the use of pre-existing leases that PMDC owns, giving investors a competitive edge.







# **The Pakistan Advantage**

## The Pakistan Advantage

Pakistan has many other advantages that promise cost-benefits and strategic advantage to operators.

Pakistan showcases positive indicators for long-term gains for investors in the mining sector. While the government and state machinery maintain a strong focus on ensuring rapid growth in the sector, Pakistan's macroeconomic indicators support these aspirations.

### Favorable Demographics

Demographics is one of Pakistan's greatest assets. Like its minerals the young population of the country is also untapped and keen to grow to its full potential. The large population and its median age translate as valuable human resource which, if given the requisite training can be of tremendous abenefit to operators.

**The government of Pakistan under the visionary leadership of the Prime Minister and strategic and operational support of the Special Investment Facilitation Council (SIFC) remains committed to facilitating global investors in the mining sector.**

**Pakistan has the 5th largest population in the world projected at 251.27 million with 20.8 being the median age.**

### Barrick building capacity amongst Baloch youth for operating Reko Diq

Demographics work in favour of investors looking for a young workforce and development of the Reko Diq mine in Balochistan bears testament to this.

### Engaging Local Talent

Today an international mining company such as Barrick which is a joint-venture partner with various government entities for the Reko Diq project shares that about **77%** of its workforce belongs to Balochistan - the province where the Reko Diq project is situated in. They are capitalizing on the untapped human resource potential by initiating education and skills-training programs catering to the mining business and have sent two cadres of competent Baloch graduates to their international locations on a training program.



A young female Pakistani graduate trainee learning how to operate mining equipment in Argentina on a program sponsored by Barrick. (Photo courtesy RDMC)





The first batch of Baloch graduate trainees with colleagues in Argentina at a Barrick operations site.  
Photo courtesy: RDMC

Remittances  
between US  
**\$28-30**  
billion coming into  
Pakistan with an  
upward increase likely.



**Pakistan Telecommunication  
Authority** shared that there is now  
over **91%** cellular coverage.

This highlights effective  
communications network,  
even across remote regions  
which is an advantage for any  
business.



## In-country Port Capacity

Availability of two ports, one of  
which is a deep-water port,  
supplements the geographical  
location of Pakistan, providing  
offtake opportunities to  
international markets.





## Established banking sector

Pakistan has an established banking sector coupled with a mining-centric fiscal regime which is specifically designed to attract investment. This serves investors and operators as well as giving Pakistan a commercial edge to exploit its natural resource base.

## Strategic location of Pakistan with proximity to regional commercial hubs

The geographical location of Pakistan facilitates connectivity to South Asia, Central Asia and the Middle East and therefore provides unparalleled access to regional markets.







# **Commitment by the Government**

## The Special Investment Facilitation Council (SIFC)

The Special Investment Facilitation Council (SIFC) was formed in 2023 with a particular focus on attracting investment in earmarked sectors with mining being included amongst those sectors.

The SIFC acts as a single window for 'multi-domain' cooperation in relevant field with GCC countries and global players from the wider world to enable an investor-friendly environment in Pakistan.

SIFC focus on mining led to Pakistan hosting its first international event on mining.

- Pakistan Minerals Summit held on 1<sup>st</sup> August 2023, brought together diverse stakeholders from within the country and beyond.
- Included representation from senior executives of global mining giants such as Barrick, Rio Tinto, BHP Billiton, Ma'aden etc.
- Panel on '**Ministerial Dialogue**' had Ministers from Saudi Arabia, Azerbaijan and Pakistan discussing the way forward on policy developments for mining.
- International investment houses such as Rothschild, Jeffries and PIF were present to share their insights.
- Pakistan is gearing up to host its second Mining Conference in **2025**.



### Important stakeholders at the Pakistan Minerals Summit.

The inaugural international mining event, the Pakistan Minerals Summit 2023 received wide coverage in domestic and international media platforms.



