Mexican Mining

A mature industry is reinvigorated and reaffirms its importance to the national economy.

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Cover photo: The Mulatos open pit, looking south. Courtesy of Alamos Gold

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Mexico’s economy is the world’s 13th largest in terms of nominal gross domestic product (GDP) and is part of North American Free Trade Agreement (NAFTA). Mexico has a long-standing tradition as a mining country. Since the pre-Columbian days, when mining in Mexico was practiced by the Maya, Aztec, Mixteco and Zapoteco peoples, the country’s underground resources have played an important role. The arrival of the Spaniards intensified mining activity. Indeed, 200 years ago mining was Mexico’s most buoyant business sector and the conquest of Mexico cannot be fully understood without considering the industry. Miners followed in the footsteps of the conquistadores, side by side with the soldiers, priests and missionaries, locating ore deposits, creating wealth, opening roads and making significant contributions to the creation of new cities, towns and villages of present-day Mexico. Today, Mexico is a major producer of silver, base metals and gold, as well as a leading producer of bismuth, fluorite, cadmium, molybdenum, arsenic, zinc, graphite, manganese and copper.

The country is ranked among the world’s top 10 in barite, manganese, salt, lead and zinc production. “Mexico is a mining country. The mining industry represents the third productive activity, after the oil and the tourism industries, excluding money sent by Mexicans living in other countries. In 2011, mining production amounted to about US$2 billion, the first part of the US$12 billion; very close to tourism industry’s turn over,” said Jimena Valverde, Mexico’s general coordinator for mining. In 2009, Mexico’s GDP contracted by 6.6%. This was the sharpest decline of any Latin American economy. Mexico’s mining sector also felt the pain, but has been the first industrial sector to recover.

“Many exploration projects have been delayed or suspended due to lack of funding, but with the recovery of prices in 2009, the sector has recovered faster than others,” said Sergio Almazan Esqueda, general director of the Mexican Mining Chamber (CA-MIMEX). Moreover, given the dollar’s weakness, investors and central banks are taking refuge in gold, causing record prices which have stimulated the industry’s boom. “In fact, the financial crisis has driven a positive tendency towards precious metals. The sector is growing more and more each day,” said Rosalind Wilson, former president and executive advisor to Canadian Chamber in Mexico (CanCham).

The National Institute of Statistic and Geography (INEGI), an agency of the Mexican government, reports that mining production rose by 13% in August 2010 compared to a year earlier, with increased production in copper, silver and gold. In 2000, Mexico produced less than 20 mt of gold. Exploration of precious metals has since increased steadily, production reaching 50 mt in 2008 and 62 mt in 2009. In 2010, the Mexican production of gold increased by 21% compared to 2009, amounting to about 75 mt. CAMIMEX expects gold production for 2011 to reach 90 mt. In 2009, Mexico produced less than 20 mt of gold. Exploration of precious metals has since increased steadily, production reaching 50 mt in 2008 and 62 mt in 2009. In 2010, the Mexican production of gold increased by 21% compared to 2009, amounting to about 75 mt. CAMIMEX expects gold production for 2011 to reach 90 mt. According to official figures, in 2010 Mexico has become the sixth producer of gold and has overcome Peru in silver production, to become the world’s largest silver producer, with 730.9 million oz (22,733 mt), representing an incremental to 3%, according to the Silver Institute. This new precious metals rush has attracted a flock of foreign junior companies, especially Canadian. Canadian companies, present in Mexico since the mid-1990s, when Mexico opened the doors to foreign investment, have helped to re-activate many of Mexico’s centenarian mines, which were previously not economic to operate. “High prices of metals and new technologies make it economic to develop and operate old mines,” said Andrew Sharp, general director of Great Panther Silver. Seventy-five percent of foreign companies operating within the Mexican mining industry are Canadian and 62% of them are gold and silver producers. “Mexico is the largest recipient of Canadian mining investment in the Central America region. Continued economic expansion in the U.S. and Canada will inject more money into the development of Mexican gold and silver projects as precious metal prices break records in 2011,” said Rosalind Wilson, former president of the Canadian Chamber in Mexico. Right behind the Canadians rank new Chinese investments, which in 2011, will top those of some of the giant domestic producers. Despite the crisis, China has maintained the appetite for base metals such as copper, iron, zinc and lead, which are abundant under the Mexican soil. In 2010, six Chinese mining companies have arrived in Mexico looking for minerals to supply their electronics and construction industries. In 2011, they are expected to invest around US$2 billion, the first part of the US$12 billion they intend to invest over the next few years on the Mexican minerals industry, including exploration, acquisition of existing...
Mexico’s economy is the world’s 13th largest in terms of nominal gross domestic product (GDP) and is part of North American Free Trade Agreement (NAFTA). Mexico has a long-standing tradition as a mining country. Since the pre-Columbian days, when mining in Mexico was practiced by the Maya, Aztec, Mixteco and Zapoteco peoples, the country’s underground resources have played an important role. The arrival of the Spaniards intensified mining activity. Indeed, 200 years ago mining was Mexico’s most buoyant business sector and the conquest of Mexico cannot be fully understood without considering the industry. Miners followed in the footsteps of the conquistadores, side by side with the soldiers, priests and missionaries, locating ore deposits, creating wealth, opening roads and making significant contributions to the creation of new cities, towns and villages of present-day Mexico. Today, Mexico is a major producer of silver, base metals and gold, as well as a leading producer of bismuth, fluorite, cadmium, molybdenum, arsenic, zinc, graphite, manganese and copper.

The country is ranked among the world’s top 10 in barite, manganese, salt, lead and zinc production. “Mexico is a mining country. The mining industry represents the third productive activity, after the oil and the tourism industries, excluding money sent by Mexicans living in other countries. In 2011, mining production amounted to about US$12 billion; very close to tourism industry’s turnover of production reaching 50 mt in 2008 and 62 mt in 2009. In 2010, the Mexican production of gold increased by 21% compared to 2009, amounting to about 75 mt. CAMIMEX expects gold production for 2011 to reach 90 mt.”

In 2009, Mexico’s GDP contracted by 6.6%. This was the sharpest decline of any Latin American economy. Mexico’s mining sector also felt the pain, but has been the first industrial sector to recover. “Many exploration projects have been delayed or suspended due to lack of funding, but with the recovery of prices in 2009, the sector has recovered faster than others,” said Sergio Almazan Esqueda, general director of the Mexican Mining Chamber (CAIMEX). Moreover, given the dollar’s weakness, investors and central banks are taking refuge in gold, causing record prices which have stimulated the industry’s boom. “In fact, the financial crisis has driven a positive tendency towards precious metals. The sector is growing more and more each day,” said Rosalind Wilson, former president and executive advisor to Canadian Chamber in Mexico (CanCham). The National Institute of Statistics and Geography (INEGI), an agency of the Mexican government, reports that mining production rose by 13% in August 2010 compared to a year earlier, with increased production in copper, silver and gold.

