IMIDRO
Five Years of Brilliant Record!

Double Issue
The Art of Communicating
The Business of Promoting
The Moment of Enjoying

International IRAN
The Forum for Partners in Iran's Marketplace
Iran’s Mining Projects Open to Foreign Investors

IMIDRO Exclusive

Mohammadreza Baniasadi Rad, Managing Director of NICIC
Farid Dehghani, Managing Director of Mining Investment Insurance Fund
Seyed Farhad Eslami, Managing Director of Iran Central Plateau Iron Ore Mines Complex
Dr. Ali Asghar Pourmand, CEO of MIDHCO
Dr. Morteza Hashempur, Managing Director of Sangan Iron Ore Complex
Saeed Pirmoradi, Managing Director of Sirjan Iron Ore Complex
Dr. Hassan Khalaj Tehrani, Managing Director of P.G.S.E.Z
Alireza Talari, Managing Director of Mouteh Gold Complex
Hossein Etemad Rezaei, Managing Director & Member of the Board of Arya Transfo-Ghodrat
Farajallah Memari, Chairman of the Board & Managing Director of Arya Transfo-Shargh
Seyed Hossein Ahmadi, Managing Director of Khorasan Steel Complex
Touraj Zare, Head of Iran Alumina Company
Masoud Ghazanfari, Managing Director of Anguran Lead and Zinc Mineral Complex
Vahidollah Jafari, Managing Director of Iran Minerals Production and Supply Company (IMPSICO)
Mohammad Abka, Managing Director of FIE Co.
Hassan Karbaschi, Managing Director of MME
Mohammad Reza Taheri Shahraini, Managing Director of MMTE
Mansoor Yazdizadeh, Managing Director of ESCO
M.Vafaei fard, Managing Director of IMPRC
Hamidreza Askari, Managing Director of Esfordi Phosphate & Zarand Coke Making and Tar Refinery Complex
Hasan Shahrokhi, Managing Director of PEISEZ
Mohammad Kalantari, Managing Director of Sabanour Mining & Industrial Development Co.
Hossein Motesadi Zarandi, Managing Director of Central Alborz Coal Co.
Vajihollah Jafari, Managing Director of Iran Minerals Production and Supply Company (IMP ASCO)
Hossein Babaei, Managing Director of Jalalabad Iron Ore Complex
Dr. Ali Safi, Managing Director of Zarshouran
Seyed Hossein Ahmadi, Managing Director of Khorasan Steel Complex
Mahmoud Nourian, Managing Director of Chadormalu Mining & Industrial Co.
Ali Akbar Naeni, Managing Director of Khor-O-Biabanak Potash Complex
in this issue

IMIDRO Exclusive

Iran’s Mining Projects Open to Foreign Investors ........................................... 4

IMIDRO, Five Years of Brilliant Record! .......................................................... 8

ARYA TRANSFO ............................................................................................. 22

IMIDRO, the Top Organization .................................................................... 25

We Are Self-Sufficient in Domestic Production .......................................... 26

Maad Koush Company .................................................................................. 28

National Iranian Copper Industries Company ........................................... 29

Mining Investment Insurance Fund .............................................................. 34

Chadormalu Mining & Industrial Co. ............................................................. 36

US Schemes for Iran’s Oil, Steel and Copper ............................................... 37

Iran Central Plateau Iron Ore Mines Complex ......................................... 39

Saba Steel Continuous Rolling and Steel Expansion Plan Becomes Operational .................................................. 40

Mobarakeh Steel Group ............................................................................... 41

MIDHCO and Economy of Resistance ......................................................... 42

Middle East Mines & Mineral Industries Development Holding Company ................................................................ 44

Superior Technology .................................................................................... 46

Sangan Iron Ore Complex ........................................................................... 48

Sirjan Iron Ore Complex ............................................................................. 50

Persian Gulf Mining and Metal Industries Special Economic Zone, Is the Safest Place for Investors ........................................... 52

40 Tons Added to Gold Reserves .................................................................... 53

Moutheh Gold Complex ............................................................................... 54

Attainment of Production Capacity of 3.5 Tons of 24 Car at Pure Gold .......................................................... 56

Gov’t, Private Sector United on 55mt Steel Output .................................... 58

Khorasan Steel Complex ............................................................................... 59

Iran Alumina Company ............................................................................... 60

Getting to Know Hormozgan Steel Co. ......................................................... 62

Russia to Invest in Mehdi Abad Mine ............................................................ 64

Mehdiabad Lead and Zinc Industry Pioneers Company ............................ 65

Anguran Lead and Zinc Complex ................................................................. 66

Foolad Technic International Engineering Co. ............................................ 68

Mines & Metals Engineering GmbH ............................................................. 70

Mines & Metals Technological Engineering Co. ......................................... 72

Developing Programs in Iran Mineral Processing Research Center .......... 73

Esfordi Phosphate Complex ....................................................................... 74

Parwan Energy Intensive Industries Special Economic Zone ..................... 76

Central Alborz Coal Company .................................................................... 78

IMPASCO Conducted over 600,000 Meters of Drilling (2002/3 to 2017/18) ........................................................................ 80

Iran Joins Rail Track Manufacturing Countries ........................................... 82

Zarand Coke Making and Tar Refinery Complex ........................................ 83

Jalalabad Iron Ore Complex ....................................................................... 86

Khoor-O-Bibaran Potash Complex ................................................................. 88

Overall Development, on Sabanour Agenda ............................................... 90

Tabas Coal Mines Complex ....................................................................... 92

A Glance at Production of Major Items in Mining ....................................... 94

Share of Mining & Mineral Industries ......................................................... 97

Gratitude

The pictures of this special issue have been taken by Mr. Hossein Arjomand. I would like to thank him for the nice job he has done.

Editor-in-Chief
First Step: Updating of the Strategic Plan

Formulating a strategy to avoid financial and managerial challenges and creating stability

At the beginning of the 11th government (under President Hassan Rouhani), with the presence of Dr. Mehdi Karbasian as CEO of IMIDRO (Iranian Mines and Mining Industries Development and Renovation Organization), order was issued to formulate two strategies: One strategy for the six-month and one-year primary plan of the government, and one strategy for the government’s 4 to 5 year plan that was successfully implemented. These plans were designed to save IMIDRO from the challenges it is facing and to create stability at the organization.

IMIDRO succeeded in preventing dissolution of the National Iranian Steel Company, one of the country’s technical and engineering reserves, and persuading the privatization organization to maintain NISC. Furthermore, IMIDRO delegated the study of the comprehensive steel plan and the implementation of provincial and other steel projects to the NISCO.

IMIDRO also prevented transfer of shares of Iran Minerals Production and Supply Co (IMPASCO) to non-specialized sectors to maintain the company as its executive arm. It also resisted against the transfer of Iran Mineral Activities Insurance Investment Fund (MAIIF) to the private sector and prevented the occurrence of a bitter event for Iranian mines. The insurance fund is a sovereign activity, and, if transferred, one of the important and essential sources of support of the industry would be eliminated and it would deal a big blow on Iran’s mineral structure. By boosting the financial strength of the fund, IMIDRO multiplied its initial capital in order to meet the needs of the miners and activists of the mineral sector of Iran. The fund continued to play a significant role in the exploration, commissioning and employment of small and medium-sized mines in rural areas.

In line with the 2013 state of affairs, through direct negotiations, part of the previous IMIDRO claims was collected. Major mining companies using IMIDRO mines paid a portion of their payables. Underwriting companies also updated part of the previous debt and transferred funds to IMIDRO’s account. The delayed interests of the shares were also demanded and IMIDRO was ready to be redeveloped.

In the new plans, IMIDRO paid particular attention to the private sector, especially NGOs, large mining companies and investors, and used the sector’s elite in its decision makings.

Formulating Strategies for Developing International Relations and Attracting Foreign Investors

Following this trend, and in 2015, order was issued for rewriting and updating of international development strategies and attracting foreign investors in the mining and mineral sector. Four steps were taken in this direction. First, a letter was sent to Es’hag Jahangiri, First Vice President, to make the country competitive in attracting foreign investment. Then a special international strategy formulation working group was formed. More than 20 technical and specialized interviews were conducted with some experts with experience in attracting investors in the mining chain in order to identify the problem. Finally, the study of some successful countries in attracting foreign investment in the mining and mineral sector was put on the agenda.

In these studies, developed countries in mining field such as Canada, Australia and China, as well as developing countries that are more similar to Iran in terms of mineral structure, such as Chile, Peru and Kazakhstan, were also studied.

The project is still underway with the study of six neighboring countries so that Iran could provide better conditions for foreign investors.

During the past five years, IMIDRO has been engaged in technical and economic talks with companies from 35 countries and has signed memorandums of understanding with 15 countries, including France, Italy, Austria, China, South Korea, South Africa, India and the Czech Republic.

Development of Mines and Mining Industries of Iran

At the beginning of the 11th government, IMIDRO was the heir of 47 unaccomplished projects. Of these 47 projects, 7 were active, 5 were semi-active and 35 were inactive. This situation was not good for a large corporation.
like IMIDRO, and it threatened its credibility. Thanks to the experience and guidance of Dr. Karbasian and the use of experienced experts in the organization, IMIDRO started a new era by revising the strategies, paying attention to resources and spending, and tweaking organizational structure without adjusting human capital. The season that IMIDRO regained stability and scientific decision making led to the development of the mining and mineral sector and the creation of sustainable employment. At this time, the expert committees regained their special status.

First, eight provincial steel projects were examined. One project was fully passed to the private sector. Thanks to initiatives, one approach was added to the procedures of financing IMIDRO projects. Seven other projects were announced for partnership, and the private-sector’s economic activists invested as IMIDRO partners. Thus steel projects were saved from crisis and continued business.

The project to produce alumina from Nepheline Syenite was in queue to be implemented for nearly three decades and was halted each time for some reasons. But finally, in December 2014, IMIDRO signed an agreement with Outotec Company for the initial design of the project. The substructure has been implemented, and in the near future, with an annual production of 200,000 tons of alumina powder and 150,000 tons of industrial salt, sustainable jobs will be created for our compatriots. Azarshahr pilot plant, which had been launched for trial production of Nepheline Syenite, changed application and was used to generate Boehmite, catalyst base and catalyst, and its investment was maintained.

The Southern Aluminum project became operational in January 2015. The project will be the largest aluminum production unit in the country. The land, gas and other infrastructures are ready and the project is being implemented at a suitable pace, and the first ingot will be marketed this November.

The contract for the completion of the first phase of the Jajarm aluminum ingot manufacturing plant with production capacity of 37 million tons was inked and the project progress is very favorable. The plant will start producing ingots from October 2018. The implementation of these two projects will boost Iran’s rank in the world’s aluminum production capacity by three steps, and will increase the capacity of aluminum production in Iran to 777,000 tons per year, despite halting operation of two lines in the Iranian Aluminium Co. (IRALCO) for environmental reasons.

One of the major projects that were retrieved during this period is Mehdiabad lead and zinc. This mine is one of the largest mines in the world that had been neglected. With careful planning and solving the problems with the previous investor and conducting a new call, businessmen from seven industrialized nations came to Tehran for investment in our mining industry. Eventually a credible and powerful domestic consortium succeeded in getting the project. This plan is considered to be one of the most successful examples of the Iranian contracts. The barite section of the mine began its operation in 2015. The project will produce 800,000 tons of zinc concentrate and 80,000 tons of lead and silver concentrates. With additional exploration, suitable copper deposits have been discovered that are undergoing expert examination. The complex will provide jobs for 3,000 people.

Some other valuable projects of this period which indicate a return to the right course, are as follows:

- Project to produce graphite electrode, which is one of the bottlenecks in the steel industry of the country
- Pilot project of Sefidabeh antimony, which has a highly strategic product, commissioned in 2014
- Hormuz & Hormuzan Power Plant was built to supply electricity to the industries of the especial mineral and metal industries in the Persian Gulf, which was commissioned in August this year
- Zarshouran gold mine (2014)
- Khor & Biabanak Potash Complex
- Qatran Zarand Refinery
- Four concentrate and pelletizing projects in Sangan
- Energy intensive special zone
- Kahnuj titanium processing
- Equipping Golgohar mines 4, 5, 6
- Khamrud coal and Green Coke production

In 2013, due to problems created in the 10th government and severe financial
bottlenecks in IMIDRO, no project went on stream. With the mobilization of facilities in 2014, eight projects with an investment of $1,025 million were commissioned. In 2015, 10 projects with an investment of $913 million became operational. In 1395 (2016/17) too, 18 projects with an investment of $1,480 million were launched. Meanwhile, with the growing strength of IMIDRO and the positive impacts of the JCPOA (Joint Comprehensive plan of Action) on our economic relations, IMIDRO managed to launch 27 projects with an investment of $3,064 million in 2017. In 2018 too, 31 projects worth $5,890 million will become operational.

Following up on these activities, a large number of projects are underway including 24 projects with an investment of $5,750 million next year; 34 projects with an investment of $5,928 million in 2020 and 33 projects with a capital of $13,488 million in 2021 and the next year. 2020 and 33 projects with a capital of $5,750 million next year, 34 projects including 24 projects with an investment of $1,480 million in 2014, eight projects with an investment of $913 million became operational. In 1395 (2016/17) too, 18 projects with an investment of $3,064 million in 2017. In 2018 too, 31 projects worth $5,890 million will become operational.

According to the Ministry of Industry, Mine and Trade, explorations covered only 7% of Iran’s 1.648 million square kilometers. Also, the realization of Iran’s development goals in the areas of steel, copper, aluminum, zinc, gold, coal and ... requires new discoveries. As a result, since March 2014, with the mandate of IMIDRO, a large plan has been launched to implement new exploration projects aimed at investigating the potential of Iran’s 270,000 square kilometers of mineral resources.

The plan was started in coordination with the Ministry of Industry, Mine and Trade, IMIDRO and the Geological Survey and Mineral Explorations of Iran (GSN), which will be implemented by IMIDRO. According to the Parliament Act, IMIDRO is recognized as the main organization in mining and mineral industries, which has a developmental mission in this field. Meanwhile, the emphasis of the Supreme Leader on the development of the mining sector, along with the Resistance Economy, has caused this sector of the economy to draw more attention over the last few years. This is where exploratory activity is the starting point of any plan in mining.

The new exploration plan which is the basis for development of mining and downstream mining industries has been designed and implemented in the Rouhani government. IMIDRO’s exploration plan covers 270,000 square kilometers of the country, more than 2.5 times the number of discoveries in the past 80 years. This plan can play a role in the country’s balanced development, enhancing the role of mines in the national economy, and reducing reliance on oil revenues.

Iran is among top 15 countries of the world having diverse mineral potentials and precious metallic and nonmetallic reserves accounting for about 7% of global reserves. Due to its location on the Alp-Himalayas metallurgical and mineralization global belt, our country has the capability to be the first-tier leader of the Middle East and Central Asia in terms of mineral exploration, technology and investment in mining sector. Evidence to this claim is that Iran owns at least eight large world class mines. Therefore, the development of these resources and their exploitation will increase the competitiveness power of Iran internationally and will place the mining sector in the first position in employment and national income generation. At present, the ratio of discovered and exploitable reserves (57 billion tons) is small in comparison with the area and potentials of Iran.

With regard to IMIDRO’s developmental mission in the country, extensive exploratory plans have been designed to compensate for the historical backwardness of exploration in order to achieve the following objectives:

1. Discovering diverse new mineral resources for the development of the mining sector and increasing its share in gross national product
2. Providing a suitable platform for attracting domestic and foreign investment by preparing exploratory documentation in accordance with global standards
3. Exploration investments in unprivileged areas with mineral potentials for resource management, development, job creation and security in those areas
4. Creating a multi-product economy and taking steps in the direction of sustainable development and turning mines into one of the important economic sectors of the country
5. Discovering strategic metals and the supply of feedstock to the industries

In line with this roadmap, extensive exploration activities in the country have been designed and implemented since 2014 based on the following priorities:

1. Deploying advanced heuristics such as aerial geophysical operations to discover hidden reserves
2. Exploration operations in the form of zones with an area of 250,000 square kilometers on the eastern and western borders of the country and in deprived areas in order to create employment in less developed
been implemented in general, detailed exploration operations in 22 provinces, zones is the identification of 400 mineral exploratory locations into two sections, “Exploratory Zones” and “Exploratory Projects”.

New Zones
In the exploration zones, a new exploration plan began in the Sangan Mining Zone (northeast), followed by the eastern strip and other regions of Iran. The result of this enormous activity in 36 zones is the identification of 400 mineral areas, the details of which are as follows:
1. Conducting identification and exploration projects in 22 provinces, including 36 zones in more than 270,000 square kilometers
2. Identification of more than 400 new promising areas in some areas of the country including:
   - 76 promising areas in the Sangan zone of Khorasan Razavi Province
   - 28 promising areas in the borderline of Sistan and Baluchestan Province
   - 12 promising areas in Saravan in Sistan and Baluchestan Province
   - 16 promising areas in the borderline of South Khorasan Province
   - 100 promising areas in Abadeh Jasmoryan region
   - 60 promising areas in the center of Iran
   - 10 promising areas in Ardabil Province
   - 88 promising areas in other exploratory locations

Since the beginning of the activities of this sector, 82 exploration projects have been implemented in general, detailed and complementary phases in different regions of the country. The designs are based on various minerals such as iron, coal, poly metal, gold, copper, antimony, lead and zinc, chrome, titanium, nickel, molybdenum, barite, phosphate, bauxite, brine (potash, magnesium, lithium and others...). Only in the complementary project of Zarshouran gold exploration 50% has been added to the reserves of the mine. Meanwhile, good gold mines have been identified on the golden belt of the country.

Participation of 100 Private Companies
In line with IMIDRO’s policies for attracting private sector participation, various meetings were held with different companies, and by providing the opportunity to visit the above-mentioned regions measures were taken to encourage domestic and foreign investors. The first call for the transfer of the private sector in 2015 was in Nikooeye (Qazvin Province). However, during the last four years, private sector companies involved in consulting, contracting and ... after the bidding, have taken over the implementation phase of all the exploration projects. Over the past three years, about 100 domestic companies, some of which using foreign partners, have implemented the organization’s exploration plans.

Investing in Exploration
Considering 2012 as the base year, the amount of drilling carried out from 2013 to 2018 stood at 1.5 million meters of drilling at a cost of 7,500 billion rials which was made in the course of base and complementary explorations.

One of the effects of the exploration plan is the discovery of new mineral deposits. The initial results indicate that the amount of reserves of eight types of minerals including gold, coal and carbon fiber, iron ore, antimony, rare earth elements, barite, bauxite and copper has increased. Noting that the reserves of rare earth elements in Iran were unknown before the exploration plan, so far about 65,000 tons of these elements have been discovered.

Development of Infrastructures & Specialized Zones in Mining & Mineral Industries
Considering that about 70% of the freight shipped through the rail network is related to minerals and mineral products, since 1392 (2013/14), in close coordination with the Islamic Republic of Iran Railways, improving rail fleet efficiency on the routes to mines and mining industries are on the agenda. Specific results of this effort are as follows:
- Continuation and increase in number of scheduled trains from Choghart, Chadormalu, Golgohar, Sangan, etc. to various destinations
- Investigating the possibility of carrying hybrid (rail-sea) minerals from mines to Khoozestan Steel Company
- Reducing rail tariffs compared to road transport

<table>
<thead>
<tr>
<th>Mineral resources</th>
<th>Previous resources</th>
<th>Current resources</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold (tons)</td>
<td>252</td>
<td>292</td>
<td>42</td>
</tr>
<tr>
<td>Bauxite (million tons)</td>
<td>14</td>
<td>35</td>
<td>21</td>
</tr>
<tr>
<td>Barite (million tons)</td>
<td>10</td>
<td>113</td>
<td>103</td>
</tr>
<tr>
<td>Antimony (tons)</td>
<td>5,000</td>
<td>35,000</td>
<td>3,0000</td>
</tr>
<tr>
<td>Rare earth elements (tons)</td>
<td>0</td>
<td>65,000</td>
<td>65,000</td>
</tr>
<tr>
<td>Coke coal (million tons)</td>
<td>752</td>
<td>1,097</td>
<td>345</td>
</tr>
<tr>
<td>Thermal Coal (million tons)</td>
<td>410</td>
<td>630</td>
<td>220</td>
</tr>
<tr>
<td>Iron ore (million tons)</td>
<td>2,650</td>
<td>3,150</td>
<td>500</td>
</tr>
</tbody>
</table>
Due to ongoing efforts, daily trips has risen from 100 km to 300 km in scheduled trains; the need for follow-up on continuation of this trend.

Definition of investment packages in development of rail network with the approach of mineral loads in the form of BOT contracts and....

Collaborating on increasing the capacity of the eastern railroad network (Torbâb-Jandagh) and proposing import/export duties in order to provide part of the funding needed for this section of the rail network related to minerals.

Increase by 16.6% in productivity index of wagons in 2016 compared to 2013.

Special Zones

Persian Gulf Mining & Metal Industries Special Economic Zone

The Persian Gulf Mining and Metal Industries Special Economic Zone is located 13 km from Shahid Rajaei Highway in the west of Bandar Abbas. Some 2,000 hectares of the zone is operational and investor companies are running or developing their desired projects. Since 2013, infrastructure development operations have begun in a development site of 2,500 hectares. Investor recruitment has begun in this development area, and so far several investors have begun their executive operations. Due to shortage of electricity in the area, the Ghadir Oxan Power Plant was outlined and became operational. The plant will be inaugurated in 2018 and will provide electricity for development. There are about 5 million tons of steel making in the area and one of the successes of IMIDRO in this period was to bring the steel shareholders and collect them around a table at IMIDRO. With the cooperation of these companies, IMIDRO has outlined and plans to operate the 10-million-ton mega module steel project in the Persian Gulf Mining and Metal Industries Special Economic Zone.

Preparing Infrastructures in Lamerd Special Energy Intensive Zone

Lamerd site is located south of Fars Province, 6 km northeast of Lamerd city. Its area is about 8,500 hectares. Lamerd’s aerial space from the Persian Energy-Intensive Industrial Special Economic Zone (PIESEZ) as well as under construction port and jetty in Hormuzgan Province is 30 km and will be connected by the 43-km Persian Gulf freeway.

PIESEZ will require an investment of $37.4 billion in the nongovernmental sector for production of 4 million tons of steel, 18 million tons of petrochemicals, 1.2 million tons of aluminum, 6,000 megawatts of electricity per year, and the construction of Persian port with an annual capacity of 40 million tons and desalination plants. So far, two petrochemical units with a total investment of $4.2 billion have started operating in the region, which ultimately provides direct employment for 75,000 people and indirect employment for some 270,000 people.

Currently, there are two projects underway: the South Aluminum Ingot Plant with a capacity of 300,000 tons per year and a 930-MW combined cycle power plant to supply electricity for the plant and other industries. Other investment opportunities in this area include: the aluminum industry and its downstream industries, cement, magnesium, petrochemicals, and the downstream steel industries with high value added.

So far, several petrochemical and metallurgical companies have received the necessary permits as well as land.

Kashan Special Economic Zone

In accordance with the law on the creation of special economic zones approved by the Parliament in 2010 and the 2012 mandate of the council of ministers Kashan Special Economic Zone was created and IMIDRO was assigned as the responsible organization of the zone. In the wake of follow-ups of the CEO of IMIDRO Dr. Karbasian; the activity of Kashan Special Economic Zone started in June 2015 in the presence of minister of industry, mine and trade, president of the board of governors and governor general of Isfahan. So far, the comprehensive plan of the region has been prepared and approved by the Secretariat of the High Council of Free Trade, Industrial and Special Economic Zones. Land acquisition and delivery from the Forests, Range, and Watershed Management Organization with an area of 1,344 hectares has been made to the regional responsible organization.

The necessary licenses have been received and the area is ready for the presence of the mineral industries and downstream industries.

