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On September 25th, 2013, London Metal Exchange was opened by a Turkish delegate including Energy and Natural Resources Deputy Minister Hasan Murat Mercan, Deputy Undersecretary Nevzat Kavakli and outstanding members of Turkish mining industry.

The opening was an important part of the ‘Turkey Mining Finance Investment Summit in London’ organized by EBY Summit. The organization was a success of EBY Summits CEO Yaşar Şuşek, who passed away untimely in March 13th, 2014. With our condolence to his family and Turkish mining sector...
For the last 7 months until April of 2014, Turkey has gone through an active and heated period dominated by municipal elections campaigns and political struggles. After several events which as we know also aroused international interest, elections were held in Turkey. Rather than electing the mayors and municipal council members, these municipal elections have undergone in an atmosphere of a harsh competition between the ruling party and the opposing parties in government and a rehearsal for next year’s general elections. Although the mayoral elections do not have a significant importance for the mining sector, the municipal elections give us a clue about the modeling or remodeling of the next year’s government, it’s also a projection for the mining sector in Turkey and the direction of local and foreign investors’ investment choices.

As we mentioned and discussed in our earlier volumes, the permits on any state-owned real estates have been subject to the Prime Minister’s Office due to a ministerial decree dated June, 2012. This leaded to a process began with such a piling up of permits, longer periods waiting for the permits to be approved and continued in a phase in which some of the permits were rejected. Subsequent to these, the stay order was issued in December against some of the positive EIA reports in Çanakkale and the sanctions were imposed on some mining companies. When all these mentioned incidents taken into account, it challenges us to state a clear opinion at the moment. Due to the upcoming Presidential Elections in 4 months and the next year’s General Elections, it is hard to say that the sector will undergo a considerable change in the forthcoming period.

Besides these, the sector has experienced certain positive developments, too. Many companies got approval for their EIA applications of their advanced projects and are now ready to progress towards production. After 1.5 years, mining license auctions restarted in February and 151 licenses are listed in the website of General Directorate of Mining Affairs. Most of the mining companies have announced that the production in 2013 was increased comparing to 2012 numbers and it is expected that the production will slightly increase in 2014, too. Mining export numbers in 2013 had a record growth by achieving 5 billion 43 million USD of exports upon an increase by 20.67%. The Turkish mining sector managed to surpass its 4.5 billion USD goal set out for the year 2013 and came third among the sectors with maximum increase in the field of exportation.

In this issue, we publish a review of Turkish mining industry in 2013 to give you a better view about last year’s news on both Turkish and foreign companies’ sides along with legal progress. Consequently, the boom of mining sector in Turkey is now in a constant state; the production and exports are increasing, some of the significant development projects are progressing and getting legal approvals but exploration is almost come to a standstill due to low budgets and unpermitted exploration licenses, some foreign companies are considering of focusing on their other projects outside of Turkey and the ongoing political developments affect mining industry as well as all business in Turkey. Today, Turkish mining industry seems to be on a bumpy road yet the solutions to the mining sector’s problems are very clear and easy to solve. Last of all, together with the new mining law which as far as we know is being prepared at the time and the application regulations based on it, the political effects of Presidential and General elections can be observed on Turkish mining sector for the following 6 months.
Stay of Execution for the EIA Permits in Çanakkale

The execution of the approved of EIA (Environmental Impact Assessment) the mining companies operating in Çanakkale’s Kazdağları (Mount Ida) have been suspended. Ruling in favor of the legitimacy of the law suits brought by the Çanakkale Environment Platform, the Chamber of Agricultural Engineers and local environmental organizations, Çanakkale Administrative Court has suspended the execution of the approved EIA results which were previously granted to the companies for their exploration and operation projects in the region.

Moreover, it’s reported that the recent amendment made to the Olive Cultivation Regulation has also been overruled by the administrative court. According to the statement by the local environmental organization called Güzel Edremit Körfezi Bekçileri (Guardians of the Beautiful Bay of Edremit), Çanakkale Administrative Court has ruled for the stay of execution for the amendment.

41% Downfall in BİST Mining Index

BIST Mining Index containing shares of İhlas Mining (IHMAI), İpek Natural Energy (IPEKE), Koza Mining (KOZAA), Koza Gold (KOZAL) and Park Electricity Mining (PRKME), which has been active since early 2013 suffered a 41% loss at the end of the year. Going through a decline upon the downfall in the prices of gold and other minerals following the statements by the FED in 2013, the index which kicked off in early 2013 having 66,831 points ended up with 39,194 points as of December 31st.

Some of the leading companies within the index have suffered major depreciation in 2013:

<table>
<thead>
<tr>
<th>Company</th>
<th>2012 Price</th>
<th>2013 Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>KOZAL</td>
<td>42.80 TL</td>
<td>22.20 TL</td>
</tr>
<tr>
<td>KOZAA</td>
<td>5.45 TL</td>
<td>2.42 TL</td>
</tr>
<tr>
<td>PRKME</td>
<td>6.14 TL</td>
<td>4.92 TL</td>
</tr>
</tbody>
</table>

Profit-Loss Statements of BİST Mining Index Companies

According to the financial statements made to the tax offices as annexed to the provisional tax returns for the period between 1 January 2013 and 31 December 2013, the net profits of the BİST (Stock Exchange Istanbul) Mining Index companies are as follows:

- Koza Altın İşletmeleri Inc.: 543,281,929 TL net profit
- Park Elektrik Üretim Mad. Inc.: 77,833,540 TL net profit
- Koza Anadolu Metal Mad. Inc.: 11,380,100 TL net profit
- İpek Doğal Enerji Inc.: 1,112,419 TL net profit
- İhlas Madencililik Inc.: 1,424,178.68 TL net loss

Gold Prices Endanger Gold Mines

Many gold mines around the world are on the verge of closing down due to the low course of the gold prices. In his interview with the Anadolu Press Agency, the Chairman of Gold Miners Association Executive Board Ümit Akdur pointed out that, over the past year, not only gold but also copper, zinc, silver and lead exploration activities have suffered a 50% downfall.

According to Akdur, last year 29,5 tonnes of gold was produced in the mines around Turkey, the expected gold production for the year 2013 was 33 tonnes; by the end of November 2013 271 tonnes of gold had been imported and the estimated year-end figure for gold importation was about 12 billion USD. Suggesting that the recent decline in gold prices lowered the level of interest in gold, Akdur reminded that a number of gold mines in Australia, Canada, Africa and the USA were facing the risk of shutting down.

Underlining that the downfall experienced in exploration activities of gold as well as copper, lead, zinc and silver was rooted in the declines of 56% in mining funds, 55% in mineral explorations and 45% in new gold reserves, Akdur noted that gold mining sector would be suffering in the coming days unless the gold prices go up soon.

Akdur further added: “In Turkey, some projects have been suspended as they had become uneconomical on account of the decline in the prices. Therefore, the interest of the investors has also run low. Owing to the downfall of the prices, the funds devoted to gold exploration have also decreased substantially over the past 20 months. The budgets allocated for new exploration activities have been cut, and many projects that had been deemed investable previously, have been suspended. When the prices were high, processing a ton of rock containing a gram of gold was affordable; however it is no longer the case due to the downward course of the prices. The decline in the prices also caused the downfall of the equity value of some gold companies registered in the stock exchange around the globe.”
Will Mining Royalties be Increased?

The Turkish mining sector described by the Prime Minister Recep Tayyip Erdoğan as “They have been earning shedloads of money. Perhaps some will be agitated, but we have to take this action;” is now subject to scrutiny. As put forth by Sabah’s Mehmet Nayır, many mining companies have made billions until present thanks to the governmental incentives, whereas their contribution to the government has made no headway whatsoever. According to the Nayır’s story, although mining sector’s share in Gross Domestic Product has reached to 11 billion USD annually, the government received only 350 million TL from the mines in 2012, and in this regard a share raise for the government is now on the agenda.

Here’s the rest of the original story titled “Slash on the Gold Elite” by M. Nayır:

There are speculations of many figures varying from 2.5 to 10 trillion USD regarding the economic value of Turkey’s minerals based on its geological diversity. While mining investments have accelerated due to the recent increase in prices, the government’s income from these investments remains subdued. Yet, according to the Constitution, the minerals are state property. Where the government hands over the operation of a mine to a private sector company, it receives a share called “government’s entitlement”. The entitlement share would be around 2 to 5%.

Gold production in Turkey which was almost nonexistent in 2000, have gained substantial moment upon the elevation of prices. With their recent prominence, gold producers - a leading one being Koza Group - have climbed to the top of the list in Europe upon an annual gold production of 30 tonnes in Turkey, which corresponds to billions of USD in terms of magnitude. However, the sum paid by the gold miners under “government’s entitlement” was only 90 million TL in 2012. No large mines have been entrusted to the private sector within the past one and a half years, and a commission formed under the Prime Ministry has been scrutinizing all mines throughout Turkey.

“Some people have obtained mining licenses via trickery. They obtain it cheaply and then lease it paying very little sums. What they pat to the government is only 5%. They have been earning shedloads of money,” said Prime Minister Erdoğan. “They pay 3 - 5 thousand TL for 4,500 square meters of domain and then pay only one thousand TL monthly. Perhaps some will be agitated, but we have to take this action.” To begin with, the 2% government share will be raised starting with the minerals of high income, such as gold and copper. Nevertheless, some special criteria will be applied with a view to ensuring integration of minerals into economy and avoiding the obstruction of the sector. To do that, the “grade” of the mineral will be based on. In other words, the government’s share will be re-designated in view of the operation and extraction costs. Those who earn more, will pay more to the government.

Minister Yıldız: “Privatization of Boron is not on the Agenda!”

During his speech in the meeting on “Turkey’s Energy Policies” held in the facility of Ankara Metropolitan Municipality, Minister of Energy and Natural Resources Taner Yıldız noted that their goals and programs do not include the privatization of boron. “Boron is a strategic good; it has many products. We do not intend to privatize the boron. We have no such scheme, no such plan or objective,” said Yıldız in response to a question about boron, as reported by Anadolu News Agency. “However, the procurement of services for bringing in a number of technologies to be used for obtaining the boron should not be regarded as part of a privatization scheme.”

Agreement Signed with the Saudi Company for the Karapınar District

Saudi Acwa Power has signed a good-will agreement with Elektrik Üretim Inc. (EÜAŞ) for the coal site with a reserve of 1.8 billion tonnes in Karapınar district of Konya province, which is the property of General Directorate of Mineral Research and Exploration (MTA). According to the Turkish newspaper Sabah, the facility to be established upon an investment of 7 - 8 billion USD, will have a 5000 MW power plant capacity. By virtue of this project, another Arabian company will be working in Konya while the construction of the coal power plant to be established in Afşin and Elbistan districts of Kahramanmaraş by the United Arab Emirates’ government controlled holding TAQA has been postponed till sometime in 2014.

The officials of the Saudi company are expected to visit the coal in Karapınar soon, and carry out a study on the technical data from the site and its coal resources. An international agreement will be signed for the site in Konya - Karapınar as in the case of the one previously signed for the site in Afşin - Elbistan.

December 2013

February 2014

November 2013
Park Elektrik’s Copper Reserve is 41,500,000 Tonnes at Siirt Madenköy

According to the statement by Park Elektrik Inc., the copper reserve of the company’s Madenköy cooper mine in Şirvan district of Siirt province, has been updated as 41,500,000 tonnes. In the latest announcement, it is suggested that the reserve was updated following the studies by an international consultancy firm upon the request of the company and in the light of the new findings achieved subsequent to the drilling undertaken between October 2011 and November 2013 to ensure reserve development, the copper reserve of Madenköy has been reassessed.

The new study has shown that the copper reserve revised in line with JORC standards is 41,500,000 tonnes in total with measured 36,264,000 tonnes, indicated 5,002,000 tonnes and inferred 225,000 tonnes. According to the statement, the average grade of the reserve is 2.02%, and around 6,514,225 tonnes of the total reserve have so far been produced.

In the company’s disclosure to the stock exchange dated 11 October 2011, it was announced that according to the report drafted at the time in line with JORC standards about the concentrated copper production activities in Madenköy, the total copper reserve was found out to be 39,875,000 tonnes with measured 31,182,000 tonnes and the average grade of the reserve was 2.40%.

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Actors of the Natural Stone Sector Decide to Join Forces

Raif Türk, Chairman of the Executive Board of Turkish Marble, Natural Stone and Machinery Manufacturers Association (TÜMMER) and Arslan Osman Erdinç, Chairman of the Executive Board of Aegean Mineral Exporters Association which is known for registering more than half of Turkey’s natural stone exportation, announced – following a meeting - that they decided to join forces to remedy the problems of the natural stone sector.

According to the written statement by EMİB, Arslan Erdinç suggested that introduction of new production sites had been suffering some kind of obstruction due to the Prime Ministry’s Circular numbered 2012/15 and dated 16 June 2012 which puts the Prime Ministry in charge of granting mining permits within the Turkish natural stone sector. Erdinç underscored the vital need for the launch of new production sites to ensure the realization of mining sector’s exportation goals for the year 2023.

Indicating that in order to eliminate the problems arising from the circular, it would be essential to go back to the practices employed in the past for achieving the production and exportation goals of the sector, Erdinç announced their decision to cooperate with TÜMMER to address the problem.

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CLK Holding Buys All Licenses of Frontline Gold

Having been established upon the strategy adopted in 2009 to conglomerate with the intent of ensuring growth in other sectors by Çelik Thread, a company known for its activities within the textile sector since 1979, CLK Holding keeps investing in the mining sector. According to the latest statement by CLK, the company has taken over 4 exploration licenses of Menderes Gold Project carried out in the Aegean Region by the Canadian Frontline Gold, a company operating in Turkey for about 3 years.

CLK announced on 25.10.2013 that a goodwill and confidentiality agreement had been signed. The latest statement reads “Our company has taken over 4 mineral exploration licenses numbered 200704134 and 200704135 in Central district, Efemçukuru quarter; 200706724 in İzmir province, Menderes district, Gödence quarter, and 200801988 in İzmir province, Urla district, Çamtepe quarter owned by Frontlinegold Mining operating in İzmir province Efemçukuru quarter which is regarded by our company as one of the most significant regions in our country where gold mining activities are currently undertaken.”

During the period ahead, with a view to rapidly establishing the economic reserve, CLK will undertake drilling and seismic studies over the areas that had been previously examined and deemed favorable by Frontline. The amount to be paid for the licenses purchased is expected to be made public alongside the report on the economic reserve.

Upon the latest takeover, the number of licenses held by CLK Holding reached 20 in total, including 4 licenses purchased from Ege Mining (gold exploration and business licenses numbered 200709099, 200709100, 200709101 and 200709102 covering a total area of 3.362 hectares in İlikler, Yenişehir and Taşkonaklar sites in Kışladağ district of Uşak province), 2 licenses purchased from Dinçtaş Mining and 10 licenses from Sadatlar KSA Gold Mining Inc. Moreover, the company intends to transfer all the gold mining licenses it currently owns to the subsidiary partnership it has recently established, of which it holds 100% of the shares. The subsidiary is called Sadatlar KSA Gold Mining Inc. and it will be undertaking gold exploration and production.