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Seventy-five percent of foreign companies operating within the Mexican mining industry are Canadian and 62% of them are gold and silver producers. “Mexico is the largest recipient of Canadian mining investment in the Central America region. Continued economic expansion in the U.S. and Canada will inject more money into the development of Mexican gold and silver projects as precious metal prices break records in 2011,” said Rosalind Wilson, former president of the Canadian Chamber in Mexico.

Right behind the Canadians rank new Chinese investments, which in 2011, will top those of some of the giant domestic producers. Despite the crisis, China has maintained the appetite for base metals such as copper, iron, zinc and lead, which are abundant under the Mexican soil. In 2010, six Chinese mining companies have arrived in Mexico looking for minerals to supply their electronics and construction industries. In 2011, they are expected to invest around US$2 billion, the first part of the US$12 billion they intend to invest over the next few years on the Mexican minerals industry, including exploration, acquisition of existing

Sustainability is core to Fresnillo’s philosophy, strategy, and operations, underpinning our social license to operate as the world’s largest primary silver producer. At Fresnillo we strive to embed a sustainable way of working throughout our business.

Our policies are focused on health and safety in the workplace, environmental responsibility and protection, and sound relations and active involvement with the local communities in places where we operate. This approach provides the framework in which our business works, and means that sustainable development considerations are an integral part of our business plan as we pursue our goal of producing 65 million ounces of silver and over 400,000 ounces of gold by 2018.
projects as well as the construction of new ones. The company Jin Chuan Group, for example, has already invested US$230 million in a copper, zinc and molybdenum project in Chihuahua, and has more than US$500 million earmarked for exploitation in the next three years. Currently, there are more than 700 exploitation projects in Mexico, and more than 230 foreign companies that explore in the country. “The country has a huge geological potential,” said Rafael Alexandri, general director of the Mexican Geological Service (SGM). “From a geological perspective, Mexico is a cornucopia of mineral wealth: the opportunities for new discoveries are excellent,” said Ben Whiting, chief geologist for Orko Silver Corp. and Ores Minerals Inc.

In 2010, the Fraser Institute ranked Mexico as one of the most attractive countries for geological potential, among top global mining destinations, fourth in the world and first in Latin America. To date, only 25% of the national territory has been explored, 70% of which may contain mineral deposits. Since 2009, turnover generated by the mining industry in Mexico amounted to nearly US$15.5 billion, 51% more than in 2009. Irrefutable evidence of this new interest in the mining industry is Carlos Slim, the richest man in the world according to Forbes, who will invest US$3.6 billion in the sector in 2011. But the future of Mexico’s mining is not completely free of concerns. The lack of funding is a consistent limitation to the sector, especially for small- and medium-sized mining companies that struggle to raise capital to explore and develop their properties.

The Toronto Stock Exchange has been fundamental throughout the boom of investment for the past three years, raising capital to invest in mining projects. The Mexican Bolsa and the Toronto stock exchange are talking of creating a mechanism that would allow smaller to medium-sized Canadian companies into the Mexican market. Part of this idea involves allowing a double listing of companies in Toronto and Mexico, which will be active by the end of 2011. “The idea is to have access to venture companies in mining which are now raising capital in Toronto and have operations in Mexico, to make them available for Mexican institutional and retailing investors and vice versa to allow Mexican companies to raise capital in Canada,” said Luis Tellez, president of the Mexican Stock Exchange.

Another important issue is the Mexican mining industry and the Mexican economy in general, is the escalation of violence since the government’s crackdown on organized crime and drug trafficking, which has led to insecurity in some regions of the country and, subsequently, a sharp decline in foreign direct investment flows. Mining projects, which are often in remote areas of the country, have seen a rise of operational costs, as higher security services are needed. However, despite these challenges, foreign companies continue to invest in Mexico, as the country offers political and financial stability, as well as a very attractive tax system, without corporate taxes and royalties. Furthermore, legal stability for investors and a digitalized geological mapping system add to the advantages. According to Tawn Albinson, president of Prospero Silver Corp., country manager for Baja Mining and well-known geologist, “the deposits in Mexico have attractive grades and good metallurgy and the cost of labor is much lower than in Canada.”

In 2010, Mexico was the Latin American country that received the highest amount of investments (2009 was Peru) in the mining industry and the fourth largest worldwide. For 2011, the CAMIMEX expects US$14.15 billion to be spent on exploration activity in the country. New mineral projects are expected to ensure that Mexico retains its position as one of the top global mining destinations, fourth in the world and first in Latin America. To date, only 25% of the national territory has been explored, 70% of which may contain mineral deposits. With the immense concession. 70% of Mexico’s territory is each mining company only needs a single activity. This has been modernized and now mining which are now raising capital in Toronto and have operations in Mexico, to make them available for Mexican institutional and retailing investors and vice versa to allow Mexican companies to raise capital in Canada,” said Luis Tellez, president of the Mexican Stock Exchange.

The mining industry is the country’s third major industry and was founded in 1906. CAMIMEX members include about 150 combined enterprises that produce 93% of the value and volume of mineral production in the country. CAMIMEX is a private and voluntary organization.

What are CAMIMEX’s main initiatives within the mining industry?

We are constantly working with the authorities (the federal government, Progepa and SEMARNAT) to improve the regulatory framework for mining operations. The mining sector is experiencing a positive cycle, so it is necessary that we solve some of the country’s internal problems, including a labor reform. We would like to see the law reformed to promote competitiveness and productivity. To avoid impediment on acquiring new properties and to guarantee legal certainty to the investor a very important issue is the access to land. Furthermore, we have to develop environmental regulations, including the sites’ recovery after the end of the mine. On this matter, progressively more companies are getting the “clean industry certification.” The lack of professionals in engineering and earth science is another important issue in the field of mining, so we have created a fund of US$1 million for teacher and student scholarships to boost quality and vacation. Since 2008, there has already been a growth in the numbers of enrolled students, but they are not sufficient. A last important factor is the competitiveness of energy prices.

What is the importance of the mining industry within the Mexican economy?

After the oil and the tourism industry, the mining industry is the country’s third productive assets, excluding money sent by Mexicans living in other countries. The mine production amounted to about US$12 billion, so very close to the tourism industry’s turnover.

Interview with Sergio Almazan Esqueda, Director of Mexican Mining Chamber (Cámara Minera de México - CAMIMEX)

Please introduce us to the CAMARA MINERA DE MEXICO (CAMIMEX).

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How successful is Mexico at attracting foreign investors to the mining industry?

It has been calculated that between 2007 and 2012 about US$21 billion will be invested in the mining industry in Mexico. With regard to exploration, the Canadian organization Metal Economic Group estimated in 2009 a figure of US$12.6 billion dollars of exploration around the world. Mexico ranked fourth in the world, after Canada, Australia and the United States, with 6% of the global budget. After the crisis, in 2009, world investment in exploration declined to US$7.3 billion and Mexico has fallen from its fourth to a sixth position, after Peru and Russia. In 2010, investments in exploration are expected to grow to US$11.5 billion. According to official figures, the exploration projects in Mexico are over 700 and there are more than 230 foreign companies that explore in the country, in addition to Mexican businesses.

For 2011, we expect US$14.15 billion to be spent on explorations in the country.