Plan to Create Necessary Infrastructure in Large Mines & Mineral Areas

This project is being implemented and pursued as one of IMIDRO’s empowerment projects. The plan addresses access of small and medium-sized mines of the private sector to infrastructures and seeks to increase generation of employment opportunities in mineral areas, mainly in less developed areas, by supporting small mines, in addition to increasing mining share and gross domestic product (GDP).

Between 2005 and 2017, a total of 2,318 billion rials of commitment were defined in the form of projects to create and complete mining industries infrastructures within 266 contracts (contracting, monitoring, consulting, and laboratory). Some 28% of the amount in rials with 200 contracts (650 billion rials) was outlined from 2005 to the end of 2012 and 72% of the amount in rials was defined with 66 contracts (1,668 billion rials) from 2013 to 2017.

From 2013 to 2016, 66 contracts were concluded with an amount of 1,350 billion rials. From 2013 to 2017, 20 executive projects (two electricity supply projects, 17 road construction projects and one weighbridge installation project) have been outlined, with five road construction projects commissioned in 2017.

In 2018, five road construction projects and one electricity supply project will be operational.

Given the impact of the project on
small and medium mines, IMIDRO has supported this project from its internal resources whenever it has been necessary.

**Importance and Development of Applied Research**

Thanks to special attention of Dr. Karbasian to research and technology activities, IMIDRO and affiliated companies between 2013 and 2018 spent more than 8 trillion rials on applied research. Over the past few years, we’ve seen the highest level of IMIDRO’s cooperation with the universities of the country. IMIDRO has signed cooperation agreements (MOUs) with 25 universities and scientific centers and conducts research projects. We hope this will lead to an appropriate leap in knowledge in Iranian experts.

Contracts have been signed with Sharif University of Technology, University of Tehran, Kerman University, and Islamic Azad University, and...

IMIDRO sponsors dozens of conferences and publication of books annually and equips specialized laboratories every year.

One of the remarkable efforts of the organization over the past five years is to support students and specialized dissertations related to mining and mineral industries.

Some of the most important research topics of the past three years are:

1. Applied research in processing and extraction of the essential and critical elements needed in the development of advanced and emerging technologies
2. Applied research and studies in promoting the productivity of mines and mineral industries
3. Application of new technologies (nanotechnology and biotechnology) in applied research and development of mining and mineral industries
4. Development of technical knowledge and scientific information needed in the development of mining and mineral industries
5. Applied and developmental research in the mining and mineral industries
6. Supply and procurement of software and hardware infrastructure required in technology research and development

**Education**

In 2018, IMIDRO and its subsidiaries and affiliates have held around 21,000 training courses and more than 3.2 million hours of training. The number of participants in these courses was more than 80 thousand. Esfahan’s Mobarak Steel Co. and National Iranian Copper Industries Co. are among the top mining and mining industries companies in the field of education. Over the past five years, education has been one of the points of strength at IMIDRO.

IMIDRO through creditable organizations and non-governmental organizations (NGOs) in the mining sectors, such as the provincial mining engineering association, and the provincial industry, Mine and trade organization, annually holds 300 training courses for the private sector free of charge. In addition, each year, 10 courses are held with foreign professors from many countries attending.

**Iran Mineral Research Center: Self-Sustaining, Localization & Processing Development**

Iran Mineral Processing Research Center (IMPRC) started its activities as one of the world’s first research centers in the field of mineralogy, chemistry, processing and localization of mineral processing equipment and components, and has gained significant achievements in these fields. The localization of the technical knowhow of rare earth elements, production of the first antimony ingot and the construction of its production line, production of four Misch Metal ingots of rare earth elements, has increased its revenues by 42%, including the achievements of the center for the past three years.

In recent years, the revenues of the center has grown 50% on average in various sections (minerals, chemistry, processing, environment and manufacturing workshops) compared to 2013.

The development goals of the center are in the field of manufacturing processing equipment and communication with leading research centers in the field of processing, focusing on the processing of rare earth elements, holding training courses, expanding the market for mineral processing in different fields and equipping laboratories with new and advanced machines.

In the new term of activity of IMPRC (11th government), various achievements have been made such as:

- Outlining two-year objectives and operational plans of the center, including short-term goals and prioritization of projects, allocation of required resources, implementation of organizational structure reforms and human resources management system; ongoing and future projects

- Definition and creation of an industrial marketing unit in the organizational structure of IMPRC

- Preparation of cooperation agreements with international companies such as South Africa’s Mintek and Australia’s Mineral Technologies with a view to access international projects and benefiting from expertise of the said companies in implementation of the processing sector project
- Communication with provincial industry, mine and trade organizations in order to provide the provinces with an opportunity to attract provincial projects
- Inauguration of a plan for processing research and feasibility of rare earth elements and the acquisition of knowledge on the production of metals of rare earth elements and strategic materials, in the presence of Ali Akbar Salehi, Head of the Atomic Energy Organization of Iran (AEOI); Dr. Sorena Sattari, Vice President for Science and Technology and chairman of IMIDRO Board of Governors in 2015
- Extraction of rare earth elements for the first time in the country and the acquisition of technology for the production of metals of rare earth elements and strategic materials such as Misch Metal ingot, and...
- Localization of the know-how in the field of rare earth elements is one of the other achievements of the center, which is ready to be transferred to other countries; Also, for the transfer of technical knowledge in some areas, including iron ore, copper, etc., training foreign experts has been on the agenda of the center, and so far, there have been
Nano micro flotation method on Esfordi placer iron ore deposits and has signed international cooperation agreements with scientific and research centers. Among the most important actions mentioned can be made of negotiations with four internationally acclaimed companies including Mintek, MSA Group, Fraser Alexander and Maelgwyn Mineral Services to develop cooperation in the field of mineral processing. Also, during the recent visits to the center of the minister of mines of Guinea Conakry and the chairman of the Vincent Co-China Company emphasis was placed on development of technical cooperation in the field of mines.

Conclusion and implementation

Upon the order of Dr. Karbasian from 2013, effective communication with NGOs and guilds was put on the agenda of IMIDRO and was recognized as one of the most important decisions. IMIDRO at the level of top and middle managers continuously holds working sessions with the private sector such as the House of Mine, Association of Engineering, Association of Iron Ore Producers and Exporters, Iron and Steel Association, Steel Manufacturers Association, Stone Manufacturers Association, Commodities Exchange, Aluminium Guilds, and so on.

Health, Safety, Environment & Energy Measures

Since the appointment of Dr. Karbasian as IMIDRO CEO, the HSEE has assumed a special place. Initially, it strengthened its position in the organizational chart and came under direct supervision of chairman of the board of governors. Then, the HSEE status was strengthened in subsidiary and affiliate companies. Over the past five years, there has been a very good and fair relationship between IMIDRO and the Department of Environment. IMIDRO also managed to boost the activities in mineral industries by improving the level of standards and getting help from international experts. By accepting the costs of raising the level of standards, IMIDRO has caused development in part of the country and the introduction of new environmental technologies.

The result of the heavy monitoring and continuous audit of the HSEE of subsidiaries companies was the creation of hundreds of improvement projects that significantly improved the level of environmental protection. Installing a large number of contamination monitoring devices, filtration systems, sewage absorption systems, construction of tailings dam, system of efficiency and reduction of water and energy consumption were all part of recent actions.

Cooperation and Support of Large Companies in Mining & Mineral Sector

One of the policies of Dr. Karbasian, which is very much appreciated, is cooperation with and support for large mining companies and mineral industries. Most of these companies have been subsidiaries of IMIDRO in the past, which were cut off with IMIDRO after privatization. Some of these companies have been created and developed from the outset in the private sector. In the past five years, IMIDRO has supported some of these companies as if it were a shareholder. In many cases, when faced with bureaucratic problems and barriers, IMIDRO has been helping out and removing obstacles by using experiences and helping them with governance and brand credibility. Wherever IMIDRO has been involved with foreign investors, it has also supported the domestic private sector.
Designing and Manufacturing of
Power Transformers & Shunt Reactors

Products:
- Generator Step-Up Transformers
  - Up to 420 kV and 550 MVA
- Transmission Transformers
  - Up to 420 kV and 550 MVA
- Shunt Reactors
  - Up to 420 kV and 100 MVAR
- Special Transformers
  - Multi-Voltage Transformers
  - Mobile Substation Transformers
  - Rectifier and Furnace Transformers
  - Phase Shifting Transformers

Designing and Manufacturing of
Distribution Transformers

Products:
- Transformers With Conservator
  - Up to 36 kV and 4000 KVA with corrugated wall
  - Up to 36 kV and 4000 KVA with radiator
- Hermetically Sealed Transformers
  - Up to 36 kV and 4000 KVA with corrugated wall
  - Up to 36 kV and 4000 KVA with gas cushion
- Dry Type Cast Resin Transformers
  - Up to 36 kV and 10,000 KVA

Factory: Postal Code: 3573195986
P.O Box: 35715-111, Shahnirzad, Semnan, Iran
Tel: +98 23 3111, Fax: +98 23 33670126-7
sales@arya-transfo.com

Headquarter: Postal Code: 1468833846
P.O Box: 15175-518, Tehran, Iran
Tel: +98 21 88374338-8, Fax: +98 21 88374339
sales@arya-transfo.com
Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO) has been named as a top organization in the section of selected agencies affiliated to the ministries, based on general and exclusive indicators.

According to IMIDRO Public Relations Office, the closing ceremony of the 14th edition of Martyr Rajaei Festival was held on the occasion of Government Week and in the presence of President Hassan Rouhani at Tehran’s Summit Conference Hall where 14 top government organizations were honored.

IMIDRO, Iran Power Generation, Transmission & Distribution Management Co (Tavanir) and the National Organization for Educational Testing were honored as top organizations in the section of selected agencies affiliated to the ministries based on general and exclusive indicators.

IMIDRO CEO Dr. Mehdi Karbasian and heads of the other two organizations received statues and plaques of honor from President Rouhani.

Part of the President’s message addressed to Dr. Karbasian, read: “Serving
the sacred system of the Islamic Republic and the great nation of Iran is a great honor on the path to the great religious and revolutionary doctrines and continuation of the culture of sacrifice and jihad.”

According to the report, previously Dr. Karbasian had received grade 2 badges of merit in management and service in the ‘Reconstruction’ and ‘Reform’ governments, respectively.

Karbasian, Deputy Minister and Chairman of IMIDRO’s Board of Directors also issued a message on the occasion. “I congratulate all the honorable colleagues on the nomination of IMIDRO as a model and top organization, as well as receiving a plaque of honor and statue from the President. The day when I took over IMIDRO, I focused all my efforts as well as those of my colleagues, companies and subsidiary units on strengthening cooperation with the private sector as well as powerful executives and formations. In fact, the image depicted from IMIDRO in the mid-1392 (2013/14) was an unpleasant situation to overcome which called for a lofty, all-embracing effort by the private sector and the government. Shortly after, step by step efforts to complete the abandoned projects for years further reflected this reality that empathy and endeavors along with management and planning of all the directors and experts of the organization, together with cooperation with the private and non-governmental sector, could lead to such a success.

“IMIDRO boasts of such a companion and seeks continuation of this approach on the path of building a developed Iran. Activating and launching any mine and mining industries projects, in addition to driving the industrial wheel of the country, will keep hope and faith of the workforce alive. In the last 5 years, the use of internal power in the development of this field has been able to further illustrate the Resistance Economy. Now that the roadmap of the mine and mining industries has been finalized, it should be admitted that it is difficult to overcome the challenges ahead in the absence of continuous and overall efforts of the colleagues and utilization of the facilities and capacities of the private and non-governmental sectors as well as cooperation of the organizations. On behalf of all the colleagues, experts and managers of IMIDRO and the subsidiary companies, I appreciate and thank all of these beloved ones.”

Deputy minister of industry, mine and trade announced the formation of a committee in the ministry and in IMIDRO (Iranian Mines & Mining Industries Development & Renovation Organization) to counter the sanctions and emphasized: “The country has experienced difficult crises in different periods and if there are empathy and unity and we have timely decision-making, we can move through the new conditions.” What follows are excerpts of a recent interview with Karbasian:

**How do you assess the current status of mining and mineral industries?**

I believe the least pressure will be imposed on mining and mineral industries, because the raw materials are domestically made, and, fortunately, we are self-sufficient in domestic production, but we will probably face problems in import of equipment and receiving facilities. All our industries need equipment and facilities, but I believe mining and mineral industries are less problematic than other areas.

In general, it seems that the country has experienced difficult crises in different periods, and if we have empathy and unity, and timely decision-making power, we can overcome this situation.

**Once it was said that the mining sector could take the place of oil in the Iranian economy. Considering the new situation in Iran, do you think such an idea could be realized?**

As an expert, I would not prefer the mining sector take the place of oil because iron ore, coal and gold are parts of mines, and their exploitation should be positive; but the point is that we should be active in mining sector so...
Maad Koush Co. is a subsidiary of ARZESH developing international investment Company and it is 100 percent private and has been established to develop country's steel industry and complete the production chain in the upstream steel industries and also from extracting and processing the iron ore to produce pellet and concentrate.

The company’s plan for current year is opening the first phase of the Maad Koush pellet factory which has a capacity of 2.5 million tons annually and following up development plan of Arzesh Investment Company specially extending the capacity to 5 million tons because the prepared substructure for this issue is built for this purpose. As stated earlier One of the primary and ongoing plans of the company is pelletizing project and 85 percent of the factory is ready now and in the middle of fall cold and warm tests will begin then the factory opens during winter.

Investment for this project was 140 million euro and about 1500 billion IRRs of financial support has entered in the project from stock holders sources. Also, all of foreign exchange reserves are supplied by opening a letter of credit. All infrastructures for building the second phase with 5 million tons capacity would start at the middle of 2019.

The required concentrate for Maad Koush will be supplied by the Maad Chemie Company which have the capacity of 2.5 million tons of concentrate that is a subsidiary of the Arzesh investing group that’s feasible and based with the goal of independency of the complex in case of supplying raw materials and also completing supply chain of steel in level of investment group. In addition, also before launching the Maad Chemie, the required materials can be supplied from local sources or importation that feasibility study and primary planning regarding it has been done. Maad Koush Plant is located in the Persian Gulf Special Economic Zone and have the potential to reach the high waters, private piers and tax exemptions and other benefits of special zones. It would ease the importation of concentrate and export the pellet.

Other programs of this investment group are opening an iron ore concentrate factory in Maad Chemie (located next to the Maad Koush plant in P.G.S.E.Z in Bandar Abbas) and opening second site of the Maad Kansar company in field of stacking and concentrate with a capacity of 6 million tons annually at the P.G.S.E.Z in Bandar Abbas.

Maad Koush pellet factory with a capacity of 5 million tons is going to be opened in the middle of 2019. As stated earlier One of the primary and ongoing plans of the company is pelletizing project and 85 percent of the factory is ready now and in the middle of fall cold and warm tests will begin then the factory opens during winter.

Investment for this project was 140 million euro and about 1500 billion IRRs of financial support has entered in the project from stock holders sources. Also, all of foreign exchange reserves are supplied by opening a letter of credit. All infrastructures for building the second phase with 5 million tons capacity would start at the middle of 2019.

The required concentrate for Maad Koush will be supplied by the Maad Chemie Company which have the capacity of 2.5 million tons of concentrate that is a subsidiary of the Arzesh investing group that’s feasible and based with the goal of independency of the complex in case of supplying raw materials and also completing supply chain of steel in level of investment group. In addition, also before launching the Maad Chemie, the required materials can be supplied from local sources or importation that feasibility study and primary planning regarding it has been done. Maad Koush Plant is located in the Persian Gulf Special Economic Zone and have the potential to reach the high waters, private piers and tax exemptions and other benefits of special zones. It would ease the importation of concentrate and export the pellet.

Other programs of this investment group are opening an iron ore concentrate factory in Maad Chemie (located next to the Maad Koush plant in P.G.S.E.Z in Bandar Abbas) and opening second site of the Maad Kansar company in field of stacking and concentrate with a capacity of 6 million tons annually at the P.G.S.E.Z in Bandar Abbas.

Sales from 1392 Up to Now: A Comparison
Based on the statistics and financial statements, sales of 1392 (2013-2014) were equivalent to 1,239 million$, which reached 2,264 million$ by the end of 1396 (March. 2017), and it is predicted that by the end of 1397 it will jump over 2,473 million$ which would be indicative of a 100% growth. Keep in mind that the average price of copper based on LME (ton/dollar) in 1392 was about $7132 and average price of copper cathode was about $1315 million by the end of 1396. In 1392 copper exports amounted to $267 million and the figure will increase to about $1315 million by the end of 1396, showing an increase of about 400%.

Cut in Finished Cost
The National Iranian Copper Industries Company has made the country among the most important copper mines in the country. Among duties of the company, extraction and exploitation of copper mines, production of high alloy copper ore and products such as cathode, slab, billet and 8mm wire could be cited. The Sarcheshmeh and Miduk copper mines in Kerman and Sungun Copper Mine in East Azerbaijan Province are among the most important copper mines in Iran.

Production
Production of sulfur ore was about 38 million tons in 1392 (2013-2014) which increased to 51 million tons in 1396 (2017-2018) and is expected to reach 215 thousand tons in 1397 which will experience a growth of 42.5%. Copper cathode was about 189 thousand tons in 1392 which will reach 215 thousand tons in 1397, showing an increase of 14%. The mineral content copper was 216 thousand tons in 1392 which increased to 296 thousand tons in 1396. It will be the same amount of production in 1397 which will show an increase of 37%. Production of sulfuric acid will reach 120 thousand tons in 1397 from 61 thousand tons in 1392, showing an increase of 97%.

Other programs of this investment group are opening an iron ore concentrate factory in Maad Chemie (located next to the Maad Koush plant in P.G.S.E.Z in Bandar Abbas) and opening second site of the Maad Kansar company in field of stacking and concentrate with a capacity of 6 million tons annually at the P.G.S.E.Z in Bandar Abbas.

National Iranian Copper Industries Company over the Past Five Years
The National Iranian Copper Industries Company is the largest copper producing company in Iran. On July 3, 1972, Sarcheshmeh Copper Mines Company of Kerman was founded and four years later, in 1976, it changed its name to the National Iranian Copper Industries Company which embodies all the activities of copper mines in the country. Among duties of the company, extraction and exploitation of copper mines, production of high alloy copper ore and products such as cathode, slab, billet and 8mm wire could be cited. The Sarcheshmeh and Miduk copper mines in Kerman and Sungun Copper Mine in East Azerbaijan Province are among the most important copper mines in Iran.

Production
Production of sulfur ore was about 38 million tons in 1392 (2013-2014) which increased to 51 million tons in 1396 (2017-2018) and is expected to reach 215 thousand tons in 1397 which will experience a growth of 42.5%. Copper cathode was about 189 thousand tons in 1392 which will reach 215 thousand tons in 1397, showing an increase of 14%. The mineral content copper was 216 thousand tons in 1392 which increased to 296 thousand tons in 1396. It will be the same amount of production in 1397 which will show an increase of 37%. Production of sulfuric acid will reach 120 thousand tons in 1397 from 61 thousand tons in 1392, showing an increase of 97%.

Sales from 1392 Up to Now: A Comparison
Based on the statistics and financial statements, sales of 1392 (2013-2014) were equivalent to 1,239 million$, which reached 2,264 million$ by the end of 1396 (March. 2017), and it is predicted that by the end of 1397 it will jump over 2,473 million$ which would be indicative of a 100% growth. Keep in mind that the average price of copper based on LME (ton/dollar) in 1392 was about $7132 and average price of copper cathode was about $1315 million by the end of 1396. In 1392 copper exports amounted to $267 million and the figure will increase to about $1315 million by the end of 1396, showing an increase of about 400%.

Cut in Finished Cost
The National Iranian Copper Industries Company has made the country among the most important copper mines in the country. Among duties of the company, extraction and exploitation of copper mines, production of high alloy copper ore and products such as cathode, slab, billet and 8mm wire could be cited. The Sarcheshmeh and Miduk copper mines in Kerman and Sungun Copper Mine in East Azerbaijan Province are among the most important copper mines in Iran.

Production
Production of sulfur ore was about 38 million tons in 1392 (2013-2014) which increased to 51 million tons in 1396 (2017-2018) and is expected to reach 215 thousand tons in 1397 which will experience a growth of 42.5%. Copper cathode was about 189 thousand tons in 1392 which will reach 215 thousand tons in 1397, showing an increase of 14%. The mineral content copper was 216 thousand tons in 1392 which increased to 296 thousand tons in 1396. It will be the same amount of production in 1397 which will show an increase of 37%. Production of sulfuric acid will reach 120 thousand tons in 1397 from 61 thousand tons in 1392, showing an increase of 97%.
In line with coping with water crisis, the required measures have been taken through implementation of projects for renewed purification of water, methods to prevent water evaporation, productivity in water consumption and participation in water transfer from the Persian Gulf to Kerman region, as well as some other projects.

Also, in order to realize sustainable development and protect the environment, projects have been implemented or are under implementation such as:

- Review of development projects with environmental perspective
- Protection of environmental resources (water, soil and other energies)
- Establishment of acid plants for the prevention of release of SO2
- 90% reduction of CO2
- Protection of regional plants, livestock and animals

**Explorations**

Explorations are one of the most important rings of the mining chain. In line with this, studies are underway for finding the location in East Azerbaijan and Kerman provinces in an area of over 9 thousand square km. Meanwhile, planning is on the agenda for finding the regional locations in south of Kerman Province as well as in Semnan, West Azerbaijan and South Khorasan provinces in an area of about 12 thousand square km. Moreover, plans are being formulated for carrying out basic airborne geophysics studies in an area of 17 thousand square km.

In line with the new explorations with the approach of exploration of hidden and exotic deposits, the National Iranian Copper Industries Company has embarked on holding partnership with the following companies:

- Infr Reservoir (British-Canadian)
- Japan’s Jogmecc
- Georgia’s JMB
- Shahid Bahonar University of Kerman and UBC of Canada
- Tabriz University and UBC of Canada (for northwestern areas)

Meanwhile, the policy of the company is using modern global technology and focusing on hidden, exotic, skarn and deep deposits.

**Increase in Energy & Water Efficiency & Environmental Measures**

In line with the cut in finished costs as well as protection of the environment, the company has managed to significantly reduce its consumption from 1393 up to the end of the three quarters of 1395. Water consumption has reached 99 ton cubic meters from 120 ton cubic meters. Energy consumption dropped from 961 to 938 kw/h, gas oil consumption from 0.55 ton liter to 0.39 ton liter and gas consumption from 15 to 10 ton cubic meters.

During this period, the reduction percent of finished cost of copper cathode of the refinery and leaching with average rate of 3900 $/t was slightly more than 6%.

**Table 1: Sales of company in recent years**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cathode</td>
<td>765</td>
<td>905</td>
<td>561</td>
<td>1,043</td>
<td>800</td>
</tr>
<tr>
<td>Concentrate</td>
<td>88</td>
<td>172</td>
<td>226</td>
<td>527</td>
<td>796</td>
</tr>
<tr>
<td>Other</td>
<td>391</td>
<td>403</td>
<td>252</td>
<td>381</td>
<td>628</td>
</tr>
<tr>
<td>Total Sales</td>
<td>1,239</td>
<td>1,492</td>
<td>1,038</td>
<td>1,968</td>
<td>2,264</td>
</tr>
<tr>
<td>Export</td>
<td>267</td>
<td>520</td>
<td>569</td>
<td>1,171</td>
<td>1,315</td>
</tr>
</tbody>
</table>

The total value of Table 2 projects plus the started up projects before, in 1396, are 16991 billion tomans equivalent to 3100 million euros. The amount of 7540 billion tomans (equivalent to 1500 million euros) has been accomplished until now, but for the completion of the total projects 9450 billion tomans (equivalent to 1600 million euros) are required which about 1000 million euros of that will be attracted from the outside of the company.