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April 2014
Sandvik has been around for over 150 years, working with our customers to constantly improve operating environments. Today, Sandvik Mining is the leading supplier of equipment for both surface and underground applications, ensuring that each of our customers is matched with the best solutions for the maximum in productivity, safety and peace of mind. Our long history ensures that our solutions are based on extensive field experience, giving you the very best conditions for good business – and that we are a team you can count on, for today and for the future.

Read more about the Sandvik Mining offer
It’s This Way: mining.sandvik.com
Soma Holding Enters Technology Market via Solid-ICT Partnership

Soma Holding, one of Turkey’s leading mineral producers, has become a partner of Solid-ICT and upon making an investment in the field of technology. Adopting the strategy of investing in markets with a potential of expanding, Soma Holding partnered with Solid-ICT known for its rapid growth within the market over the past three years. This partnership aims to focus on infrastructure software that will improve the management functions of the business world and make them more effective. The company will also be carrying out projects for the adaptation of institutional infrastructure software to mobile applications, and the due analysis, design, development and test processes of these projects will be undertaken by the company’s own team.

Local Resource Suggestion for Thermal Power Plant in Çatalağzı

President of Zonguldak Chamber of Commerce and Industry (ZTSGO) Salih Demir noted that privatization of Çatalağzı Thermal Power Plant via asset sale without a precondition for local coal usage, would negatively affect the coal production within the region. President Demir indicated that, during their visit to Ankara for expressing their opinion about Çatalağzı Thermal Power Plant (ÇATES) for which the tender process is currently underway, they explained what ÇATES meant for the region.

Having informed the officials concerned as well as the public about their opinion as the Zonguldak Chamber of Commerce and Industry that privatization of ÇATES must be carried out adopting a method that would ensure the continuity of mining activities within the reservoir, Demir said:

“We have duly informed the people of the region and the concerned officials that awarding the tender of ÇATES via Asset Sale, without prescribing any association between local coal production and ÇATES unlike other Thermal Power Pant tenders planned and undertaken by the Privatization Administration so far, would end up in turning the plant into a facility that is fully dependent on imported coal. When the society came to comprehend how mineral coal reservoir could be devastated both economically and socially, as a first step, a delegation consisting of local administration officials, representatives of NGOs and managers of Professional Organizations paid a visit to our Parliamentarians.”

Suggesting that 2.5 million tonnes of mineral coal produced annually within the region could only be sustained if ÇATES continued to use the local coal, Demir noted “We told the members of the parliament that in 15 years 200 million USD of royalty would be paid over this production and the government would receive minimum 150 million USD including indirect taxes.”

According to Salih Demir, in the event that the coal used in the power plant were to be imported, an extra sum of 250 million TL would be added to the current deficit which is regarded as the biggest economic handicap of Turkey. Demir further added:

“The members of the parliament have conveyed the disadvantages to which we refer to the Minister of Finance Mehmet Şimşek. They also testify that the tender method currently adopted contradicts with the priorities of our National Energy Policy that embodies the principles of encouraging the utilization of local resources, ensuring security of supply and promoting the employment of all our coal resources. We have informed the Minister and, by this occasion, we would like the inform the public once again that the adopted method tender that merely focuses on the income to be generated from the sale of the property is not only against the strategy papers regarding the liberalization of the energy market but also has a potential to cause a disaster throughout the region and damage the national economy.”

Çayeli Copper Focused on Exploration

Çayeli Copper (ÇBİ) announced that they had been sustaining their mineral exploration works without a break. In his statement, Çayeli Copper Managing Director Iain Anderson shared their estimations that the copper mine in Çayeli district of Rize would become obsolete in 2019 and therefore be closed down. Noting that they still maintain the exploration studies to find new mineral reserves, Anderson said:

“We wish to proceed with our activities upon finding new opportunities both for our employees and our company. We have accelerated our already ongoing mine exploration activities in this respect. We conduct operations on our license area covering about 33 villages. All of our neighbors we have visited to explain such activities until now gave their support in this respect. I would like to extend my gratitude to each and every one of them.”

● December 2013

● January 2014
Critical Mandate from the Ministry of Environment

İdris Güllüce, upon taking office as the Minister of Environment and Urban Planning after the cabinet revision carried out subsequent to previous Minister Erdoğan Bayraktar’s resignation following the corruption and bribery investigation of December 17, issued a new mandate regarding EIA decisions. According to the Ministry’s mandate, ‘EIA Decisions’ shall be only taken upon approval by the Ministry, until further notice. The mandate also suspends the procedures regarding ‘EIA Positive’ and ‘EIA Nonessential’ decisions until further notice.

Over the same period when the mandate was issued, the Minister of Environment and Urban Planning İdris Güllüce decided to undertake a substantial revision on the positions held within the Ministry and duly replaced many bureaucrats working in the Ministry as department heads or managers. After last week’s assignments, A. Çağatay Dikmen who was originally a Department Head within the Directorate General of Environmental Impact Assessment Permit and Inspection and had been working therein as the Acting Director General, has been discharged to be assigned as Ministry Advisor. Mehmet Mustafa Satılmış who had been previously assigned as Ministry Advisor after being discharged, has been assigned as the new Director General.

Miners Ask for President Gül’s Help

The mining sector has asked for President Abdullah Gül’s support to overcome the difficulties caused by the Prime Ministry Circular. President Abdullah Gül attended the Turkey - Italy Business Forum organized on 28 - 31 January 2014 by the Foreign Economic Affairs Board (DEİK). It is reported that the Vice-President of the Executive Board of Aegean Mineral Exporters Association Mehmet Yunus Şahin who also attended the event, presented President Gül with a report on the distress within the sector arising from the Circular, after their talk on the plane. Şahin conveyed to the sector the message from President Gül that he would look into the issue.

Suggesting that, following the Circular issued by the Prime Ministry, it now took too long to get new mining licenses as well as extend the expired ones, Şahin said “The problems in the mining sector are growing like a snowball. The process of acquiring licenses takes three to four months, and most of the time the applications are rejected. Over the first three quarters of 2013, Turkey’s economic growth was 4% while the growth of the mining sector was reduced by 3,5%. We believe that the reason why the mining sector was unable to keep pace with the growth of the Turkish economy is the aforementioned problem with licenses.” Şahin noted that following the reviews carried out by the Prime Ministry, some licenses had been revoked indicating that the three-year period granted to mining facilities to acquire the necessary permits, which is set out in the Mining Law No 3213, had been exceeded. Underscoring that the delays in getting the permits negatively affect the investments planned based on the existing exploration and business licenses, Şahin said “Many other exploration works could not be undertaken during the season as they were supposed to. Mining business permits of the facilities located on forest lands have also been delayed. Moreover, new mineral production sites were not opened; likewise, production targets were not achieved. As mining is a sector with high added-value, many companies which operate in the fields of geology, geophysics, drilling, laboratory, cartography, environment and technology as well as the ones that supply machinery to the sector have also been suffering from the problems experienced within the sector”.

Chinese Partner for the Chrome Producer from Muğla

Mining businessman Mehmet Pekmez, the owner of several mining sites throughout Muğla, shook hands with a Chinese company to take up chrome production within a site in Ula. Having been in touch with the Chinese company for about two years, Pekmez noted “Chrome will no longer be sent to China in its raw form. By virtue of the facility we are planning to establish in Ula together with our Chinese partner, we are going to export chrome after it has been processed”.

About the partnership, an official of the Chinese company Jintong Zhang said “We have been in an endeavor to invest in Turkey for about two years. Finally, we have made up our minds and shaken hands with Mehmet Pekmez. From this day forward, we will be undertaking chrome production in Ula together. Turkey is a region with economic development; Turkish economy draws interest by dint of its sound and stable structure.”

“We have been in contact with the Chinese Henan Yukuang Group for about two years. After carrying out a visibility study, they decided to invest in the chrome facility,” said Mehmet Pekmez. “We have 22 years of experience in the business. We will, hereafter be working with our Chinese partner. It is a great advantage that Chinese businessmen prefer to invest in our country. We now have the chance to connect with China on a more amiable level.”
**Turgay Ciner: Government Domination over Mining Sites Must Be Abated!**

Chairman of the Board of Directors of Ciner Group Turgay Ciner made some remarks about coal and energy during the program titled 'Strategic Expansion and New Regulatory Perspectives for Turkish Energy Markets' held in Ankara within the scope of the 12th anniversary of Energy Market Regulatory Authority (EMRA). Suggesting that coal-fuelled power generation in Turkey is not much cared for; Ciner asked “8 billion tons of coal sits in Elbistan Reservoir alone. Why is the utilization of these sites hindered? What is the point in imposing challenges?” Pointing out the lack of support in this regard and the significance of promoting coal-fuelled power generation, Ciner protested the government domination over mines.

“In the end, it has to do with EMRA. However, before dealing with EMRA, the government domination over these sites must be abated. Today, 90% of mining licenses are owned by the State,” said Ciner. “It is like a closed book, which minerals we have and which ones we don’t. Do we have coal or do we have iron? We don’t know. The lands remain idle. If we can overcome the obstacles, and break loose form some of the misguided approaches currently adopted in Turkey, the current deficit which is around 60 - 100 billion would be eliminated.”

Reminding that in the past 10 years, EMRA has granted licenses for power generation over 100,000 MW, Ciner said “Power generation fuelled by domestic coal, I presume, is around 2,000 MW. Of that amount, as far as I am concerned, the portion which is treated is handled by 3 - 4 investors. One small of these investors is my company. Such a state of play seems to be flawed.” Referring to the ‘affliction’ arising from all this, Ciner noted “If we were to import electricity from the country in the North, rather than importing natural gas to generate electricity, we would only roughly pay 3 cents. Now, we pay 9 - 10 cents for 1 KW/h of electricity. There is something wrong with it. This is the underlying reason for some of the challenges we face in the economy.”

Ciner suggested that Turkey’s capacity for coal would prove sufficient to provide the necessary resources to meet the needs today. Calling for the promotion of this sector, Ciner said “The rate of coal-fuelled power generation in Germany is 50% and in Plond, it is 90%. Nevertheless, in our country, coal-fuelled power generation is not much cared for. 8 billion tons of coal sits in Elbistan Reservoir alone, which corresponds to 250 billion USD over present rates.”

Referring to the regulation issued regarding the mining sector, Ciner said “We lodge an application to undertake drilling works in a coal mine; in accordance with the new regulation, it is referred to the Prime Ministry. It is getting a little ludicrous. The problems must be remedies at once. Today, we are unable to drill. When you say you want to build a power plant using imported coal, nobody asks you about your source or drilling.”

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**Activities Suspended in Kaymaz**

The production of Koza Gold’s gold mine in Kaymaz - Eskişehir has been suspended by Office of the Governor of Sivrihisar District upon the request by the Provincial Directorate of Food, Agriculture and Livestock under the Office of the Governor of Eskişehir claiming that a part of the land on which the facility operated was indeed pasture area.

Koza Gold’s statement to Public Disclosure Platform (KAP) is as follows: “The action in question has been taken although it is clearly stated in the present Official Land Registry records and pasture field records which are open to public access, that the lands in question are not pasture areas.

Our facility holds all necessary permits required by the Mining Law and other legislation.

As can be clearly seen in the official letters dated 27.05.2009, 06.10.2009, 29.11.2010, 06.11.2012 and 16.01.2014 received from the Sivrihisar Land Registry Office under the Office of the Governor of Eskişehir, the lands we operate on are fields which are registered to our company and are registered as ‘Rubble Land Outside Cadaster’ in the land registry records.

All procedures regarding the lands used by our facility have been carried out within the scope of official land registry records,

- Paragraph 10 under the Article 121 of the Regulation on Mining Activities clearly states that where an exploration or business permit is requested during the exploration period, the due procedure shall be carried out in accordance with the present land registry records.
- As per the Article 21 titled Justification for Claiming as Pasture, Summer Pasture and Winter Pasture of the Pasture Law No: 4342, a real property could be regarded as pasture, only if its registered in the pasture registry book of the relevant land registry directorate.

In each official application we lodged to the Directorate of Land Registry and Cadaster between the years 2009 and 2014, it was clearly stated that our land of operation was registered as “Rubble Land outside Cadaster”; and it was not a public domain or pasture land in accordance with the records of the pasture registry book.

We would like to kindly announce to the public that we are going to take legal action against the decision of suspension in question which, in our opinion, distinctly contradicts with the legislation.”

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Necati Kurmel: “Let us work and earn, and pay taxes”

Owner of Saray Carpets and Saray Biscuits, Necati Kurmel with 50 years of experience in mining, suggested that the lack of new exploration permits on top of the decline in chrome prices was a major blow, and reminded that many mines in Turkey have been shut down and foreign investors’ interest had worn out. According to the story by Dünya Daily’s reporter Özlem Ermiş Beyhan, Necati Kurmel has been struggling to sustain Turkey’s largest chrome beneficiation facility which he established in 2007 upon a 100 million USD investment. The facility employs 1050 people. “Miners in Turkey have been going through a rough time, mining is now regarded as if it were something to be ashamed of” says Kurmel, noting that he had to sell 400 of his flats in Istanbul to keep the chrome facility running. According to Kurmel acquiring new exploration licenses has been somewhat problematic and the downfall of chrome prices has made production unprofitable, and he adds “The Chinese are bringing down the prices, 100 Chinese miners are wandering around Turkey and trying to find out who is struggling and who is on the verge of selling their plants. We are asking for support from Eximbank, but we cannot get it, either. As in the case of almost all other mining sector actors around Turkey, Kurmel’s mining companies which process chrome in Adana - Aladağ; lead, zinc and copper in Gümüşhane; gold and silver in Bolkar say ‘Let us work and earn, and pay taxes.’

Kurmel says due to the retreat of chrome prices from 700 USD to 250 USD they have to find new reservoirs with richer resources within their chrome sites, however they have been unable to get a permit to carry out new explorations over their own licensed lands. “The circular that requires the approval of the Prime Ministry for the granting of permits must be abrogated” says Kurmel and suggests that such a technical issue could not be settled single-handedly.

“Today, many enterprises whose exploration and business activities have been limited due to the de facto suspension of mining and forestry permits for almost two years, affected by the ongoing plunge of commodity prices around the world, are fighting to sustain their businesses, let alone making profits.