Do you forecast continued growth? We have competitive laws. We have used to have two types of concessions: one for investigating the ground and one for production activity. This has been modernized and now each mining company only needs a single concession. 70% of Mexico’s territory is likely to contain minerals. Of this 70%, only 30% has been explored. With the immense evolution of technology, areas can be explored which were previously inaccessible. So there is a big potential.
projects as well as the construction of new ones. The company Jin Chuan Group, for example, has already invested US$30 million in a copper, zinc and molybdenum project in Chihuahua, and has more than US$500 million earmarked for exploitation in the next three years.

Currently, there are more than 700 exploration projects in Mexico, and more than 230 foreign companies that explore in the country. “The country has a huge geological potential,” said Rafael Arenal, general director of the Mexican Geological Service (SGM). “From a geological perspective, Mexico is a cornucopia of mineral wealth: the opportunities for new discoveries are excellent,” said Ben Whiting, chief geologist for Orko Silver Corp. and Ores Minerals Inc.

In 2010, the Fraser Institute ranked Mexico as one of the most attractive countries for geological business potential, among top global mining destinations, fourth in the world and first in Latin America. To date, only 25% of the national territory has been explored, 70% of which may contain mineral deposits. Since 2009, turnover generated by the mining industry in Mexico amounted to nearly US$15.5 billion, 51% more than in 2009. Indisputable evidence of this new interest in the mining industry is Carlos Slim, the richest man in the world according to Forbes, who will invest US$3.6 billion in the sector in 2011. But the future of Mexico’s mining is not completely free of concerns. The lack of funding is a consistent limitation to the sector, especially for domestic small and medium mining companies that struggle to raise capital to explore and expand their properties. The Toronto Stock Exchange has been fundamental throughout the boom of investment for the past three years, raising capital to invest in mining projects. The Mexican Bolsa and the Toronto stock exchange are talking of creating a mechanism that would allow smaller to medium-sized Canadian companies into the Mexican market. Part of this idea involves allowing a double listing of companies in Toronto and Mexico, which will be active by the end of 2011. “The idea is to have access to venture companies in mining which are now raising capital in Toronto and have operations in Mexico, to make them available for Mexican institutional and retailing investors and vice versa to allow Mexican companies to raise capital in Canada,” said Luis Tellez, president of the Mexican Stock Exchange.

Another important issue is the Mexican mining industry and the Mexican economy in general, is the escalation of violence since the government’s crackdown on organized crime and drug trafficking, which has led to insecurity in some regions of the country and, subsequently, a sharp decline in foreign direct investment flows. Mining projects, which are often in remote areas of the country, have seen a rise of operational costs, as higher security services are needed. However, despite these challenges, foreign companies continue to invest in Mexico as the country offers political and financial stability, as well as a very attractive tax system, without corporate taxes and royalties. Furthermore, legal stability for investors and a digitalized geological mapping system add to the advantages. According to Tawn Albinson, president of Prospero Silver Corp., country manager for Baja Mining and well-known geologist, “the deposits in Mexico have attractive grades and good metallurgy and the cost of labor is much lower than in Canada.”

In 2010, Mexico was the Latin American country that received the highest amount of investments (2009 was Peru) in the mining industry and the fourth largest worldwide. For 2011, the CAMIMEX expects US$4.15 billion to be spent on exploration activity in the country, more than US$12 billion, so very close to the tourism industry’s turnover.

Is Mexico successfully profiling from the current high price of gold?

The gold production in Mexico is a success story. In 2000, Mexico held a production of less than 20 mt gold. In 2010, the Mexican production of gold increased by 21% compared to 2009, amounting to about 75 mt. Our predictions for 2011 are 90 mt. Also, in 2010, Mexico surpassed Peru again in the production of silver, with 4,000 mt of silver (18% of total production).

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After the crisis, in 2009, world investment in exploration declined to US$7.3 billion and Mexico has fallen from its fourth to a sixth position, after Peru and Russia. In 2010, investments in exploration are expected to grow to US$11500 million. According to official figures, the exploration projects in Mexico are over 700 and there are more than 230 foreign companies that explore in the country, in addition to Mexican businesses. For 2011, we expect US$4.15 billion to be spent on explorations in the country.

Do you forecast continued growth?

We have competitive laws. We used to have two types of concessions: one for investigating the ground and another for production activity. This has been modernized and now mining companies only need a single concession. 70% of Mexico’s territory is likely to contain minerals. Of this 70%, only 30% has been explored. With the immense evolution of technology, areas can be explored which were previously inaccessible. So there is a big potential.
Mexico’s Regulatory Framework Open to Foreign Investors

Since the beginning of former president Salinas’ administration at the end of the 1980s, Mexico has undergone profound economic changes. Private investment has become the driving force of the Mexican economy and the country has opened its commercial borders. The regulatory framework has been simplified in order to absorb greater inflows. In the field of mining, the concessionaire can now negotiate with foreign or domestic companies as long as the rules of the game are applied in a fair manner.

However, since the time of the Mexican Revolution, many lands in Mexican territory have been dedicated for mining purposes. The law concerning the ownership of land is different from the rest of the property in Mexico. The concessionaire always tries to buy the property under mining law, mining concessions give the holder both exploration or exploitation of minerals and their corporate domicile be within the state. The law merely requires that mining companies are incorporated under the Mexican Law, that the corporate purposes include the exploration or exploitation of minerals and their corporate domicile be within the Mexican Republic. While previous mining legislation subjected mining companies to numerous rules, requirements and prior approval regarding bylaws, transfer or shares, citizenship of directors and chief executive officers, private laws have abolished all of these requirements. Now, laws merely require that mining companies are incorporated under the laws of Mexico and that the corporate purposes include the exploration or exploitation of minerals and their corporate domicile be within the Mexican Republic.

According to the 2007 Ejidal Census, more than 35,518 ejidos agrarian and indigenous communities are based in an extension of 105.9 million ha; 54.1% of the total of Mexican soil. Communal land in states such as Oaxaca, Baja California and Nayarit, represents more than 80% of their territory. The primary advice to foreign companies that intend to invest in Mexico is to carry out due diligence before starting a project, said Enrique Rodriguez del Bosque, founder of RB Abocados, one of the few Mexican law firms specialized on mining. The law firm’s team is composed of professionals graduated from top law schools in Mexico who can provide diverse services to global mining firms, including due diligences over mining properties, M&A deals, drafting options, assignments, joint ventures, counseling in top transactions before the Anti-trust Commission and all kind of procedures related with the Mines Bureau and the Foreign Investment Bureau.

Law firms additionally recommend to identify the official and informal leaders of the “ejidos” and to deal with them directly at the beginning of the project, barging the ownership of the land in exchange with social and development projects for the local community. Following formalities and dealing with the right people are mandatory elsewhere in the world. Moreover, they are allowed to transfer their property to create partnerships up to a period of 30 years with a renewal pilot. As mentioned above, before closing any deal it is essential to keep in mind that parties are entitled to full disclosure in order to review and check that titles, certificates, minutes and deeds are in good standing. Formality is essential in any transfer, lease, joint venture or partnerships with third parties, either individuals or corporations. According to the 2007 Ejidal Census, more than 35,518 ejidos agrarian and indigenous communities are based in an extension of 105.9 million ha; 54.1% of the total of Mexican soil. Communal land in states such as Oaxaca, Baja California and Nayarit, represents more than 80% of their territory.