In order to achieve the production outlook of 400,000 tons of copper content in 1400 (2021); the following most important projects must be commissioned:

- Development of Sarcheshmeh copper smelter and installing Flash technology
- Construction of Khatoom Abad refinery factory with the capacity of 200,000 tons of copper cathode
- Combined cycle power plant project with the capacity of 500 Megawatts
- Integrated power master plans & also road construction projects as well as infrastructures of the Production Line in 9 various projects.

**Table 2: Latest Status of NICIC Projects**

<table>
<thead>
<tr>
<th>No.</th>
<th>Project</th>
<th>Operation year</th>
<th>Total investment Million Euro</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Infrastructures of Sarcheshmeh concentrator factories</td>
<td>1397 (2018/19)</td>
<td>65</td>
</tr>
<tr>
<td>2.</td>
<td>Construction of Kerman acid factories</td>
<td>1397 (2017/18)</td>
<td>194</td>
</tr>
<tr>
<td>3.</td>
<td>Darrehzar mine and concentrator factory project</td>
<td>1399 (2020/21)</td>
<td>331</td>
</tr>
<tr>
<td>4.</td>
<td>Khatoom Abad smoking development project</td>
<td>1398 (2019/20)</td>
<td>131</td>
</tr>
<tr>
<td>5.</td>
<td>Sungun heap leaching</td>
<td>1398 (2019/20)</td>
<td>19</td>
</tr>
<tr>
<td>6.</td>
<td>Sungun cathode production (suitable method)</td>
<td>1399 (2020)</td>
<td>300</td>
</tr>
<tr>
<td>7.</td>
<td>Dar Alou mine and concentrator factory project</td>
<td>1399 (2020)</td>
<td>273</td>
</tr>
<tr>
<td>8.</td>
<td>Chah Firoozeh mine and concentrator factory project</td>
<td>1399 (2020)</td>
<td>279</td>
</tr>
<tr>
<td>9.</td>
<td>Taft copper mine project</td>
<td>1400 (2021)</td>
<td>258</td>
</tr>
<tr>
<td>10.</td>
<td>Sarcheshmeh slag flotation</td>
<td>1399 (2020)</td>
<td>20</td>
</tr>
<tr>
<td>11.</td>
<td>Sarcheshmeh chemical fertilizer</td>
<td>1400 (2021)</td>
<td>300</td>
</tr>
<tr>
<td>12.</td>
<td>Integrated water master plan</td>
<td>1398 (2019/20)</td>
<td>214</td>
</tr>
<tr>
<td>13.</td>
<td>Integrated power master plan</td>
<td>1398 (2019/20)</td>
<td>107</td>
</tr>
<tr>
<td>14.</td>
<td>Sarcheshmeh mine development project</td>
<td>1397 (2018/19)</td>
<td>91</td>
</tr>
</tbody>
</table>

Total in million euro 2,582

The National Iranian Copper Industries Company in its development program, has been preparing and shaping four mines in the past years and purchased most of the equipment and devices related to the concentrate factories for the production of concentrates from those mines, it has invited the private sector and foreign investors for participation in those giant plans.

Features of the mines are as follows:

- **Development Projects up to 1400 (2021-2022)**
- In 1396 (2016-17), thirteen projects were inaugurated by the president with the value of 3520 billion tomans, equivalent to 800 million euros (with the exchange rate of 1395). The most important of them includes:
  - Development of Sarcheshmeh copper smelter and installing Flash technology
  - Construction of Khatoom Abad refinery factory with the capacity of 200,000 tons of copper cathode
  - Combined cycle power plant project with the capacity of 500 Megawatts
  - Integrated power master plans & also road construction projects as well as infrastructures of the Production Line in 9 various projects.

**Table 3: Latest Status of NICIC Projects**

<table>
<thead>
<tr>
<th>No.</th>
<th>Project</th>
<th>Operation year</th>
<th>Total investment Million Euro</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Infrastructures of Sarcheshmeh concentrator factories</td>
<td>1397 (2018/19)</td>
<td>65</td>
</tr>
<tr>
<td>2.</td>
<td>Construction of Kerman acid factories</td>
<td>1397 (2017/18)</td>
<td>194</td>
</tr>
<tr>
<td>3.</td>
<td>Darrehzar mine and concentrator factory project</td>
<td>1399 (2020/21)</td>
<td>331</td>
</tr>
<tr>
<td>4.</td>
<td>Khatoom Abad smoking development project</td>
<td>1398 (2019/20)</td>
<td>131</td>
</tr>
<tr>
<td>5.</td>
<td>Sungun heap leaching</td>
<td>1398 (2019/20)</td>
<td>19</td>
</tr>
<tr>
<td>6.</td>
<td>Sungun cathode production (suitable method)</td>
<td>1399 (2020)</td>
<td>300</td>
</tr>
<tr>
<td>7.</td>
<td>Dar Alou mine and concentrator factory project</td>
<td>1399 (2020)</td>
<td>273</td>
</tr>
<tr>
<td>8.</td>
<td>Chah Firoozeh mine and concentrator factory project</td>
<td>1399 (2020)</td>
<td>279</td>
</tr>
<tr>
<td>9.</td>
<td>Taft copper mine project</td>
<td>1400 (2021)</td>
<td>258</td>
</tr>
<tr>
<td>10.</td>
<td>Sarcheshmeh slag flotation</td>
<td>1399 (2020)</td>
<td>20</td>
</tr>
<tr>
<td>11.</td>
<td>Sarcheshmeh chemical fertilizer</td>
<td>1400 (2021)</td>
<td>300</td>
</tr>
<tr>
<td>12.</td>
<td>Integrated water master plan</td>
<td>1398 (2019/20)</td>
<td>214</td>
</tr>
<tr>
<td>13.</td>
<td>Integrated power master plan</td>
<td>1398 (2019/20)</td>
<td>107</td>
</tr>
<tr>
<td>14.</td>
<td>Sarcheshmeh mine development project</td>
<td>1397 (2018/19)</td>
<td>91</td>
</tr>
</tbody>
</table>

Total in million euro 2,582
Table 3: Project: Darreh Zar Equipping of mine and constructing concentrate factory

| Geographical location: Kerman Province, NorthEast of the town of Sirjan |
| Mineable reserve: 248 million tons with a grade of 0.37% |
| Aim: Equipment and exploitation of Darreh Zar mine in Kerman with a capacity of 11 million tons of sulfide ore with a grade of 0.38% and annual production of 150 thousand tons of copper concentrates with an average grade of 26% |
| Estimated time of commissioning: 1399 (2020) |
| Amount of investment: 204 million euros |
| The Value of equipment/machinery: 72 million euro contract |
| Amount of the contract and the cost for the purchase of crushing equipment: 55 million euros contract |
| Estimated production: 118 thousand tons of copper concentrate with an average grade of 26% |

Table 4: Project: Daralu mine equipment and concentrator construction, Kerman

| Geographical location: This deposit is located in Kerman Province, 120 km south of the city of Kerman |
| Mineable reserve: 153 million tons with a grade of 0.38% |
| Aim: Equipment and operation of Daralu mine with a capacity of 7 million tons of sulfide ore with a grade of 0.39% and annual production of 100 thousand tons of copper concentrate with an average grade of 27% |
| Estimated time of commissioning: 1399 (2020) |
| Amount of investment: 148 million euros |
| Amount of the contract and the cost for the purchase of crushing equipment: 55 million euros contract |
| Estimated production: 100 thousand tons of copper concentrate with an average grade of 27% |

Table 5: Project: Chah Firouzeh Mine equipment and construction of concentrate factory

| Geographical location: This deposit is located in Kerman Province, 32 kilometers north of Shahre Babak |
| Mineable reserve: 140 million tons with a grade of 0.37% |
| Aim: Equipment and operation of Chah Firouzeh with a capacity of 7 million tons of sulfide ore with a grade of 0.41% and annual production of 100 thousand tons of copper concentrate with an average grade of 25% |
| Estimated time of commissioning: 1399 (2020) |
| Amount of investment: 131 million euros |
| Amount of the contract and the cost for the purchase of crushing equipment: 55 million euros contract |
| Estimated production: 100 thousand tons of copper concentrate with an average grade of 27% |

Table 6: Project: Taft Copper Mine project

| Geographical location: Aliabad and Darreh Zereshk deposits in Yazd Province, southwest of the city of Yazd |
| Mineable reserve: 248 million tons with a grade of 0.40% - Aliabad, 50 million tons with a grade of 0.4% - Darreh Zereshk, 72 million tons with a grade of 0.44% |
| Aim: Equipment and exploitation of Taft copper mines (Aliabad and Darreh Zereshk) with a capacity of 11800 tons of sulfide ore and annual production of 118 thousand tons of copper concentrate with an average grade of 26% and annual production of 400 kg of gold bullion |
| Estimated time of commissioning: 1400 (2021) |
| Amount of investment: 145 million euro |
| Amount of the contract and the cost for the purchase of crushing equipment: 55 million euro contract |
| Estimated production: 11800 tons of sulfide ore and annual production of 118 thousand tons of copper concentrate with an average grade of 26% and annual production of 400 kg of gold bullion |

Important: It should be noted that it is possible for the company’s presence in international consortiums for the operation of and participation in the above-mentioned development projects. The company has had cooperation with major foreign companies such as Swedala (Metso Minerals), SRK, RIO TINTO, Sandvik, FLSmidth, CSA, Outotec, Knight Piésold, SNG, Hatch, Mintek, Techpro, etc. Meanwhile, the company is a member of the international copper studies group in Portugal and is in constant contact with credible scientific and analytical institutions of the world and maintains constant consultations with CRU Metal Bulletin and Wood Mackenzie institutions. Possibility of Exporting Technical & Engineering Services

In the copper industry and at different times, experts and talented engineers have served in different fields with an experience of more than 50 years in mines and close to 40 years in giant copper production industries. Now the skilled, specialized and veteran workforce has been trained at different levels in order to play key roles in the fields of services and transfer of knowledge to the future generation as well as to the other side of the borders.

Angles of Cooperation with Foreign & International Companies

The National Iranian Copper Industries Company has been interacting with the world renowned companies for long years. The three major domestic copper concentrate plants – Sarcheshmeh, Midok and Sangun – operated under the supervision of NICIC from 1978 (1999-2000) up to 1385 (2006-2007). It had also signed contracts with Metso Mineral Company of Sweden for construction of the plants and purchase of equipment. The company has also had cooperation with major foreign companies such as Swedala (Metso Minerals), SRK, RIO TINTO, Sandvik, FLSmidth, CSA, Outotec, Knight Piésold, SNG, Hatch, Mintek, Techpro, etc. Meanwhile, the company is a member of the international copper studies group in Portugal and is in constant contact with credible scientific and analytical institutions of the world and maintains constant consultations with CRU Metal Bulletin and Wood Mackenzie institutions. On this basis:

1) In the field of research: The ability required for the export of different services as well as survey and exploration of the demanded cases with regard to having a highly capable research center at Sarcheshmeh Copper is fully available and the center is ready to conduct any research work related to the copper industries, similar to any part of the world.

2) In the field of manufacturing equipment and spare parts for various copper industries: There is the possibility for the manufacturing company to sign contracts with Metso Mineral Company of Sweden for construction of the plants and purchase of equipment. The company has also had cooperation with major foreign companies such as Swedala (Metso Minerals), SRK, RIO TINTO, Sandvik, FLSmidth, CSA, Outotec, Knight Piésold, SNG, Hatch, Mintek, Techpro, etc. Meanwhile, the company is a member of the international copper studies group in Portugal and is in constant contact with credible scientific and analytical institutions of the world and maintains constant consultations with CRU Metal Bulletin and Wood Mackenzie institutions.

3) Export of knowledge and different engineering services: There is a possibility for the export of engineering services in different fields such as survey and exploration of the demanded cases with regard to having a highly capable research center at Sarcheshmeh Copper is fully available and the center is ready to conduct any research work related to the copper industries, similar to any part of the world.

4) The National Iranian Copper Industries Company is ready to receive proposals for the formation of joint company (JV) for the implementation of international projects in all parts of the world.
What kind of activities the Mining Investment Insurance Fund deals with?

Managing director of the Mining Investment Insurance Fund (MIIF), pointing to the scope of activities of the fund said: “The fund is 100% state-owned and is considered a supportive fund of the government. It is a specialized fund with 100% government investment which belongs to IMIDRO (Iranian Mines and Mining Industries Development and Renovation Organization).

“The function of this fund is essentially covering the investment risk in the mines and mining industries in the various cycles of the value chain of the mining sector, and the exploration sector, which has the highest risk of investment, is in need of this risk coverage, of course most of the sectors are also under the same coverage.”

Farid Dehqani, stating that our main function is to cover the exploration risk, noted: “If the private sector investor is in need of providing financing, the investment fund for mining activities along with the risk of exploration will also support the investors in the finance sector due to the issuance of the exploration insurance.

“In other words, if the insurer intends to invest in exploration alone, he will receive an exploratory insurance from us, and if he reaches no conclusion in that investment and does not reach the desired deposit, 80% of his investment will be paid by the MIIF.”

Acceptance of operation permit as guarantee by the MIIF during mining activities

The MIIF chief, saying that the banks do not accept the operation permit of the mines as guarantee, noted: “Despite legal measures taken to this end, the banks would not accept the mine and its operation permit as guarantee; but the fund accepts the permit as a documented pledge and on that basis issues a credit guarantee to the customers and hope that if exploration resources out of the funds provided by the Ministry of Industry, Mine and Trade are also available for the New Year, we can have a good leap, and if there are no resources, we should use other resources of IMIDRO.”

Stressing that all such efforts are directed towards increasing investment in the mining sector, he said: “The more we could reduce investment risk in the mining sector, the more we can increase profitability, and the easier we can make access of the mine owners to the financial resources, the more successful we will become.”

He continued: “We have also signed a memorandum of understanding with various banks.”

What is your program for attraction of investors in the New Year?

Referring to the programs of the fund for the attraction of the investors, Dehqani said: “Thanks to the efforts of our friends and colleagues in this direction, low-cost financial resources have been attracted and mine owners after completing administrative formalities will gain access to those resources.”

He added: “In connection with the remaining cases, due to the increase in the capital we collect from our stockholders, we have increased the amount of loans and credits to the customers and hope that if exploration resources out of the funds provided by the Ministry of Industry, Mine and Trade are also available for the New Year, we can have a good leap, and if there are no resources, we should use other resources of IMIDRO.”

Stressing that all such efforts are directed towards increasing investment in the mining sector, he said: “The more we could reduce investment risk in the mining sector, the more we can increase profitability, and the easier we can make access of the mine owners to the financial resources, the more successful we will become.”

Continued from page 27
US Schemes for Iran’s Oil, Steel and Copper

The first vice president considered the suspension of Iranian oil exports by the United States an empty and unfounded claim and said: “Our efforts and planning should be in the opposite side of the US actions; we must strive to produce enough oil to meet our domestic needs and export the surplus.”

Es’haq Jahangiri, during a trip to Isfahan Province, pointing out that the US Treasury Department has become an economic operation room against Iran, said the most important goal of the United States is to bring serious harms to the Iranian economy and make life hard for the people of Iran in order to increase the level of people’s dissatisfaction so that the Americans could pursue their other goals.

He stressed: “We, as the officials of the country and nation of Iran, must come up with an appropriate strategy to counter the US strategy. Through resistance, precise planning and precision in implementation, we should be able to overcome the US schemes and keep Iran’s economy on its feet and safeguard the lives of the people.”

Noting that the United States wants to bring Iran’s oil exports as its most important revenue to zero by November, the first VP said: “Of course, this is an absurd claim. To realize this claim requires the other countries admit their humiliation against Washington and surrender to the United States.”

Jahangiri added: “Our efforts and planning should be in the opposite side of US actions; we must strive to produce enough oil to meet our domestic needs and export the surplus.”

In order to counter the sanctions, we need hard work, high quality and affordable production, and to prevent imports of goods that we produce inside the country”, Jahangiri said.

‘In order to counter the sanctions, we need hard work, high quality and affordable production, and to prevent imports of goods that we produce inside the country’

Jahangiri said.
the Iranian nation is fighting an enemy like the United States, some people inside the country are looking for ways to loot the nation. Of course, we will deal with this small group in the right way.”

Quality Production: The Solution to Counter Sanctions

Meanwhile, Jahangiri said: “In order to counter the sanctions, we need hard work, high quality and affordable production, and to prevent imports of goods that we produce inside the country.” He described Isfahan as the main focus of the country’s progress in different periods and said: “Nowadays Isfahan Province is the most important industrial province in the country as it hosts large steel, metal, mining and petrochemical industries, as well as refinery, and other small and large industries. The 75 percent saving in Mobarakeh steel water consumption is commendable and I would like to thank Dr. Sobhani for all the great work done here.”

He urged the people, farmers and industry owners to save on water consumption, and said: “With 10 percent of water saving in the drinking, industry and agriculture sectors, which have the most water consumption, the country will not have water problem, and the country’s plains for farming will be fertile.”

Iran’s Steel Production Higher than Global Average

Mohammad Shariatmadari, Minister of Industry, Mines and Trade said that from 1392 (2013/14) until today, crude steel production has reached 34 million tons. The Mobarakeh steel industry which is known as “from stone to color industry and its chain and production cycle are complete and has no dependence abroad today is active in the industrial activities of seven provinces. Referring to the social activities of the Mobarakeh Steel Company, he pointed out: “Although this company suffers from water shortage, it is helping overcome the problem. From 1392 to the present, the share of crude steel production has reached 34 million tons. But providing the infrastructure needs of the steel industry is one of the most important challenges facing the country’s industry.”

He said in the field of mining, good news about identification of new mines and the exact amount of iron ore reserves will be heard soon. “We recorded 22 percent growth in steel production, which is much higher than the global average.”

Mobarakeh Steel’s 5% Share in Industry

Shariatmadari said during the opening ceremony of the projects of Mobarakeh Steel Company that it has 5% share in the field of industry. Mobarakeh Steel Company has completed the production chain. This establishment has rendered service to the national economy and is present in seven provinces. The minister also said that 4,000 companies are present alongside this complex and 2,800 industrial units are localizing the engineering equipment of this company. According to statistics, 84% of the complex has been localized.

Mobarakeh Steel Company is expected to produce 55 million tons within the 2050 Vision. This complex has a share of one percent in the field of social activities and 5 percent in impact on the industry. Shariatmadari further emphasized on the important role of Mobarakeh Steel Company in optimal consumption: Good efforts have been made in the area of water storage and waste utilization in the Mobarakeh region so much that water consumption in this complex has dropped to one seventh in recent years.

“We recorded 22 percent growth in steel production, which is much higher than the global average.”

Chah Gaz Iron Ore

Chah Gaz iron ore mines are located at a distance of 65 kilometers from the city of Baft, which, according to the exploitation permit, its total amount of definite iron reserve is 88,000,000 tons, and the average iron assay is 57 percent, which is concentrated in the two parallel parts of the eastern and western masses.

Zaghiha Mines Complex

Zaghiha Mines Complex consists of two anomalies (4, 2c) within 10 kilometers from the city of Baft with a definitive reserve, based on the exploration certificate, of 3,843,000 tons with an average assay of 26.43 percent and 346,000 tons with an average assay of 51.55 percent of hematite or magnetite iron ore with the discovery cost of 7,600,000,000 rials. As a result of the complementary exploration activities new reserves have been identified which will be announced after final review and approval.

North Anomaly

The North Anomaly is located 25 kilometers from the city of Baft with a definitive reserve, based on the exploration certificate of the Industry, Mine and Trade Department of the province, of 1,555,000 tons of hematite iron ore with an average assay of 21.44 percent with an exploration cost of 5,900,000,000 rials.

Iran Ore 17C

The mine is located in the city of Ardakan with a total amount of definite reserves, based on a certificate of discovery from the Industry, Mine and Trade Department of the province, of 22,64,000 tons of magnetite iron ore with an average assay of 52.3 percent with an exploration cost of 500,000,000 rials.

Golmand Iron Ore

The mine is located in the city of Ardakan with a total amount of definite reserves, on the basis of a certificate of discovery from the Industry, Mine and Trade Department of the province, of 22,64,000 tons of magnetite iron ore with an average assay of 39.54 percent with an exploration cost of 6,240,000,000 rials.

History

Iran Central Plateau Iron Ore Mines Complex (ICPOMC) consists of the following iron ore mines which are at different stages of exploration, extraction and processing and the products are sold through the stock market:

Anomaly 5a (Sheytoor)

This anomaly is located 80 kilometers from the city of Baft. The Iron ore in this anomaly is concentrated in the three distinct eastern, central and western masses. The equipping and exploring operations of this anomaly have been completed and the result has been reported to the Industry, Mine and Trade Department of the Province for examination and approval.

Mishdavan Iron Ore

According to the exploitation license, the total reserves of this mine is 13,248,391 tons of iron ore with an average assay of 38.79 percent in three eastern, western and central parts which started operation in 1383 (2006-2007) and is equipped with a crushing and concentration line with a capacity of 700,000 tons per year.

Chah Bashe Iron Ore

The mine is located in the city of Ardakan with a total amount of definite reserves, on the basis of the discovery certificate of the Industry, Mine and Trade Department of the province, of 1,555,000 tons of hematite iron ore with an average assay of 52.3 percent with an exploration cost of 500,000,000 rials.

Iran Ore 13C

The mine is located in the city of Baft with a total amount of definite reserves, based on a certificate of discovery from the Industry, Mine and Trade Department of the province, of 276,000 tons of hematite iron ore with an average assay of 32 percent with an exploration cost of 5,900,000,000 rials.

Iron Ore 17C

The mine is located in the city of Ardakan with a total amount of definite reserves, based on a certificate of discovery from the Industry, Mine and Trade Department of the province, of 22,64,000 tons of magnetite iron ore with an average assay of 52.3 percent with an exploration cost of 500,000,000 rials.
During a visit by the first vice president to Isfahan, the steelmaking and continuous casting mill expansion project of Saba Steel Complex, a subsidiary of Iran’s largest flat steel producer Mobarakeh Steel Company, was put into operation.

Es’haq Jahangiri visited the province to commission the continuous rolling expansion project of Saba Steel Complex and inspected the various parts of the production line.

With the official launch of the complex’s expansion plan and continuous casting project, the capacity of sheet production will go up from 750 thousand tons to 1.6 million tons. The products include hot rolling coils, steel sheets and dentine sheets, with an investment of 146 million euros and 2,536 billion rials raising the investment to 220 million euros in total.

Stay in the frontline of Steel Production & Exports: Addressing the inauguration ceremony, the first VP said, “You must be at the forefront of steel production and export. You need to increase the amount of steel production and export. The steel industry should aim the target at exports to counter US sanctions, and we should not be skeptical about this.”

Jahangiri, while pointing out that steel is the frontline of production and exports, said: “Try to increase production and exports compared to last year. This is the expectation of the government and the nation of steel craftsmen, and this is possible.”

Commenting on news reports that the US will block the export of Iranian goods, most of which are petrochemicals, copper and steel, he said, “The Americans seek to prevent imports of essential items to the country.”

Earlier in the day, Jahangiri inaugurated the 25-megawatt power plant of Saba Steel Complex, which aims to provide emergency power to the steel production and strategic centers. The investment made on this project is 150 billion rials plus 13.7 million euros and has provided jobs for 30 people.

Saba Steel Complex was launched in the calendar year 1382 (2003/04) in the vicinity of Esfahan Steel Company (ESCO) and three years later it was transferred to Mobarakeh Steel Company.

Saba Steel Complex, located in the southwest of Isfahan, with a production capacity of 700 thousand tons of steel sheet, has the potential to increase its production to 1.4 million tons per year; Saba is the first industrial unit in the country to produce stainless steel sheets and meets the domestic needs.
IMIDRO Exclusive

We should use the capacity of medium and small mines that are operating or are inactive. Otherwise, we must launch newly explored mines.