This is the case for our chrome facilities Akmetal and Pınar Inc. which I have founded and been the controlling shareholder of, operating in Adana - Aladağ, a district with a population of 5000 people. The county’s largest integrated chrome beneficiation facility which we have established upon an investing more than 100 million USD in 2006 - 2007 when chrome prices were around 600 USD a ton, has become inoperative since chrome prices have dropped under 300 USD. On top of such a depression, the lack of a chance to explore and process new sites to replace the exhausted reserves due to the “permit moratorium”, has made things worse. It is safe to say that in Aladağ district, one of our employees live in almost each house, the town which used to lose people due to migration now receives immigrants. Apart from the prayers we receive for the schools, houses and facilities we have built, we get no support, not even the permits to extract the minerals we need to run our facilities. We want to earn enough to pay taxes; all we want is just a little help...”

Kurmel’s formula to ensuring the recovery of mining is as follows:

1- Exploration activities of integrated mining facilities should be promoted and companies that are exclusively specialized in exploration should be encouraged and supported. Legislative action should be taken to promote such instruments in mineral exploration as venture capital and getting into the stock market.

2- Scientific and systematic horizontal and vertical exploration activities should be focused on.

3- The motto that says “It may be small, at least it’s mine” would not work in this sector. The minimum annual turnover should not be under 70 - 80 million USD. Large-scale ventures and enlargement strategies as well as acquisitions and mergers should be encouraged. We need to create a world champion in this sector.

4- The mining sector has been facing substantial limitations in finding security. Actual investments are made in the establishments on licensed mining sites; however it is difficult to find security for such facilities without having their title deeds at hand. A legislative amendment should be made to enable the pledging of these facilities and particularly the mining licenses as security.

5- Some people keep saying “Why don’t we produce and export advance-stage processed alloy or metals, rather than ores?” Before we climb the ladder, first we need to set it right. To begin with, our country’s steel industry must be encouraged to concentrate on stainless steel production. Then, there would be a need for ferrochrome and it would be produced.

6- Issued in June, the regulation, which was undoubtedly put into effect in good faith, but turned into an actual moratorium must be renounced or at least become somehow effective. New exploration activities have come to be unfeasible, mining activities in forest lands have been ceased, and facilities are on the verge of being demolished. In some cases, a delayed response to an application ends up causing the lapse of a permit regarding a forest land and thus the entrepreneur faces the obligation to leave the area. This should no longer be the case.

December 2014
Koza Gold Responds to the Press

The statement made by Koza Gold Inc. on 23.12.2013 to Public Disclosure Platform (KAP) in response to the various claims covered by the visual and printed press, suggested that only mining licenses had been acquired from the government and no other benefits had been requested. Koza Gold’s statement to the stock market includes the following:

“We have felt compelled to make a statement in response to some false stories covered by a number of media organizations. Our company, Koza Gold, is the third private company on the list of top corporate taxpayers within the ISO 500 rating. We have not once been in a public tender so far.

The most vital issue that must be understood regarding the mining sector is that there is no gold or metal mine in Turkey that has been discovered or made into a venture over the past decade. A significant part of the mines run by our company were discovered by foreign companies about fifteen years ago, and sold to our company as they were regarded uneconomical to build facilities on, due to the low gold prices at the time.

The reserves of these mines have been developed by our company and become profitable upon the climb of mineral prices around the world. The rest of the mines we run are the ones discovered by our own exploration teams.

Mineral exploration licenses for mines whose reserves have not been settled upon drilling are of no significant value. Our company carries out its mining activities only after undertaking exploration studies. We ask for permits from the government only for exploration purposes, and act in compliance with all legislation upon due diligence. We have never used even the smallest benefit so far.

The odds of discovering minerals upon gold or precious mineral prospecting are around 1/300 in Turkey. In other words, 299 out of 300 drilling works prove to be in vain and the duration of each exploration is around 8 to 10 years. This is why very few companies step into mining sector starting from the stage of exploration.

In conclusion, our mining companies, each one of which have been operating based on their respective venture capitals, have never been involved with the government other than required by the legislation and requested benefits apart from its legal rights.

There is nothing new with our companies that needs to be announced to the public.”

Following this statement, Koza Gold’s activities in Çukuralan facility were suspended on 31.12.2013 by Izmir Special Provincial Administration based on the absence of “Environmental Permit or Environmental Permit and License Certification”. Koza Gold’s statement to the Public Disclosure Platform (KAP) is as follows:

“Our company’s activities in Çukuralan facility have been suspended by Izmir Special Provincial Administration based on so-called lack of “Environmental Permit or Environmental Permit and License Certification”. As indicated in the letter by the administration, our company holds the temporary activity license numbered 2896 and dated 20.02.2013 which is valid until 20.02.2014, granted by the Directorate General of Environmental Impact Assessment, Permit and Supervision (ÇEDGM) under the Ministry of Environment and Urban Planning. All the necessary documents and required information regarding the permit and license were submitted to the concerned authority on time. There is no document or information requested from our company by a governmental body that is not provided in a timely manner.

Koza Altın said and that every activity has been in full compliance with the law. Additionally, a valid Environmental Impact Report (CED), issued on March 11, 2011, is still in effect and there is no problem with it, the statement asserted. Additionally, the positive Environmental Impact Report (CED) dated 11.03.2011 on which all our activities are based, is still in effect and there is no problem with it. The aforementioned stay of execution has been imposed despite the presence of this report.

In our previous statement we already indicated that our company is the only one in Turkey with 100 percent domestic ownership, the third private company on the list of top performers in terms of corporate taxes and acts diligently in line with all kinds of legislation. As is known, our facilities have been cited as good examples to world mining by the European Union Miners Association. Our company has always fulfilled all requirements of the related legislation with due diligence and in a timely manner, and never asked for any benefits other than our legal rights.”

As a company with public ownership, which employs over 2000 people, we are going to take legal action against this decision.”

Upon further statement by Koza on 02.01.2014 following the decision of suspension of activities in Çukuralan, the claims by the press regarding gold trade were addressed.

“The information and coverage about our company and our president are completely false and untruthful. Neither our company nor our subsidiaries have ever imported gold. Moreover, all the gold we produce is sold via the Precious Minerals Market under BIST (İstanbul Stock Exchange) in accordance with the Communiqué No: 26350. All procedures are confirmed and recorded by BIST. Sale to designated individuals is out of question.

Ours is a mining company; we have never been involved in gold trade. We have no corporate or personal affiliation whatsoever with the people referred to in the new stories, neither in terms of gold trade nor any other business. Our company has been operating based on its equity and venture capital and engaged in mining starting from the stage of exploration, and it acts diligently in compliance with the legislation.

Another statement released on 02.01.2014 refers to the Çukuralan Mine included the following:

*The press release by İzmir Special
Koza Gold Stops Production in Mastra

Koza Gold Inc. announced the decision to shut down Mastra Gold Mine. In the statement, the company listed the decisions taken to sustain the company’s budget and profit distribution plans and keep the growth performance at an optimum level considering the practices and restrictions imposed on the mining sector. The decisions included the halt of business in Mastra facility in Gümüşhane province by the end of February; reducing the budget allocated to exploration activities by 70% as in the case of other companies operating in the sector, with a view to keeping the short-term budget performance intact; within the context of the plans for achieving short and medium term targets, focusing on the actual and potential opportunities offered by foreign companies, giving priority to the ones in countries which have an established mining legislation.

The statement also asserts “We would like to underline that mining companies that operate on its own venture capital with substantial knowledge on each stage, from exploration to establishing facilities, are welcomed and encouraged by all countries. While the rate of discovering minerals upon drilling in Turkey is 1/300, due to the practices and restrictions within the sector, the average global rate in this regard is 1/100. We are fully confident that Koza mining teams will also thrive on the global platform, as they have already proved their competency upon the flourishing performance they have displayed so far. The most significant factor in mining is undoubtedly the mineral prices around the world. Apart from this factor over which we have no control, we plan to sustain our short, medium and long term budget and profit distribution targets, without any significant variations.”

● December 2013

April 2014
Canadian Mining Corporate Social Responsibility Workshop

The Consulate General of Canada in Istanbul in collaboration with the Embassy organized a Mining CSR Workshop at the Sheraton Hotel in Ankara with participation of Canadian mining companies active in Turkey. The objective of the Workshop was to create a discussion forum for the participants to exchange views and their experiences in implementing CSR programs as well as reviewing the highlights of the Canadian Government's approach to CSR practices and guidelines for the industry in terms of environmental preservation and community services. The discussions were also aimed at reviewing the prerequisites for sustainable mining in the Turkish environment, the challenges faced by the Canadian firms and ways to address them.

Senior Turkish Government officials, headed by Dr. Nevzat Kavaklı, Deputy Undersecretary of the Ministry of Energy and Natural Resources, and executives from Canadian mining exploration and operation companies were hosted and their active contributions enhanced the discussions.

In his welcoming remarks John Holmes, the Ambassador of Canada, who chaired the Workshop pointed out that environmental sustainability as well as healthy community relations based on mutual trust are essential elements which the companies should take as priority. He also expressed his hope that the event would serve as an opportunity to foster greater awareness of Canadian CSR practices and to reinforce the positive image that the Canadian companies have built in Turkey.

The keynote speaker of the workshop was Julia Cloutier, CSR expert from the Department of Foreign Affairs Trade and Development of Canada. In her comprehensive keynote presentation, Mrs. Cloutier outlined Canadian Government’s CSR standards and guidelines for extractive industries, how they are enforced and how they contribute to the welfare of the local communities and protection of the environment. She also referred to the Canadian Government resources available to support CSR programs and how companies may benefit from them. Mrs. Cloutier’s presentation continued with references to exemplary CSR projects implemented by Canadian companies in various parts of the world.

The Workshop continued with presentations by executives of two Canadian mine operating companies, namely Mehmet Yılmaz from Tüprag and Iain Anderson from Çayeli Bakır, on their CSR strategies and successfully completed and ongoing projects to upgrade the living standards of the communities where they operate.

In wrap-up and concluding remarks, Dr. Nevzat Kavaklı stated that such meetings are very beneficial for better understanding of the value of CSR programs and responsible mining practices which will ensure harmonious relations between the mining industry and local communities. He expressed his pleasure for being part of such a fruitful meeting and emphasized that such events serve as educative tools not only for the industry, but also other parties including supervisory agencies and stakeholders.

Mining Sector’s 1Q Export Numbers Announced

According to İstanbul Mineral Exporters Association (İMİB) data, in the first quarter of 2014, Turkish mining sector’s exports reached to 5,025,000 tonnes with a 5.45% increase compared to the same period last year. In financial terms, the figure achieved in exports was 1 billion 92 million USD with a decrease of 6.06%. In the first quarter of 2014, exports to China which is regarded as the largest market for the sector, dropped to 423 million 742 thousand USD upon a 29.42% downfall while exports to the USA was increased by 21.57% which corresponds to a figure of 99 million 218 thousand USD.

The increase of exports to Netherlands, Sweden, India and Spain was remarkable in the first quarter. Over this period, mining sector exports to the Netherlands turned out as 31 million 491 thousand USD with an increase of 141.74%, to Sweden as 27 million 219 thousand USD with an increase of 2.757%, to India as 24 million 946 thousand with an increase of 110.84% and to Spain 23 million 507 thousand USD with an increase of 49.25%. These countries were among the prominent ones taking up the top places on the list regarding the increase in export numbers. It is reported that the climb in the exportation to the Netherlands and Sweden had to do with the upsurge in the ferrochrome exports.
Eldorado's Mine in Kışladağ Confirmed for the International Cyanide Management Code

The International Cyanide Management Institute (ICMI) has confirmed that Eldorado Gold’s Gold Mine in Kışladağ operates in accordance with the International Cyanide Management Code. Upon this confirmation, the Kışladağ Gold Mine has been the first Turkish mine ever receiving an approval of conformity to the Cyanide Code.

Having been designed within the scope of the United Nations Environment Program, the Cyanide Code is a voluntary program for the producers and transporters of cyanide used in gold mining from around the world. Eldorado Gold received a professional report from an independent supervision organization on the Kışladağ Gold Mine operated by Eldorado’s subsidiary in Turkey, Tüprag Metal Mining, and sent the report to ICMI. Subsequent to the review of the report by the ICMI, an approval of full conformity to the Principles and Standards of the Cyanide Code has been awarded to Kışladağ. The approval is available on ICMI’s website using the link below:

www.cyanidecode.org/signatory-company/eldorado

Çinkom and Mexican Zinc National to Build a Constant rate Facility in Aliağa

During the Turkey - Mexico Business Council Meeting organized by the Foreign Economic Affairs Board (DEİK), Çinkom of Kayseri signed a business agreement with the Mexican company Zinc National for establishing a zinc concentrate facility in Turkey. According to the agreement, the construction of the facility will be launched in 2014 and the zinc concentrate production facility will be set up in Aliağa district of İzmir, upon an investment of 100 million USD. The facility is expected to become operational in 2015.

Being a first for both countries, the agreement was signed on behalf of Çinkom by Saffet Arslan, Chairman of the Executive Board of Çinkom Inc. which is a subsidiary of İpek Group, and by Eduardo Alverde the CEO of Zinc National. Turkey - Mexico Business Council Meeting, during which this partnership agreement was signed, hosted not only the prominent figures of politics and business world but also the Mexican President Enrique Pena Nieto who also made some remarks at the event. The other speakers of the event were Chairman of DEİK Turkey - Mexico Business Council Albert Saydam, Jorge Lopez Morton, The President of TOBB and DEİK M. Rifat Hisarcıklıoğlu and the Turkish Minister of Science, Industry and Technology Nihat Ergün.

Mining Site Tenders to be Re-Launched

Since the annulment in October 2012 of the tenders regarding the mining sites within groups 107 and 113, no mining site tender has taken place for about a year and a half. Upon the tender notice published by the General Directorate of Mining Affairs (MİGEM) in the Official Gazette dated 12 February 2014, it was announced that 151 mining sites would become available for exploration studies.

Following the clarification of their legal status, a total of 151 mining sites including 14 sites from Group I(B), 20 from Group II, 6 from Group III and 111 from Group IV will be awarded upon tender. Tenders will be launched on 15 April 2014. Moreover, it is also noteworthy that in the tender list published on MİGEM’s website the coordinates of the license sites are shown on the map, some information is provided on a number of sites and the price floor for the tenders has been raised.

Tens of Mine Workers Lost Their Lives in 2013

The second research on “Accidents at Work and Work-Related Health Problems” carried out by the Turkish Statistical Institute (TurkStat) throughout April, May and June, outlines the accidents at work and work-related health problems experienced over the past 12 months. According to the research, across Turkey, 2.3% of the individuals who were employed within the last 12 months had an accident at work, and with a rate of 10.4%, the sector with the highest rate of accident turned out to be mining and quarrying. Furthermore, the highest rate of people who suffered from a work-related health problem in the last 12 months was in mining and quarrying sector, with a rate of 5.5%.