Mineral concessions must be paid in advance every six months. When the production begins, there is an additional tax on production. As a rule of the concession, the taxes grow accordingly. Currently, this discussion has evolved on the governmental introduction of new mining royalties, as implemented in the 1980s and then abolished in the early 1990s when the aim was to attract foreign investment.

Of course, the mining community is opposed to the inclusion of these new royalties, which would drop the level of competitiveness below that of other Latin American countries. The decision will be made probably after the next election to be held in April 2012 by the federal deputies.

Silver and gold in Mexico

In 2010, Mexico overtook Peru in silver production, reaching the world’s top position, with 128.6 million oz produced. After Mexico and Peru, China, Australia and Chile were the world’s largest silver producing countries in 2010. Mexico currently ranks 12th in gold production, with a strong possibility of ranking among the top five within the next few years. Most metal prices have gained solidly throughout 2011, despite the U.S. government’s stimulus package and persistent concerns over the strength of the global recovery. In general, precious metals are among the commodities performing better on the market as gold has become the refuge against inflation and the volatility of international currencies. In 2010 and 2011, silver has performed nearly three times better than gold, reaching almost US$40/oz. Investors are seeing silver as an alternative to gold. For its part, gold rose to over US$1,700/oz. “The price of gold is being supported by a stronger dollar and strong investment demand,” said Luis Teillé, president of the Mexican Stock Exchange. As the prices of precious metals are booming, investments in gold and silver mining projects mirror this trend. According to Jimena Valverde, general coordinator of mining, between 2010 and 2012 US$13.1 billion will be invested in the Mexican mining sector and about 60% of this amount will be invested in gold and silver projects. In the past few years, silver and gold mining activity has grown exponentially on Mexican territory.

Fresnillo

Fresnillo produced record levels of gold and silver, beating its targets in 2010. In 2008, the company took over the precious metals division of the 124-year-old Peñoles and since then is listed on the London Stock Exchange.

Fresnillo operates four gold and silver producing mines, one development project, and five advanced-stage exploration projects in Mexico. “Mexico will be a key factor in the industry growth. We have completed the Saucito mining project and are expanding its capacity, as well as the Soledad and La Cienega mines, and we are launching the Noche Buena mine project, among many others in the exploration stages,” said Jaime Lomelin, Fresnillo’s CEO. In 2010, Fresnillo produced a record of 38.6 million oz of silver and 368,995 oz of gold in 2010 and is on track to reach its 2018 production target. “Our performance in this short period has been outstanding and our goal is to produce 65 million oz of silver and 400,000 oz of gold by 2018,” said Lomelin. Fresnillo is the world’s third largest primary silver company and Mexico’s second largest gold producer. The company has solid growth plans, but due to high prices of metals, buying other companies is currently expensive, so we focus on growth through development, operation, building, and exploring activities,” said Lomelin. In 2010, the Fresnillo mine ranked as the second largest primary silver mine with 35.91 million oz and the second richest in the world, after the Canning mine in Australia, owned by BHP Billiton. In 2011 Fresnillo expects to spend more than US$250 million in capital expenditures to increase their silver production and gold production.

Goldcorp

In the same state, Goldcorp recently invested US$1.7 billion in the Peñasquito mine, where they plan to produce 50 million oz of silver in 2011. Peñasquito is a poly-metallic mine, which produces gold, silver, lead and zinc. Peñasquito is Mexico’s largest open-pit mine and the largest single investment in the country.

• The fact that Mexico’s President Felipe Calderon inaugurated Peñasquito in 2010 is a sign of the national government’s strong recognition of the mining sector’s importance for the country’s economy,” said Jimena Valverde, general coordinator for mining.

“Peñasquito has generated more than 4,000 direct jobs, which
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However, since the time of the Mexican Revolution, many lands in Mexico are owned by local communities with collective ownership of the land known as “ejidos.” “The principal challenge for the mining industry in Mexico is the property rights of the soil. One major problem we have is that the ejidos do not own the full domain of the land and earth and it is not easy to negotiate the ownership,” said Javier Lopez Olivas, former president of the mining and metallurgist association of Sonora.

According to the 2007 Ejidal Census, more than 35,518 ejidos agrarian and indigenous communities are based in an extension of 105.9 million ha; 54.1% of the total of Mexican soil. Communal lands in states such as Oaxaca, Baja California and Nayarit, represent more than 80% of their territory.

“The primary advice to foreign companies that intend to invest in Mexico is to carry out due diligence before starting a project,” said Enrique Rodriguez del Bosque, founder of RB Abocados, one of the few Mexican law firms specializing on mining.

The law firm’s team is composed of professionals graduated from top law schools in Mexico who can provide diverse services to global mining firms, including due diligences over mining properties, M&A deals, drafting options, assignments, joint ventures, counseling in major transactions before the Anti-trust Commission and all kind of procedures related with the Mines Bureau and the Foreign Investment Bureau.

Law firms additionally recommend to identify the official and inform leaders of the “ejidos” and to deal with them directly at the beginning of the project, bargaining the ownership of the land in exchange with social and development projects for the local community. “Following formalities and dealing with the right people are mandatory elements in your to-do list to achieve a successful business in Mexico,” said Attorney Cruz Herrera, founder of Cruz Herrera Ltd.

These communities are considered as legal entities, with property rights over their land and entitled to make contracts, agreements and partnerships with third parties, either foreign or domestic.

Moreover, they are allowed to transfer their property to create partnerships up to a period of 30 years with a renewal option. As mentioned above, before closing any deal it is essential to know in mind that parties are entitled to full disclosure in order to review and check that titles, certificates, minutes and deeds are in good standing. “Formality is essential in any transfer, lease, joint venture or partnerships regarding land owned by the ejidos, agrarian and indigenous communities; therefore, if legal proceedings are not fulfilled, those agreements or contracts will be void,” said Herrera.

Mineral concessions must be paid in advance every six months. When the production begins, there is an additional tax on production activity. As the age of the concession grows, the taxes grow accordingly. Currently a discussion has evolved on the governmental introduction of new mining royalties, as implemented in the 1980s and then abolished in the early 1990s when the aim was to attract foreign investments.

Of course, the mining community is opposed to the inclusion of these new royalties, which would drop the level of competitiveness below that of other Latin American countries. The decision will be made probably after the next election to be held in April 2012 by the federal deputies.

Key Minerals

Big Domestic Players, Junior Companies

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“The fact that Mexico’s President Felipe Calderon inaugurated Peñasquito in 2010 is a sign of the national government’s strong recognition of the mining sector’s importance for the country’s economy,” said Jimena Valverde, general coordinator for mining.

“Peñasquito has generated more than 4,000 direct jobs, which
means five times more indirect jobs," said Salvador Garcia, Goldcorp’s vice president in Mexico.