IMIDRO (Iranian Mines & Mining Industries Development & Renovation Organization) CEO, while inspecting MIDHCO projects in Kerman Province, said the steel chain is being completed with the measures taken over the past few years. Dr. Mehdi Karbasian said: “Fortunately, the ingot production capacity has risen from 21 million tons in 1392 (2013/14) to 33 million tons in 1396 (2017/18), and we are currently approaching the 55-million-ton target. Along with those units, coking, charcoal washing, coal and other chain units are at the stage of operation which shows the steel chain is being completed.”

As to Zarand Iranian Steel Co, he said: “The capacity of the project is 1.7 million tons, which needs 3 million tons of coal, and this shows the country’s need for new coal capacity.”

Karbasian added that the project will become operational thanks to the great and valuable work done by its staff. He said that in the area of coal, very good work has been done by MIDHCO (Middle East Mines Industries Development Holding Company). For example, the Khamroud mine has been activated after its license, and now it has made a progress in the area of coal, very good and valuable work done by its staff. He became operational thanks to the great efforts of the staff of MIDHCO.

He stated that job creation is a national and revolutionary duty, adding that participation of investment companies, including Pasargad Bank, in the development plans of the mining and mineral sector has led to the growth of value added and employment.

MIDHCO Investment Targets: Karbasian appreciated MIDHCO managers for the key role they play at country level, especially in Kerman Province, saying that 2.2 million tons of iron ore reserves, which will be increased with the explorations of MIDHCO and other organizations deep inside the ground. “We currently have more than 3 billion tons of definitive iron ore reserves, which will be increased with the explorations of MIDHCO and other organizations deep inside the ground.” He also said there are vast coal reserves in Kerman and South Khorasan provinces, but there is not enough investment in these areas.

Karbasian noted that over the past two years, 500 million tons have been added to definitive iron ore reserves.

The MIDHCO CEO, during a visit to the Butia Iranian Steel Company (a MIDHCO project), also said that it is very valuable to create direct employment for 9,000 people by MIDHCO. He stated: “Development of Kerman Province is because of existence of mines and actualization of potential opportunities. These successes come from using young people’s experience and expertise.”

Karbasian, referring to the agreement signed with MIDHCO to support small and medium-sized mines, said: “We should use the capacity of medium and small mines that are operating or are inactive. Otherwise, we must launch newly explored mines. In this direction, the insurance fund also supports mining activities.” He noted: “Among the advantages of small and medium mines is their mobility in deprived areas and job creation. At present, MIDHCO runs mines in line with the government policies and Article 44 of the Constitution.

The MIDHCO chief, saying that the equipment of this mine should be supplied as soon as possible in order to meet the needs of the complex upon commissioning, added: “The transfer of Jalalabad mine is also another significant step taken by MIDHCO. This mine is supposed to provide iron ore to the region.”

He stated that job creation is a national and revolutionary duty, adding that participation of investment companies, including Pasargad Bank, in the development plans of the mining and mineral sector has led to the growth of value added and employment.

MIDHCO Investment Targets: Karbasian appreciated MIDHCO managers for the key role they play at country level, especially in Kerman Province, saying that 2.2 million tons of iron ore reserves, which will be increased with the explorations of MIDHCO and other organizations deep inside the ground. “We currently have more than 3 billion tons of definitive iron ore reserves, which will be increased with the explorations of MIDHCO and other organizations deep inside the ground.” He also said there are vast coal reserves in Kerman and South Khorasan provinces, but there is not enough investment in these areas.

Karbasian noted that over the past two years, 500 million tons have been added to definitive iron ore reserves.

The MIDHCO CEO, during a visit to the Butia Iranian Steel Company (a MIDHCO project), also said that it is very valuable to create direct employment for 9,000 people by MIDHCO. He stated: “Development of Kerman Province is because of existence of mines and actualization of potential opportunities. These successes come from using young people’s experience and expertise.”

Karbasian, referring to the agreement signed with MIDHCO to support small and medium-sized mines, said: “We should use the capacity of medium and small mines that are operating or are inactive. Otherwise, we must launch newly explored mines. In this direction, the insurance fund also supports mining activities.” He noted: “Among the advantages of small and medium mines is their mobility in deprived areas and job creation. At present, MIDHCO runs contracts in this area.”

He added that with the full utilization of MIDHCO projects, 8 million tons of iron ore concentrates, 7.5 million tons of pellets, 3 million tons of sponge iron and 4.2 million tons of steel will be produced.

Dr. Karbasian said that in the 2017 global turnover, $2 trillion (43%) is related to the steel chain. “Steel is also a sustainable factor and cause of growth in our country, and the existence of vast reserves of mineral resources, abundant energy, and access to open waters are among growth potentials.”

He added: “In 1392, Iran’s steel production ranked 15th and now we are in the 13th place. According to our planning at the end of this calendar year (ending March 2019), we will improve one rank, and if the projects are completed in time, we will be among the top 10 steel producers.”

Mining Sector; Resistance Economy: MIDHCO chief stated: “Considering that we want to export 15 to 20 million tons of our 55 million ton output by 1404 (2025/26), and to become the top regional power, we should pay attention to the mining sector as the Resistance Economy.”

He added: “Support for the private sector, job creation, and the achievement of Resistance Economy began in the eleventh government. Prior to the JCPOA (Joint Comprehensive Plan of Action), there was little export in the copper and steel sectors, but last year we exported $9 billion worth of steel to Canada, Europe and Asia alone.”

IMIDRO-MIDHCO Cooperation: MIDHCO managing director also addressed the meeting and said most of the problems of the holding company had been resolved under Mr. Karbasian. “The cooperation between IMIDRO and MIDHCO was very favorable during this period, resulting in wealth creation by forging a sincere cooperation between the government and the private sector.”

Ali Aghbar Pourmand added the MIDHCO projects that have been completed or are under construction create new wealth in the country. He pointed out that the mining sector could be the driving force behind the development of the country and move in line with the Resistance Economy.

Pourmand said: “This capacity is the result of presence of educated forces and God given resources.”

Projects to Be Launched by the End of 1398 (2019/20): On the Butia Iranian Steel Company, he said the complex included 5 mills such as pelleting factory with a capacity of 2.5 million tons, a direct reduced iron with a capacity of 2 million tons, steel mill with capacity of 1.5 million tons, a 500-megawatt power plant and a lime and dolomite factory with a capacity of 450 thousand tons per year.

Pourmand added: The pelleting factory has become operational and other factories are under construction.

According to the official, so far 20 trillion rials have been invested in this complex. He said with the full operation of the plants direct jobs will be provided for 2,600 people and indirect jobs for 26,000 people.
Introduction

The Middle East Mines and Minerals Industries Development Holding Company (public joint stock) was established in 2007 by relying on knowledge and expertise as well as banking, mining and industrial backup. On November 7, 2007, the company registered under Registration No. 310643 at the Department General for Company Registration and Industrial Ownership of Tehran.

Operations

The MIDHCO subsidiaries are mainly active in mine, mineral processing and crude metal and copper (copper cathode & copper pipe) production.

Vision

To become the most admired company in mining and mineral industries in Iran.

Mission

- Sustainable and long-term value creation for the shareholders through design, implementation and development of mines and minerals industries.
- To create a model for the development of mines and mineral industries in Iran.
- To promote the level of management, technology and the share in the Gross Domestic Product (GDP)

Middle East Mines & Mineral Industries Development Holding Company (MIDHCO)

MIDHCO Subsidiaries

1. Zarand Iranian Steel Co. (ZISCO)
2. Sirjan Iranian Steel Co. (SISCO)
3. Butia Iranian Steel Co. (BISCO)
4. Iranian Bahak Copper Co. (IBCCO)
5. Ferrosilice Gharb Pars Co. (FESICO)
6. Pabdana Coal Processing Co. (PCPCO)
7. Iranian Industrial Development and Renovation construction Co. (MANAGC)
8. Middle East Me'yar Sanat Engineering Co. (MEMSICO)
9. Middle East Mines Renovation and Development Co. (MEMRADCO)
10. Middle East Aftab Derakhshan Commercial Co. (MESICO)
11. Middle East Aftab Derakhshan stock Brokerage Co. (MESIBROKER)
12. GMI Projects GmbH
13. World Mining Industry Co. Ltd. (WMI)
14. Middle East Karavaran Sanat Co. (MIEPCO)
15. Mana Saz Co. (MANASAZ)
16. Iranian Samangan Tarabar Co. (ISTCO)
17. Iranian Fartak Innovation & Research Co. (FARTAK)

MIDHCO Exploration

MIDHCO is currently carrying out exploration activities on an area of about 8000 square kilometers in several provinces. Ores under exploration mostly include iron ore, copper and polymetallic ores.

MIDHCO Subsidiaries

1. Zarand Iranian Steel Co. (ZISCO)
2. Sirjan Iranian Steel Co. (SISCO)
3. Butia Iranian Steel Co. (BISCO)
4. Iranian Bahak Copper Co. (IBCCO)
5. Ferrosilice Gharb Pars Co. (FESICO)
6. Pabdana Coal Processing Co. (PCPCO)
7. Iranian Industrial Development and Renovation construction Co. (MANAGC)
8. Middle East Me’yar Sanat Engineering Co. (MEMSICO)
9. Middle East Mines Renovation and Development Co. (MEMRADCO)
10. Middle East Aftab Derakhshan Commercial Co. (MESICO)
11. Middle East Aftab Derakhshan stock Brokerage Co. (MESIBROKER)

MIDHCO Products

<table>
<thead>
<tr>
<th>No</th>
<th>Product Name</th>
<th>Production Capacity (Ton/year)</th>
<th>Supply (Ton/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Steel Billet and Bloom</td>
<td>4,200,000</td>
<td>4,200,000</td>
</tr>
<tr>
<td>2</td>
<td>DRI</td>
<td>3,000,000</td>
<td>338,000</td>
</tr>
<tr>
<td>3</td>
<td>Iron Ore Pellet</td>
<td>7,500,000</td>
<td>500,000</td>
</tr>
<tr>
<td>4</td>
<td>Iron Ore Concentrate</td>
<td>8,000,000</td>
<td>500,000</td>
</tr>
<tr>
<td>5</td>
<td>Metallurgical Coke</td>
<td>1,200,000</td>
<td>548,000</td>
</tr>
<tr>
<td>6</td>
<td>Coal Concentrate</td>
<td>1,050,000</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>Copper Cathode</td>
<td>50,000</td>
<td>38,000</td>
</tr>
<tr>
<td>8</td>
<td>Copper tube</td>
<td>12,000</td>
<td>12,000</td>
</tr>
<tr>
<td>9</td>
<td>Ferrosilicon</td>
<td>24,000</td>
<td>9,300</td>
</tr>
<tr>
<td>10</td>
<td>Calcined Lime &amp; Dolomite</td>
<td>400,000</td>
<td>32,500</td>
</tr>
</tbody>
</table>

MIDHCO Mine Extraction

<table>
<thead>
<tr>
<th>No</th>
<th>Ore Type</th>
<th>Ore Reserves (Ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Iron Ore</td>
<td>337,000,000</td>
</tr>
<tr>
<td>2</td>
<td>Copper Ore</td>
<td>150,000,000</td>
</tr>
<tr>
<td>3</td>
<td>Coal</td>
<td>210,000,000</td>
</tr>
</tbody>
</table>

MIDHCO Services

MIDHCO service companies are involved in activities including exploration, extraction, transportation, commerce, brokerage, engineering and construction.

MIDHCO Projects

35 Projects have been designed and are following up in mines and minerals industries, including:

A) Commissioned Projects
1) 2mT Sirjan iron ore concentrate plant No 1 (2012)
2) 2m T Zarand iron ore concentrate plant No 1(2012)
3) 550th T Pabdana coal processing plant (2013)
4) 800th T Zarand coal coking plant (2013)
5) 12th T Hamedan ferrosilicon plant No 1 (2014)
6) 1m T Bardsir direct reduction plant (2015)
7) 2.5m T Zarand iron ore pelletizing plant (2016)
8) 2.5m T Zarand iron ore pelletizing plant (2016)
9) 2.5m T Sirjan iron ore pelletizing (2016)
10) 12th T Copper tube production plant (2016)
11) 2.5m T Sirjan iron ore pelletizing plant (2016)
12) 12th T Hamedan ferrosilicon plant No. 2 (2017)
13) 12th T Butia Iron Ore Pelletizing Plant (2017)
B) Ongoing Projects
14) 1.7m T Zarand steel plant.
15) Zarand coke dry quenching plant (CDQ).
16) 1m T Bardsir steel making plant.
17) 500 MW Butia power plant.
18) 2.0 and 1.5m T respectively Butia direct reduction and steel making plants.
19) 50th T Copper cathode making plant.
20) 400th T Lime and dolomite calcining plant.
21) 550th T Tabas coal processing plant.
C) Other Projects
22) MIDHCO Resource Planning (MIDRP) Integrated Solution
23) Khoumad coal mine, preparation and extraction
24) Jalalabad iron ore mine, preparation and extraction
25) Gol-Gohar iron ore mine project No. 2, preparation and extraction
26) Gol-Gohar iron ore mine project No. 3, preparation and extraction
27) Gol-Gohar iron ore mine project No. 4, preparation and extraction
28) Chah Firuzeh copper mine project, preparation and extraction
29) Iron ore recharging project in Sirjan concentrating plant.
30 - 35) Six exploration projects.

Address: No. 8, Farhang Blvd, Sa’dat Abad, Tehran
Postal Code: 1997744111
Tel: 021-27340 2345
Fax: 021-22363691
E-mail: info@midhco.com
P.O.Box: 456-14655 Tehran
Minister of Industry, Mine and Trade Mohammad Shariatmadari, speaking at the commissioning of Fakoor Sanat Tehran Company’s concentrate plant in Zarand, Kerman said: “One of the promises I had given at the beginning of the 12th government was to compile and implement a 4-year plan for the mineral development of the country. Thanks God today the Mining and Mineral Industries Roadmap is in front of us and will be unveiled soon.”

He said: “By using this map, we know where, with what goals and at what speed we should move in this area. Without a roadmap, it is wrong to act, and in the field of mineral industries, which, according to the Supreme Leader, is one of the alternatives for oil, it was not appropriate to take steps without a roadmap.”

He added: “We have focused on the use of small reserves and mines in the 4-year and comprehensive roadmap, and have anticipated solutions for using these types of mines and for mineral development.”

Shariatmadari said that Fakoor Sanat Tehran Company has implemented 32 million tons of iron production capacity in various fields in the country so far. He added: “If the capacity of concentrate production reaches 2 million tons one of our important dreams has been realized and a great deal of the mining industry is emerging so that instead of selling crude iron ore we would set up processing and production units, create value addition and employment. Our country is one of the big powers in metal production in the world, especially in the steel sector.”

He noted: “Throughout the world, the development of steel, due to its remarkable effects and results, is an important component of a comprehensive and balanced development, and today we own one of the most important and most renowned steel industries in the world.”

Referring to the lack of a comprehensive map of mining and mineral industries, the minister said: “This has caused a lack of equilibrium in the field of mineral industries, and in the steel field, an imbalance in various fields of concentrate, sponge iron, pellets, etc. The problem will be solved gradually through access to this comprehensive document.”

Shariatmadari continued: “One of our points of emphasis for the development of mineral activities is paying attention to the issue of exploration so that these activities in the 11th and 12th governments are comparable to all mining activities in both the geophysics and geochemistry sectors.”

He stressed: “By preparing the comprehensive 4-year roadmap for mineral development, for the first time in history, there is a transparent division of labor between activities of geology and cartography organizations and IMIDRO (Iranian Mines and Mining Industries Development and Renovation Organization). By utilizing all the capabilities of the private sector we will take more important steps to improve exploration which is the pillar of mineral development.”

He also disclosed that a large cache of iron ore has been discovered in Yazd Province, equivalent to total reserves of iron ore in the country in a little more depth from the surface we are currently working.

The minister noted: “Exploration is one of the most important elements of our work. Additional explorations are like investing in a production unit where the infrastructures are ready and we need to pay more attention to the prolongation of the life of the complex in order to insure us in fulfilling other mineral activities. IMIDORO is responsible for complementary exploration in commissioning production units.”

He said that the water sector was another important environmental issue, adding that in October 1997, a plan was launched for waste water management and treatment, which has 70 percent physical progress and will be launched in September this year. Using this unit will prevent the loss of one thousand cubic meters of water annually.

Shariatmadari said that another valuable work at this point is to build a second plant for increasing concentrate grade by using wastes. He added: “The plant will add 20% to the previous employment, which directly and indirectly employs one thousand people, and with the completion of the plan, we will have wider employment.”

New Technology

IMIDRO Chairman Dr. Mehdi Karbasian, pointing out the specific characteristics of Jalalabad iron ore processing plant in Zarand, Kerman Province, said that the new technology of low grade hematite iron ore (which did not exist in Iran before), as well as private sector investment in the construction of the plant, are the two significant features of the project.

Referring to IMIDRO’s development tasks, he said the organization had called for investment in production of concentrate from low grade hematite ore the winner of which was identified in 1393 (2014/15). “Now, with the operation of the plant, we are witnessing the launch of the first IMIDRO project to attract investment from the private sector.”

He further stated that the high grade hematite iron ore plant, by using the low grade deposits, has been built adjacent to Jalalabad mine, adding that the plan was realized with 1,570-billion-rational investment (by Fakoor Sanat Tehran Company).

Karbasian reminded that in the past few years, 10 million tons of low grade iron ore (34 percent) had been deposited in the vicinity of the mine.

As for the employment in this project, he noted that 160 employees are working in the factory directly while 500 others are involved indirectly.

Noting that the plant was built and put into operation 18 months after the contract was effectively implemented, he said the plant with an incoming feed of 2.2 million tons per year, has the potential to produce 600,000 tons of iron ore concentrate annually with a grade above 66 percent.

He emphasized that the plan is being implemented with an aim of enhancing mines and mining productivity and now has received the welcome of other companies in reprocessing and increasing productivity of other mines.

According to Karbasian, by using the new technology in the processing of low grade minerals that were unusable, while providing the raw materials for the industrial units, it could help create job...
Western deposits were carried out by Detailed exploration operations in 1362 (1983/84) up to 1369 (1990/91) by Barit Iran Company. The new Sangan were conducted in 1354 (1975) from Afghanistan border. 300 kilometers southeast of Mashhad.

Iron ore deposits are divided into three regions, in an area of approximately 22,000 square kilometers and after aerial and ground geophysics, 15 anomalies were identified. So far 13 areas have been delineated to the private sector for exploration operations.

To reach a production capacity of 55 million tons of steel under the 1404 Vision Plan (2025/26) requires reliable iron ore reserves. The iron ore needed to attain the goal of the plan is 160 million tons, and the production of Sangan Iron Ore Complex (SIOC) under the plan is 40 million tons, equivalent to 25% of the entire country. The required concentrate and pellet are 90 million tons, and the SIOC plans to produce 17.5 million tons of concentrate (20% of the total volume in the country) and 15 million tons of pellets (equivalent to 16% of the entire country).

With regard to the needs of the operating or under construction factories in the region to water resources and other energy uses, including gas and electricity, mechanisms to provide the requirements studied and basic measures for their supply are underway.

The Sangan comprehensive plan was finalized in 1392 (2013/14) and 1393 (2014/15) and measures have been taken for localization of industrial and mining units based on the same comprehensive plan.

BHP from 1369 up to 1372 (1993/94), and exploration activities in western, central and eastern deposits are still underway.

In this location, aerial geophysical operations were conducted in an area of 11,500 square kilometers and after aerial and ground geophysics, 15 anomalies were identified. So far 13 areas have been delegated to the private sector for exploration operations.

According to IMIDRO, so far Iran did not possess the necessary technology for taking advantage of the low grade hematite deposits but with the launching of the plant, a new technology for using the minerals which were previously considered as waste, has entered the iron ore section.

The plan has become operational in the two sections of crushing, and grade enrichment and processing with an initial incoming capacity of 2.2 million tons per year as well as production of 620,000 tons of concentrate annually.

The operation in the construction and building section was launched in October 2014 and in accordance with the progress of the work and arrival of domestic and foreign equipment, planning was put on the agenda for the installation of mechanical and electrical instruments and the first phase of the plant became operational in January 2015.

Also, as of March 2016, with the selection of the contractor for mechanization and electrical installation, activities for the installation of the second phase started and the initial operation and production of concentrate was successfully started in November 2016. Since its inception, the plant has produced 700,000 tons of iron ore concentrate from about 3 million tons of low grade waste iron ore (26.28 percent Hematite).

Positive Prospect of Low Grades

Completing the steel cycle and creating more value added in the extraction of mineral products by using the low grade hematite iron ore can become faster and bigger in volume. Creating value added and approaching the 55-million-ton output target has further added to the importance of using the maximum capacity of mines and mineral resources more than ever; this is to the extent that by using the modern mineral technology in the field of processing, it is possible to bring utilization of the products to the highest possible level.

This is while until recently, the low grade hematite iron ore was considered waste, or due to lack of technology and high costs of processing, it would be exported to foreign markets. Jalalabad mine, with a capacity of 620,000 tons of high grade concentrate per year and the investment of the private sector, was due to become operational in the third quarter of last year, but the official operation of the plant was postponed until the fifth month of the current calendar year.

Meanwhile, since the beginning of the month of Bahman (February/March) last year, low grade iron ore processing has started in that area.

The private sector is looking for activities in the hematite iron ore mines that the public sector is reluctant to enter into the field due to the high cost of processing. They refer to their goal as the ‘low grade hematite ore processing movement’ and believe that by utilizing such factories when the country would face a shortage of iron ore in 1404 (2025/26), another ring for the completion of steel chain would be created.
Sirjan Iron Ore Complex

Iron Ore Reserves in Iran & Process of Using Them for Development

The definite iron ore reserves in Iran is said to stand at 3 billion tons. On the other hand, there are about 200 iron ore mines in the country that are operating, and a limited number of them have completed complementary explorations. The steel production plan, in accordance with the specifications of the Vision Plan 2025 is estimated at 55 million tons; this means 20 years of steel production at most. From the perspective of the Vision Plan 2025, with regard to the above-mentioned cases, new explorations in the expanded territory of Iran assume great importance.

Fortunately, Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO) is strongly resolved to take this course. But the question is whether all of the active mines listed are on the way to finalizing their complementary explorations? Or are active with their initial explorations? Certainly, the complementary explorations of these mines could increase the relative capacity of the crude iron ore and serve as a further step towards progress in this field.

Challenges of Iron Ore Mines and Mechanisms to Remove the Problems

Mining conditions and activities are specific in terms of geography or human resources, etc. and as a result of this specification challenges too are very specific in certain cases; For example, in transportation. As far as I know, about 90% of the transportation of minerals in the country is carried out by truck, which means less transportation, higher cost and...

The first challenge to be addressed is the question of infrastructures, including water, electricity, gas, roads, railways, etc. Are there enough required infrastructures around the mines? Obviously, presence of infrastructures and their access ways with regard to the geographical limits of the mines is highly important in the development of the mines and the initial investment.

The next challenge is technology. The up to date technology means reducing costs, increasing revenues and, as a result, continued profitability and investment security. The next question relates to human resources and their increased productivity. Specific forces, especially in the economic sectors, tend towards urbanism and their selection and presence in mineral complexes have been neglected. For example, an expert workforce who is acquainted with strategy and knows the market and understands the global and domestic economic conditions is not present in the mines. Under severe conditions, such people can present a proper plan and design so that the mine owners can leave the difficult situation behind.

The next challenge is the consumer market and the new sales techniques. Whether on a macro or micro level, whether as an upstream organization or as a mine owner, we should learn new sales methods and constantly monitor the consumer market and take our share from the market and safeguard it and try to increase them. Taking steps towards increasing the share means better productivity, competitive production, and...

Other cases, that are not less important, can be added to this list such as injection of capital and money, offering financial incentives, stability of laws and regulations, and most importantly, proper management and creation of security to reduce the risk of investors.