Independent of TurkStat’s research, according to the reports by various sources, 92 mine workers died during work accidents in Turkey. On the other hand, in reference to the figures announced by the Revolutionary Mining Workers’ Union (Dev-Maden), 95 workers died in mining accidents in 2013. The 2012 figure for the same group was 77.
20 % Increase in Mineral Export, 5 Million USD: A Record

Being one of the driving forces of the Turkish economy, mining sector has broken a record in 2013 by achieving 5 billion 43 million USD of exportation upon an increase by 20.67%. Despite all the drawbacks that affected the economies on a global scale, the mining sector managed to surpass its 4.5 billion USD goal set out for the year 2013 and came third among the sectors with maximum increase in the field of exportation. According to the data presented by Istanbul Mineral Exporters Association (İMİB), in 2013, Turkey’s mineral exportation reached up to 5 billion 43 million USD in worth, with an increase rate of 20.67% compared to last year, and 22 million 326 thousand tons in volume, with an increase rate of 9.18%. The top five countries of exportation, in the respective order, were China, the USA, Iraq, Belgium and Italy.

Turkish mining sector maintained the upwards trend in exportation during the last month of the year, as well. In December the export figure achieved by the sector was 425 million 832 thousand USD, which means a 7.20% increase as opposed to the month of last year.

Being the largest market of the sector in 2013 once again, China preserved its first place in the list. With 2 billion 467 million USD of exportation to China, the figure was raised by 35.69% compared to the 2012 figure. Over this period, the top minerals exported to China were: natural stones, chrome ores, copper ores, precious metal ores and lead ores.

Among the other top countries of exportation in 2013, with their notable increase in the exportation rates, the most prominent countries were Bulgaria, Republic of South Korea, Netherlands, Libya and Azerbaijan - Nakhchivan. Compared to the figures of 2012, the respective mineral exportation figures and the increase rates are as follows: Bulgaria, 99 million 507 thousand USD, 171.94% increase rate; Netherlands, 80 million 959 thousand USD, 98.10% increase rate; Azerbaijan – Nakhchivan, 54 million 129 thousand USD, 58.39% increase rate; South Korea, 45 million 233 thousand USD, 128.69% increase rate; and Libya, 37 million 100 thousand USD, 80.25% increase rate.

Block natural stones ranked first in the list of product groups within the mining sector exportation in 2013, with a figure of 1 billion 141 million USD. The second place was claimed by processed natural stones with an amount of 1 billion 83 million USD and followed respectively by copper ores with 508 million 749 thousand USD, chrome ores with 450 million 366 thousand USD, natural borate and concentrates with 235 million 913 thousand USD and zinc ores with 202 million 208 thousand USD.

The exportation amount of the natural stone sector which is one of the most significant subcomponents of the mining sector reached up to 2 billion 225 million USD with an increase of 17% compared to figure achieved in 2012. The top five countries of natural stone exportation, in their respective order, were China, the USA, Iraq, Saudi Arabia and India. Furthermore, the increased rates of exportation over the same period to Azerbaijan - Nakhchivan, Russia, Libya, Turkmenistan and Qatar were also noteworthy.

Commenting on the 2013 export figures, President of Istanbul Mineral Exporters Association (İMİB) Mehmet Özer said “In 2013, both our country and the world have witnessed many noteworthy events that directly affected the global economy. Unfortunately, these events brought along some challenges for many sectors. Nevertheless, in 2013 our sector managed to maintain the upwards impetus in export which we had achieved earlier. Although the export goal set out for 2013 was 4.5 billion USD, we climbed over this target upon achieving 4 billion 617 million USD of export as early as November. By the end of December, the total figure for mineral export reached to 5 billion 43 million USD. We are proud to announce having surpassed our export target despite last year proved to be a challenging one for the economies around the world.”

Mehmet Özer noted that as İMİB they were focused on the export target for the year 2014 and added “The representatives of the sector who made outstanding contributions to the Turkish economy over the last year, have already rolled up their sleeves for their work during the year ahead. Our export target for 2014 is 5 billion 600 million USD. As İMİB, we intend to keep up our tireless work both in the domestic and international arena to achieve this target, just like we have always done so far. We are confident that our members will also do their best to reach the goal we have set out.”

January 2014

Aldridge Minerals Announced Their New President and CEO, Right After Their EIA Approval

Aldridge Minerals announced the appointment of Han Ilhan as President and CEO, effective as of April 7, 2014. Ilhan joins Aldridge from an international mining company with operations in Turkey where he served as Vice President of Projects and Country Manager of Turkey Operations.

Aldridge is a development stage mining company focused on its wholly owned Yenipazar polymetallic VMS Project (Au, Ag, Cu, Pb, Zn) in Turkey. The company announced their EIA approval for their 100% owned Yenipazar Property in March 6, 2014, just 19 days before the announcement of Han Ilhan’s appointment as President and CEO.

March 2014
Optimising Coal Recovery in a Time of Declining Coal Prices

The Geotechnical team at PT Bayan Resources Tbk (PT Bayan) knew that there was potential for improved coal recovery at a number of their Indonesian mine sites. The location of the coal seams and the adverse geotechnical condition of the open cut pit slopes meant that in areas adjacent to unstable sections of the pit the cost of additional overburden removal and the risks of coal extraction outweighed the benefits to production.

With declining global coal prices, PT Bayan developed a strategy to address these challenges. They undertook a number of pit design changes to economically optimise the coal seam reserves. Ground control systems were installed to enhance mine safety and provide reliable and accurate slope movement data to the geotechnical, mine operations and coal production teams. An upgrade of slope monitoring and reporting systems was carried out at four key mine sites. To maximise coal recovery in unstable pit areas, the GroundProbe Slope Stability Radar (SSR™XT) was deployed. The results speak for themselves.

― The deployment of the Slope Stability Systems at our key minesites has empowered our geotechnical staff to be proactive in the communication of timely, accurate and reliable slide movement information to our mine safety, operations and production teams.‖ – Warren Tamblyn, Manager Mine Geotechnical Services, PT Bayan Resources Tbk

1. LOW WALL FAILURE BLOCK, WAHANA – JANUARY 2010
At the Wahana open cut pit, more than 8,000 tonnes of coal were recovered from the low wall toe area, prior to the cracking, break-up and destruction of the coal seams in the slide mass. 24/7 monitoring with SSR™XT, in combination with Bayan best practice safety procedures, made the coal recovery possible with no injuries or loss of equipment. Coal recovery value $1m

2. FLOOR SLIDE AREA, WAHANA – JUNE 2011 TO MAY 2012
Through a remote monitoring service, GroundProbe’s Geotechnical Support Services team notified PT Bayan of potential movement on a coal seam floor area. Equipment and personnel were removed from the site and SSR™XT was left to monitor. Once the slide movement had stopped, PT Bayan, utilizing best practice mining and safety procedures recovered an additional 45,000 tonnes of coal from the area below the slide mass. Coal recovery value $4-5m

3. HIGH WALL AREA, MELAK PROJECT – JUNE 2012
Initial geotechnical assessment showed limited access for mining below the unstable high wall slope. A safety exclusion zone of 30-40 metres was recommended, thus restricting coal recovery. The deployment of SSR™XT, allowed mining of the coal seam to continue down to another bench. An additional 12,000-14,000 tonnes in this area of the open cut was recovered. Coal recovery value $1-2m

The SSR™XT monitoring data provides hard “real time” data for mining operations. With this information, PT Bayan is able to give clear direction on whether to proceed with coal extraction.

The Bayan Group is engaged in open cut mining of various coal quality from mines located primarily in East and South Kalimantan. Being an integrated coal producer in Indonesia the Bayan Group through its various mines, produces coal ranging from semi-soft coking coal to environmentally-friendly low sulphur, sub-bituminous coal.

ABOUT GROUNDPROBE
Since 2001, GroundProbe has been redefining safety and productivity in the mining industry. Through an unwavering commitment to safety, dedicated industry focus and pioneering technology, GroundProbe developed the world’s first Slope Stability Radar; a system to monitor and warn of ground movement in open pit mines. Today, GroundProbe provides high value information to help customers to better manage risk. With a range of slope monitoring solutions built on the successful detection of over five hundred wall failures, GroundProbe’s products, services and people enable customers to make confident decisions about mine safety and ongoing production.

GroundProbe operates in over 20 countries, serving all major mining companies through local offices across Australia, the Americas, Africa and Asia. More information about GroundProbe can be found at www.groundprobe.com

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The year 2013 was not an easy one for the Turkish mining sector. The turmoil within the global economy, the downfall of the mineral prices as well as the bureaucratic distress our country went through proved to be rather formidable for the sector as a whole. Nevertheless, it would be unfair to say that it was all negative. In this regard, we would like to present our readers with a digest of the substantial developments achieved in the mining sector, which were also covered by our magazine throughout 2013.

It is safe to say that in 2013, Turkish mining sector stepped into a period of recession - not unlike the rest of the world - justifying the warning signals of 2012 for an economic crisis. Due to the economic recession in Europe, which surfaced in 2012, and the actions taken by the FED, the USA’s central bank, in 2013 in an attempt to reboost the US Dollar, which ended up causing a downfall in the gold prices, and as a consequence, in the prices of all commodities, making investments in the mining sector became a challenge in 2013. When the global giants of the mining sector announced, one after another, that they decided to cut down on their exploration costs, i.e. their venture capitals, the gold mines in Australia where the costs were the highest were shut down one by one, and the nickel and chrome prices were hardly over the production costs, our country was duly affected. Moreover, despite all efforts the inclusion of mining sector within the scope of the Prime Ministry Circular No: 2012/5 which took effect in June 2012, caused a continued negative effect notably on exploration projects and reserve enhancement studies. The implications of the Circular were strongly felt, particularly after the second half of 2013, by the undertaking and consultancy firms which operate in the mining sector. On the other hand, notwithstanding the unfavorable course of events, the announcement by the Istanbul Mineral Exporter’s Association (İMİB) that the 4.5 billion USD exportation goal set out for the year 2013 had been achieved as of the end of November proved to be the brightest indication that the sector was not adversely affected in terms of production and finding markets.

AN OVERVIEW OF 2013

Association of Mining Sector Presidents’ Council announced in July that they had lodged a formal application to the Prime Ministry in March requesting the exemption of the mining sector from the scope of the Circular No: 2012/5, just like the one granted to the Energy Market Regulatory Authority (EPDK). No remedy to this issue could be found within 2013.

In his speech during the 17th Annual Zinc and Its Markets Conference which was organized in Amsterdam this year, Selim Ergüder, the executive board member of Gök-Er Group, presented an overall assessment on the zinc market in Turkey. Ergüder pointed out that, over the past 7 years, Turkey’s zinc exportation increased by 490% in wet metric tons.

The Tenth Development Plan presented in the Planning and Budget Commission of the Turkish Grand National Assembly (the Parliament) by the Turkish Development Minister Cevdet Yılmaz on 18 June 2013 Tuesday, was adopted on 01.07.2013 upon the approval by the TGNAs’s General Assembly. In his presentation in the Commission, making a remark about the sector, “The exportation of the mining sector has shifted from 382 million USD to 3.2 billion USD over the last decade. The investment funds allocated to exploration of oil, natural gas, mineral and geothermal resources between the years 2002 and 2013 have been substantially augmented. We are going to intensify the exploration studies in the mining sector. In this regard, we intend to scale up drilling from 1.3 million meters to 3 million meters.” Minister Yılmaz said. On top of their plan to annually produce 5 - 6 billion USD worth of shale gas on average until the year 2023, the leaders of economy will be improving the shale gas incentives. It is reported that, within the scope of the new incentive package worked out by the Ministry of Energy and Natural Resources and the Ministry of Economy, oil and natural gas exploration studies will gain momentum.

The 4th International Istanbul Gold Summit which portrayed the course of gold, from the moment it is extracted from underground up until it reaches the end-user, was held on 20 June 2013 in Çırağan Palace. During the event which was highly appreciated by the gold mining sector and sponsored by the Gold Miners Association, Deputy Prime Minister in Charge of Economy Ali Babacan as well as the prominent figures of the gold sector and Turkish money markets made a series of remarks. Deputy Prime Minister Babacan commenced his speech indicating that they attach utmost importance to gold mining and they recognize the bureaucratic troubles. Pointing out that the current deficit of the government could be met by harnessing gold mining which was something they had been pondering, Babacan suggested that an outstanding success was achieved in the design part of gold jewelry sector and underlined the need for paying the due regard for branding and institutionalization.

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Turkey Mining Finance Investment Summit which was organized by EBY International Summit, regarded as the leading local company famous for putting together the most rewarding domestic and international events for the mining sector, upon the contributions by the Turkish Miners Association and its press sponsors being Madencilik Türkiye and Mining Turkey magazines, was held on 26 - 27 September 2013 in London. Prior to the event which happens to be the most prestigious one about Turkish mining ever organized abroad, Turkish Mining Sector Delegates rang the bell in London Stock Exchange (LSE) with a view to drawing the attention of the finance world not only to the Turkish mining sector but also to the event which would be held on the following day. In his speech after the ringing of the bell, Deputy Minister of Energy and Natural Resources Murat Mercan suggested that the Turkish economy began to establish a noteworthy presence both around Europe and the globe.

The New Environmental Impact Assessment Regulation which was published in the Official Gazette Numbered 28784 and dated 03.10.2013, was promulgated. In accordance with the new Regulation, all processes and procedures will, from now on, be carried out in the electronic environment. For mineral explorations, the companies will be asked to provide an Environmental Impact Assessment (EIA) file alongside their EIA reports. During our interview with the Director General of EIA Çağatay Dikmen, which was published in our 35th edition, he noted that what they did had nothing to do with hindering the investors, rather its intention was, under the guidance by science, to ensure minimum damage to the environment, and he added that this process, contrary to the prevailing assumptions, would prove to be favorable in the long run, not a handicap for the investors.

According to Istanbul Mineral Exporter’s Association (İMİB), mineral exportation during January - December 2013 reached 5 billion 43 million USD upon an increase of 20.67% as opposed to the same period of the past year, which happens to be a record in its history. The top five countries of exportation, in the respective order, were China, the USA, Iraq, Belgium and Italy. The annual goal set out for exportation in 2013 had already been achieved in October.

The exportation amount as of the end of October by the natural stone sector which is one of the most significant subcomponents of the mining sector reached up to 1 billion 835 million USD with an increase of 18.45% compared to the same period of the year 2012. In addition, exportation of metal ores amounted to 1 billion 477 million USD as of the end of October, upon an increase of 36.45%. The top three of the metal ore exportation were copper, chrome and precious metals.