Goldcorp, a Vancouver-based company, is a fast growing gold producer with operations throughout the Americas. Over a short period, Goldcorp has grown from a strong intermediate player into one of the top senior gold producers in the world. At the beginning of this year, Goldcorp’s management said it expects its production to rise by 60% over the next five years. The company has three active operations and two developing projects in Mexico. “Los Filos, in the Guerrero State in 2010 was the mine that produced the most gold in Mexico, with 306,000 oz. Goldcorp is the second largest producer of gold worldwide after Barrick and 55% of the Goldcorp active assets are in Mexico,” said Garcia.

Minera Frisco

Minera Frisco was already producing gold and silver when the Mexican billionaire Carlos Slim took the company public at the beginning of this year, Goldcorp’s management said it expects its production to rise by 60% over the next five years.

Junior companies: gold

Despite 500 years of intensive exploitation and exploration, discoveries and production advances continue to be made. Guachichiles Indians communicated the presence of minerals in the San Potosi district to Francisco Franco in the 15th century. Since then, San Potosi is a major mining district, which is today once more exploited by junior companies finding gold deposits in the area. New Gold’s El Cerrro de San Pedro mine, located 20km northeast of San Luis Potosi, has gold reserves of 1.4 million oz and silver reserves of 52 million oz. New Gold is an intermediate gold producer, operating assets in the United States, Mexico, Australia and development projects in Canada and Chile.

“In terms of numbers, I am proud to say that within our company’s group, Cerro San Pedro in Mexico, compared to Mesquite (U.S.) and Peak (Australia), is the jewel of the crown. While the mine has almost the same numbers in production as the others, it is the best in terms of a critical factor; cash cost,” said Armando Ortega, vice president of New Gold and director general of NWM’s Mexican subsidiary of New Gold. Districts such as San Martin, Santa Barbara, Charcas and Fresnillo have been proven to be exploitable at rates of up to 7,500 m/td, displaying an increase of more than 700% compared to their mid-1970s production levels.

Sonora was the most prolific gold producing state in 2010 with a production of 22,590 oz of gold accounting for 32% of the total national production. In recent years, exploration activities and mining exploitation in the Sonora state have intensified. Over the last year, companies have invested a total of US$ 397 million. They created roughly 135,000 jobs and extracted 3,400,000 mt of metallic and non-metallic minerals.

An important gold mine in Sonora is Aldo Gold’s Mulatos mine, with more than 60 million mt of reserves at close to 1 g/t. “For 2011 we are forecasting 160,000 oz/y production to 175,000 oz of gold production, with the cost of US$355 to US$365/oz,” said Manley R. Guarducci, vice president and COO of Alamos Gold. The company is also expanding the mine’s production. “The new high grate mill will give us 75,000 to 150,000 extra oz/y. Subsequently, we will join the 250,000 to 300,000 oz producers in Mexico, what we consider as a very significant step,” said Guarducci.

Alamos Gold recently added the Ağı Dağı and Kınaz properties in Turkey to its portfolio. It also owns several exploration projects. “We expect to increase production three times over the next three or four years,” said Guarducci, who has a vast experience in Latin America’s mining industry. Alamos Gold’s Mulatos mine and other mines, such as La Herradura and El Chanate, have helped to make Sonora the number one producer of gold in Mexico.

The NWM Mining Corporation, listed on both the Toronto and the Frankfurt Stock Exchanges, is a Canadian company that entered Mexico in 2005 to develop the Lluvia de Oro and La Jojoba gold mines located in Sonora. Lluvia Jojoba produces mainly gold, but also silver and copper. NWM owns several properties in the country, including the Sierra Pinta underground gold mine in north-west Sonora. Sierra Pinta is just 15 km away from La Herradura, Mexico’s biggest gold mine.

“In a few years we will have some mature projects and several mines that will have started producing. In addition, we will increase our portfolio and as a result, investors will keep on trusting NWM mining as a gold cap to invest in," said Franco Antonio Benal Portillo, administrative director for Minera Columbia de Mexico, which is NWM’s Mexican subsidiary.

Yamana Gold Inc., a dynamic gold producer active in Latin America with six pro-
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duling mines and four projects currently under construction, which will contribute to expected production growth of over 60% to 1.7 million oz of gold in 2014. The first of these projects to commence production is the Mercedes project located in Sonora, Mexico.

“Construction and mine development at the project are progressing ahead of schedule and commercial production is now expected to begin before mid-2012”, commented Peter Marrone, Yamana Gold’s CEO.

Gold will be extracted at the Mercedes project by agitated leaching with counter current decantation and Merrill-Crowe processing. The mine is expected to produce approximately 120,000 oz/y of gold for over seven years. Current exploration success is expected to increase both mine life and annual production.

“We will be investing US$11 million at Mercedes in 2011 for exploration to follow-up on previous successes. Organic growth is one of Yamana’s key strategies and achieved through continued aggressive exploration and optimizations and expansions at operations. It is through organic growth and exploration success that we will continue to build significant value for our shareholders,” said Marrone.

The Chihuahua state ranks second in Mexico for both gold and silver. Goldcorp’s El Sauzal mine, AuRico Gold’s Ocampo mine, Hochschild’s Moris mine and Minefinders Dolores mine are some of the biggest producing mines of the state.

AuRico Gold’s Ocampo mine in Chihuahua started production in 2006. Since then, the company has been growing at a steady rate. “AuRico Gold is the second largest Canadian gold producer in Mexico, after Goldcorp. Right now we have more than US$100 million in the bank and most of our explorations are funded by our own cash flow,” said Luis Chavez, corporate director for Mexico at AuRico Gold.

In 2010, AuRico Gold’s production was 220,000 equivalent oz of gold, meaning silver and gold, including the Ocampo and El Cuyo mines’ production.

“Our plan is to produce up to 400,000 oz in total by the end of next year. We have just announced a merger with Capital Gold. In numbers it will be a final quote spend by the shareholders of Capital Gold to consolidate the acquisition adding 50,000 oz. Furthermore, we have several exploration projects that are in different stages of progress, including Guadalupe y Calvo, which will be ready to produce in two years,” said Chavez.

Luis Chavez, corporate director for Mexico, AuRico Gold

Goldcorp’s flagship operation is situated in the state of Veracruz. “Caballo Blanco has high profit margins and on top of that will start production by the end of 2012 with around 100,000 oz/y. The gold here is very fine and leaches very rapidly, hence, the project can be set into production cheaply with capital costs of less than US$40 million and under US$400/oz operating costs. Our growth expectations are very high – from 25,000 to at least 200,000 oz/y of gold within less than three years. The company has no debt, more than US$40 million in the bank and a very profitable operating mine. We are a very well financed company with two world-class projects, Caballo Blanco and San Jose de Garcia, both in the advanced stages of exploration,” said Keith Piggott, Goldcorp’s president and CEO.

Durango State is the third producer for Mexico in 2010. Estimates indicate the Metales project by agitated leaching with counter current decantation and Merrill-Crowe processing. The mine is expected to produce approximately 120,000 mt/d of rock in 2010.