Raising Operating Rate & Its Impact on Further Competitiveness of Products in Global Markets

In a general definition, the mere increase in the operating rate does not necessarily mean further increase in competitiveness of the market products; the operating rate from the economic capacity is obtained from the actual production ratio to the economic production capacity. So, what is important is the economic capacity and review of this capacity along with production and during the operating period is very important. As it was mentioned before, revision and new designs can best be accomplished in the presence of human resources and expert forces.

Iron Ore Production in Vicinity of Golgohar Development Permit

Sirjan Iron Ore Complex is one of the most acclaimed and big complexes of the country that started its operations in 1387 (2008/09) in the form of a project for equipping Golgohar Mines 2 and 4 in the field of extracting iron ore from the said mines.

The complex, up to the month of Esfand 1394 (February/March 2016), directly and by using services of the contractors, managed exploitation operations from the said mines. With regard to the upstream regulations and policies of IMIDRO, in Esfand 1394 Golgohar Mine 4 in return for receiving the ownership equity was shared between IMIDRO and the private sector. In the month of Mehr (September/October) this year, Golgohar Mine 2 was ceded to the private sector for a certain period of time. Currently, the Sirjan Iron Ore Complex, on behalf of IMIDRO has supervision over the 6 mines on its agenda in accordance with the communicated contracts.

The total amount of crude iron ore produced in 1395 (2016/17) amounted to 20.46 million tons, of which 12 million tons were related to Golgohar Mine 1 (Golgohar Mining and Industrial Company) and 6.85 million tons to the production of Gohar Zamin Iron Ore Company dealing with Mine 3. In 1396 (2017/18), the total production of the 6 mines was about 33 million tons. It is noteworthy that the highest production increase was related to Mine 3 and Gohar Zamin Iron Ore Company.

Given the figures and numbers mentioned, it is clear that the production leap has occurred in the Golgohar area and production of crude iron ore.

At first glance, it seems that only about 5% of the country’s economy depends on the mines and mining industries sector, but in fact more than 30% of the economy in the downstream industries of mining and metals is dependent on mines.

All the above mentioned information is a confirmation on the special importance and significant contribution of the iron ore mines of Golgohar in Sirjan in the country’s economy and national production and development.

Sirjan Iron Ore Complex
Tel: 034-41423480-1
Fax: 034-41423459
www.msas.ir
Email: golgohar@gmail.com
Deputy minister of industry, mine and trade and CEO of Iranian Mines & Mining Industries Development & Renovation Organization (IMIDRO), said: “The discovery of large open mines is almost over but there are high underground reserves and deep mines, which demand private sector involvement.”

Dr. Mehdi Karbasian said: “To meet the needs of the manufacturing units, small and medium mines should be activated so that the activities of big factories will continue without problems.”

For example, Karbasian pointed to the Mouteh gold mine in Isfahan’s Mourcheh Khort and said: “The plant’s annual production of gold was up to 230 kg a year until sometime ago, but using the soil and minerals of the surrounding mines, its production last year reached 600 kilograms.”

He added: “Similarly, we have begun to expand Golgohar Mining and Industrial Company and MIDHCO, which are iron ore consumers.” He said that in February last year a memorandum of understanding was signed and it became operational today. According to him, the project will be funded with the support of the investment fund for mineral activities and by receiving 12 thousand billion rials from the resources of the National Development Fund as well as IMIDRO budget.

About the measures taken to stop crude exports, he said that last year, five million tons of concentrate and iron sponge exports were recorded. Before the 11th government took over, one of the threats to the mining and mineral sector of the country was reduction of reserves, Karbasian said. Therefore, the new government launched the plan for exploration in coordination between IMIDRO, the Ministry of Industry, Mine and Trade and the Iranian Geological and Mineral Exploration Organization through a memorandum of understanding, which is implemented by IMIDRO, he added.

The IMIDRO CEO added: “Planning for the exploration of 270,000 square kilometers of the country’s areas was prioritized and started seriously from the spring of 1393 (2014/15), and so far, 200 million tons have been added to the total national reserves, and up to 300 million tons of new reserves are expected.”

He said following new discoveries 40 tons of gold was added to the country’s reserves.

Karbasian added that there are gold mines in 16 provinces of the country and in Sistan and Baluchestan, Kurdestan, West Azarbaijan, and South Khorasan, new mines have been discovered. He said the gold production will increase from five to eight tons by the end of this calendar year (March 20, 2019).
Mouteh Gold Complex

Mouteh Gold Complex, as the first center for processing and extracting gold in Iran, has nine mineral deposits in an area of 150 square kilometers, of which the two mines of Chah Khatun and Sinjedeh have been developed over the past few years and the mineral substance has been extracted. Operations for the extraction of mineral substance from Chah Khatun mine are currently underway in the form of opencast and benching. Important measures taken in the Mouteh Gold Complex over the past 5 years are as follows:

- Receiving the license for the standard gold bullion mark
- Receiving the IMS Certificate (ISOs), 2015 version as the first mineral complex in the country
- Top research and development unit in the country
- Top research and development unit in Isfahan Province
- Exemplary standard production unit in Isfahan Province
- Extension of exploitation of Chah Khatun mine for 10 years
- Receiving development permit of Sinjedeh mine for 5 years
- Reforming and receiving development permit for Shanaq gold mine
- Construction and operation of the 5-million-ton tailing dam while taking all the standards into account

- Implementation of the project for identification of plant species and reconstruction of the mine ecosystem in line with achieving environmental targets and...
- Exemplary complex of Iran Minerals Production and Supply Company (IMPASCO)
- Selecting the complex manager as an “unforgettable face” in industry, mine and trade in 1396 (2017/18)
- Receiving ISO 17025 laboratory standard
- Getting 3-star badge of productivity promoters from IMIDRO

It must be noted that the complex has completed the study, laboratory and semi-industrial phase of the project for the selection of proper plant species for the reconstruction and revitalization of the ecosystem of Mouteh Gold Complex and efforts are underway to develop infrastructure and make investment for the industrial implementation of the plan. The project is under implementation with the direct supervision of the representative of the Department of Environment of Isfahan Province. In this regard, three pilot plans, including plantation of 4,800 seedlings have been carried out and currently 15,000 seedlings are being grown in the greenhouse which will be transferred to the suitable environmental areas after reaching proper growth.

Direct employment: 238 people
Indirect employment: 500 people

One of the most important plans of the Mouteh Gold Complex is the purchase of minerals from small mines without a factory which was done in 1395 and 1396 and is part of the program for the current year, 1397. The above-mentioned strategy has led to the increase in production, efficiency and support for small mines which are devoid of factory. Through implementation of this measure job opportunities have been indirectly provided for about 70 people.

Programs for the calendar year 1397 (2018-2019):

- Initiating the executive operations of the project for the dewatering and extraction of gold from the tailing dam
- Receiving a permit for the development of Darreh Ashki gold mine
- Exploring Qorom Qorom mine
- Performing additional exploration in Shanaq gold mine
- Constructing a building for acid washing operations up to the stage of production of gold bullion for the gold room

Product of the Mouteh Gold Complex with 24 karat, or 0/999, and the standard weight of one kilogram is available on the commodity exchange.

A glance at the statistics for the production of gold bullion and employment opportunities in the Mouteh Gold Complex in the past five years:

<table>
<thead>
<tr>
<th>Year</th>
<th>Production</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1392</td>
<td>236,000 g</td>
<td>200</td>
</tr>
<tr>
<td>1393</td>
<td>281,000 g</td>
<td>300</td>
</tr>
<tr>
<td>1394</td>
<td>248,000 g</td>
<td>360</td>
</tr>
<tr>
<td>1395</td>
<td>380,000 g</td>
<td>210</td>
</tr>
<tr>
<td>1396</td>
<td>602,000 g</td>
<td>0</td>
</tr>
</tbody>
</table>

Direct employment: 238 people
Indirect employment: 500 people

One of the most important plans of the Mouteh Gold Complex is the purchase of minerals from small mines without a factory which was done in 1395 and 1396 and is part of the program for the current year, 1397. The above-mentioned strategy has led to the increase in production, efficiency and support for small mines which are devoid of factory. Through implementation of this measure job opportunities have been indirectly provided for about 70 people.
With regard to the importance, value and application of gold as a precious metal with limited and fully strategic resources throughout the world and considering the ever-increasing application of this metal in medical and electronic industries in the developed and developing countries, especially Iran (according to unofficial statistics the annual consumption in the country is 25 to 30 tons), the Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO), as the compiler of macro policies and the decision maker in the necessary policies in the area of mine and mineral industries, was encouraged to take measures for the expansion of its targeted activities in the area of extraction and processing of gold and creation of value added and generation of wealth for the country.

To this end, the establishment of the second development phase of Zarshouran gold mine and the gold processing factory in the West Azarbaijan Province (Takab) was put on the agenda with an aim of realizing the annual production capacity of 3.5 tons of 24 carat pure gold (to be upgraded to 5 tons) and with an investment of over 3,000 billion rials (with the inclusion of the necessary infrastructures that would be implemented by IMIDRO the amount of the investment will reach 5,000 billion rials). With the signing and exchange of contracts between Zarshouran Gold Mines and Mineral Industries Development Company (the employer) and participation of Kahanroba Company and Foolad Technic International Engineering Co. as well as a foreign company (from South Africa) as the contractor, it was officially launched in the month of Khordad (May/June) and will be completed and put into operation in the next three years.

This important task, as golden foliage of the performance of President Hassan Rouhani government and IMIDRO, will promise a future full of blessing and economic growth and prosperity for the country and especially the hardworking people of the region. It should be noted that at present 714 people are working in the company of whom about 350 are serving in the mine sector and 474 in the factory. The number of the manpower of the employer is 397 and that of the contractor, including consultant engineers as well as mine, road and compound building contractors and etc., is 317. Over 95% of the forces employed in this company (employer and contractors) are committed local people of the region.

It should be noted that Zarshouran gold mine was commissioned in 1393 (2014/15) by Es’haq Jahangiri, First Vice-President and thanks to the efforts of capable Iranian experts. Meanwhile, Zarshouran Gold Mines and Mineral Industries Development Company in 1396 (2017/18) by taking advantage of the sympathetic guidelines of the senior officials of IMIDRO and in the light of the unique efforts of its committed and skilful personnel, managed to produce 850 kg of 24 carat pure gold and register it as a record.
Gov’t, Private Sector United on 55mt Steel Output

Chairman of the Board of Directors of IMIDRO (Iranian Mines & Mining Industries Development & Renovation Organization), said at a meeting on monitoring steelmaking plans in the country, that the launch and development of semi-finished projects have been implemented with an approach of convergence and synergy both by the government and the private sector.

Dr. Mehdi Karbasani, speaking at a meeting with the private sector company directors in the steel chain, said: “The launch of semi-finished mining and mineral sector projects since the beginning of the eleventh (Hassan Rouhani) government has been a major step in balancing the steel chain and shifting the country towards reducing crude sale in this sector.”

He stipulated, “Launching projects and boosting production capacities promise that we are one step closer to relying on ourselves and the development of the steel chain from the mines to the downstream products is one of the pivots of the Resistance Economy.”

He added that the use of domestic resources, the growth of production and the creation of jobs are the effects of this great national movement and wealth generation in the country. Also, balanced development, elimination of deprivation and improvement of the quality of local communities are the result of these actions, he noted.

The IMIDRO CEO said that the supply of concentrates was of interest to steel companies, adding that Khouzestan Steel Company bought the concentrate project of the National Development Company in order to complete the steel chain, while it had no feedstock backing before the purchase. A report on the status of the projects was also presented at the meeting. According to the report, the pelletizing project of Omid Noor Quem Technical Development Steel Company with a capacity of 2.5 million tons has made a physical progress of 86.33 percent and will be commissioned by the end of the calendar year (March 2019).

Foolad Sharg Kaveh Steel Company project with a capacity of 2.5 million tons has made a physical progress of 45.61 percent, and Kaveh Pars Mining Industries Development Company project with a capacity of 2.6 million tons of pellets, has already recorded 11 percent of physical progress.

Torbat Heydarieh Steel Complex also has made a physical progress of 22.26% in sponge iron, melting and rolling sheets, and in infrastructure, engineering, logistics, building, installation and commissioning. The meeting also heard a report on physical progress of Maad Koush pelletizing plant, steel bar project of Kish South Kaveh Steel Company, Boeine Zahra Steel Mill project, and Alborz Nab Arash Steel Complex at 83%, 53%, 80% and 77% respectively.

Due to the problems it faces, the project will be operational early in the summer. The report also said that the plan for the production of mineral resources in the Sarg Foolad (Steel) Company of Khorasan with a production capacity of 2.5 million tons of concentrates has recorded a physical progress of 19.41 percent, and the plan of the National Industrial & Mining Development Company with a capacity of 2.5 million tons of pellets has made a progress of 86.33 percent and will be commissioned by the end of the calendar year (March 2019).

Foolad Sharg Kaveh Steel Company project with a capacity of 2.5 million tons has made a physical progress of 45.61 percent, and Kaveh Pars Mining Industries Development Company project with a capacity of 2.6 million tons of pellets, has already recorded 11 percent of physical progress.

Torbat Heydarieh Steel Complex also has made a physical progress of 22.26% in sponge iron, melting and rolling sheets, and in infrastructure, engineering, logistics, building, installation and commissioning. The meeting also heard a report on physical progress of Maad Koush pelletizing plant, steel bar project of Kish South Kaveh Steel Company, Boeine Zahra Steel Mill project, and Alborz Nab Arash Steel Complex at 83%, 53%, 80% and 77% respectively.

Khorasan Steel Complex

The Khorasan Steel Complex, located 15th km Neyshabour-Firouzeh road, established in 1989 based on Kobe Steel feasibility studies. The company has been located in the plot land of 1400 hectares with the following plants and capabilities: Pelletizing plant of 2.5 million tonnes per year, light constructional steel mill of 620,000 tons per year, two DRI plants of 1.6 million tons per year, two Melt shops of 1.5 million tons per year and under construction project: Iron ore concentrate of 2.5 million tons per year. All the above capabilities and expansion projects have led the Khorasan Steel Complex to the third pole of the country’s steel production in Khorasan Razavi Province while the foundations capabilities and basic structures had been mentioned which maintain its 10 percent share of country’s crude steel output in the next ten years (2025).

The largest industrial plant in the eastern Iran has created at least 5000 direct job opportunities as well as remarkable number of indirect job positions in transportation and public service sector, having a significant impact on socializing the company.

Specific Potential of Khorasan Steel Complex

Currently, the complex includes 4 different production lines: Rolling mill with the nominal capacity of 550 thousand tons per year which has already crossed the nominal capacity and working on the average of 620 thousand tons per year, two melt shop modules with the average capacity of 1.5 million tons per year; two DRI modules of 1.6 million tons per year and Pelletizing plant of 2.5 million tonnes per year.

Khorasan Steel Complex’s Role in Achieving the Country’s Long-Term Goals

At the moment, the complex is capable of producing almost 10 percent of country’s steel output and our workforce and the production goals will lead us to produce the same amount of national production in 2025 (National production plan overview). Iron ore concentrating plant in Sangan, expected to become operational in 2020, will help us to achieve our ambitious goals.

According to Iran’s steel industry 2025 vision, we will balance our steel production chain from iron ore concentrates to finished steel and become the enormous production unit in the country and the Middle East. Annual production capacity of iron ore concentrates is going to reach 5 million t, pellets – 5 million t, DRI – 3.5 million t billet and 1.3 million t finished products.

Export Achievements

Participation in neighbor’s fairs and exhibitions will give us the opportunity to introduce our high quality products to our neighboring countries. The complex has already attended fairs in Afghanistan, Erbil, Baghdad, Turkmenistan and Oman which had a good impact on increasing the quality of our exports in the last months of the previous Iranian calendar year.

Inviting Traders and Target Market Participants

- Monitoring the activities of domestic and foreign competitors;
- Performance in international market Since domestic market already facing downturn, we are focussing on our neighbors markets. Target markets are: Afghanistan, Turkmenistan, Pakistan, Iraq and Union Arab countries.

Khorasan Steel Complex’s Action to Reduce Costs (Cost Reduction)

- EAF REVAMPING (which will have significant ENERGY SAVING effects)
- Modifying and enhancing Hot charge of rolling mill furnace
- Accurate controlling and measurement system
- Continuous control of raw material
- Localization of production components
- Planning to improve the human resource capabilities and compensation
- Implementation of TPM
- Continues progressive production plan

Financial Management

Financial measures for concentrate project from National Development Fund and avoiding incurring cost of delay.

Expansion Projects

- Iron ore concentrating plant with the annual capacity of 2.5 million tons which located near Sangan mine (will be commissioned in 2020).

Plans to Develop New Products and Increase Product Variety (Product Diversification)

- Planning and continuing effort to improve productivity of q10 and q12 Rebar and implementing the new product line q8 with the cooperation of DANIELI
- Production of 130*130 type of billet according to the market requirements
- Packing of the final products with the length of 11.7 meters according to the international market requirements

Khorasan Steel Complex

Km 15 Firouzeh Road, Neyshabour, P.O.Box: 488
Tel: (+98) 51 4245520 - 20
www.khorasansteel.com
Due to the unique properties of aluminium and the strategic role of this metal in the world, its use has become widespread in many industries, especially high-tech industries, and the market demand for this metal has increased dramatically.

Considering the goal of producing high grades of this metal in the country’s development plans and the construction of several aluminium billet factories, the importance of production of this strategic metal, the main source of its production being aluminium oxide (AL2O3) with high purity becomes clearer.

In the second step, we intend to provide bauxite based on the capabilities of the private sector. The main potential in this sector is in small mines that are owned by the private sector. The result of this approach was the purchase of 70,000 tons of quality bauxite from the mines around Jajarm and two private-sector mines. The third plan of Iran Alumina Company was to inject technical and engineering knowhow in the form of consultation into the field of exploration and development of alumina reserves. In this approach, with long-term foresight and decision making, the concentration of bauxite extraction from available and quality resources in Jajarm was directed to other existing mines including Tash, Semnan and Yazd.

Also, in order to strengthen the competitiveness of the finished product, the consumption of energy and primary materials diminished. Meanwhile, it must be noted that the development of this industry and, in general, its related industries, especially the aluminium industry, requires revision of some existing policies. Currently, more than 65 percent of the country’s alumina is imported, so any major decision that could strengthen the country’s alumina plants will prevent exit of foreign exchange from the country. This calendar year, there are several plans to expand the dimensions of this industry in the country’s economic system. The completion also of the Aluminum Billet Project is a major development project of the company in 2018/19. The project, with a significant improvement over the last two years, has been completed 87.30. Also, the Aluminum Billet Project with a capital of 1,300 billion rials will be launched with private sector participation.

Other projects, such as Special Hydrates Generation, are using the highest level of technology in our upcoming business calendar. In addition to the above, the operations of the second and third phases of aluminium ingot production and downstream industries, including flat aluminium plates and aluminium alloys, are included in the future plans of Iran Alumina Company. Meanwhile, due to the increase in Iran’s bauxite deposits and exploratory activities carried out over the past two years, the start of the second phase of the development of Iran Alumina Company in Jajarm has been taken into consideration.

Iran Alumina Company

Touraj Zare, Head of Iran Alumina Company

Address: KM. 7 of Sankhast Road to Jajarm, North Khorasan Province – Iran
Tel.: +985832272086, +985832605944    Fax: +985832273190
www.iranalumina.ir    Email: info@iranalumina.ir
Getting to Know Hormozgan Steel Co.

Hormozgan Steel Company (HOSCO), the second largest steel producing plant in the aftermath of the 1979 Revolution, is located along the Persian Gulf in an area of 95 hectares, 13 kilometers west of Bandar Abbas city and in the Persian Gulf Mining and Metal Industries Special Economic Zone. The presence of this company turns Hormozgan Province into the third steel pole in the country.

The direct reduction unit (ironwork factory) with an annual capacity of 1,650,000 tons of sponge iron was constructed in a period of 32 months as a result of the continuous efforts of domestic specialists and craftsmen, which in its kind is a unique record in the country. In the month of Mehr 1387 (September/October 2008) it entered into the cold operation phase and in the month of Esfand 1387 (February/March 2009) was put into operation in the presence of the President.

In 1389 (2010/11), the steelmaking unit also entered into the hot test phase and in the month of Mordad (July/August) the same year, the first electric arc furnace melting was conducted and on April 15, 2011 the first experimental slab of Hormozgan Steel Company was produced. HOSCO has a nominal capacity of 1.5 million tons of slabs with the thickness of 200 and 250 mm, width of 600 to 2,000 mm and length of 6,000 to 12,000 mm. The company is also capable of producing intermediate products such as 1,650,000 tons of sponge iron per year, 90,000 tons of lime per year, 7,500 normal cubic meters of oxygen per hour, 10,000 normal cubic meters per hour of nitrogen and 120 normal cubic meters per hour of argon.

The company, benefitting from the latest advanced achievements of the steel industry and taking advantage of highly qualified and experienced human resources, plans to present its productions on the basis of customer-oriented approach and customer’s request to the domestic and overseas markets.

The steel produced in HOSCO is mainly carbon steel for use in rolls and sheets as the hot and cold rolled sheets. The company’s slabs used in the hot rolling lines, are mainly for profiling purposes, oil and gas transfer pipelines, and heavy steel parts and the produced sheets in the cold rolling lines are used in the body sheet of the vehicles, the body of the home appliances including refrigerators, heaters as well as special applications such as tin plated and galvanized sheets.

With the full operation of this company, the country will become self-sufficient in broad slab production. Products of the company are produced in compliance with the standards such as ISIRI (Iran’s national standard), ASTM, SAE/ASIS, API (the US), B5 (UK), DIN (Germany), EN (international), JIS (Japan) and ISG (internal standard).

Unique Specifications of HOSCO

- Using the Dog House Contamination Control System to control and reduce pollution for the first time in the country
- Existence of one of the most advanced water desalination equipment in the south of the country for the use of seawater in the production process
- Production of the widest slab with a width of 2,000 mm for the production of oil and gas transfer pipelines
- Possibility of producing slabs with the two thicknesses of 200 mm and 250 mm in order to diversify production and gaining the top position in the market
- Production of high-carbon steel for the production of high-strength steel
- Production of the heaviest slab in the country with a weight of 46 tons
- Possibility of changing the width during casting to reduce preparation time and increase production
- Using one of the most advanced casting machinery with full automation for the production of slabs
- Possibility of changing the width of molten substance in the furnace, lack of dependence on the fluctuations of the scrap market is one of its advantages
- No need to slag pile and slag discharge on the ground to eliminate the pot waiting time and increase efficiency
- Existence of a vertical arch casting line for the production of quality steel, increasing the production of high quality melting and reducing impurities
- Possibility of changing the width during casting to reduce preparation time and increase production
- Having one of the most advanced casting machinery with full automation for the production of slabs

Address: Km 13, Shahid Rajaei Highway, Bandar Abbas, Iran
Postal Code: 7917176319
Tel: (+98) 07633530003-8
Fax: (+98) 07633530145
Web Site: www.hosco.ir

Fax: (+98) 07633530145
Postal Code: 7917176319
Tel.: (+98) 0763353003-8
Address: Km 13, Shahid Rajaei Highway, Bandar Abbas, Iran
Web Site: www.hosco.ir

The presence of this company turns Hormozgan Province into the third steel pole in the country.

Among specifications of this company one is its proximity with the sky blue waters of the Persian Gulf and easy access to the high seas, proximity to the huge gas reservoirs of Assalouyeh and Golgohar iron ore deposits, proximity to Shahid Rajaei port complex and easy access to road and rail transportation.