Prime Minister Recep Tayyip Erdoğan suggested in his speech in Van province in October that the logs shipped from Turkey to Italy and China over many years virtually for free were later purchased, after they were duly processed, paying far, far more. “What kind of logic is this? What kind of understanding is this? Some people feel disturbed and having a hard a time getting over the fact that we managed to eliminate such kind of understanding. Now I’ve made all mineral affairs directly attached to myself. No matter what, whether it is marble, gold, copper or zinc, I said I would attend to it personally. The necessary steps will be taken subsequent to my approval. Some of these are the areas bought by the separatist terrorist organization, this is also interesting. Now having seen all that has been done, how can we approve and say ‘yes’? Some people feel uneasy. They say ‘Sir, it took too long, it is delayed.’ Pardon me, it is because I had no intention of giving it, because I am saving on the 76 million people’s money I’ve been entrusted with. If not, when the day comes, I’d be unable to account for it before this nation. Some might have done this in the past, but we only welcome those who would make investments just like our brothers from Van Marble who made such an investment. Those who have invested 60 - 70 million there and also undertaking such a production, we would warmly welcome this kind of...”
4.5 billion USD goal set out for the year

Despite all the drawbacks that affected the economies on a global scale, the mining sector managed to surpass its exportation goal for the year 2014, which is 5 billion 600 million USD. The mining sector’s exportation figure achieved in 2012 was 151,869 billion USD, with a 0.4% downfall as opposed to the figure achieved in 2012. Mining sector’s share in this amount was 3.32%. The sector has raised its exportation figure by 20.67% compared to the 2012 figure, achieving an exportation figure of 5 billion 43 million USD which is the highest number ever recorded. The sector’s exportation goal for the year 2014 is 5 billion 600 million USD.

PDAC held a “Turkish Day” event in Canada. During the event organized by the Canadian Representative of the Turkish Prime Ministry’s Investment Support and Promotion Agency (a.k.a. Invest in Turkey) the guests were informed about the mineral potential of Turkey, the latest amendments to the laws and regulations on mining and the strong support by the government, using printed and visual presentations.

2013 EXPORT FIGURES OF THE MINING SECTOR

The total exports figure of Turkey in 2013 was 151,869 billion USD, with a 0.4% downfall as opposed to the figure achieved in 2012. Mining sector’s share in this amount was 3.32%. The sector has raised its exportation figure by 20.67% compared to the 2012 figure, achieving an exportation figure of 5 billion 43 million USD which is the highest number ever recorded. The sector’s exportation goal for the year 2014 is 5 billion 600 million USD.

Despite all the drawbacks that affected the economies on a global scale, the mining sector managed to surpass its 4.5 billion USD goal set out for the year 2013 and came third among the sectors with maximum increase in the field of exportation. In 2013, Turkey’s mineral exportation reached up to 5 billion 43 million USD in worth, with an increase rate of 20.67% compared to last year, and 22 million 326 thousand tons in volume, with an increase rate of 9.18%. The top five countries of exportation, in the respective order, were China, the USA, Iraq, Belgium and Italy.

Being the largest market of the sector in 2013 once again, China preserved its first place in the list. With 2 billion 467 million USD of exportation to China, the figure was raised by 35.69% compared to the 2012 figure. Over this period, the top minerals exported to China were: natural stones, chrome ores, copper ores, precious metal ores and lead ores.

Among the other top countries of exportation in 2013, with their notable increase in the exportation rates, the most prominent countries were Bulgaria, South Korea, Netherlands, Libya and Azerbaijan – Nakhchivan. Compared to the figures of 2012, the respective mineral exportation figures and the increase rates are as follows: Bulgaria, 99 million 507 thousand USD, 171.94% increase rate; Netherlands, 80 million 959 thousand USD, 98.10% increase rate; Azerbaijan – Nakhchivan, 54 million 129 thousand USD, 58.39% increase rate; South Korea, 45 million 233 thousand USD, 128.69% increase rate; and Libya, 37 million 100 thousand USD, 80.25% increase rate.

The top five countries of exportation, in their respective order, were China, the USA, Iraq, Saudi Arabia and India. Furthermore, the increased rates of exportation over the same period to Azerbaijan - Nakhchivan, Russia, Libya, Turkmenistan and Qatar were also noteworthy.

NEWS ON THE TURKISH MINING FIRMS

Giving priority to the manufacturing of products that bear added-value in the field of boron, and upon marketing 16 boron products in 84 countries, Eti Maden has succeeded the throne from the USA’s Rio Tinto which up until present had the upper hand in the global boron market. When Eti Maden began to dominate the global market in the past couple of year, the market share of Rio Tinto dropped to around 23% in 2012, while Eti Maden reached a market share of 46%. Orhan Yılmaz, Director General of Eti Maden, reminded that in 2005 the mineral giant Rio Tinto had a 40% in the global boron market, and indicated that they managed to increase their market share against Rio Tinto by putting an emphasis on R&D studies.

Upon a decision by the TRNC cabinet, Santral Mining - a subsidiary of Güriş Holding – is going to undertake exploration works within a designated area in Northern Cyprus and take action to eliminate the mineral waste from the past across the region. Santral Mining intends to focus on metallic minerals, particularly copper.
Çaldağ Nickel Mining announced having lodged an EIA application for a nickel project in Çaldağ. The Ministry of Environment and Urban Planning has approved the application and “Çaldağ Complex Mine (Nickel-Cobalt-Iron) Project Amendment and Additional Units” project has been put into action.

Park Elektrik, a company of Ciner Group, published its production figures for the first quarter of 2013 as 201.795.861 TL (175.484.942 TL copper, 25.626.498 TL asphaltite, 684.421 TL other). Park Elektrik also announced that over the first three quarters of 2013, compared to the same period of the past year, the company’s copper production had increased by 10.3% and asphaltite production had increased by 10%.

Ciner Group and Chinese Tianchen Corporation signed a contract on the construction of a soda ash facility and electricity generation facility in Ankara – Kazan, which is expected to have a total investment value of 1.35 billion USD. The intended exportation figure for Kazan Soda facility is 1.55 billion USD annually, and the expected production amount is 2.7 million tons when the investment is completed. The soda ash produced will be transported via railway.

The Main Economic Indicators Report of 2012 by the Directorate General of Mineral Research and Exploration (MTA), which takes detailed stock of Turkey’s mining reservoirs, indicated that our country hosted 700 tons of gold reservoirs and 9 thousand 129 tons of designated uranium reserves. According to the sectorial distribution of the GDP, mining and quarrying had grown by 21.5% in 2011 and 10.3% in 2012. The ratio of mining within the GDP was 1.49%.

Kombassan Holding’s mining company Hisar Mining achieved a 20% capacity increase upon investing 2 million TL in capacity building and modernization studies within its plants in Aksaray and Aydın provinces last year. It is reported that the company will proceed with its capacity building studies for its products at hand. The total production amount of Aksaray and Aydın plants in 2012 was 98 thousand tons and the company announced that the production planning for 2012 surpassed 9%.

It is reported that in Eti Copper Inc’s copper enterprise in the Küre district of Kastamonu province, a new copper reserve of 25 million tons has been discovered.

Being one of the key actors in the chrome markets around the world, Yıldırım Group purchased Russian Mechel’s Voskhod Mining Facility (Voskhod) in Kazakhstan and Tikhvin Ferroalloy Plant (TFP) in Russia. Located in the northwest Kazakhstan, Voskhod chrome mine harbors a state of the art underground mine and an ore processing facility. The mine has a total chrome ore reserve of 21 million tons. With its chrome/iron (Cr/Fe) rate of around 3.5 - 3.8, Voskhod’s chrome ore has one of the highest chrome/iron rates in the world.

In October, Yıldırım Group signed an initial contract of 450 million USD with CCX Carvão da Colômbia SA, which a company owned by the billionaire Eike Batista, with a view to buying the coal mines and affiliated facilities in Colombia. The companies intend to sign a final contract until the end of December, for the sale of Cañaverales and Papayal open-cast mines which worth 50 million USD. With regard to the underground mine in San Juan whose estimated value is around 400 million USD, the negotiations on the sale of the railway and harbor infrastructures is expected to be finalized until April 2014.

According to the third quarter of 2013 activity report by Koza Gold Enterprise, the company’s gold production over the first three quarters of 2013 was 242,459 ounces with drop of 7.2%.

Hattat Holding signed a contract with the China Coal Construction for extracting the coal necessary for the thermal power plant in Amasra – Bartin, which will have an energy capacity of 2,640 MW, from the anthracite coal mine which is also located in the same area it owns.

Ankara based, Meta Nickel Cobalt Mining (META) was founded by Meta Mining Co. and ZORLU Group with an aim of becoming a regional supplier of nickel-cobalt in various forms. META was the first company to mine nickel in Turkey. META has produced a total of 230,000 mt of lateritic type nickel ore from open pits since 2003. The nickel-cobalt producer company is now committed to investing up to 700 million USD to build up the first hydrometallurgy process plant facility in the country. The first phase consists of 300 million USD investment to process 1.5 Mt per year of lateritic ore and obtain nickel and cobalt mixed hydroxide product (MHP). The MHP will be equivalent to 10,000 mtpa nickel metal and 750 mtpa cobalt. These phases are to be completed by the beginning of 2014. Then, META will invest another 400 million USD to expand the production capacity to 3 Mt per year of lateritic ore with nickel-cobalt refinery (EW/SX). At that time, doubled production capacity, resulting in a yearly turnover of approximately 400 million USD, at an around current nickel prices.
Before deciding on the technology, META carried out an extensive laboratory testing program and economical analyses on the available technologies, namely heap leaching, atmospheric tank leaching, HPAL. As a result, HPAL technology was selected mainly due to its low environmental effects (it is a controlled process within closed circuit), high metal recovery level and its low operational cost (due in part to its low sulphuric acid consumption). The selected method was tested in pilot scale in Australia and Canada to guarantee that this is the safest technology to use for GÖRDŞES ore, especially from an environmental point of view.

The building process of autoclave took 18 months in China. It weight 580 tonnes with the dimensions of 32m length and 7m height. It is transported 176 km from İzmir/Aliaga Port to Gördes Project area on the SPMT (Self Propelled Modular Transportation). Meta’s autoclave is the heaviest and the largest transportation Cargo in Turkey roads. During the transportation; 11 unit bridges by-passed, 2 unit pedestrian overhead crossings removed, approximately 250 unit electric/telephone cables lifted, approximately 16 unit traffic lights and signboards removed.

The Ministry of Energy and Natural Recourses has taken action to introduce the rock salt with a reserve of 8 billion tons in Delice district of Kınikkale province into the economy. It is reported that a portion of the salt acquired from the project to be carried out upon a planned investment of 100 million USD, would become table salt, whereas the rest would be used in the processing of the chemicals needed for industrial purposes.

MTA discovered a lignite reserve of 950 million tons in Dinar district of Afyonkarahisar province. Upon 5 billion USD of investment, a thermal power plant with a generation capacity of 3.500 Mw will be established in the region.

Another site discovery announced by MTA is in Karapınar district of Konya province. It is estimated that the 1.8 billion tons of reserve within the lignite site would satisfy a 5250 MW thermal power plant for about 30 years.

Within the scope of its copper mine project carried out in Hanönü district of Kastamonu province, İlba Holding’s Asya Mining Inc. was granted an investment incentive certificate for 280 million TL via KUZKA Kastamonu Investment Support Office (YDO). During the studies carried out to establish the reserve amount, upon 47 thousand meters of drilling until present, 24.5 million tons of visible and 12 million tons of potential copper reserve was discovered, under the approval by the internationally accredited organizations. It is expected that the amount of the reserve will increase following future drilling studies.

Marmara Metal Inc. which supplies a wide range of materials and raw materials to iron, steel and casting industries in Middle Eastern and European countries bought 5.3% of Thompson Creek’s shares, a leading molybdenum manufacturer in the USA which intends to soon launch production within the scope of a copper-gold project. Upon this purchase, Marmara Metal became the third largest partner of Thompson Creek while the largest share among other partners, which is 9%, is owned by Gold Corp. Finance giants such as ING Bank, Bank Of America, JPMorgan Chase, Citi, Wells Fargo, Barclays, Deutsche Bank, Credit Agricole, Credit Suisse and Morgan Stanley hold the shares of Thompson Creek in various sizes.

Çinkom of Kayseri signed a business contract with the Mexican company Zinc National for the establishment of a zinc concentrate facility in Turkey. With the construction work intended to be initiated in 2014 according to the contract, a zinc concentrate production facility will be set up in İzmir – Aliaga upon an investment of 100 million USD. The facility is expected to become operational in 2015.

NEWS ON FOREIGN MINING COMPANIES

Alacer Gold published its 2013 production numbers of Çöpler Gold Mine located in Erzincan - İliç. According to the press release dated March 12, 2014, Alacer and their Turkish partner Lidya Madencilik (owns 20% of the mine) produced 216,850 ounces of gold in Çöpler, increased 44% regarding to the last year’s production numbers, at an all-in cost of 864 USD per ounce. The updated Çöpler resource estimate has resulted in measured and indicated resources increasing to 194.2 million tonnes at a grade of 1.4 g/t gold, containing a total of 8.5 million ounces (inclusive of reserves) as at June 30, 2013.

Aldridge Minerals announced that it fully owns their polymetallic Yenipazar Project, in Yozgat. According to the news release dated June 17, 2013, Aldridge completed the earn-in by delivering the Yenipazar Feasibility Study to Alacer Gold. Alacer retains a 6% net profit interest in the Yenipazar Property until such time as operational revenues reach the amount of 165,000,000 USD. When revenues exceed this threshold amount, the NPI will increase to 10%. Aldridge Minerals completed the EIA Report for its flag-
ship Yenipazar Project in August 28, 2013 and in March 2014, the report is approved.

Ariana Resources, the gold exploration and development company focused on Turkey, announced in September 2013, a JORC Resource Estimate for the Kizilcukur and Iivrindi projects which are 100% held by the company outside of the Red Rabbit Joint Venture in Western Turkey: 27,600 oz Au equivalent JORC Inferred added to the resource base from two satellite prospects, Kizilcukur and Iivrindi, located in the vicinity of the Red Rabbit Gold Project. Total resource base in western Turkey increased to approximately 475,000 oz Au equiv. gross (currently 395,000 oz Au equiv. net to Ariana) in addition to 1.09Moz gross (534,000 oz Au net to Ariana) located within the company’s JV with Eldorado Gold in north-eastern Turkey. Ariana Resources, announced in July that it has submitted its final EIA report for the Kiziltepe gold-silver project to the Ministry of Environment and Urban Planning via its JV company, Zenit Madencilik San. ve Tic. A.S. The EIA for Ariana’s Kiziltepe Sector of the Red Rabbit gold-silver project, is approved at the last day of 2013, December 30.

In August, Australian-based Chesser Resources announced an update on its Kestanelik project at Canakkale. According to the news release dated August 12, Kestanelik project’s indicated and inferred mineral resources increased by 52% to 703,000 ounces of gold, comprising 10.2 Mt at 2.15 g/t gold and 1.9 g/t silver. In November, Chesser announced that it has started a two phased drilling program at Kestanelik and in December the company published a press release on the drill results expand footprint of near surface high grade zones.