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Junior companies: silver

“The basis of our exploration success lies in the fact that Mexico was closed to foreign investments in the mining sector for more than 40 years and that only changed in 1992. As a result, the entire country is relatively under-explored, and even old famous silver mining districts with 450 years of production history have seen little modern systematic exploration,” said Bradford Cooke, Endeavour Silver’s chairman and CEO.

“I founded the company in 2002 to get into silver, as at that time the gold price was rising, but the silver price was not. In my experience, wherever gold goes, silver follows. In 2003, we came to Mexico as a very small company with only two people, a little bit of money and an idea. The idea was to look for high grade silver veins, like the Spaniards did centuries ago. Once we found the right deposit, it only took us six months from signing the agreement for the first acquisition to generate cash-flow,” said Cooke.

Since then, the company has grown its reserves and resources, silver and gold production and mine operating cash flow every year. Moreover, Endeavour Silver has expanded the Guanacevi and the Guanajuato’s plants, leaving the door open for future expansion.

“Each year, we acquire more land and explore those areas and luckily, every year since start-up, we have made at least one material new discovery. Our exploration success is proof that if you bring the money and the expertise, there is definitely excellent potential to discover new ore-bodies in the old silver mining districts of Mexico,” said Cooke.

In general, the silver mines in Mexico are present along the Sierra Madre Occidental, or in the central plateau of Chihuahua, Coahuila and Durango, as well as in the south of the country, including Zacatecas, Guanajuato, Pachuca and Queretaro. Formations...
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Golden Opportunity.
Bradford Cooke, chairman and CEO, Endeavour Silver

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originated by intrusive rocks, like Taxco, Guerrero and Temascaltepec have contributed significantly for centuries to the general silver production. At present, the major silver producing states are Sonora, Zacatecas, Durango, Chihuahua, Guanajuato and Queretaro.

Pan American Silver Corp. has seven operating mines in Mexico, Peru, Argentina and Bolivia. In 2003, Pan American Silver acquired the La Colorada mine in Zacatecas state. During the last five years La Colorada has been a steady producer of silver with a production output of close to 4 million oz. In 2005, Pan American Silver opened its first open-pit mine in Mexico, the Alamo Dorado project in the Sierra Madre Occidental in Alamos, Sonora. In 2007, the mine started commercial production. Alamo Dorado is a very successful mine that has matured its production to 6.7 million oz/y on a budget of US$4.5 million in 2010.

“In terms of our Mexico operations, in 2010, Alamo Dorado produced 28% and La Colorada 15% of the total silver ounces for the company, which accounted for 43% of the total Pan American Silver production last year. We have studies ongoing at the moment developing strategies on stockpiles and further waste stripping and plant expansion to increase throughput to the mills,” said Chris Warwick, country manager at Pan American Silver, Mexico. Pan American Silver is looking for further interesting projects to acquire.

Silver Standard has a pipeline of 15 projects, ranging from grassroots exploration to production, spread across Argentina, Peru, Mexico, Canada, Chile, the United States and Australia. “For 50 years Silver Standard did nothing else than exploration and acquisition,” said Guillermo Lozano, Silver Standard’s Mexican country manager. In 2002, the company came to Mexico and started a grassroots business.

“We were looking for opportunities in Mexico and came up with the projects that we are now developing,” said Lozano. These include the Pitarilla silver and zinc deposit, with more than 600 million oz of silver. This open-pit mine has been taken into production during the course of 2011, while the company is still developing the underground part of the mine. “In two to three years Pitarilla will become a bimodal operation with the open-pit and underground mine,” said Lozano. The San Luis project, a high-grade gold and silver discovery, will probably start producing in 2012.

According to Lozano, Silver Standard is financing its exploration activity and acquisition of new mines with the sale of projects in British Columbia that have generated US$230 million.

Another junior producer in Mexico is Great Panther Silver that has its main mine in Guanajuato. The mine had been previously exploited by Spanish colonials. Great Panther Silver owns two operating mines in Mexico and aims to mine about 2 million oz gold equivalent in 2011. “We are successful inorganic growth of the old operations structure towards the new operation, with innovative equipment,” said Andrew Sharp, general director at Great Panther Silver.

Copper

Just as with gold and silver, copper prices have increased quickly over the last few years. In 2010, Mexico ranked as the world’s 16th largest producer of refined copper. Mexican copper production has grown by 4% in 2010 compared to 2009.

The majority of copper comes from the Mexican copper belt. The belt stretches along the west of the country to the northern state of Baja California through Sonora, Sinaloa, and western Chihuahua towards Chiapas. These include Cananea and La Caridad, both located in Sonora, as well as Sabinas and San Martin, which are located in Zacatecas, and Santa Barbara and San Francisco del Oro located in Chihuahua.

Grupo Mexico

According to official data, the state that increased its production most in 2010 was Sonora, which accounted for 67% of national copper production, thanks mainly to the municipalities of Cananea, Nacozari de Garcia and Santa Cruz. In Sonora, Grupo Mexico operates Cananea, North America’s oldest and one of the world’s largest open-pit copper mines. Nearby is La Caridad, also owned by Grupo Mexico.

In the first quarter of 2011 the company reported a 47% increase in net earnings for the first quarter of this year’s copper production. The estimated copper production for 2011 is 830,000 mt, of which the Southern Copper mines in Latin America will produce 630,000 mt, and 200,000 mt by the Asarco mines in the U.S.

The increase in copper production was mainly due to the restart of production at the Buenavista mine, also known as Cananea, which has started to operate at full capacity after a three year strike ended in October 2010 and has even optimized the production process in order to raise the final copper concentrate grade.
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output during the first two quarters of 2011. “Canada will revolutionize Mexico’s copper production,” said José Armando Córdoba, director of mining for the Sonora government. Copper production at a new project, called El Arco in Baja California, is expected to start by 2015. “El Arco will be a development pole in the Baja California state, as we plan to create at least 4,000 direct jobs,” said one of the directors at Grupo Mexico.

The group also owns a metallurgical mining complex that includes a smelter, a refinery and a copper rod’s plant, which is located only 24 km from its mining unit La Canadita. Grupo Mexico, listed on the Mexican Stock Exchange, is the largest mining corporation in Mexico and the third largest copper producer in the world.

Lead & zinc
According to the International Lead and Zinc Study Group (ILZSG) based in Lisbon, production of zinc in 2010 was 12,309,000 mt, an 8.8% increase from Portugal, production of zinc in 2010 was 11,362,000 mt.

MEXICAN MINING
Goldcorp became the largest producer of zinc in Mexico with 65,332 mt/y of zinc. Mexican company Industrias Peñoles is the largest zinc producer in the country.

Chihuahua and Zacatecas produce the most zinc and lead, hosting mines including Santa Barbara and San Francisco del Oro. The largest individual producers in Mexico are the Charcas mine in San Luis Potosí and the Francisco y Madera mine, which is Mexico’s largest zinc mine (61,082 mt and 61,082 mt in 2007) in the state of Zacatecas. The Naica mine, located in Chihuahua, is Mexico’s largest lead producer. Industrias Peñoles and Grupo Mexico are the largest producers in this sector.