The construction plan of this large steel complex in Hormuzgan Province after final approval as the largest project of the Ministry of Industry, Mine and Trade, which included excavation, concreting, construction of huge steel jetties and thousands of tons of other required materials and equipment, was launched in 1385 (2006/07).
Russia to Invest in Mehdi Abad Mine

Deputy minister of industry, mine and trade announced the presence of Russian companies and their investment in Iran’s mining and mineral industries. Dr. Mehdi Karbasian, CEO of IMIDRO (Iranian Mines & Mining Industries Development & Renovation Organization), said: “We forecast an investment of one billion dollars by the Russians in this sector. There will be no restrictions if some challenges and monetary and banking problems are solved. We hope that the final deal will be concluded with the Russian side as soon as possible.”

He added: “Following the visit of President Hassan Rouhani to Moscow, a number of large Russian companies have come to Iran to study grounds for investment in exploration and mineral industries as well as fields such as copper and zinc. They have held negotiations with various parties in Iran, including IMIDRO. Of course, they have not yet come to a final conclusion, but we hope the talks will have good results.”

Karbasian said: “Two Russian companies have come to Iran; one of them has received blueprints and will soon submit its proposals. We have agreed to make joint investments in two exploratory areas. The consortium includes Golgohar, Sarcheshmeh Copper, Chadormalou and Mines and Metals Investment Development Company. In fact, this Iranian-Russian venture is after exploring new mines in the areas of interest and finding new mineral deposits.”

Noting that the investment of this project is SBI foreign investment, the IMIDRO chief continued: “There is another major Russian company we have reached initial understanding with so that funding will come from the sale of Iranian oil in Russia. We have reached an agreement of $1 billion annually in general but the Russians want to deliver half of the money in the form of goods. The Central Bank of Iran (CBI) however insists that all the money should be paid in cash.”

Noting that these theoretical disagreements should end in the national interests of Iran, Karbasian said the Russians argue that if they are supposed to sell Iranian oil and make the whole payment in cash it would not be beneficial for them. That is why they insist to pay part of the money in kind. If this does not happen, they would probably refuse to strike a deal because they would lose money.

He said IMIDRO, with the help of the Trade Promotion Organization of Iran, has made a priority arrangement in this regard according to which Iranian companies can provide Iran with its necessary and strategic needs and buy from Russia. Of course, there should be a plan on how to make the payments because the CBI wants to get all the credits in cash so that it could provide rubles to the businessmen. But given the shortage of liquidity in the market and the need to support national production, it is expected to provide a more appropriate approach to producers.

He said Mehdi Abad area has been completely handed over to the Iranian investors, adding: “It is possible to benefit from services of a Russian consultant but the partners are all Iranians.”

Karbasian said Russia is among the five top countries in the area of mine and mining industries with valuable experience in the field.

He added that IMIDRO, along with other government agencies, has been preparing the ground for $1 billion in Russian investment in Iranian mines and mining industries.

The scope of activity is not restricted to certain mineral areas but could cover primary materials such as alumina powder, coke coal, some other cyanide minerals and other basic materials needed for the production of gold, drilling machines, mineral machinery, etc, he said, adding that these items are not produced inside the country and Russia can become a major supplier of these items.

Mehdiabad lead and zinc mine area is located approximately 116 kilometers southeast of the city of Yazd and about 550 kilometers southeast of Tehran. The company’s total lead and zinc sulfide and oxide reserves are 154 million tons with an average grade of 6% zinc and an average grade of 2% lead. Based on the reserve estimate, in Jan-Feb 2016 an investment call for the construction and operation of Mehdiabad lead and zinc mining processing factories was released which was eventually assigned to a private sector consortium, led by Mobin Mining and Road Construction Company in March 2017, following which Mehdiabad Lead and Zinc Industry Pioneers Company was registered and launched its activities for the accomplishment of this mission.

Commitments of the Contract

■ Participation in investment to construct and operate the processing plants within a period of 24 years.
■ Construction of zinc processing plant with a capacity of 800,000 tons of concentrate with a minimum grade of 35%.
■ Construction of lead processing plant with a capacity of 80,000 tons of concentrate with a grade of 60% of lead.
■ Supply and transfer of infrastructure needed in mining.

Terms of the Contract

■ A 4-year-term for mining preparation, manufacture of processing plants, supply and transfer of the required infrastructures.
■ A 20-year-term for exploitation including mine extraction, production and sale of project products.

Summary of Measures Taken Since Contract Signing (April 12, 2017)

■ Additional geological studies with an aim of re-evaluating geological reserves based on the report of JORC 2012 Standard.

Phase One: Early 1398 (2019/20)
Increasing production capacity of sulfide lead concentrate up to annual capacity of 200,000 tons

Phase Two: Early 1399 (2020/21)
Increasing production capacity of sulfide lead concentrate up to annual capacity of 400,000 tons

Final Phase: End of 1401 (2022/23)
Increasing production capacity of lead concentrate up to annual capacity of 800,000 tons (or its equivalent)

■ Equipping and exploiting the mine based on the outlined strategy and beginning of executive operations for advanced stripping: By changing the strategy and implementation policy of Mehdiabad project, employment of 1,000 people in the mine and its factory is provided under the 12th government.
■ Compiling the mining plan (long term, medium term and short term) based on the outlined strategy.
■ Advanced stripping executive operations: Implementing advanced stripping up to 35 million tons.
■ Constructing the processing plant out of sulfide soil - Phase 1 with an annual capacity of 200,000 tons:
  ■ Conducting studies and designing crushing circuit, crushing and floating.
  ■ Supplying, transporting and delivering the equipment of crushing circuit for two phases including four crushing plants, related sivers and feeders (Metal) to Mehdiabad site.
  ■ Supplying water from the waste water treatment plant of Yazd at 100 liters per second.
  ■ Determining the location for the construction of the tailings dam.
  ■ Disposing wastewater by installing the Social Responsibility

Mehdiabad Lead and Zinc Industry Pioneers Company in line with the sustainable protection of the environment, has always been committed to its social responsibilities and to this end, has considered provision of the forgage and water needs of the animals part of its duty in carrying out this project. Also, by optimizing the explosions, a peaceful situation has been created for the wildlife and the mining activities. The wildlife in the area not only has not decreased in recent years, but has increased by 10%.

Investment Opportunity Up to $1bn

The Mehdiabad mine project will be the largest project for production of zinc concentrate in the world over the next 10 years and in the future 3% of the world’s lead-silver production will be supplied by this mine. Therefore, making investment in this project is advantageous. Mehdiabad Lead and Zinc Industry Pioneers Company, in order to speed up realization of the internal and national targets, has taken advantage of the world leading companies in the field of designing, consulting, and supplying of the equipment like Australian H&E (Health and Social Care) Company, Australian Core Resources Company, the Spanish TR Group (Tecnico Reunidos) Company, Gencore Company, and the Australian ATC (ATC Williams Grounded In Design) Company. Mehdiabad Company has always tried to cooperate with other world-class companies in order to use modern technologies. To this end, any proposal for participation in the investment of this grand project up to $1 billion will be welcomed and considered.
Operations of Anguran Lead and Zinc Mineral Complex are in three sections of open mine, underground mine (sulfur) and travertine construction stone. Extraction in the open mine includes waste and mineral extraction that is accomplished by the contractor and the extracted minerals would be delivered by the employer (Iran Minerals Production and Supply Company – IMPASCO) in the course of a special process to different factories for processing and producing ingots. The underground sector (sulfur) has been established in order to gain speedy access to the mineral substances in the lower parts of the mineral reserves. About 4200 meters different excavations had previously been constructed by the employer but continuation of the activity is conditioned on the completion of the preparations. Also, excavation of the mineral substance through tender has been ceded to the eligible contractor. The extracted mineral substance will be delivered to the employer in order to be handed over to the applicants through auction or the stock market.

The second mineral substance of Anguran Complex is travertine construction stone with a geological reserve of about 30 million tons and proved reserve of over 14 million tons. The operation license has been maintained for the 14 million tons, and it is expected that 25 thousand tons will be annually extracted. The extraction and sale of the travertine construction stone is done by the contractor and the employer’s share will be paid by the contractor after the sale.

Anguran lead and zinc soil is exclusively supplied to the domestic factories and considering the created capacities and local needs there is no possibility for export but as for travertine, there is, which, regards to the type of the contract sale and export of such product are carried out by contractor.

Achievements of Anguran Lead & Zinc Mineral Complex in the last 5 years in following Domains

Mining:
1- Obtaining the title of Superior Provincial Operator in 2013
2- Extraction and exploitation of travertine plan in 2014 with obtaining a license of production of 25 thousand tons per annum
3- Extraction record in producing more than one million tons of lead and zinc in 2014, which has been unprecedented in the history of the operation of the Anguran mine.
4- Exploitation of Sahib Saqez Iron Ore project in Kurdistan province in 2016 and creation of employment in this section.
5- Development of Northern parts of this Open Pit mine and exploration of such area and discovery of 370,000 tons of minerals during 2015 and 2016.
6- Installation and commissioning of crusher system in 2015 for crushing and homogenizing of mineral in line with customers satisfaction.

HSEE:
1- Utilization of soil stabilization solution (tach hydrate) to prevent dust emissions aiming at protecting the environment.
2- Substructure and asphaltion of exclusive mine’s road and path leading to Anguran Residential Town.
3- Operation of the wastewater treatment system with a total capacity of 120 m³ (biological treatment method) and return of outlet waste to the complex consumption cycle.
4- The plan to revive waste dumps by creating green forest area
5- Place determination of solid waste landfills at Anguran region
6- Construction of sediment retention dam on the rivers course around the complex
7- Elimination of worn out vehicles and replacement of new cars
8- Obtaining an Environmental Management Certificate in accordance with the International Standard Requirements - ISO 14001
9- Obtaining the Occupational Safety and Health Management Certificate in accordance with the International Standard Requirements - OHSAS 18001
Foolad Technic International Engineering Co.

Foolad Technic is an international company which renders services in the form of feasibility studies, management, engineering, procurement and execution on integrated and individual basis by efficient leading of the investment. The company’s presence in above-mentioned activities, having more than 1500 projects in the fields of inspection, studies and banking supervision show the company’s capability in the above mentioned activities. Foolad Technic company soon after being established in 1370 (1991), started working in the field of engineering and consultation and from 1383 (2004) following the strategic studies and with regard to the market developments as well as government sections in the industrial and construction projects, making use of young manpower graduated from the prime universities of our country along the experience industrial forces. Fulfillment of over 150 EPC projects, industrial automation, signaling, consultation and engineering; also implementation of more than 1500 projects in the fields of inspection, studies and banking supervision show the company’s capability in the above mentioned activities.

Successful results achieved through the company’s efforts and activities in fulfillment of the country’s great projects such as:

- Design, construction and execution of the DR1 plant with one million ton capacity for Sirjan Iranian steel co.
- Design, construction and execution of two rolling mill unit with capacity of 900 thousand tons for Kavir steel complex.
- Design, construction and execution of water treatment plant of No.5 casting machine for Moharan steel complex.
- Design, construction and execution of rolling mill unit with a capacity of 450 thousand ton of round bars for Sarmad iron & steel Co.
- Design, construction and execution of DRI and steel making plant with a capacity of 800 thousand tons for Neyriz Ghalir steel Complex.
- Design, construction and execution of a seven km pellet transition line with capacity of one million tons for Golgohar mining and industrial company.
- Execution, erection and commissioning of a round bar rolling mill plant 550 thousand ton capacity for Baftgh mining and industrial complex.
- Design, construction and execution of a pelletizing plant with 2.5 million ton capacity for Sirjan Iranian steel Co.
- Plant and design, construction and execution of oil Desalination of oil unit for Gachsana oil wells, are indicative of the company in the areas of the defined activities.

In addition to its activities in industry and mining section, Foolad technic company due to having competent manpower, has also attained considerable scientific achievements. Obtaining patent for wagon tippler, patent for blast furnace design, programming and producing technical and engineering software’s, compiling technical and engineering books and working out scientific papers in international journals and conferences are further evidences for Foolad Technic’s competence to contribute to the enhancement of our country.

- Attaining silver statue of Excellent project certificate in the 6th national festival of project management award in Iran in the year 1395 (2016).
- Selecting as the country’s prime engineering company in the 5th festival of research and technology in industry, mine and trade in the year 1395 (2016).
- Selected as the excellent national brand in 1393(2014) in the country.
- Selected in the festival of 30 top brands of 1391 (2012) in central provinces of the country.
- Selected as the excellent national brand in 1391(2012) in the country.
- Selected as the prime company, member of engineering services in 1391(2012), and as the selected company in 1389 (2010) in the festival for the top 100 brands, are among the honors that our company has gained through its activities which are considered as further evidence of FIECo’s capability.

On the way toward its growth and excellence, Foolad Technic has always been trying to follow and meet the requirements for enhancement of the country’s industry, and the sustainable development of our beloved country is the main target aimed by executive managers, and special of this company.
As it was mentioned before, MME is present in five provincial steel projects as the contractor in the engineering and supply section. The company’s projects in the field of direct reduction projects include Shadegan Steel, Mianeh Steel, Baft Steel, Neyriz and Sepid Dasht Steel.

Meanwhile, due to the significant achievements of PERED in the reduction units operational in Shadegan, Mianeh and Neyriz, and in the year of support for the Iranian commodities by the minister of industry, mine and trade, the Iranian PERED plan has been introduced as a substitute for the US MIDREX plan and at present projects such as Baft, Qorveh and Bijar (Kardestan Steel) have been entrusted to the company and engineering of the mentioned projects has been launched.

Currently, the Shadegan, Mianeh and Neyriz projects have been put into operation in the past 15, 12 and 7 months respectively, and are producing at the maximum capacity. The Baft reduction plan is in progress with up to 90% and in accordance with the planning made with the contractor and the employer, it will reach the production stage in the month of Bahman 1397 (January/February 2019). Also, the MME has a 300,000-ton direct reduction project in Shaxxi, China, of which the engineering and parts of supply have been completely accomplished.

It should be noted that all the above-mentioned direct reduction projects are under operation in accordance with the unique innovative approach of the company which is called PERED (Persian Direct Reduction).

In the field of steelmaking, our current projects include Sepid Dasht Steel and South Kaveh Steel Co.

The first phase of South Kaveh Steel project, with a capacity of 1.2 million tons of ingots per year, 1.2 TPY commissioned and delivered to client. Its second phase, with a similar capacity and 50% progress, is underway. At SKS Company, we are responsible for engineering and supervision.

In addition to the above mentioned designs, the MME had three revamping projects at Khouzestan Steel Company, which have been temporarily delivered and are in the final stage of delivery.

The largest project of the MME in Khouzestan Steel Company has been increasing the capacity of module 2 of the reduction of the company from 350,000 tons of sponge iron to 800,000 tons per year.

This project was put at the disposal of our company in the form of EPC, and with major changes in the furnace, reformer, heat recovery and blowers, we were capable of successfully increasing the capacity of the unit from 75 tons of sponge iron per hour to 104 tons, by observing the standards and meeting the criteria of the project. To create exothermic reaction with an aim of reducing the power consumption of the furnace have been implemented and with the implementation of these projects, power on time of the furnace has been reduced by 11 minutes.

Another MME project in Khouzestan Steel Company has been implementation of the automation of slab and bloom casting lines, which has been carried out successfully and is in the final stage of delivery.

Could you please elaborate on the ongoing projects?

The activities of the company are focused on projects in the form of EPC and it currently is the contractor of the EP in five provincial steel projects. It should be noted that due to the significant success of the PERED plan (a “Direct Reduction Technology” invented and patented by MME in 2007) in one-million-ton capacity, the company is preparing infrastructures for the start of the Baft Steel plan. With regard to the successful implementation of the one-million-ton PERED plant in provinces, the company is preparing itself for the start of the mega module and super mega module engineering.

Along with the implementation of the ongoing projects, paying attention to the market development with the priority of being present in all parts of the steel production cycle, from the concentrate and pellet lines to the casting and production of special steel products are on the agenda.

Also, with regard to the need of the steel companies of the country for the issue of optimization of production lines and reduction of consumption, especially water, electricity and gas, MME has formulated reforming proposals in the mentioned fields which will be put at the disposal of the owners of the steel industry.

In the next step, we consider involvement in other mineral industries such as aluminum, copper, lead and zinc, etc. and in this regard measures have been taken and we are determined to play our role as an engineering company through consultation and using potentials of other collaborative and qualified companies as joint venture in these industries.

What is MME’s strategy during the sanction?

Due to international conditions, this company is relying on the technical knowledge of domestic specialists and experts do the best to improve and upgrade PERED technology on commissioning & under construction sites.

Of course designing of Mega modules & super mega modules in one of the top target of MME at present time MME had got one million Tons license inside the country.

Obviously, with the launch at successful commissioned PERED plants it is expected other steel making plants help us to upgrade and registering of super mega modules of PERED.

The company intends to support its domestic manufacturing companies for main equipment of DRI plants and during the sanction, there in less dependence on external equipments.
MMTE was successful in commissioning the 12th plant for the production of sponge iron, which is the largest direct-reduced iron plant in the country, in the month of Khordad (May/June) with a capacity of 1.85 million tons with CDRI & HDRI methods and metallization of 95%.

Services of MMTE to the country’s sponge iron industry:
- Operating 12 direct reduction units
- Constructing four direct reduction units
- 13,040,000 tons production capacity
- 6,360,000 tons under construction capacity
- 19,400,000 TPY capacity in the country

Developing Programs in Iran Mineral Processing Research Center

- Developing communications with top research centers at national, regional and international levels in order to set up open innovation and transition from research and development (R&D) to communication and development (C&D).
- Research development in the field of environmental assessment and strategic studies for promotion of green productivity and economy in the field of mineral processing.
- Development of research and technology in the extraction of strategic and precious elements, future technologies etc…
- Strengthen and develop targeted communication between university and industry.
- Prioritize researches on the challenges of the country’s mineral processing industries, such as water crisis and cost.
- Identifying and developing new processing methods and equipment as well as technological knowledge transfer and technology cooperation.
- Reprocessing of residue and wastes of mines and processing plants.
- Process troubleshooting and promotion of the recovery and efficiency of mineral processing plants.
- Attracting mineral processing ideas and establishment of participation in the development and commercialization of them.
- Identifying and developing communication with experienced experts, research centers and so on for developing researches and technologies in the field of mineral processing.

In this regard, the center welcomes the ideas, suggestions, and cooperation of all the experts in this field, including real and legal persons, in order to take several steps towards the implementation of the above contents as well as development of the country mineral processing industries.

IMPRC Units
- IMPRC consists of four major divisions including:
  - Mineral Processing
  - Mineral Processing Pilot Plant
  - Mineral Processing lab
  - Environmental & occupational health Lab
  - Chemistry Lab
  - Mineralogy Lab

Overall activities operated in IMPRC units
- Consulting services in mineral processing field
- Feasibility and processing studies of rare earth elements
- Characterization studies and identifying mineralogical composition of various samples
- Chemical and geochemical analysis of samples
- Identification and control of environmental parameters and work place dangers

Pilot Plant
- IMPRC Pilot plant has a world class, state-of-art facilities and infrastructures with up to 24 t/h capacity, covering 7500 square meters of space area for conducting tests on ferrous, non-ferrous ores, coal and industrial minerals and rocks.

Iran Mineral Processing Research Center
- Tel: 0098 26 92108361-71
- Fax: 0098 26 92108360
- Address: IMPRC, Karaj, Qazvin, 9 Km from Qazvin / Karaj Freeway, Iran
- E-mail: info@imprc.ir
- Website: www.imprc.ir
1. About the Complex
1.1 - Esfordi Phosphate Industrial and Mineral Complex with a capacity to produce phosphate concentrate and iron concentrate has highest quality phosphate in the country. Located 35 km northeast of the city of Bafq and 155 km of Yazd Province, the plant produces 62,000 tons of phosphate concentrates and 23,000 tons of iron concentrates by product, annually.

1.2 - The contract for the basic and detailed engineering plan of the mine was signed in the course of legal formalities within the framework of leadership. The engineering plan of the mine was signed December 22, 2016. The contract for the basic and detailed engineering plan was signed with Khatam al-Anbia Construction Headquarters as of December 22, 2016 in the course of legal formalities within the framework of leadership.

2. Products
2.1 - Phosphate concentrate with an alloy of Fe%60+-1
2.2 - Iron concentrate with an alloy of Fe%60+1

3. Phosphate Consumption
3.1 - Phosphate is used 85% in production of different fertilizers, 8% in animal feed and human food supplement, 5% for industrial purposes and 2% in specific chemical substances. The most use of phosphate is in production of phosphate fertilizers and industrial and oral phosphoric acid for use in food and medicine industries such as: vegetable oil, sugar production from sugar cane, beverage industry, pharmaceuticals and detergents, paint and resin, textile industry, oil industry, military industry, etc.

3.2 - The main consumption of Esfordi concentrate phosphate is in domestic industry for the production of different types of fertilizers such as simple super phosphate (SSP), triple super phosphate (TSP) and diammonium phosphate (DAP) or monoammonium phosphate (MAP) and production of industrial phosphoric acid (HIPPO4).

3.3 - The most common method to use phosphate rock is its conversion into phosphoric acid and then its consumption in the related industries. In order to benefit from the investment and the capacity of the private sector in line with increasing productivity for realizing the Resistance Economy program, production and employment, production of phosphoric acid, etc., the complex was assigned to Khatam al-Anbia Construction Headquarters as of December 22, 2016 in the course of legal formalities within the framework of leadership.

3.4 - Domestic Companies consuming the product of Esfordi phosphate are:

4. Introduction of Manufactured Products for Export and Volume of Exports
For example, joining the consortium of Chinese and Russian companies in line with investment in production of phosphoric acid from the low-grade green rock deposits of Esfordi or the known reserves of the country by using the HHP method which has good technical knowledge in this regard.

5. Opportunities to Attract Investment
5.1 - Investing in phosphoric acid production from manufactured phosphate concentrate
5.2 - Investment in production of phosphoric acid from low-grade green extracted stones (unprocessed)
5.3 - Investment in extraction of rare earth elements
5.4 - Investment in the phosphate exploration section
5.5 - Most Important Measures and Performance of the Last Five Years
5.6 - Five-year performance in production and sales

6.2 - Launching pilot plant for the extraction of rare earth elements and conducting pilot tests
6.3 - Assigning the complex to the private sector in line with the implementation of general policies of Article 44 of the Constitution with an aim of attracting capital and making investment and development for the construction of acid phosphoric plant or another final product to the Khatam al-Anbia Construction Headquarters.

6.4 - Receiving three-star productivity emblem award from Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO)

6.6 - Assigning the complex to the private sector in line with the implementation of general policies of Article 44 of the Constitution with an aim of attracting capital and making investment and development for the construction of acid phosphoric plant or another final product to the Khatam al-Anbia Construction Headquarters
6.7 - Five-year performance in production and sales

7. Membership in International Consortiums

<table>
<thead>
<tr>
<th>Production of phosphate concentrate (ton)</th>
<th>Production of iron concentrate (ton)</th>
<th>Sale of phosphate concentrate (ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>290677</td>
<td>73755</td>
<td>241989</td>
</tr>
</tbody>
</table>

7.1 - Extraction of rare earth elements with foreign consortiums using modern methods such as nano and bio-leaching.
7.2 - For example, joining the consortium of mining phosphate rock producers in line with investment in exploitation and extraction of more than 600 million tons of discovered deposits in Iran via new methods.

8. Prospects and Trends of Global Market for Chemical Fertilizers by 2019
The amount of demand for enriched fertilizers in 2014 exceeded 184.67 million tons, which increased to about 186.6 million tons in 2015. If this figure is to increase continuously by 1.6% per year, it would reach 199 million tons by 2019.

Esfordi Phosphate Complex
Address of Complex:
Km 35 Bafq-Bahabad Road, Bafq, Yazd
Tel.: (+98) 035-32413340-44
Fax: (+98) 035-32413332
www.iran-phosphate.com
info@iran-phosphate.com

Hamidreza Askari,
Managing Director of Esfordi Phosphate Complex
Introducing Parsian Energy Intensive Industries Special Economic Zone (PEISEZ)

Parsian Energy Intensive Industries Special Economic Zone (PEISEZ) is located on 9,800 hectares, 40 km east of Assaluyeh, on the border of Hormuzgan, Bushehr and Fars provinces. This area was designated as a special economic zone upon a decision by the Iranian Parliament in 1389 (2010/11) and endorsed by the government in 1390 (2011/12).