Centerra Gold announced the closing of the purchase of the remaining 30% interest in the Öksüt Gold Project, located in central Turkey in January 24, 2013. On closing Centerra became the sole owner of the Öksüt Gold Project. As part of the offer, Stratex is entitled to receive up to a further 20 million USD payable through a 1% net smelter return royalty over the Öksüt Gold Project upon the commencement of production. The disposal is honoured by the “Small Cap Deal of the Year” award at “Minerals and Money London 2013 Mining Journal Outstanding Achievements Awards” night in December 4, 2013.

Empire Mining Corp. changed its name to Columbus Copper Corp. and the new ticker symbol CCU in January 9, 2013. In May 2013, Columbus Copper and First Quantum Minerals Ltd. entered into a project generation agreement. The agreement provides 250,000 USD to Columbus Copper over a twelve month period for the exploration of copper dominant projects in the European Balkan Peninsula and in Turkey, in which First Quantum may then elect to earn an interest by funding exploration. Columbus Copper published an update for drill results from its 2013 diamond drilling program at its Karapinar copper-molybdenum Project in September 18. These include 31.2 meters of 0.45% copper and 0.08 g/t gold from 269 meters depth, 9 meters of 0.48% copper and 0.06 g/t gold from 312.5 meters depth, and 68 meters of 0.36% copper and 0.08 g/t gold from 379 meters depth in drill-hole KDH028.

Eldorado Gold, announced the gold production of 2013 at its Turkish subsidiary Tüprag Metal Madencilik’s Kışladağ and Efemçukur mines as 397,000 ounces total. At Kışladağ gold mine, the gold production was 306,182 ounces, 6% higher than last year. The total cash cost was 358 USD/oz, and the grade was 1.12%. At their Efemçukuru gold mine, near Izmir, gold production is increased also to 90,818 ounces, 26% higher than 2012 and the grade was 8.87%. The total cash cost is given as 604 USD/oz.

Eurasian Minerals made an Option Agreement with Çolakoğlu Ticari Yatırım AŞ to sell the Akarca property in northwest Turkey for a combination of cash payments, gold bullion, work commitments, and a royalty interest. If the terms are fulfilled, Çolakoğlu will have the right to acquire Eurasian Minerals’ 100% owned subsidiary, AES Madencilik AŞ that controls the Akarca property. Akarca project consists of six separate epithermal gold-silver mineralized zones and the latest drill results includes an intercept of 36.4 meters averaging 5.67 g/t gold and 53.31 g/t silver, with a sub-interval of 2.15 meters.
averaging 89.34 g/t gold and 835.16 g/t silver of oxide mineralization.

Canadian mining company **Frontline Gold Corporation** completed the final payment and acquired the remaining 10% ownership of its Turkish subsidiary, FrontlineGold Madencilik Ltd., from Aegean Gold Madencilik Ltd. Sti and owns 100% of Menderes project, which is the eastern strike extension of Eldorado Gold’s Efemçukuru gold mine, in April 2, 2013.

TSX listed and Middle-east focused **Gentor Resources** announced a 2.5 kilometre long volcanogenic massive sulphide (VMS) gossan discovery in Mesozoic ophiolitic rocks in the Kastamonu-Sinop District of the Central Pontide Region in northern Turkey, in December 18, 2013. In the press release dates January 22, 2014, it is announced that Gentor and its joint venture partner in the Karaburun project in northern Turkey, have successfully converted the exploration licence for the Karaburun project to an operating licence.

Canadian mining company **Mediterranean Resources** has received formal notice from the Capital Markets Board of Turkey that pre-approval has been given of its listing application for the IPO of its main Turkish subsidiary, Akdeniz Resources Madencilik AŞ on the Venture Board of the Istanbul Stock Exchange. Mediterranean owns two developing stage projects; Taç gold-copper deposit and the Çorak gold-zinc-lead deposit.

**Nuincso Resources** announced an update on its Berta project in Turkey in February, 2013. According to the results of drilling program in 2012, all holes drilled to date (February 27) have returned copper mineralization and the copper mineralization covers more than 8 km2 area. **Glencore Xstrata** owns 64% of Berta project.

**Pasinex Resources**, announced the release of NI43-101 Technical Report on its Gölcük copper property in Sivas, Turkey, in July 2013. According to the report, Gölcük property has considerable potential for discovery of new mineralization in addition to the existing mineralization.

In September 2013, Canadian mining company **Pilot Gold** has reached an agreement under Orta Truva, a JV company of **Pilot Gold** (40%) and Teck Resources Limited’s Turkish subsidiary, **Teck Madencilik Sanayi Ticaret A.S.** (60%), acquired 100% of the Karayayi project from the Turkish subsidiary of **Cheasser Resources** for 1,250,000 Pilot Gold common shares issued in stages and 300,000 USD in cash. According to the TV Tower update, published in November 2013, reported mapping, soil sampling, rock sampling and compiled drill data indicate the presence of a potential shallow, bulk-tonnage oxide gold-mineralized system at least four kilometres long between the Kayali and Karayayi target.

Australian exploration company **Rubicon Resources** announced in March 2013, that it has established a Turkish subsidiary company and has targeted project interests in gold/copper and base metals. Rubicon announced in June 2013, that the company is in advanced discussions for initial acquisition of Balya West project with Nurol Holding’s Tümad Madencilik.

AIM quoted exploration and development company **Stratex International** published an update on its projects in Turkey. According to the news release dated July 30, 2013, environmental impact study approved at Stratex’ 45%-owned Altintepe gold project and their Turkish partners Bahar Madencilik which owns remaining 55% of the project, have confirmed production decision subject to permits. Initial production target of the project is announced as three million tonnes averaging 1.34 g/t au, plus half million tonnes of low-grade material averaging 0.35 g/t au. At Muratdere copper-gold-porphry project, 7,900 meters of diamond drilling completed since March 2012 and the promising results include 73.20 m @ 1.33% Cu and 35.70 m @ 0.71% Cu; 20.20 m @ 1.58% Cu and 48.30 m @ 0.57% Cu. Their JV partners of Muratdere project, Lodos Maden Yatırım vested at 61% following payment of 500,000 USD to Stratex.

Turkey’s one of the biggest copper producer **Çayeli Bakır İşletmeleri**’s owner **Inmet Mining** has been acquired by **First Quantum Minerals** after a long negotiation period, in April 2, 2013. After the takeover, Çayeli Bakır İşletmeleri and all other Inmet’s asset has been passed in to First Quantum’s portfolio. **First Quantum** announced its 2013 production and sales numbers in January 2014. According to the press release, 31,510 tonnes and 43,097 tonnes of zinc has been produced at Çayeli copper mine, in Rize. Regarding to 2012 production numbers, copper production has increased 0.36% and zinc production has increased 6% as well.
LOOKING AHEAD WITH CONFIDENCE

This year, we celebrate 29th years of Çayeli Bakır İşletmeleri and its outstanding performance, as well as the significant contributions CBI has made to the community of Çayeli and the Madenli region during that period.

Recently acquired by First Quantum Minerals Ltd., CBI is currently looking for new reserves and establishing corporate partnerships, since the life of Çayeli mine will be over by 2019.

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NEW PANTERA DRILLS COMBINE PRODUCTION, SAFETY AND OPERATING COST ADVANCES WITH CAPACITY TO MEET MINING’S FUTURE NEEDS

Sandvik Mining has announced a new Pantera percussive drill platform – designed specifically for mining and available for both DTH (down-the-hole) and TH (top hammer) applications – delivering increased drilling capacity, lower fuel consumption and improved safety.

Featuring a distinctive new-look design, the new range has been developed to take advantage of mining industry trends towards fully autonomous operation – with options allowing owners to take advantage of automation technology as their needs and mining operations change.

The two new models will be Pantera DI6400 (DTH) and Pantera DP2000 (TH).

The new Pantera line delivers greater productivity and better drilling economy, in an integrated package able to meet the changing needs of the mining industry for many years to come.

The authorities indicate that “These new drills have been developed from the ground up to meet the needs of today’s mining industry, as well as future requirements as the industry moves towards automated and, ultimately, fully autonomous operations.” Designed for wall control, pit development and production drilling in open pit mines, all Pantera variants share the same platform, control system and automation infrastructure, further reducing the cost of training, maintenance and ownership in surface drilling applications.

The new Pantera platform combines an innovative approach to surface drilling with proven and intelligent SICA (Sandvik Integrated Control Architecture) control system technology. It offers efficiency and precision in drilling, increased safety and comfort in its operating interface, while reducing emission levels and environmental impact.

Pantera DI6400 is designed for 115-203 mm diameter blastholes up to 45 meters in depth, while Pantera DP2000 can drill 152-178 mm diameter holes 36 meters deep.

Sandvik’s Pantera range is a major step forward in surface mining drills business. It combines mining industry-specific design, machine intelligence, increased performance and productivity, higher safety and truly ‘green’ features unmatched by other drill manufacturers.

The Pantera top hammer configuration – featuring the new 45 kW hydraulic rock drill Sandvik RD2045C – offers superior drilling capacity in the 152-178 mm diameter range for the first time in the market.

Its combination of a longer feed module and greatly reduced tool handling times means many more meters can be drilled in a shift.

The Pantera DTH configuration will offer the industry’s highest operating pressures for faster, more efficient drilling.

The new range is the “greenest” and safest blasthole drill offering on the market, through such features as advanced powerpack and clutch technology that reduce engine load, save fuel and reduce carbon emissions – as well as ensuring longer service intervals and service life.

The Pantera range also contributes to improved operating safety through a number of new features, these include an optimized combination of width and weight distribution for better stability,
a FOPS/ROPS cabin with comfortable seats for operator and trainer and a remote control option when drilling in potentially hazardous areas where unmanned operation is required.

The new Pantera range also offers increased service life and lower maintenance costs through such features as an optimized powerpack offering on the TH drill, heavy-duty main frame and boom/feed modules and modular layout and improved access to all components.

Each option is available in three configurations – Silver, Gold and Platinum – allowing them to be readily adapted to the needs of customers in different mining markets around the world.

PANTERA DTH PLATFORM - ENVIRONMENT FRIENDLY WITH A HIGHER PRODUCTIVITY

With the release of Pantera DI6400 onto the global mining market at the end of 2013, Sandvik Mining offers more environmental and productive choice for the DTH mining drilling segment for the first time. Designed for drilling 115-203 mm blast holes up to 45 m, the Pantera DI6400 delivers up 35 bar operating pressure in DTH drilling.

This rig variant also marks an industry first, with the introduction of 25-foot (7.5 m) drill pipes, in diameters from 89-140 mm, for boom-based operation. Compared with other DTH solutions, Pantera DI6400 with 25-foot drill pipes delivers higher productivity and lower operating costs, through higher penetration rates, reduced time spent in tool changes, better stability, faster maintenance, and an optimized powerpack.

In addition, significantly increased fuel efficiency is ensured through the proven Sandvik Compressor Management System (CMS), which precisely matches compressor use and output to drilling needs, and advanced clutch technology.

PANTERA TH VARIANT - INTRODUCING HYDRAULIC TOP HAMMER DRILLING

To be released in mid-2014, Pantera DP2000 TH drill sees the introduction of the new Sandvik RD2045C hydraulic top hammer rock drill, combined with 20-foot (6.1 m) 127 mm diameter drill tubes.

This rig is designed for drilling 152-178 mm diameter blast holes up to 37 m deep.

"In top hammer applications, hydraulics offer significant advantages in transmission of forces and energy – ensuring higher penetration rates, superior drilling capacity and fuel efficiency compared with pneumatic systems. The new Sandvik RD2045C hydraulic rock drill class is specifically designed for 165 mm diameter drilling with the company’s brand new ST94-127 tube rod system and features long piston and HLX valve technology for optimal energy transmission.

Its stabilizer manages the percussive recoil energy, thereby ensuring optimal energy transfer to rock for maximum penetration rates, tool economy and blasthole quality.

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A Decade of Modern Gold Exploration in the Ancient Land of Turkey

Unprecedented gold exploration and mining in the last decade has made Turkey a significant gold producer on the door step of Europe with the production apex over 1 Moz gold in 2013. The country is well-equipped to become one of the major gold producers of the future. Gold endowment of the country has more than doubled in the last decade (Yigit, 2012). Since the initiation of foreign mining investment in mid-80’s with the major changes in the mining law, many multinational major and junior companies started to explore especially for gold and base metals throughout the country. In the early 2000’s these exploration efforts yielded the first gold mine of the country. Later amendments of the mining law, pro-mining investment climate, well-established infrastructure as well as bull market conditions lured many gold companies to explore for untapped gold resources in this forgotten prospective part of the Tethyan Metallogenic Belt (TMB). TMB is one of the most prolific metallogenic belts in the World after N and S American Cordillera and SW Pacific rim.

Fig. 1. Histograms showing number of the deposits and prospects (a) and cumulative number of the gold deposits and prospects (b) entered into TMDD in last decade with respect to cumulative average gold prices. Data source for London PM fixed (US$) gold prices: www.kitco.com.

Fig. 2. Thematic map showing spatial distribution of the gold deposits and prospects entered into gold database in last decade in Turkey with background DEM (N=501), Lambert Conformal Conic Projection for Turkey, scale accurate for the location’s latitude.
Assessment of gold exploration of the country in the last decade, from 2004 to 2013, is based on a database containing 501 gold deposits and prospects as of December 31, 2013, forming a subset of the author’s proprietary GIS database called Turkish Mineral Deposit Database (TMDD). The TMDD contains more than 12,000 deposits and prospects, including metallic, industrial, and energy raw materials. The gold database consists of any deposits or prospects containing gold regardless of the nature of the gold occurrences from gold-only to gold-rich (by product gold) base metal systems.

In many cases exploration companies do not release the discovery dates contemporaneously, which is the nature of business to gain advantage in a district, or in a certain genetic gold deposit type. Most of the discovery dates are different than the entry date of the deposit or prospect into the database, thus, they were assessed differently in this article. It should be noted that some of the new gold discoveries are based on old known prospects, e.g., base-metal prospects, as a result of evaluation of the gold potential of the mineralized systems.

In the last decade, a total of 319 new deposits or prospects entered the gold database of Turkey, and the total number of deposits and prospects has reached 501. The new deposits and prospects entered into the gold database in last decade are shown in Figure 1 compared with cumulative average gold prices. Increasing gold prices in last decade has a clear effect on cumulative number of the discovered gold deposits and prospects (Fig. 1). Spatial distribution of the deposits and prospects through the years are shown in a thematic map in Figure 2. As is seen on Figure 2, most of the exploration effort has been concentrated in the known gold districts or terrains, e.g., Biga Peninsula in NW Turkey, and eastern Black Sea region in NE Turkey and east-central Turkey. However, several new areas of exploration that are worth mentioning are eastern Turkey, e.g., Agri and Van districts, south-central Turkey, e.g., Konya and Nigde districts, and northern Turkey, e.g., Kastamonu district.