**"The Pakistan government's strategic vision, translated into policies – and coupled with steps such as infrastructure development initiatives and an attractive fiscal regime have ONE clear driver – to make this a win-win proposition for investors, operators and the host country."**

Policy Maker PROFILE: Dr. Musadiq Malik – Minister of Energy

Dr. Malik has a diverse skill-set built over two decades of international strategy consulting and serving in the cabinets of three governments in Pakistan. His public service career started in the 2000s and has since spanned across various roles including those of federal minister and advisor.

His postgraduate doctorate and MBA in the USA built credentials and expertise in economics and public policy. His experience in the private sector spans across the globe. Dr. Malik has advised policy makers in the Kingdom of Saudi Arabia, Sultanate of Oman, and Bahrain and others on formulating strategies on economic transformation, energy sustainability, industrial development, labour reforms etc.







# Pakistan Means Business

**The Government of Pakistan has never been more serious about streamlining the framework and incentivizing this sector.**

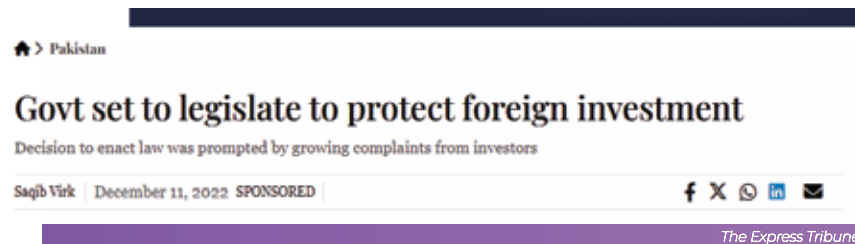
In 2022 legislation in the form of the Foreign Investment (Promotion and Protection) Act was ratified by the upper and lower houses of parliament and went on to build investor confidence and secure their investment in the country.

Other than this law being passed the Government of Pakistan has put in place incentives that benefit operators and investors, specifically in the mining sector. These include introducing a fiscal regime that attracts investment through tax breaks, duty exemptions and flexibility on ownership of mining assets.

## **Tangible steps that illustrate the government's commitment include incentives already in place:**

- Introducing legislation such as Foreign Investment Promotion and Protection Act 2022.
- Tax breaks for operators.
- Duty exemptions on mining related equipment.
- Flexibility on foreign ownership.

## Some media headlines sharing the ratification of the Foreign Investment (Promotion and Protection) Act 2022





## Legislation and Policy Development

- Mining legislation is being reviewed by global legal experts engaged by the Government of Pakistan.
- Focus on putting in place a favorable legal framework that creates 'mutual advantage' for the investors and operators as well as the country and local communities.
- Harmonization of existing mining laws and regulations especially between the provinces and the federal government.



## Consolidated platforms for mining data

- Creation of a National Mineral Data Center to facilitate information availability for interested players and investors.

## Geological mapping

- Advanced geological surveys have and continue to be undertaken to map out potential blocks which can be awarded to interested investors.

## Curriculum Development to create mining workforce

- Work is being done on developing mining-centric curriculum modules for existing higher education institutions.
- Introduction of vocational trainings and skills-courses after consultative sessions with government and non-governmental stakeholders in the mining sector.



## Creation of Special Economic Zone (SEZ) & Export Processing Zone (EPZ)

- Government has established trade zones to promote economic growth and enhance the overall competitiveness of the areas earmarked for mining.
- One of the main drivers was to create an environment conducive to foreign investment and simultaneously incentivize growth in the mining sector.



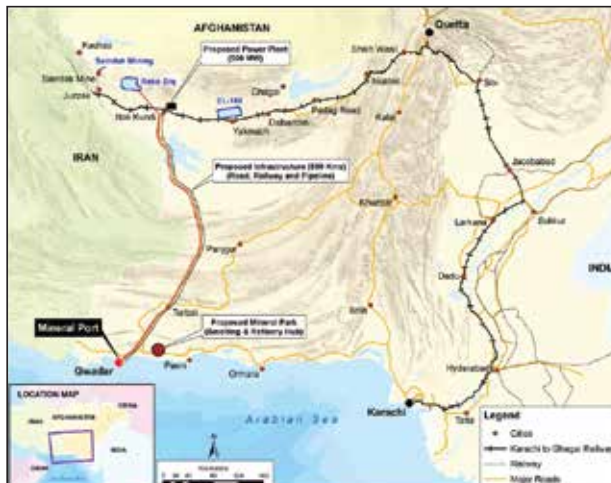
## Infrastructure Development

To further serve the geographical advantage the government has placed a special emphasis on infrastructure development.