Peñoles
Peñoles is a vast mining, metallurgical and chemical company. “Mining and metalurgy are the core of Peñoles’ business. Zinc is one of our strengths and we own mines such as Bismarck and Francesisco y Madero, and poly-metallic mines like those in Sabino, Coahuila and Zacatecas in the state of Mexico (a joint venture with a Japanese company), as well as a copper mine in Sonora, ra and Naica in Chihuahua,” said Fernando Alanis, Peñoles’ general director.

Peñoles produces about 240,000 mt/y of zinc. “Peñoles is the largest zinc producer in Mexico, followed by Grupo Mexico,” said Alanis. Currently the group has six mining operations and a very important metallurgical complex for nonferrous metals, which is the fourth largest in the world.

Peñoles owns 77% of Grupo Fresnillo. “Our combined investment is about US$100 million a year, with very aggressive growth plans for our silver, gold, zinc, lead and copper business,” said the company’s CEO.

Iron
China is the key driver of the global iron ore industry, and will remain so for the foreseeable future. Chinese investments plans on iron projects in Mexico are still confidential. Arcelor Mittal, Terminium y Altos Hornos de Mexico SAB de CV are the principal owners on the Mexican iron ore market.

The weakened global demand caused by the global financial crisis in 2008 has had a strong negative impact on the iron ore industry globally, including in Mexico, Arcelor Mittal, for example, had to suspend operations on its plants in December 2008 as a strategy to address the crisis.

The company’s production restarted in January 2010 and today, with iron ore’s high prices recovering, Arcelor Mittal has new ambitious expansion plans.

“The expansion project of the concentrate production at our Las Truchas plant in April 2011 has allowed scale capacity of 2 million mt/y to increase to 2.6 million mt/y,” said Bill Chisholm, Arcelor Mittal’s CEO for Mexico. Arcelor Mittal will expand the concentrate capacity at Las Truchas up to 6 million mt/y, with an investment of US$300 million over the next three years.

In conclusion, with gold and silver, copper, iron, steel and zinc prices at all-time highs, the stage is set for a major push in exploration, development and production.

Interview with Rosalind Wilson, former president of the Canadian Chamber of Commerce (CANCHAM) in Mexico

Please tell us about the history of Cancham and Canadian investments in Mexico?

In 1982, a few Canadian business people, including representatives of two banks and a mining company, founded Cancham. The Chamber lived through some ups and downs during the the 1980s and early 1990s, and it was not until the NAFTA was signed in late 1994 that the Chamber really started to grow.

Our investment portfolio is very diverse. The major sectors for Canadian investments are mining, financial services, automotive, oil and gas, and transportation industries. We have rail cargo services connecting our two countries and Air Canada is expanding its passenger routes constantly. Most of the Canadian banks are present, with Scotiabank being a leader in retail banking services.

Our strongest investment sector is the mining sector. Mining represents more than 50% of Canadian Foreign Direct Investment in Mexico and today the strongest task force within the chamber is the Mining Task Force. We have more than 50 Canadian mining companies members, which includes our biggest Canadian investor in Mexico, Goldcorp.

What is the role of the mining task force within Cancham?

Essentially the mining task force is a platform for Canadian companies to share common successes and areas of improvement. We meet every couple of months to share experiences, find solutions and approaches to local issues and authorities.

Currently, there are 208 mining companies with Canadian capital registered in Mexico, managing 585 projects. Basically 75% of the foreign financed companies in the mining sector in Mexico are Canadian.

What kind of improvements in terms of regulatory framework would you like to see to facilitate the investments of Canadian companies?

As most mining companies invest significantly in local communities as part of their corporate social responsibility programs, recent talks of bringing in an additional royalty tax is a controversial topic.

In general, Canadian financed mining companies do understand the potential benefits if part of the taxes go back into the local communities. But we are concerned about any additional tax that simply fills federal pockets.

This is a sensitive topic for any mining company, including the Canadians, as they already invest heavily in building access roads, water treatment plants, electricity, health services, community development, and hospitals in many towns where mines are operated. The tax is an increasingly spoken of topic at this moment, and if it’s implemented the chamber will advocate a mechanism that encourages the flow of funds into the local communities.

What activities and initiatives does Cancham promote to get Canadian companies to invest in Mexico?

CanCham is active in most mining forums in Mexico and we work very closely with CAMI-MEX in order to coordinate our efforts in an effective manner.

We also work with local state governments and local authorities to address local mining issues and encourage dialogue between investors and the communities in which they operate. We believe that clear and open communication leads to a healthy investment environment that creates investor confidence and therefore attracts foreign capital, which in turn generates local wealth.

The risk for Mexico is that if a new royalty tax is badly designed and/or implemented, our companies could well opt to move their investments to countries with more favourable tax regimes.

How do Canada’s financial institutions serve Mexico?

Canada is a worldwide leader in terms of generating and obtaining financing for Small and Medium Sized Enterprises (SME’s) including junior mining projects. The Toronto stock exchange (TMX) has been fundamental in this entire boom of mining investment for the past five years not only in Mexico, but worldwide.

TMX and the Mexican Bolsa de Valores have initiated talks in terms of creating a mechanism that will allow for joint listings. This is a fabulous initiative as it would not only provide key financing to SME’s operating in both countries, but would also allow the Mexican public to invest in companies and projects that are being explored and developed in their home country.

What activities and initiatives does Cancham promote to get Canadian companies to invest in Mexico?

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outDuring the first two quarters of 2011. “Camasa will revolutionize Mexico’s copper production,” said Jose Armando Cota, director of mining for the Sonora government. Copper production at a new project, called El Arco in Baja California, is expected to start by 2015. “El Arco will be a development pole in the Baja California state, as we plan to create at least 4,000 direct jobs,” said one of the directors at Grupo Mexico.

The group also owns a metallurgical mining complex that includes a smelter, a refinery of electrolytic copper, a precious metals refinery and a copper rod’s plant, which is located only 24 km from its mining unit La Canadita. Grupo Mexico, listed on the Mexican Stock Exchange, is the largest mining corporation in Mexico and the third largest copper producer in the world.

Lead & zinc

According to the International Lead and Zinc Study Group (ILZSG) based in Lisbon, the lead-zinc market is expected to see little change in the near term. “The main reason for this is the market has continued to undersupply its end markets,” said Bill Chisholm, Arcelor Mittal’s CEO for Mexico.

In 2011, zinc mine production in Mexico was 475,449 mt, worth 23% more than in 2009. The Penasquito mine operated by Goldcorp became the largest producer of zinc in Mexico with 65,332 mt/y of zinc. Mexican company Industrias Peñoles is the largest zinc producer in the country. Chihuahua and Zacatecas produce the most zinc and lead, hosting mines including Santa Barbara and San Francisco del Oro.

The largest individual producers in Mexico are the Charcas mine in San Luis Potosí and the Francisco y Madera mine, which is Mexico’s largest zinc mine (61,082 mt Zn in 2007) in the state of Zacatecas. The Naica mine, located in Chihuahua, is Mexico’s largest lead producer. Industrias Peñoles and Grupo Mexico are the largest players in this sector.