The database shows that a total of 136 gold deposits and prospects have been discovered in the last decade. Number of the discovered gold deposits and prospects are parallel to the trend of the increasing gold prices in the first half of the decade (Fig. 3). However, relatively...
low numbers of the exploration and operational licenses granted as well as fewer license auctions by Turkish Mining Bureau (MIGEM) in addition to declining trend of gold prices have had a definite negative effect on the number of the gold discoveries in recent years (Fig. 3). Distribution of the gold deposits and prospects discovered in the last decade in Turkey is shown on a thematic map in Figure 4. Most of the new gold discoveries are in the old known districts, with the exception of some in south-central Turkey, eastern and northern Turkey.

Gold endowment of the discoveries in the last decade is approximately 9.5 Moz in 15 deposits (Fig. 5a). Figure 5a shows total gold reserve and/or resources of the deposits that were discovered only in the last decade. The majority of the newly discovered prospects have ongoing exploration, advanced exploration or feasibility studies for ore reserve/resource estimation. The significant discoveries in the last decade, containing calculated >0.32 Moz Au or 10 tonnes as reserve and/or resources, include Halilaga, Camyurt, Kucukdag, Ugur Tepe and Kisacik in Canakkale in the Biga Peninsula in NW Turkey, Salinbas in Artvin in NE Turkey, and Himmetdede and Oksut in Kayseri in south-central Turkey. Halilaga porphyry Cu-Au-Mo deposit contains a total of 3.42 Moz gold resources, Oksut high-sulfidation epithermal deposit contains 1.6 Moz gold resources, Kisacik low-sulfidation epithermal system contains approximately 1 Moz gold resources, Himmetdede Carlin-like gold deposit contains 0.99 Moz gold resources, Salinbas epithermal system contains 0.77 Moz gold, Camyurt high-sulfidation epithermal system contains 0.64 Moz gold resources, Kucukdag high-sulfidation epithermal contains maiden resources of 0.52 Moz gold, and Ugurtepe Cu-Au porphyry contains unclassified estimated resources of 0.35 Moz gold. These 8 discoveries contain...
a total of 8.84 Moz [275 tonnes] gold reserve and/or resources (Fig. 5b).

The country’s first gold mine, Ovacik, opened in 2001. Kisladag with 10.2 Moz current Au reserves and more than 1 Moz Au production opened in 2006. The second largest gold deposit in Turkey, Copler with 4.62 Moz Au reserves, started production in late 2010. Other new mines include Kucukdere, Mastra, Efemcukuru, Kaymaz, Cukuralan, Sart and Midi.

Gold production in 2004, start of the last decade, was 0.1 Moz and increased steadily reaching over 1 Moz in 2013 (Fig. 6a). In the last decade the country’s cumulative production reached over 5 Moz gold (Fig. 6b). Low-gold production costs, as low as 338 US$/oz, made the country the jewel of the TMB, especially for mid-tier companies, e.g., Canadian-based Eldorado and Australian-based Alacer Gold.

In 2013 Eldorado Gold’s Kisladag open pit mine produced 306 182 oz gold with cash operating cost of 338 US$/oz via heap-leached operation. The company’s Efemcukuru underground mine produced 90 818 oz gold with cash operating cost of 580 US$/oz from the flotation and carbon in leach operation. KozaGold produced 350 000 oz gold from Ovacik underground operation, Cukuralan open pit and underground, Mastra open pit and underground, Kaymaz open pit and Coraklitepe open pit mines with operating cash cost of approximately 454 US$/oz in 2013. Copler open pit gold mine, 80/20 JV between Alacer Gold and Turkish Lidya Mining respectively, produced 216 850 oz gold with all-in production costs of approximately $865 from the heap-leached operation.

The country has several ongoing gold mine development projects. Kirazli and Agidagi including Camyurt gold mines in the Biga Peninsula in NW Turkey, and Himmetdede in central Turkey. Additionally there are several feasibility studies, e.g., Konak porphyry Au-Cu-Mo deposit, discovered in early 1990s, in NE Turkey, and Kestanelik LS epithermal gold deposit in NW Turkey. Konak and Kestanelik deposits contain 2.14 Moz and 0.7 Moz gold resources respectively.

Proven exploration and production success in the last decade in the country shows the promising future exploration potential for gold. In terms of gold deposit type, porphyry and epithermal systems have been the most important deposit types to date, though gold credits in volcanic-associated massive sulfide deposits should not be neglected. Therefore, future exploration efforts should focus on volcano-plutonic arcs in tectonic settings of both continental and island arc environments.

Modern gold exploration with limited expenditures in the last decade has shown that large areas are still underexplored, especially outside of the known districts, with the exceptions of a few new districts. While there are gold ounces remaining to be found in incompletely delineated deposits, the exploration maturity of Turkey suggests that the country has potential to generate new prospects through reconnaissance exploration in greenfield and brownfield areas.

For further discussion and details of the gold endowment of Turkey see;

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InterGEO Services is an innovative GeoEnvironmental contracting company capable of providing solutions to diverse construction needs. InterGEO functions in a variety of capacities from design/build contractor, to general contractor, to specialty subcontractor or construction manager, all dependent on the needs of the project team and owner. This experience allows InterGEO to evaluate engineering alternatives and their associated costs for design and construction. We have always focused on the extra service of providing sustainable designs whether it be reducing carbon footprint or incorporating recycled materials or beneficial reuse of waste products from industry into our projects.

InterGeo Services is a geoenvironmental contracting company based out of Trevose, PA. The original company was established in 2000 and has experienced significant growth over the past 11 years. As of August 2011, InterGEO is sitting on a record backlog of work. Over half of the backlog is within our traditional environmental market, but we have seen substantial growth within the shale gas market with two long term commitments for large International Oil Companies (IOC’s). The company’s focus on safety has afforded it the ability to be pre-qualified by some of the largest companies in the country.

In reviewing the needs of our client, we take a multi discipline approach which helps plan, manage, and execute programs that meet the project requirements. We currently offer true turn-key project delivery services that afford our clients single-source responsibility and high value. Our ability to work in both Union and nonunion markets allows us to work with clients throughout the country.

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- Industrial Sites
- Brownfield Redevelopment
- Sediment Remediation
- Greenroofs
- Vapor Barrier
- MSE Walls and Slopes
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- Geofoam
- Storm Water Detention Systems
- HDPE Piping
- Erosion Control

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1. **LANDFILLS**
Landfill closures represent a compliment to liners and a major market for our services. The closure of a landfill cell includes gas collection, barrier layers, and drainage layers. Stormwater management is also a large part of all closures and usually includes construction of downstream and other erosion control measures. Figure 1 is an aerial of our Freshkills landfill closure project that represents our single largest contract. Freshkills is the largest landfill in the world and InterGEO has been working on Phase 6/7, a 286 acre closure for over 5 years.

Other work at landfills include temporary covers to reduce leachate production and increase gas collection.

2. **INDUSTRIAL SITES**
Industrial facilities include steel and chemical plants with existing operations that require new landfills or closure of old landfill cells. Closed industrial facilities usually require either a landfill closure or remediation of site soils. Remediation can include soil stabilization/solidification, vapor barriers, or vertical cut-off walls. Figure 2 is a 150 acre composite lined impoundment for Aughinish Alumina on the Shannon River in Western Ireland. The impoundment used for disposal of bauxite which is a waste product produced during the manufacturing of aluminum. Steel plants in Indiana along Lake Michigan have been an area of focus over the last two years. Work with US Steel at the Gary Works site in Gary, Indiana include new cell construction, landfill closures, and beneficial reuse of steel slag. The US Steel site is 1 mile wide by 6 miles long as shown in figure 3.
3. COAL ASH

Coal-burning power plants produce coal ash, a pollutant that can contaminate soil and groundwater, as a byproduct of the combustion process. As detailed in Appendix C, 135 million tons of coal ash were produced in 2009 in the United States. Approximately 55% of this was disposed of in surface impoundments, landfills, and minefills, which are often unlined or inadequately lined. In December 2008, a coal ash containment failure at the Tennessee Valley Authority’s fossil fuel plant in Kingston, Tennessee resulted in the release of approximately 5.4 million cubic yards of coal ash into the Emory River. The clean-up costs and timeline associated with the failure are estimated to be in excess of $1 billion and four years, respectively. Following this incident between May and November 2010, the United States Environmental Protection Agency, or EPA, announced plans to regulate the disposal of coal ash generated by coal-fired electric utilities under RCRA, published proposed rules for the regulation, and held a public comment period.

As a result of the proposed U.S. EPA regulations for coal ash impoundments, demand for geosynthetics is expected to accelerate to between 235 million and 410 million square feet annually between 2011 and 2014 assuming U.S. EPA regulates coal ash disposal under Subtitle C or Subtitle D and mandates that new and replacement coal ash impoundments and landfills are lined. Utilities have already begun constructing disposal facilities that meet the requirements of the regulation in advance of it coming into effect. Figure 4 illustrates a new lining at Allegheny Powers Hatfield Power Station in Western, PA.

4. MINING

In the tailings dam process used in the mining industry, geosynthetic system prevent the leakage of the valuable leachate into which the metal is dissolved, protect the ground and soil from contamination, and provide drainage solutions. In the processes, geosynthetics are used as containment solutions for the tailings ponds in which water-borne tailings are stored in order to allow the separation of solid particles from water. The size of the geosynthetic opportunity in mining end markets is directly related to the amount of global mining activity, which is driven by demand for precious metals and minerals and the need for new mining infrastructure to satisfy this demand.

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In the modern world of Mining where, as some would say, the “Art” of the deployment of explosive materials, commonly known as blasting is practiced, it is often seen as being Alchemic in nature by the un-educated and/or a Science by the dedicated professional blasting engineer.

Well the truth is over the ages blasting has and still does contain something of all of these descriptions. The “Alchemy” coming from the history and origin of explosives, the “Science” of the integration of explosive materials and initiation systems constantly being developed and refined, last but not least the “Art” of deployment of the blasting agents to break in-situ rocks of the almost infinite variability delivered by nature.

In this article I want to focus on a broad description of the factors that are to be considered by Mining Engineers needing to break rock and supply run-of-mine ores to the mill with as little dilution by non-mineralised materials as possible.

In order to achieve this goal it is necessary to understand that optimal blasting achievement is delivered as lowest cost/tonne broken by an integrated system of scientific information (of the materials to be broken/blasted), human experience and design, blast hole drilling and charging equipment, blast hole treatment and stemming materials, explosives and initiation materials, and finally shot/blasting firing units and systems. Any deviation/omission/error of any part of this integration will deliver sub-optimal results and add downstream cost to the operation.

Briefly then, let’s review each of the mentioned elements and what’s important?

Material to be blasted – It is imperative to understand as much as possible about the rock type and quality. This is normally embedded in the RQD (Rock Quality Designation) and UCS (Uniaxial Compressive Strength) numbers normally generated by the geologist or the geotechnical engineers involved in the pit design or excavation design in UG mines. Localised fracturing and jointing systems are important for gas containment, fragmentation (big rock generation) and throw patterns of the muck pile after blasting. The relative homogeneity of the rock mass and differences between the mineralised materials trying to be recovered and the barren country/waste rock involved in dilution. This feeds into the blast hole design for burden and spacing and the powder-factor or charge density required to break the rock.

Drilling & Charging Equipment – good quality appropriate kit is usually specified dependent on blast hole size and depth, requirement for mobility in the mining area and overall logistics to extract its maximum utilisation. Drills can be air or hydraulically driven, pure rotary or rotary percussion, with TH (Top Hammers/Drills) or DTH (Down-the-hole Hammers), different drill rods and tubes, different drill bits, etc. These many variables are to be tested and studies with Drill Operators and Consumable equipment (Shanks, Rods & Bits) suppliers to get the system that works for your conditions. The most important factor is that the toe of the hole ends where you want it and this means drilling accuracy to guarantee design burden and spacing is achieved at the base of the blast and not just on the surface area.

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Charging equipment can also be air driven or hydraulic-pumped systems, or manual, dependent on the size of the blast and explosive materials in use, from cartridge systems to bulk ANFO and Slurries.

Blast hole treatment deals with post-drilling cleaning/de-watering, in order to create the condition for optimum charge packing, initiator placement, sub-drill stemming, in-hole air-deck management, etc. Types of stemming, natural and pre-fabricated or manufactured are to be tailored to the charge design and results being sought from the blast initiation.

Explosive materials are generally proprietary in nature and branded to the supply company. The “Alchemy” or to be more accurate the “Chemistry” in branded products is tailored to a range of standard operating conditions. However major suppliers also cater for full systems delivery on contract in bulk (ANFO or Slurries) and can then deliver explosive mixed to bespoke chemistry at the hole mouth for achievement of optimal results through testing over time.

Similarly initiators from the same companies or focussed initiation systems suppliers are to be matched and come in range of standard and bespoke designed units and systems dependent on requirements. Shot fire units and associated systems whether manual, semi-automatic or timed programmable automatic are also usually matched for the conditions and type of initiator, explosive and blast design and size.

Last but certainly not least we come to the human factor. Experience in the Mining/Blast Engineer, Drill and Charging operators is key to achievement of optimum results. The proper use and understanding of the information provided by the geotechnical engineers on the rock being integrated fully into the design of the drill pattern, charge density, charge design and initiation sequencing/timing, as well as post-blast analysis by the Mining Engineer to apply and integrate the results achieved into future design modifications are all key elements in generating ultimate cost-effectiveness and return on investment in the entire system.

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Growing Uncertainty in the Turkish Mining Legislation

The mining sector currently struggles with a legal uncertainty caused by the fast changing regulations, court decisions and inconsistent implementation of governmental authorities. Being the most popular ones in the mining sector, we will focus on the (i) Prime Ministry Circular No. 2012/15; and (ii) “cumulative impact” criteria introduced by the administrative courts.

I. THE NEVER ENDING DILEMMA OF THE PRIME MINISTRY CIRCULAR NO. 2012/15

The Circular issued by the Prime Ministry on June 2012 made all transactions relating to State-owned lands subject to the approval of the Prime Ministry. Despite the heavy criticism from all sectors, the ambiguity caused by the Circular was not cleared to date; as a matter of fact it grew. The initial reaction of the Mining Department to the Circular was that it subjected forestry permits and change of allocation purpose applications regarding State-owned lands to the Prime Ministry’s approval; however, as time passed more and more transactions deemed to fall within the scope of the Circular. Currently, the Mining Department submits both license and operation permit applications and license transfers to the Prime Ministry.

Both the Circular and the way it is implemented by the Mining Department contradict with the “hierarchy of norms”, one of the basic principles of the Turkish legal system. There is a hierarchy of laws and regulations; legal rules have all the force of law, but are not necessarily on the same level regarding their significance. In principle, the lower-ranked legal acts must conform and be compatible with the higher-ranked and must not violate or contradict them. For example, a law may not contradict the constitution; a regulation may not contradict a law, and a fortiori, the constitution. The Circular issued by an executive organ, i.e. the Prime Ministry, introduced an additional review procedure restricting the rights of mining license holders or applicants granted by the Mining Law. As a matter of fact, a first instance administrative court in Konya has made the same legal assessment very recently within the scope of a lawsuit initiated against the Ministry of Energy and Natural Resources1. The decision was appealed by the Ministry and is currently pending.