### Supplementing existing networks to create connectivity for operators and investors.

This includes:

- Enhancing Railway connectivity between Gwadar and Karachi ports and Chagai and other areas along the metallic mineral belt.
- Undertaking overhauls on highway routes to establish safe and efficient transport corridors to and from mining operations in far flung areas.



### Other infrastructure development projects in the pipeline include:

- Setting up smelting and refining and processing industries for vertical integration within the mining sector.
- Developing Gwadar and Karachi port facilities to serve mineral exports and imports of necessary equipment for operators.
- Fast track development of traditional and Renewable energy supply projects to power mining operations across remote areas.
- Create platforms to encourage public-private partnerships for infrastructure, power supply and mining projects.





# **SUSTAINABILITY** **Going Green**





## Mining is more relevant than ever given this global shift and exponential demand for cleaner energy and cleaner technology.

The global shift towards clean energy technologies creates a heavy reliance on critical minerals. Critical minerals are integral for the transition from fossil fuels to modern technology, especially with the advent of electric-powered engines. Critical minerals used in transport technologies include copper, lithium, nickel, cobalt, manganese, chromium, molybdenum, zinc, silicon, rare earths, and others. Similarly, minerals such as lithium, nickel, cobalt, manganese and graphite are required for energy storage and a variety of batteries.

Alternative energy sources create a demand for rare-earth elements such as neodymium, praseodymium, terbium and dysprosium etc. while renewable power networks rely on aluminum and copper.

The quantum of critical minerals required for clean energy technologies is also larger than traditional energy drivers. In the run up to the year 2050 a 500% increase in the demand and production of minerals such as lithium, cobalt and graphite is predicted.



Metallic minerals such as **Copper** with its superior thermal and electrical conductivity and recyclability makes it a 'green' metal – a metal of value as the world turns towards sustainability and renewable energy.



### Green Minerals

Pakistan holds large deposits of copper along with pockets of rare earth metals such as **Lithium** which hold significance with the global shift towards renewables.



### Green Technology

Opportunity to deploy green technology is an attractive proposition for most global players. Since mining is an upcoming sector with a structured growth trajectory many projects offered to investors are Greenfield projects without any obsolete existing systems in place.

### Opportunity to harness renewable energy

Apart from the presence of green metals there is tremendous opportunity for mining operators to tap into available renewable resources to fulfil the power demands of project sites and camps. This feeds into global climate change initiatives and makes use of existing wind corridors and solar which are both untapped sources of power for both Green field as well as Brown field projects.





# **PAKISTAN: A Premier Destination for Mining Investment**



### Strategic Location & Infrastructure

- Situated at the crossroads of Asia and the Middle East, Pakistan provides access to vast markets with robust infrastructure such as railways and road networks essential for large-scale mining projects.
- Power availability, including renewable energy, further enhances its investment appeal.



### Abundant Untapped Mineral Resources

- Pakistan hosts vast reserves of critical minerals crucial for energy transitions, including those in the Chagai Magmatic Arc in Balochistan, part of the renowned Tethyan Belt.
- These areas have demonstrated successful and economically viable copper and gold mining projects.



### Competitive Advantages for Global Investors

- Ample port capacity, including deep-sea ports, facilitates international trade.
- Access to financial markets ensures funding availability for major projects.
- A skilled and competitive labor force is readily available to meet the industry's demands.
- The country's focus on modern, green technologies eliminates reliance on outdated, inefficient practices.



### PAKISTAN: A Premier Destination for Mining Investment



### Players with Experience and Expertise

- Pakistan boasts a long-standing history in the extractive industries, supported by experienced local and international stakeholders.