PEISEZ has been set up with macro infrastructures, licenses, and quantitative objectives including 4 million tons of steel, 600 thousand tons of aluminum, 3 million tons of alumina, 18 million tons of petrochemicals and 4,300 megawatts of electricity.

The actions taken in this area can be summarized in four sections: studies, completed infrastructures, licenses, and ongoing infrastructures, as follows:

Studies Conducted in PEISEZ
1. Detailed and comprehensive plan of the region
2. Studies on transport and traffic
3. General studies including meteorological, geological, hydrological, and geotechnical studies
4. Basic and detailed studies of Parsian Port
5. Warehouse and cargo terminal site designs
6. Evaluation of the environmental impacts of Parsian Region and Port
7. Sea catchment design
8. Design of the system for cargo transfer from industrial units to Parsian Port for export of products

Infrastructures Built in PEISEZ
1. Purchase of 4 megawatts of electricity branch
2. Purchase of 30 liters per second of water branch
3. Construction of asphalt and two-lane access roads with an approximate length of 20 km
4. Construction of part of the 20-kilovolt double-circuit distribution network in the northern site with a length of 18 km
5. Construction of concrete reservoirs with volumes of 500 and 2000 cubic meters
6. Construction of the PEISEZ customs building
7. Construction of a fire station in the northern site of the region
8. Construction of a temporary clinic building

Licenses Issued by Competent Authorities
1. The PEISEZ approval by the Parliament
2. The PEISEZ approval by the government
3. Environmental permit for the region by the Department of Environment
4. Environmental permit for the Parsian Port by the Department of Environment
5. Primary license of Parsian Port by Ports and Maritime Organization (PMO)
6. License for construction of Parsian Port by PMO
7. Permission issued by the government to strip investors of foreign exchange obligations
8. Permission on authorized sea border from the ‘working group on authorized borders of the country’
9. Permit for permanent establishment of the Islamic Republic of Iran Customs Administration (IRICA) in the region

Infrastructures under Implementation in PEISEZ
1. Completion of water distribution and transfer network with a length of 37 km
2. Construction of the lighting network of passages
3. Construction of access roads to Site No. 1 of petrochemical industries
4. Construction of square and intersection of the same level crossing of Bandar–Parsakarneh Road
5. Environmental monitoring station
6. Construction of dykes and levee structures in the northern site of the PEISEZ

Parsian Port
Parsian Special Economic Zone with the aim of annual production of 4 million tons of steel, 18 million tons of petrochemicals, 600 thousand tons of aluminum, 3 million tons of alumina, 18 million tons of petrochemicals and 4,300 megawatts of electricity.

In its Horizon Plan, the Parsian Port will have 19 pier terminals as follows:
- 11 pier terminals for public goods
- 1 container pier terminal
- 1 liquid bulk pier terminal
- 1 general pier terminal / container
- 5 dry bulk pier terminals

Loading, Unloading Capacity of 40 Million Tons Annually
According to the Horizon Plan, Parsian Port will add 40 million tons to the country’s final capacity of loading and unloading annually. Located in the approximate distance of 2000 km, Parsian Port is the largest port in this part that has specialized industrial, mining and commercial piers. In other words, the port has the largest loading and unloading capacity in the west of Strait of Hormuz between Shahid Rajaee Port and the Port of Khormamshahr.

Among the country’s ports, Parsian Port is the closest to Qatar ports and can link Iran with Qatar and its gas fields. The port is designed to be used for various industrial applications such as dry bulk and liquid bulk, including export of various petrochemical, commercial and container products.

At present, according to the current needs of this region, the first phase of this port including 4 quay terminals with a capacity of loading and unloading of 9 million tons has started as of the middle of 1396 (2017/18). The first phase of the Parsian Port has a liquid bulk bunker terminal, a dry bulkhead terminal and two general cargo terminals and container.

Opportunity to Invest in PEISEZ
- Production of a variety of petrochemical products with a capacity of 18 million tons per year
- Production of steel with a capacity of 4 million tons per year
- Production of aluminum with a production capacity of 600 thousand tons per year
- Production of alumina with a capacity of 3 million tons per year
- Production of power generation up to 4,300 megawatts
- Production of fresh water up to 750,000 cubic meters per day
- Duct port for the first phase of the Parsian Port with a loading capacity of 9 million tons per year
- Support-service projects and downstream industries
- Construction of reservoirs and farm tank
- Construction of rail and road terminals
- Construction of Small Scale Industry Town
- Construction of hotel and tourism complex

Parsian Energy Intensive Industries Special Economic Zone
Central Office: Ground Floor, Iran National Steel Company, Vali-e Asr Ave., Tehran, Iran
Tel: (+98 21) 88899985
1. History
The history of exploration operations in the Central Alborz area, which embodies more than 30,000 square kilometers of Mazandaran Province, dates back to about 83 years ago.

The first exploration operations in that vast area took place under the water in 1314 (1935/36) during the nationwide railroad construction which led to the exploitation of Kani Jola Mine and subsequently another exploration operation was conducted in the same area which eventually in 1350 (1971/72), resulted in the exploitation of some part of the Kar Mood Mine in the same area. Therefore, mines of the Central Alborz Coal Company could be considered the oldest coal mines in Iran. On the other hand, the Central Alborz Coal Company, in line with the government’s policy of privatization, was formed.

2-1. Kari Kola area: By obtaining a permit from the Environment and Natural Resources Department, tunnel digging operations are underway for complementary explorations and exploitation in coming years.

2-2. Jamshidabad area: Action has been taken to receive a permit from the Environment and Natural Resources Department so that by obtaining a permit to launch mining operations in coming years.

2-3. Exploitation permit for Goliran Mine: With a definite reserve of 27 million tons and possible reserves of 14 million tons, the capacity of the mine in block 6 is currently equal to 60,000 tons per year. With the launch of block 9 some 150,000 tons of coal will be also extracted from this block.

2-4. Garjandeh Sar and Sefid Rîz exploration area: The reserve of the area is over 10 million tons which, with the completion of the exploration operation, steps are being taken to receive a discovery certificate.

2-5. New coal washing plant in Anjir Tanghe region: It was installed in 1396 (2017) with a nominal capacity of 500,000 tons of raw coal per year and production of 350,000 tons of concentrate.

2-6. Old coal washing plant: It became operational in 1367 (1988) and has remained unused due to the commissioning of the new plant and has been put at the disposal of a contractor to process 2 million tons of the present wastes in Anjir Tanghe enclosure with the capacity of washing 150,000 tons annually and dispose the wastes remaining from the processing out of the plant area.

2-7. Charcoal laboratory in Anjir Tanghe region: For the analysis of the purchased raw coal and the produced coal concentrate.

2-8. The company has an administrative site located in Azadnâr region and an educational-cultural complex in Khazârânab. The complex is open for the use of the company staff and other partner units in all seasons.

3- Company Products
At present, the company produces coal concentrate with the following qualitative specifications after washing the raw coal at the coal washing plant:
- Ash - 10.5 to 11 percent
- Volatile materials - 34 percent
- Blastomery - 15 mm
- Sulfur - 1 percent
- Moisture - 10 to 11 percent

4- Selling Process
The company supplies part of the raw coal processing costs due to the coal washing plant from its mines and purchases the remaining raw coal from the private sector in the region and other parts of the country. After processing in the coal washing plant and transferring it into the coking coal concentrate it is transported by the railway and truck to Esfahan Steel Company and by truck to Zarand Coke Making Complex in Kerman. The current concentrate production program of the company is 120 thousand tons per year.

5- Investment Plans and Attraction of Foreign Investors
1- Plan to build Savadkouh coke factory
2- Plan to prepare and equip Kordabad Mine
3- Plan to prepare and equip Goliran Mine

5-1. Plan to build Savadkouh Coke factory
The plan for building Savadkouh coke factory with an annual production capacity of 300,000 tons of coke in Anjir Tanghe region in a period of 36 months has the joint cooperation of the Kani Kordabad. The company has prepared the final report of environmental studies and submitted it to the provincial environmental department. After approval it was sent to the Department of Environment and after receiving the final permit, operations for the equipment and preparation of Jamshidabad section of the mine will be launched. The definite reserve of the mine is 23.6 million tons and its possible reserve is 40 million tons. In this part the Kari Kola mine is currently undergoing complementary exploration operations.

5-2. Plan to prepare and equip Kordabad Mine
The plan for the preparation and equipment of Kordabad Mine for the production of 60,000 tons of raw coke per year is being followed up. Consultant of the plan has prepared the final report of environmental studies and submitted it to the provincial environmental department. After approval it was sent to the Department of Environment and after receiving the final permit, operations for the equipment and preparation of Jamshidabad section of the mine will be launched. The definite reserve of the mine is 23.6 million tons and its possible reserve is 40 million tons. In this part the Kari Kola mine is currently undergoing complementary exploration operations.

5-3. Plan to prepare and equip Goliran Mine
In this mine block 6 with a production capacity of 60,000 tons a year is currently operational and block 9 with a production capacity of 150,000 tons per year has been designed by Ukrainian consultants and if the funding is provided it will become operational in a period of three years.

6. Environmental Measures
6-1. Construction of a barrier dam to prevent entry of waste into the river adjacent to the site.
6-2. Active presence in international environmental exhibitions over the past years and implementation of programs related to the maintenance of sustainable development in the company.
6-3. In line with the improvement of environmental issues and increase of the efficiency in Savadkouh coal washing factory, technical knowhow of the creditable FLS Company has been used. Meanwhile, the company has supplied the majority of foreign equipment. Installation of the equipment and hot and cold commissioning of the plant has been done in the presence of the company supervisors.
6-4. Receiving ISO 9001 - 14001 - 18001 certificates.
6-5. Plan to prepare and equip Goliran Mine
In this mine block 6 with a production capacity of 60,000 tons a year is currently operational and block 9 with a production capacity of 150,000 tons per year has been designed by Ukrainian consultants and if the funding is provided it will become operational in a period of three years.
6-6. Plan to prepare and equip Kordabad Mine
The plan for the preparation and equipment of Kordabad Mine for the production of 60,000 tons of raw coke per year is being followed up. Consultant of the plan has prepared the final report of environmental studies and submitted it to the provincial environmental department. After approval it was sent to the Department of Environment and after receiving the final permit, operations for the equipment and preparation of Jamshidabad section of the mine will be launched. The definite reserve of the mine is 23.6 million tons and its possible reserve is 40 million tons. In this part the Kari Kola mine is currently undergoing complementary exploration operations.

Address: Km 185, Savadkouh Rd., Opposite Savadkouh Road Traffic Police, Savadkouh, Mazandaran.
Postal Code: 4791649498
Tel.: ++98 1142424001-5
Fax: ++98 1142422590
Email: info@cacco.ir
Website: www.cacco.ir
Mr. Vajihollah Jafari, Managing Director of Iran Minerals Production and Supply Company (IMPASCO), said the company has conducted over 600,000 meters of drilling from 2002/3 to 2017/18. "Considering the implementation of exploratory activities, IMPASCO has acquired exploration certificate for exploring 48,560 km² of area 37,900 km² of which have been accomplished and 35,359 km² are underway," he announced.

He added that the study of 51 main targets to obtain a new exploration license related to the completed areas is on the agenda.

He noted that a total of 680,000 meters of drilling has been carried out by the IMPASCO from 2002/3 up to 2017/18, 270,000 meters of which was core drilling which was conducted from 2013 to 2017.

Mr. Jafari reiterated that out of the covered drillings carried out from 2002/3 to 2017/18, 28% is dedicated to the coal exploration and the remaining to metal fields (Iron Ore and Poly Metal). At present, a large number of final reports on exploratory activities (19 cases) have been sent to the Ministry of Industry, Mine and Trade provincial departments or the Headquarters of such Ministry for issuing new certificates or data deposit upgrading current discovery.

He further remarked: "Within the period from December 2017 to January 2018 we had a plan to produce 665,000 tons of zinc soil which was increased up to 723,380 tons while the plan to produce 300 tons of gold was increased to 490 tons as well."

The Managing Director of IMPASCO, referring to the performance of the Mouteh Gold Mine Complex over the past 5 years, stated: “During this period, comparing with past years, the mine has had appropriate performance and followings are the four records which have been registered at this complex:
1. Record registration of the most processed soil since the factory start-up.
2. Record registration of the highest production efficiency over the past 13 years
3. Record registration of the lowest stoppage time of the factory since its start-up
4. Record registration of the highest production within the past 24 years

He also referred to the record registration of production of more than one million tons of lead and zinc in 2014/15 which is unprecedented in the history of the operation at Angouran Mine.

Mr. Jafari, referring to the performance of the Joghatai Ferrochrome Complex in recent years, said 18,346 tons of ferrochrome were exported to the Netherlands, Belgium, Japan, Turkey, China and India in 2015/16 and 2016/17, occasioned about $24 million dollars as foreign exchange to the country.

He further added that “the production plan of Nakhlak lead concentrate was 1500 tons last year which was increased to 2700 tons by mid January 2018."

The Managing Director of IMPASCO, in conclusion, said the final operational plans, for next 4 years, fall within three major groups and expressed “we hope that 28 Exploration Certificates, 30 Exploration Licenses, and 137,000 meters of drilling will have been obtained by the end of 2021.”
Iran Joins Rail Track Manufacturing Countries

The first domestically manufactured rail track consignment produced at Isfahan Steel Company was delivered to the National Railways Organization in a special ceremony held in the presence of Dr. Mansour Yazdizadeh, Managing Director of Esfahan Steel Company (ESCO).

By delivering this steel consignment, Iran has officially joined the rail track manufacturing countries.

The cargo is 500 tons of U33 rails, manufactured according to the latest global technology at ESCO, and is on par with European Standard EN13674.

Sadat Hosseini, said: “Delivering the first rail track consignment gives us the glad tidings that the IRI Railways concern over provision of rail tracks will be removed and the problem will be solved by increasing the production.”

Noting that the IRI Railways has welcomed the domestic manufacture of rail tracks, he said the organization will fulfill its obligations vis-à-vis the national railways so that an important step would fulfill its obligations vis-à-vis the national railways so that an important step would be taken towards the development of rail transport.

He said: “According to the Sixth Development Plan, the country’s railways should reach 25 thousand kilometers, every 10 kilometers of which requires 500 tons of rail tracks. The statistics indicate the country’s high rail mileage.”

Sadat Hosseini added: “The rails produced at the ESCO have been tested by experts and are reliable. The quality of these products will be better known after installation.”

Meanwhile, Yazdizadeh expressed satisfaction with the efforts made by this huge industrial complex in line with Iran’s self-sufficiency in production of rail tracks in a year designated as the year of support for domestic goods. He said: “Rail transportation development is one of the basic needs of the country and the supply of rail tracks is of strategic importance.”

In the current situation that we are under unjust sanctions, rail supplies within the country are very effective support for the industrial complex in line with Iran’s self-sufficiency in production of rail tracks in a year designated as the year of support for domestic goods. He said: “Rail transportation development is one of the basic needs of the country and the supply of rail tracks is of strategic importance.”

Yazdizadeh reiterated that the production of the rails was much easier four years ago according to the standards of the time, adding that the rail production based on the latest European standards was very difficult and complicated but it was worth the efforts because it has made the country self-reliant. “We are glad that today the production problems of other types of rails, including the UIC60, have been resolved and there is full readiness to produce all types of rails.”

The CEO of Esfahan Steel Company concluded by saying that the company, with the possibility of producing 400 thousand tons of rails per year, is able to supply the state railways with the needed tracks and export the surplus.

Zarand Coke Making and Tar Refinery Complex

The first coke and tar producer was founded thanks to the efforts of Iran Minerals Production and Supply Company (IMPASCO) and in line with the policies of the Islamic Republic of Iran based on sustainable development. The complex is located km 7 from Zarand-Kerman Road in an area of 100 hectares. The ground was broken for its construction in 1380 (2001/02) and construction operations were launched a year later with the selection of the contractor and the executive consultant. After concluding a contract with CITIC of China operations for the installation of pieces started and finally in the month of Aban (October/November) 1387 (2008) the complex became officially operational. The nominal annual capacity of the complex is 400,000 tons of metallurgical coke. The complex is capable of extracting 19,000 tons of tar resulted from the coke making process and 5,000 tons of raw benzol and 1,100 tons of sulphur from the produced gas. The complex is equipped with four main units of preparing the coal and coke grading, coke making furnace, gas refinery and tar refinery.

Metallurgical Coke
Tar
Benzol
Sulphur

Achievement
Products of Zarand Coke Making and Tar Refinery Complex

- **Metallurgical Coke**

**Analysis**

<table>
<thead>
<tr>
<th>Mechanical Resistance</th>
<th>S</th>
<th>Carbon Fix</th>
<th>Analytical Moisture</th>
<th>Ash</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>M10</td>
<td>1.1–1.3</td>
<td>83–85</td>
<td>0.2–0.4</td>
<td>9–14–1.5</td>
<td>25–80mm</td>
</tr>
<tr>
<td>M40</td>
<td>1.1–1.3</td>
<td>83–85</td>
<td>0.2–0.4</td>
<td>9–14–1.5</td>
<td>25–80mm</td>
</tr>
</tbody>
</table>

- **Fine-grained Coke**

**Analysis**

<table>
<thead>
<tr>
<th>Carbon Fix</th>
<th>Analytical Moisture</th>
<th>Ash</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>79–82</td>
<td>0.20–0.50</td>
<td>14.5–16.5</td>
<td>3–5mm</td>
</tr>
<tr>
<td>79–82</td>
<td>0.20–0.50</td>
<td>14–16</td>
<td>3–5mm</td>
</tr>
<tr>
<td>80–82</td>
<td>0.20–0.50</td>
<td>14–15</td>
<td>5–15mm</td>
</tr>
<tr>
<td>80–82</td>
<td>0.20–0.50</td>
<td>14–15</td>
<td>5–15mm</td>
</tr>
</tbody>
</table>

- **Tar**

**Analysis**

<table>
<thead>
<tr>
<th>Water Content</th>
<th>Naph</th>
<th>Ash</th>
<th>TI</th>
<th>CV</th>
<th>Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–4</td>
<td>&gt;7</td>
<td>&gt;0.13</td>
<td>3.8</td>
<td>20–25</td>
<td>1.19–1.25</td>
</tr>
</tbody>
</table>

- **Sulphur**

**Analysis**

Usually has purity higher than 90%

---

**Benzol**

**Analysis**

<table>
<thead>
<tr>
<th>Test</th>
<th>Range of Result</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillation Range ≤75°C</td>
<td>≤3</td>
<td>% (V)</td>
</tr>
<tr>
<td>≤180°C</td>
<td>≥91</td>
<td>% (W)</td>
</tr>
<tr>
<td>Density</td>
<td>≤0.9</td>
<td>g/ml</td>
</tr>
<tr>
<td>Moisture</td>
<td>≤1</td>
<td>% (W)</td>
</tr>
</tbody>
</table>

Management systems implemented in the coke making and tar refinery complex

- Quality management system IS0 9001: 2015
- Environment management system ISO 14001: 2015
- OHSAS management system OHSAS 18001: 2007
- One-star diligence rank in IMIDRO Excellence Model
- Membership in International Quality Network (IQNet)
Jalalabad Iron Ore Complex is in Zarand, one of the major iron ore reserves in Iran located in Kerman Province, 35 km northwest of the city of Zarand, and the span of the mine area is 28 square km. The way to reach the complex is through taking 18 km of the asphalted Zarand-Bafq-Yazd road and 15 km of the exclusive passway to the mine. The definitive reserve of the complex is 1.8 million tons with an average grade of 43.51 percent of which 558 million tons of tailings could be extracted which, in comparison with the total tailing of the mine, will be 5.38. The nominal capacity of the annual extraction is 6 million tons. The activities conducted so far include exploratory activities of the Russians (1344-1356 [1965/66 - 1975/76]) and exploratory activities of Iran Minerals Production and Supply Company (IMAPSCO) from 1379 (2000/01) to 1382 (2003/04). Meanwhile, the MIDHCO (Middle East Mines Industries Development Holding Company) with a capacity of 4 million tons and Fakoor Sanat Tehran Company with an annual capacity of 600,000 tons which belong to the private sector are operating close to Jalalabad Iron Ore Complex by using products of the complex.

Areas of Activities
The main activities of Jalalabad Iron Ore Complex are:
- Supervision over iron ore extraction to supply the magnetite concentrate plant of Zaran Iron Steel Company (private sector investment) with annual production capacity of 4 million tons of concentrate.
- Selling lump and granulated (tailing) iron ore to supply the hematite concentrate factory of Fakoor Sanat Tehran Company (private sector investment) with a production capacity of 600,000 tons of concentrate per year.
- The complex, in line with the mission of IMIDRO (Iranian Mines and Mining Industries Development and Renovation Organization) has undertaken for the development, empowerment and competitiveness of the mine and mining industries sector and conversion of the resources and products of this sector into sustainable wealth, as an affiliate of the private sector investment and potentials and boosting production, as of October 22, 2016 the mine was entrusted to Zarand Iranian Steel Company under the supervision of IMIDRO within the framework of making investment.

History of the Discoveries
- Beginning the study on Central Iran geological structure since 1309 (1930/31).
- Discovery of anomalies in this area in 1343 (1964/65).
- Exploiting operations by the former Soviet Techno Export Company in the years 1344 (1965/66) to 1354 (1975/76).
- Discovery of 6 anomalies (including Zarand, Najafabad, Jalalabad, XL, XXXIX, XXXVIII deposits) and an estimation of 34 million tons of iron ore.
- Stopping exploration operations in 1354 and resuming the operations in 2016.
- Conducting additional exploration studies from 1379 to 1382 (2003/04) by Kavoshgaran Consulting Engineers.
- Focusing exploratory studies on Zarand deposit.

Iron Ore Reserves in Western & Southern Areas
- Geological reserve for the deposit with a cut-off grade of 20 percent in the western area is 75.5 million tons and the average grade is 11.39 percent.
- Geological reserve for the deposit with a cut-off grade of 20 percent in the southern area is 17.3 million tons and the average grade is 19.41 percent.
- Resumption of exploratory drilling operations for 6,000 meters of drilling with the steering participation of the Zarand Iranian Steel Company.

Establishment of an Integrated Management System (IMS)
- In accordance with international standards.
- System maintenance by the end of 1395 (2016/17) for a period of 6 years.

Development plans
- Continuing exploration and drilling operations in the operation area of the mine with steering participation.