Currently, issuance of forestry permits, operation permits, and mining license applications and transfers are suspended which eventually resulted in a lack of confidence in the Turkish government and legislature, especially among foreign investors for whom the legal certainty is indispensable to continue their operations in Turkey. The Prime Ministry remains silent on the Circular.

II. “CUMULATIVE IMPACT” CRITERIA

During the last few months, operation of several projects, especially in the north-western part of Turkey including Çanakkale and Balıkesir, have been suspended by administrative courts based on the reasoning that their environmental impact assessments lacked cumulative impact examination. As a matter of fact, these decisions concerning the mining sector are not the first ones. The “cumulative impact” concept has recently been addressed in a well-known decision of the Council of State’s Plenary Session of the Administrative Law Chambers in early 2013 with respect to an electricity generation project in the south-eastern part of Turkey. Subsequent to such decision, first instance administrative courts now seem to follow this precedent.

The administrative courts in their above stated decisions referred to the “Environmental Impact Assessments Guideline” issued by the Ministry of Environment in 2009 and concluded that environmental impact assessments made after such date and lacking a cumulative impact examination were contrary to the law and should therefore be suspended. The “cumulative impact assessment” requirement is actually first introduced to the Turkish environmental legislation in October 2013 with the new Environmental Impact Assessment Regulation. Before such date, the “cumulative impact” analysis remained merely as a concept referred in the “Environmental Impact Assessments Guideline” of 2009. As explained above in the hierarchy of the norms, a guideline may not violate or contradict a law or a regulation or introduce restrictive measures that are not governed by those. Accordingly, this guideline should not constitute a valid legal ground for suspension of a project. Also, retroactive implementation of a newly issued Regulation, i.e. the Environmental Impact Assessment Regulation of October 2013 does not comply with the general principles of law.

We believe that cumulative impact assessment is very important and should be a priority. Many of the most destructive impacts of development...
result not from the effects of an individual action, but from the combination of relatively minor effects of multiple and subtly related actions over time. It is almost impossible to grant the environment and eventually people and communities the protection they deserve without making an elaborate analysis of various factors including the cumulative impact of the proposed projects. However such environmental impact assessment mechanism must be adopted within the scope of a certain legal framework supported by sufficient institutional and technical guidance of the relevant parties.

CONCLUSION
It is clear that the Government wishes to promote Turkish mining since it included mining among the “prioritized sectors” in the Council of Ministers Decree No. 2012/3305 on State Aids in Investments, the so-called “New Investment Incentive Package”. Thus, we believe that the Government shall take all necessary steps to maintain the investor-friendly image and promote further interest in Turkey in order to attain this objective.

It is an undisputable fact that protection of national resources and protection of natural environment and human health are our priority; however, such valuable steps towards improvement should not be taken at the expense of general principles of law. This should be one of the vital balances that need to be maintained by the Turkish Government and legislature for utilization of the valuable Turkish mineral reserves in the years ahead.

REFERENCES
1- Decision of the 2nd Administrative Court of Konya dated 19 December 2013 with File No. 2013/930 and Decision No. 2013/1168.
Overview of Lignite in Turkey

In recent years, parallel to climbing energy demand, energy investments gained momentum in Turkey. According to today’s paradigm, energy is not only a basic need but also a political, strategic and environmental issue. Considering all of these, Turkey should plan the capacity developments under the aim of cheap, secure and environmentally friendly energy procurement.

Considering its geographical position, utilization of lignite sources seems to be a remedy for Turkey’s increasing foreign dependency on imports. Since electricity generation from imported coal and natural gas constitutes approximately 60% of the total generation, use of local sources play an important role for easing this foreign dependency.

LIGNITE USE BREAKDOWN OF TURKEY

As it can be seen from the Graph 1, the main consumption area of lignite is the electricity generation sector, by covering 80% of the total. About 8-9% of the rest is consumed for heating purposes and the remaining amount by industry.

THE ROLE OF LIGNITE IN ELECTRICITY GENERATION

As of February 2014, installed capacity of lignite firing power plants is 8,180 MW and this constitutes 12.7% of the total installed capacity. In terms of the share in total generation, lignite firing power plants supplied 12.2% of the total generation in 2013. Graph 2 represents the yearly development of the lignite firing power plants:

It can be clearly observed that in recent years there is no significant change in the installed capacity. Most of the lignite power plant capacity is operated by EÜAŞ and its affiliates. Together with the privatization of Seyitömer and Kangal power plants, private sector operates ca. 1,700 MW of the total installed capacity.

In order to have a grasp about the geographical spread of the lignite fired power plants and appropriate lignite fields for electricity generation over Turkey, Figure 1 can be studied.

Especially Inner West Aegean regions distinguish themselves with vast lignite fields and corresponding power plants. Moreover, Konya Basin and Afşin-Elbistan, which is located in Kahramanmaraş, contain the largest lignite fields and therefore, it can be said that both locations embody a very high potential in terms of lignite.

Lignite fired power plants are appropriate for base load generation considering their technology and marginal costs. Therefore, they are expected to operate with high capacity factors. Capacity factors of the power plants in 2012 highlight the fact that Yeniköy, Seyitömer and Soma power plants operate under relatively higher capacity factors while other power plants contribute to generation with lower capacity factors due to aging technology, and problems related to lack of investments. Impacts of investments realized by private sector are expected to be observed in terms of efficiency and capacity factors for privatized plants.

As the capacity factors of EÜAŞ and its affiliates are analyzed for the period between 2007 and 2012, Afşin-Elbistan A power plant’s very low capacity factor (29% on average) becomes striking. Lacking rehabilitations on boilers, turbines, generators and electro filters, and design mismatch of the lignite contained in the basin and the equipment are believed to be the main reasons for such low capacity factors. On the other hand, Kangal Power Plant is expected to realize the necessary rehabilitation investments through its new private owner and therefore, capacity factor of this power plant is expected to rise in the near future. Another remarkable fact is

According to 2012 Lignite Sector Report of TKI (Turkish Coal Enterprises), proven reserves are around 13.4 billion tones. If the ownership of these are analyzed, EÜAŞ (State Generation Company) owns 7.6 billion while MTA (Gen. Dir. of Mineral Research and Exploration) owns 2.5 billion, TKI owns 2.3 billion and private sector owns 1 billion of the total.
the variation of capacity factors of the power plants between the years. For instance, while Yeniköy Power Plant was working with 24% capacity factor in 2011, this ratio climbed to 79% by 2012. Main reasons behind such variations can be generalized as planned or unplanned outages, rehabilitations processes, problems during lignite supply in mines and prolonged failures.

**LIGNITE POWER PLANTS UNDER CONSTRUCTION**

Analysis of the project pipeline should assist in clarifying the picture about the future development of the lignite fired installed capacity:

The main hurdle related to lignite fired power plants is the prolonged construction periods. Even if the exterior factors such as license approval, legal issues, mining license challenges, are completed smoothly, construction periods take nearly 60-66 months. As it can be seen from Table 1, although there are some power plants that have obtained licenses in 2004 and 2008, according to 2013 July Progress reports, they were still not operative. In terms of supply security and low cost electricity generation, operations of these power plants play a crucial role.

**ROYALTY MODEL TENDERS**

During the appropriate model search to incentivize the private investors for local lignite fired capacity development, royalty model shined out as a model limiting the prolonged commissioning periods. Similar to hydraulic source contribution fee practice of DSİ (State Hydraulic Works) and wind capacity contests of TEİAŞ (Turkish Electricity Transmission Company), this model foresees payment of a contribution fee for every kWh produced from the power plant which is commissioned near to the

### Table 1: Power Plants under Construction and Review & Evaluation Process

<table>
<thead>
<tr>
<th>Location</th>
<th>Company</th>
<th>Capacity (MW)</th>
<th>Licensing Date</th>
<th>Construction Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adana - Tufanbeyli</td>
<td>Enerjisa</td>
<td>450</td>
<td>2004</td>
<td>54.1%</td>
</tr>
<tr>
<td>Çumra - Konya</td>
<td>Konya Şeker Sanayi ve Ticaret AŞ</td>
<td>22</td>
<td>2004</td>
<td>92.8%</td>
</tr>
<tr>
<td>Mihalıççık - Eskişehir</td>
<td>Adularya Enerji</td>
<td>290</td>
<td>2008</td>
<td>62.2%</td>
</tr>
<tr>
<td>Kutahya</td>
<td>Polat Elektrik Üretim İnc. İhr. AŞ</td>
<td>51</td>
<td>2008</td>
<td>57.3%</td>
</tr>
<tr>
<td>Sivas - Etyemez</td>
<td>Tam Enerji Üretim AŞ</td>
<td>100</td>
<td>2008</td>
<td>14.1%</td>
</tr>
<tr>
<td>Gümüşk - Bolu</td>
<td>Aksa</td>
<td>270</td>
<td>2012</td>
<td>50.9%</td>
</tr>
<tr>
<td>Konya - Ilgın</td>
<td>Konya Ilgın Elektrik Üretim ve Tic. Ltd. Şti.</td>
<td>500</td>
<td>2013</td>
<td>0.6%</td>
</tr>
<tr>
<td>Soma - Manisa</td>
<td>Hidro-Gen Enerji (Kolin)</td>
<td>450</td>
<td>Pre-License obtained</td>
<td>Project Stage</td>
</tr>
<tr>
<td>K.Maraş - Elbistan</td>
<td>Diler Elektrik</td>
<td>400</td>
<td>Review &amp; Evaluation</td>
<td>Project Stage</td>
</tr>
<tr>
<td>Adıyaman - Gölbaşı</td>
<td>Sanko</td>
<td>150</td>
<td>Review &amp; Evaluation</td>
<td>Project Stage</td>
</tr>
<tr>
<td>Soma - Manisa</td>
<td>Hidro-Gen Enerji (Kolin)</td>
<td>450</td>
<td>Review &amp; Evaluation</td>
<td>Project Stage</td>
</tr>
<tr>
<td>Dinar - Afyonkarahisar</td>
<td>KLK Madencilik</td>
<td>640</td>
<td>Review &amp; Evaluation</td>
<td>Project Stage</td>
</tr>
<tr>
<td>Tufanbeyli - Adana</td>
<td>Teyo Yatırım</td>
<td>700</td>
<td>Review &amp; Evaluation</td>
<td>Project Stage</td>
</tr>
</tbody>
</table>

**Note 1:** The sites larger than 20 MW are taken into account.

**Table 2:** Lignite Royalty Model Tenders

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<td>290</td>
<td>2008</td>
<td>62.2%</td>
</tr>
<tr>
<td>Kutahya</td>
<td>Polat Elektrik Üretim İnc. İhr. AŞ</td>
<td>51</td>
<td>2008</td>
<td>57.3%</td>
</tr>
<tr>
<td>Sivas - Etyemez</td>
<td>Tam Enerji Üretim AŞ</td>
<td>100</td>
<td>2008</td>
<td>14.1%</td>
</tr>
<tr>
<td>Gümüşk - Bolu</td>
<td>Aksa</td>
<td>270</td>
<td>2012</td>
<td>50.9%</td>
</tr>
<tr>
<td>Konya - Ilgın</td>
<td>Konya Ilgın Elektrik Üretim ve Tic. Ltd. Şti.</td>
<td>500</td>
<td>2013</td>
<td>0.6%</td>
</tr>
<tr>
<td>Soma - Manisa</td>
<td>Hidro-Gen Enerji (Kolin)</td>
<td>450</td>
<td>Pre-License obtained</td>
<td>Project Stage</td>
</tr>
<tr>
<td>K.Maraş - Elbistan</td>
<td>Diler Elektrik</td>
<td>400</td>
<td>Review &amp; Evaluation</td>
<td>Project Stage</td>
</tr>
<tr>
<td>Adıyaman - Gölbaşı</td>
<td>Sanko</td>
<td>150</td>
<td>Review &amp; Evaluation</td>
<td>Project Stage</td>
</tr>
<tr>
<td>Soma - Manisa</td>
<td>Hidro-Gen Enerji (Kolin)</td>
<td>450</td>
<td>Review &amp; Evaluation</td>
<td>Project Stage</td>
</tr>
<tr>
<td>Dinar - Afyonkarahisar</td>
<td>KLK Madencilik</td>
<td>640</td>
<td>Review &amp; Evaluation</td>
<td>Project Stage</td>
</tr>
<tr>
<td>Tufanbeyli - Adana</td>
<td>Teyo Yatırım</td>
<td>700</td>
<td>Review &amp; Evaluation</td>
<td>Project Stage</td>
</tr>
</tbody>
</table>

**Note 2:** Aksa – Göynük, Hidro-Gen Soma and Teyo Yatırım,Tufanbeyli projects are tendered via royalty model.
corresponding lignite field. The most important characteristics of this model is that generally first 6 years is seen as investment period and if power plant becomes operational and generates electricity beforehand, only half of the royalty fee is due. If the 6 year investment period is exceeded, even if the power plant is not operational, royalty fee still accrues.

Table 2 summarizes the tenders realized in 2012 and 2013. Level of competition and resulting royalty fees differ in each tender. Graph 3 exhibits the interest of private sector for operating these fields:

As the royalty fee bids offered in the tenders are considered, it can be asserted that companies developed approaches based on their strategic expectations from the projects. For instance, closeness of fields and commissioning of a single power plant which is going to be fed from different fields, calorific value of lignite in different fields, suitable mining techniques and reliability of the existing data mainly shaped the bids of companies. However, while bidding a royalty fee, foreseeing the prospective market structure, electricity prices, and costs drive the profitability of the investment directly. Diligent studies for financial modelling, debt structuring, technology selection for power plant and turbines should boost profitability of the investments and create additional value for the projects.

INTERGOVERNMENTAL AGREEMENTS

The model preferred for utilizing the large lignite fields in electricity generation is investment through intergovernmental agreements. As the total amount of lignite contained in the fields tendered using royalty fee model (ca. 800 million tons) is compared to reserves of Afsin-Elbistan field (5.3 billion tones), the importance of this field becomes evident.

CONCLUSION

Prominence of the utilization of local lignite as a means of energy source diversification, establishment of supply security, decreasing import dependency and controlling electricity prices is a crystal clear fact. If all projects, including the royalty model fields and project stock, are commissioned, an installed capacity of ca. 5,000 MW will be operational. When the other suitable fields and ongoing projects are considered, prospective power plant capacity is expected to create a positive acceleration for the stagnant lignite fired installed capacity. On the other hand, the environmental impacts due to high sulphur content should not be ignored, and investments which prevent negative environmental impacts must also be considered. Therefore, decision makers should plan capacity developments by weighing costs and benefits.

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