### Government Commitment & Vision

- The government actively supports increased Foreign Direct Investment (FDI) through favorable fiscal terms, one-window facilitation, and policy initiatives promoting equity, employment, and sustainability.



### Supportive Legal and Fiscal Framework

- The government has established a **stable and attractive fiscal regime** to incentivize investment, ensuring a business-friendly environment for reputable global mining companies.
- Major projects, such as the Reko Diq copper mine, underscore the country's commitment to fostering investment security.
- Financial support is available from domestic and international institutions, including DFIs and IFIs.





# **Realising Potential through Players & Collaboration**



# Collaborative growth to unlocking the potential of Pakistan's mining sector

Pakistan's mining sector thrives on collaboration between local expertise and international players, backed by a strong financial framework. This synergistic approach ensures the country remains a premier destination for mining investment and development.

## Thriving Industry Backed by Domestic Expertise

Pakistan's mining sector is supported by a rich legacy of expertise in extractive resources, an established supply chain network, and a skilled labor force. National organizations play a pivotal role in developing and expanding the local mining infrastructure. Leading domestic stakeholders driving the growth of this sector include:



## Global Collaboration with International Experts

International players are essential partners, bringing cutting-edge technology, expertise, and sustainable practices to Pakistan. Their contributions drive growth in skills development, advanced mining techniques, and knowledge transfer. Key international players include:



## Robust Financial Ecosystem

Pakistan's mining sector benefits from strong access to financing from both domestic and international institutions. This financial backing ensures seamless development of large-scale projects. Key financial partners include:







# Social Investment

Companies operating in the extractive sector such as oil and gas and mining often focus on sustainable long-term CSR goals. More often than not, blocks for mining are awarded in remote areas where local communities have limited access to basic amenities and facilities. Any community development initiatives taken therefore create a visible and strong impact. This not only helps build a strong and positive reputation for the operators on ground and in-country but it goes on to add value to brands in international markets where many companies are listed.

## Sectors for sustainable social investment

- Creating access to quality **Healthcare**.
- Facilitating **Education** ranging from primary schools in some remote areas to Higher-Secondary schools,
- **Capacity Building** for improved income generation through vocational training courses, scholarships and merit-driven corporate trainee programs.
- Apart from these sectors, businesses consider local community needs and implement tailor-made solutions to improve the quality of lives of the local population.
- These can include projects for water-supply, natural disaster relief efforts, infrastructure uplift projects to help farm to market access etc.



## Partnerships for Implementing Social Investment Solutions

Pakistan has a large base of local and internationally known and registered Non-Governmental Organisations (NGOs) that businesses partner with to deliver suitable CSR projects for local communities. Many of these developed NGOs have built-in sustainability in their methodology which ensures a long-lasting legacy for the companies who invest in projects in partnership with them.

Companies in the mining sector have partnered with organisations such as the Indus Hospital and Healthcare Network, The Citizens Foundation (TCF), The Hunar Foundation and various other credible institutions.

## Spotlight on CSR:

Saindak Metals Limited has established a state of the art 'Technical Training Centre' at Dalbandin in district Chagai, which is where they operate their mines. This facility enhances technical capacity in minerals and mining related skills amongst local youth.



Reko Diq Mining Company has set up a similar vocational training centre at Nokkundi town in the same district in partnership with The Hunar Foundation which runs accredited courses in diverse fields including mining-related subjects.



Solar powered primary schools, Reverse-Osmosis plants for the provision of potable water and hospitals managed by the Indus Healthcare & Hospital Network in Chagai are all recent investments made by the stakeholders who will operate the Reko Diq mine in the area.



An aerial photograph of a complex highway interchange with multiple lanes and overpasses. A large, semi-transparent geometric shape, composed of several overlapping triangles in shades of teal, green, and purple, is positioned diagonally across the center of the image. The text 'The Future Looks Good' is overlaid in white on a dark green rectangular background in the upper right quadrant.

**The Future  
Looks Good**