Present Reserve of Jalalabad Iron Ore Mine

<table>
<thead>
<tr>
<th>FeO (%)</th>
<th>P (%)</th>
<th>S (%)</th>
<th>Fe (%)</th>
<th>Tonnage (ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.9</td>
<td>0.067</td>
<td>1.35</td>
<td>40.37</td>
<td>191,503,804</td>
</tr>
</tbody>
</table>

Performance of HSE Unit – first quarter of 1397

<table>
<thead>
<tr>
<th>Description</th>
<th>Performance of 1396</th>
<th>Performance of 1397</th>
<th>Plan of 1397</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient of number of incidents</td>
<td>1.57</td>
<td>0</td>
<td>0.58</td>
</tr>
<tr>
<td>Coefficient of severity of incidents</td>
<td>0</td>
<td>0</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Extracted tonnage - 1383 to 1396 (2004/05 to 2017/18)

<table>
<thead>
<tr>
<th>Year</th>
<th>Tailing</th>
<th>Iron ore</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1383</td>
<td>835,677</td>
<td>172,344</td>
<td>1,008,021</td>
</tr>
<tr>
<td>1384</td>
<td>370,402</td>
<td>1,348,613</td>
<td>1,719,016</td>
</tr>
<tr>
<td>1385</td>
<td>192,645</td>
<td>940,561</td>
<td>1,133,205</td>
</tr>
<tr>
<td>1386</td>
<td>1,719,658</td>
<td>1,225,421</td>
<td>2,945,079</td>
</tr>
<tr>
<td>1387</td>
<td>2,443,820</td>
<td>1,483,848</td>
<td>3,927,668</td>
</tr>
<tr>
<td>1388</td>
<td>7,897,240</td>
<td>839,925</td>
<td>8,737,165</td>
</tr>
<tr>
<td>1389</td>
<td>17,138,832</td>
<td>4,144,308</td>
<td>21,283,141</td>
</tr>
<tr>
<td>1390</td>
<td>16,070,314</td>
<td>2,433,231</td>
<td>18,503,545</td>
</tr>
<tr>
<td>1391</td>
<td>12,197,746</td>
<td>4,376,572</td>
<td>16,574,317</td>
</tr>
<tr>
<td>1392</td>
<td>11,565,922</td>
<td>4,250,156</td>
<td>15,816,078</td>
</tr>
<tr>
<td>1393</td>
<td>7,876,481</td>
<td>3,177,085</td>
<td>11,053,566</td>
</tr>
<tr>
<td>1394</td>
<td>15,219,183</td>
<td>2,844,832</td>
<td>18,064,015</td>
</tr>
<tr>
<td>1395</td>
<td>15,299,303</td>
<td>1,596,819</td>
<td>16,896,122</td>
</tr>
<tr>
<td>1396</td>
<td>5,301,024</td>
<td>620,490</td>
<td>5,921,514</td>
</tr>
<tr>
<td>Total</td>
<td>114,128,247</td>
<td>29,454,205</td>
<td>143,582,452</td>
</tr>
</tbody>
</table>

- Increasing iron ore extraction capacity to 6 million tons and tailing to 32 million tons per year.
- Improving productivity in mine extraction and tailing operations.
- Water recovery from the tailing of the hematite concentrate factory of Fakoor Sanat Tehran Company (50% water saving).

Jalalabad Iron Ore Complex
Tel.: (+98) 034 33420343
Fax: (+98) 034 33420341
Web: www.jio258.ir
Productions:

Potash:
Production of more than 35,000 tons in 3 years.
Industrial salt:
Production of more than 5,000,000 tons in 4 years.
Dust stabilization solution:
Production of more than 2,000,000 tons in 4 years.
Snow and ice melting solution:
Production of more than 1,000,000 tons in 4 years.
Carnallite:
Production of more than 580,000 tons in 9 years.
Bischoffite:
Production of more than 4,000 tons in 2 years.
Tachy Hydrite:
Production of more than 500,000 tons in 5 years.

Potash:
The most important use of potash in Iran is as chemical fertilizer in agricultural industries. It is also used in the production of soaps and detergents, chemical colors and medicine, glass and ceramics industries, food industries, production of drilling mud industry and...

Dust stabilization solution:
Supply of more than 8,500,000 liters all through the country has led to the 180,000,000 liter-decrease of the water used in the land roads in order to prevent dust. Each liter of this solution has the efficiency of 22 liters of water in 6 months.

Future plans:
1. Increasing the capacity of producing potash, procurement of the internal need and development of exports.
2. Creation and completion of supply chain and value with the production of high value added products.
3. Procurement of the internal need and development of exports.
4. Creation. Transition, localization and development of the technology with regard to the international limitations.
5. Empowerment of human resources and training successors.
6. Implementation of national and international standards, modern management systems, development of electronic services for clarification and responsiveness.
7. Creation of a secure working environment and observance of all the environmental considerations.
8. Constitution of the country’s Brine Research Center with the improvement of the knowledge of human forces, equipping the complex with the modern technology and broad communications with the scientific and academic centers.
10. Taking the required actions to register the name of the region in the list of UNESCO Global Geoparks.
Overall Development, on Sabanour Agenda

Sabanour Mining and Industrial Development Company is currently the largest iron ore producer in the northwest of Iran. The company’s products until recent years included granulated iron ore and concentrate but now the pellet production is also included in the product portfolio of this company. The company’s vision for the year 1400 (2021/22) is the production of high value added products with better quality, including iron ore extraction of 4 million tons per year, and production of 2 million tons of concentrate and pellet each, annually.

Mohammad Kalantari, the Managing Director of Sabanour Mining and Industrial Development Company, who in the past was the secretary of the board of directors of Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO), has already introduced new changes with regard to the company’s development. He considers creation of diversity in the company’s portfolio, carrying out exploration activities and also implementing the 1.5-million-ton pellet project as the projects underway in the company. According to him, the 50-million-euro pelletizing project is one of the most important projects of the company.

As for the last year performance of Sabanour, Kalantari referred to the fact that the company has currently three mines with about 100 million tons of definite iron ore reserves. He said: “Last year, we produced 1.5 million tons of iron ore, of which 1.1 million tons of concentrate was produced. One million tons of this output was exported to overseas markets.” He added: “Last year, the company also produced nearly 122,000 tons of pellets, and in the New Year’s plan, iron ore production will reach 2.5 million tons, iron ore concentrate 1.5 million tons and pellet 480,000 tons.” He stressed that if the environmental license of Shahrak Mine in Kurdistan Province is obtained, the extraction permit will increase from the present 750,000 tons to 2 million tons. Kalantari, while commenting on Sabanour production outlook, said in the 2021 perspective production capacity of Sabanour Company will reach 2 million tons in pellet, 2 million tons in concentrate and 4 million tons in iron ore.

Portfolio Development

He pointed to the portfolio development as one of the ongoing plans and said in this plan, in addition to the iron ore, the company will reach exploration and production of lead, zinc, copper and gold.

He added: “Currently, in the area of Ravar (Kerman Province) 1,200 square kilometers are under exploratory activities as there are potential deposits of zinc, lead, iron, coal and sedimentary copper.

Mine Purchase Plan

He emphasized: “In the future plans of the company exploration operations will be expanded around the existing mines and the plan for purchasing mines will be conducted through negotiations. In fact, we are considering increasing the reserves of the existing mines with new discoveries.”

HSE

Referring to the fact that Sabanour has recently formed the independent HSE unit, Kalantari said: “There was no such an independent unit in the company before, but now in the central office, a separate and independent management unit for the implementation of projects and the necessary standards in the area of health, safety and environment has been established. As for the IT and the training, we also have new programs and will develop these units.” He emphasized: “We professionally implement and follow up HSE: programs in three mines, two concentrate factories and an iron ore pellet factory. In the field of software, we are also upgrading the old systems. There was no training section in the company in the past, but currently with the establishment of the relevant unit, both domestic and international trainings will be implemented simultaneously.”

Financial Resources of Pelletizing Project

He referred to the development plan of the 1.5-million-ton pellet project as one of the most prominent programs on the agenda of Sabanour and stressed: “On behalf of the Ministry of Industry, Mine and Trade, IMIDRO and Mining and Metals Development Holding (a shareholder of Sabanour Company) we have been requested to establish a 1.5-million-ton pelletizing plant in Kurdistan Province. A total of 50 million euros will be invested in this project.” He added that the consultant of the plan has been recently chosen and the contractor will be selected as well. Sabanour CEO noted: “Finally, in order to fund the plan we will seek help from the National Development Fund. But now we are preparing and finalizing a bankable feasibility study.” In conclusion, he stated that in fact, pelletizing is one of the most important projects in the Bijar region of Kurdistan, based on which in the 2021 Horizon Plan, by taking the present factory into account, production capacity of pellets will reach 2 million tons.

Commenting on the development and increase of production in Sabanour in the current calendar year of 1397 (2018/19), Kalantari said: “By the end of 1396 (2017/18), Sabanour produced 1.5 million tons of granulated iron ore, 1.1 million tons of iron ore concentrate and, 140,000 tons of pellets. The company’s program for the current year is to increase productivity and production of iron ore to 2.5 million tons and iron ore concentrate to 1.5 million tons. We also plan to increase pellet production to 500,000 tons.”

Sabanour intends to launch the new 1.5-million-ton pellet project in the Bijar region of Kurdistan in 1397, and it is expected that the project with regard to the planning made, to become operational in 1400. Also, in the case of obtaining environmental permit, the operation permit of Bijar iron ore mine will be issued and in that case, extraction of this mine will increase from 750,000 tons to 2 million tons.

In line with developing investments in the mining sector and diversifying the product portfolio, the company has recently expanded its investment and considering the operational activities in the exploration zone of Ravar, Kerman (1200 square kilometers) with lead and zinc potential, it has put investment in other basic metals, especially copper and gold, on its agenda.

In 1396, Sabanour exported about one million tons (90 percent) of its concentrate output. One of the important plans of the company in the current year is development of detailed exploration (drilling) around its mines in the provinces of Kurdistan and Hamedan, which is hoped the definite and approximate reserves will have significant increase.

In Sabanour Mining and Industrial Development Company, with an aim of increasing productivity and production, three sections of safety, health and environment, IT and training have been established which need to be strengthened for the organizational excellence.

www.sabanour.ir
Tabas Coal Mines Complex

Tabas Coal Mines Complex, as an affiliate of Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO) was established with the aim of providing the coal needs of the country. By preparing the grounds for investment, job opportunities and transfer of technical knowhow, technology and modern mineral and industrial methods, the complex is considered among the priorities of the Ministry of Industry, Mine and Trade.

Among the most important aims of the complex reference can be made to the maximum use of the potential and reserves of coking and thermal coal which is considered the richest and largest coal zone in Iran. In terms of the definite reserves of the region, it encompasses 69% of coking coal and 99% of thermal coal and in total 79% of the total definite coal reserves of Iran. In the figure below importance of this region in comparison with other regions is totally noticeable.

Reserve of Different Blocks of Tabas Coal Field

Tabas coal reserve is more than 6 billion tons of coking and thermal coal which is considered the richest and largest coal field in Iran which is extended in Parvadeh, Nayband, Abdughi and Mazino regions. In recent years (1985 to 2018), IMIDRO in an effort to develop and exploit the existing reserves took measures for exploring and developing infrastructures, mainly in the Parvadeh region. The discovered coal deposits are of two types of coking and thermal coal.

- **Central Alborz**: 14%
- **Kerman**: 8%
- **East Alborz**: 2%
- **Others**: 1%

The definitive coal reserves of Iran

It is expanded in four regions:

- **Parvadeh region**, located 75 km south of Tabas with 1,100 million tons of discovered definite and probable coking coal and 750,000 tons of thermal coal annually from the 44 million tons resources. It is also notable that the project is financed by China.
- **Nayband region**, located 200 km southeast of Tabas, with 220 million tons of discovered definite and probable coking coal.
- **Abdughi region**, located 300 km southwest of Tabas, with thermal coal deposits under discovery.
- **Mazino region**, located 85 km west of Tabas, with 1,400 million tons of discovered definite and probable coking coal.
- **Other regions**: 1%

Central Alborz

Kerman

East Alborz

Others

Table: Employment statistics of the aforementioned projects have been estimated in the following table:

<table>
<thead>
<tr>
<th>Projects Underway (Investment Potentials)</th>
<th>Direct</th>
<th>Indirect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blocks 2 and 3 of East Parvadeh</td>
<td>150</td>
<td>4500</td>
</tr>
<tr>
<td>Block 3 of Parvadeh 4</td>
<td>500</td>
<td>3000</td>
</tr>
<tr>
<td>Block 1 of East Parvadeh</td>
<td>300</td>
<td>2400</td>
</tr>
<tr>
<td>Block 4 of Parvadeh</td>
<td>500</td>
<td>1500</td>
</tr>
<tr>
<td>Total</td>
<td>1,450</td>
<td>11,400</td>
</tr>
</tbody>
</table>

Tabas Coal Mines Complex

Address: Second floor, No. 154, Taleghani Street, Tehran, Iran
Tel.: (+98) 021 88318617-8
Fax: (+98) 021 88318619
Web: tabascocmines.com
E-mail: info@tabascocmines.com

Manpower employment

<table>
<thead>
<tr>
<th>Construction</th>
<th>Exploitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>Indirect</td>
</tr>
<tr>
<td>Blocks 2 and 3 of East Parvadeh</td>
<td>500</td>
</tr>
<tr>
<td>Block 3 of Parvadeh 4</td>
<td>500</td>
</tr>
<tr>
<td>Block 1 of East Parvadeh</td>
<td>300</td>
</tr>
<tr>
<td>Block 4 of Parvadeh</td>
<td>500</td>
</tr>
<tr>
<td>Total</td>
<td>1,450</td>
</tr>
</tbody>
</table>

Employment statistics of the aforementioned projects have been estimated in the following table:

<table>
<thead>
<tr>
<th>Projects Underway (Investment Potentials)</th>
<th>Direct</th>
<th>Indirect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blocks 2 and 3 of East Parvadeh</td>
<td>150</td>
<td>4500</td>
</tr>
<tr>
<td>Block 3 of Parvadeh 4</td>
<td>500</td>
<td>3000</td>
</tr>
<tr>
<td>Block 1 of East Parvadeh</td>
<td>300</td>
<td>2400</td>
</tr>
<tr>
<td>Block 4 of Parvadeh</td>
<td>500</td>
<td>1500</td>
</tr>
<tr>
<td>Total</td>
<td>1,450</td>
<td>11,400</td>
</tr>
</tbody>
</table>

By preparing the grounds for the reduction of imports, complete the steel ground for the reduction of investment and reserves of coking and thermal coal. The definite coal reserves of Iran can be made as follows:

- **Central Alborz**: 14%
- **Kerman**: 8%
- **East Alborz**: 2%
- **Others**: 1%

The definitive coal reserves of Iran
Iran’s mining and mineral industries sector accounts for 5.5% of the GDP. Of course, with future developments and policies being applied, the share of this sector will grow significantly. However, the role of this part of gross national product has direct and indirect impact on other sectors and also contributes to the growth of other GDP inputs. According to experts, every 1 percent GDP growth in mining sector will account for 2.85 percent growth in total of GDP.

Steel
The steel production in 1396 (2017/18) was 21,840,000 tons, up 19 percent compared with the year before (2017/18). During the calendar year 1396, 19,766,000 tons of steel products were manufactured, up 9 percent year-on-year (18,151,000 tons). At present, the steel production capacity is about 42 million tons per year.

Production of steel ingots in the first quarter of 1397 increased by 17% compared to the same period a year before. Meanwhile, steel products in the same period grew 11% and sponge iron production increased by 7% compared to the corresponding period last year.

Copper
With more than 22 million tons of copper reserves, Iran holds about 3.1 percent of the world’s copper reserves. The production of cathode copper in the country reached 161 thousand tons in 1396 and production of copper concentrate reached 1.2 million tons during the same period. The major part of Iranian copper products is produced by the National Iranian Copper Industries Company. One of the events of the past year in the Iranian copper industry was the modernization and upgrading of technology and the use of new methods in refineries and the smelting unit, which resulted in a temporary decrease in the production of cathode copper in 1396, compared to the previous year. The production of copper cathode in 1397 is estimated at 220,000 tons. The production of copper in 2017 was about 302,000 tons, up 7 percent from 2016 (282,000 tons). In 2017, more than $1,337 million of copper in 2017 was about 302,000 tons, up 7 percent from 2016 (282,000 tons). In 2017, more than $1,337 million of copper was produced, up 7 percent from 2016 (282,000 tons). In 2017, more than $1,337 million of copper was produced, up 7 percent from 2016 (282,000 tons). In 2017, more than $1,337 million of copper was produced, up 7 percent from 2016 (282,000 tons). In 2017, more than $1,337 million of copper was produced, up 7 percent from 2016 (282,000 tons). In 2017, more than $1,337 million of copper was produced, up 7 percent from 2016 (282,000 tons).

Aluminum & Alumina
In 1396, more than 337,000 tons of aluminum were produced, which is about one percent less than last year. Aluminum production in Iran is projected to reach 345,000 tons by the end of 1397. Based on the projects underway, with the opening of the aluminum ingot production line at Jajarm Alumina Company and the launch of the first phase of the Southern Aluminum Company, taking into account the withdrawal of Line 1 and Line 2 of Iranian Aluminum Company (IRALCO) due to environmental problems and replacement of these two lines, production capacity will increase to 777,000 tons. This will improve Iran’s rank in the global aluminum production. Production in the first quarter of 1397 was 11% higher than its previous year.

Due to the high volume of aluminum produced in Iran, we always need alumina powder as an aluminum primary material. Part of the aluminum industry primary materials is imported from countries with bauxite; therefore, Jajarm Alumina Plant, as the only alumina producer in the country, provides a significant portion of the domestic demand. By expanding its exploration activities, the company guarantees the future of the aluminum industry in Iran. Of course, the new developments in the mining sector will account for 2.85 percent growth in total of GDP. According to experts, every 1 percent GDP growth in mining sector will account for 2.85 percent growth.

Production of steel ingots in the first quarter of 1397 increased by 17% compared to the same period a year before.

Iron Ore
About 2% of the world’s iron ore reserves (iron-content) are in Iran; the country also ranks ninth in the world’s iron ore reserves (iron-content). Iran’s share in the world’s iron ore production in 2017 was 1.5% and stood in the tenth place in the mineral production of the world. Among the countries of the world, Iran is in the tenth place in the mineral production of the world. Among the countries of the world, Iran is in the tenth place in the mineral production of the world. Among the countries of the world, Iran is in the tenth place in the mineral production of the world. Among the countries of the world, Iran is in the tenth place in the mineral production of the world.

A Glance at Production of Major Items in Mining
During 1396, Iran produced more than 74 million tons of iron ore, recording a growth of 14.7 percent year-on-year. This figure is expected to reach 75 million tons for 1397. On the other hand, pelleting production capacity will reach 58.2 million tons by the end of 1397 and the capacity for concentrates will reach 51.9 million tons.

One of the most important reasons for output growth of pellets and iron ore concentrates was the opening of two large projects in the Sangan area. The production of granulated iron ore in the first quarter of 1396 increased by 22% compared to the same period a year before. In the same period iron ore concentrate production recorded a growth of 20% and iron ore pellets 22%.

**Coal**

In 1396, about 1.5 million tons of coal concentrate was produced, and production in 1397 is expected to increase slightly and reach 1.6 million tons. The commissioning of 300-thousand-ton coal washing plant in Savadkouh and 400-thousand-ton plant in Tabas caused the increase in production volume. In the current calendar year, a comprehensive coal project will be unveiled by IMIDRO (Iranian Mines and Mining Industries Development and Renovation Organization).

**Cement**

Iranian factories produced about 55.2 million tons of cement and 58.2 million tons of clinker in 1396. Production of cement was the same as in the previous year, and clinker output recorded a 1% drop. The cement production capacity in Iran is 83.5 million tons. Based on the international statistics of 2014 and 2015, the Islamic Republic of Iran, with a 1.6% share, ranks seventh in the world production. China, India, and the United States also accounted for 57%, 6.6% and 2% of world production during the said years, respectively.

**Other Mining and Mining Industries Products of Iran**

Possessing 68 types of minerals, Iran has numerous products in this field. Some other products include lead, zinc, anisinevan, molybdium, gold, silver, various decorative and constructional stones, nickel, coke, mica, potassium, magnesium, manganese nepheline, chromium and dozens of other product types.

---

Iran’s mining and mineral industries sector is the most serious rival of the oil sector in the country’s development, GDP growth, sustainable employment and exports. Therefore, if the rules and regulations are revised and investment is facilitated, the return on capital will be very good for the country. In the past few years, the mining and mineral industries sector has a better position and this trend is improving thanks to the efforts of IMIDRO (Iranian Mines and Mining Industries Development and Renovation Organization) and the support of the Ministry of Industry, Mine and Trade.

**Record Export of 9m Tons of Steel**

In the calendar year 1396 (2017/18), our foreign trade witnessed the rise of steel exports. One of the main goals of the mining and mineral industries sector in Iran is the growth and development of the steel industry. The first steel mill, Esfahan Steel Company, started work in 1350 (1971/2) with an annual capacity of 550 thousand tons. Today, Iran’s steel production capacity is more than 38 million tons. The country succeeded for the first time to export 9.2 million tons of steel to the five continents worldwide. Iran, on the other hand, has developed direct reduction technology thanks to its gas advantage and has overtaken India and is the first country in sponge iron production.

**22% Share of Mining & Mineral Industries from Foreign Trade in 2017/18**

In 1396, the share of mining and mineral industries sector from total foreign trade reached 22%. The figure was 16% by 1394 (2015/16). The value of exports in this area exceeded $10.7 billion in the 12 months of 1396, while $5.4 billion worth of mineral products and mineral industries were imported. Therefore, the balance of this sector is highly positive. The share of this part of imports was also 9.3%. In terms of tonnage, in the last year, the export sector recorded a negative growth of 7.8% and a total share of 46%. In import sector there was a negative growth of 96% and a total share of 15%.
Mining and Mineral Industries

Foreign Trade in 2018

In the first quarter of 1397 (March to June 2018), we saw a 12% decrease in exports (in weight) and a 16% increase in exports (in value). During this time, steel exports grew by 30% in weight and 63% in value. Imports also dropped by 28% in weight and 18% in value in the same period. In total, in the first quarter of the current calendar year, the export of mining and mineral industries was 2.4 times higher than imports.

Approval of Export Duty for Raw Materials

In the current calendar year, the government has been authorized to use a variety of incentives to process raw materials and convert domestic goods with low value added as well as imported goods into goods with high value added. Imposition of any duty on export of unsubsidized goods and services and raw materials or goods with low value added not demanded domestically or without technical and economic justification for processing inside the country, by considering a certain percentage of the global market share to the discretion of the Ministry of Industry, Mine and Trade is prohibited. The level of duty on other raw materials and low value added goods should not reduce or stop the production of raw materials or low value added goods. On the other hand, the revenues from export of raw materials and low value added goods should be reduced. The government has proposed the export duty of raw minerals or minerals with low value added for the 12 predicted groups. In this regard, the Supreme Economic Council, export duty this year and in the next two years (2019/20 & 2029/21) is considered. The proposed duty for the sub-tariffs of the said group for 1397 is 5%, for 1398 is 8%, and for 1399 is 10%. The only sub-tariff that enjoys the proposed rate of 5% over the three periods is related to ‘compressed iron ore (pellets)’. In the second group too, there are ‘iron oxides and hydrides; colored soils containing 70% or more of Fe2O3’. There are also three sub-tariffs for this group. In the third group (manganese oxide) there are two sub-tariffs. The fourth and fifth groups are allocated to ‘copper and its concentrates’ and ‘lead rock and its concentrates’. Zinc and its concentrates are also considered one of the other 12 groups that have been set export duty, with 5 sub-tariffs. However, for ‘Zinc Oxide, Zinc Peroxide Group’, which has three sub-tariff, the proposed duty considered for four periods is 5%.

Trade in Group 1, there are ‘ron ore and its concentrates’, whose duty during the three-year period is 5-10%, in other cases is 5%.

In the second group too, there are iron oxides and hydrides; colored soils containing 70% or more of Fe2O3. There are also three sub-tariffs for this group. In the third group, manganese oxides have two sub-tariffs. The fourth and fifth groups are allocated to ‘copper and its concentrates’ and ‘lead rock and its concentrates’. Zinc and its concentrates are also considered one of the other 12 groups that have been set export duty, with 5 sub-tariffs. However, for ‘Zinc Oxide, Zinc Peroxide Group’, which has three sub-tariff, the proposed duty considered for four periods is 5%.

It is reminded: The best way to invest in Iran is the one leading to the production of higher value added products and also the one in the course of export. Duties and constraints, as well as incentives and supportive laws designed to support national production and export of high value added products that generate more GDP growth as well as sustainable employment, are being developed and reformed. Export-oriented investments in less developed regions of Iran have good benefits and incentives.
Iran Mineral Products Best Substitute for Oil Revenues