Peñoles

Peñoles is a vast mining, metallurgical and chemical company. “Mining and metallurgy are the core of Peñoles’ business. Zinc is one of our strengths and we own mines such as Bismark and Francisco y Madero, and poly-metallic mines like those in Sabino, Coahuila and Zacacapan in the state of Mexico (a joint venture with a Japanese company), as well as a copper mine in Sonora, and Naica in Chihuahua,” said Fernando Alainis, Peñoles’ general director.

Peñoles produces about 240,000 mt/y of zinc. “Peñoles is the largest zinc producer in Mexico, followed by Grupo Mexico,” said Alainis. Currently the group has six mining operations and a very important metallurgical complex for nonferrous metals, which is the fourth largest in the world.

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TMX and the Mexican Bolsa de Valores have initiated talks in terms of creating a mechanism that would allow cross-listings. This is a fabulous initiative as it would not only provide key financing to SME’s operating in both countries, but also would allow the Mexican public to invest in companies and projects that are being explored and developed in their home country.

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Modern methods mandatory for exploration success

Despite more than 500 years of mining tradition, Mexico is considered an underexplored exploration target. Major discoveries have been made over the last 20 years by the application of modern geological and geophysical research. “Today’s exploration techniques are highly developed. Easy targets are no longer available in Mexico, so the exploration stage has been advanced to a point whereby we have to go through the indirect methods: geophysics, airborne or ground based concepts. Good opportunities are to identify the geology that is 200-300 meters above the earth deposit – so called semi-conception targets. There is always the possibility to find something drilling under an old mine, but the exploration is going in the direction of the conceptual and semi-conception targets,” said Tawn Albinson, Prospect Silver’s president.

The General Mining Office has brought forward the integration of Mexico’s mining cartography, digitalizing more than 2 million documents and charts to clarify the Mining Public Registry information and processes. The Mexican Geological Survey (SGM) is the public body that provides geologic information. The service has already covered Mexico’s territory with a 1:50000 cartography and about 30% with a 1:250000 cartography.

“The areas with greatest geological potential are the northern mining states, such as Chihuahua, Sonora and Guerrero. Great potential is also to be found in Michoacán, Jalisco, Oaxaca, which are characterized by some land property and community problems,” said Jesus Herrera, founder and director of Geoprocessos, which provides mapping, environmental studies, geological and topographical surveys and basic geological support for mineral exploration, working mainly with the Geological Mexican Service (SGM).

Private Mexican companies focus on the acquisition and development of mining projects in Mexico, such as Reyna Mining & Engineering S.A de C.V. and Minera Cima. Reyna Mining buys capital with potential to be developed by foreign investors that have the capital to bring them to production. “We have the experience to identify projects of interest and the expertise to know how to develop these projects in the most efficient and rapid way,” said J. Antonio Berlanga, Reyna Mining’s general director. “Minera Cima works in the exploration of commodities. So far we have developed and sold properties of silver, gold and copper. Our business is to find and prepare mines to sell them to people who have a very significant treasury that can develop the mines. The way we generate finance for exploration is simple. I sell a certain property, I get cash and I invest that money in further exploration – it simply works as an ongoing revolving fund,” said Ing. Jorge E. Ordonez, Minera Cima’s general director, whose family has been active in the mining industry for more than a century.

Exploration companies judge the presence of old mines as a potential for further ore bodies. Properties with mines operated by the Spaniards and closed by the time of the Mexican revolution have proved successful grounds for producing mines. “Dia Bras’ projects are mostly located in the world-famous Sierra Madre Occidental mineral belt of northern Mexico, which hosts a series of historic mining districts that have attracted dozens of foreign companies since Mexico reformed its mining laws in the early 1990s,” said Daniel Tellechea, Dia Bras’ president and CEO. Another example is Coneto project, owned by Orex Resources, which has a history of more than 400 years as a mining camp, since the days of the Conquistadores. Moreover, Coneto is a gold-silver mineral exploration project centrally positioned in the ‘Mexican Silver Trend’ - the Mesa Central on the Eastern side of the Sierra Madre Occidental mountains - where the largest silver-gold mine in the world, the Fresnillo mine, is located.

“The Sierra Madre Occidental has produced an estimated 40 million oz of gold and 2 billion oz of silver since the time of the Spanish Conquest, but as the access to the area is difficult, there has been limited exploration,” said Golden Goliat’s CEO, J. Paul Sorbara. Golden Goliat’s Unuachic property covers an area of 15 by 25 km, with numerous formerly producing gold and silver mines dating back to the time of the Spaniards. “The Unuachic mining camp lies directly in the center of the several hundred kilometers trend of important past producers and new discoveries that characterize the Sierra Madre Occidental, like the recent one made by Fresnillo very close to Golden Goliat’s property,” said Sorbara, who already understood the potential of the Sierra Madre when he was working in Mexico in the 1980s after he graduated in geology. As soon as the industry opened up to foreign investors in 1992, Sorbara came back to build his exploration company. In 2011, Agnico-Eagle Mines invested in Golden Goliat’s IPO, demonstrating the property’s high potential. This latest case is the example of a business model which helps both exploration companies seeking funding to start a project and for production companies searching for a skilled team looking to develop new projects to expand their production.

Another example is Orko Silver Corp., which, after the discovery of a silver deposit, La Preciosa, arranged a joint venture with Panamericana on the new discovery. “Orko is the discoverers, Panamericana are the builders. So the two companies together make a very good synergy. The most likely scenario for the future is Panamericana Silver buying Orko, or another company taking over. We let the mining companies proceed with the mining and we will keep focusing on exploration,” said Ben Whiting, chief of exploration at Orko Silver Corp.

New discoveries are the challenge for any exploration company. And according to Thomas Richards, Kostoryz Gold’s exploration vice president: “Two things can happen in relation to the company’s short-term future; the company can build itself up to having a number of very serious properties, and when it is more successful, can increase the drilling and sell its properties at a higher price. What happens in many cases is that bigger junior companies do an arrangement to buy the exploration company, but with our management company we would go on to do what we do and we are able to do,” said Richards.

In the same way, the Canadian company Argonaut has bought Minera Pittalla/Pediment Goldcorp., an exploration company directed by the young but talented geologist Alberto Orozco. Minera Pittalla, with its portfolio of exploration projects in Mexico, has become the exploration wing of Argonaut, a mining group which has expanded its production for 11 years. In the following few years Argonaut aims to use Minera Pittalla’s experience and projects to expand its portfolio into a medium producer status with three to four new mines. An example of one of their advanced exploration projects is La Colorada, a gold and silver open-pit mine that has stopped producing during the crisis and will re-start its production.

The financial crisis has especially tested the mining companies that had not yet commenced operations, as the market suspended most long-term investment. This tendency has now hardened, such as Lincoln Mining Corp., which had to suspend its exploration activity in Chihuahua since 2007 because of a severe lack of financial resources. In 2009, it re-started activities at a couple of its advanced exploration projects. Due to uncertainty, it was difficult to raise money for exploration and activities almost stopped completely until mid-2009, said Filiberto Lopez Navarro, Lincoln Mining Corp.’s director. “Today we are already back to the levels of 2006-7,” said Alberto Orozco, Argonaut’s exploration manager.
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The financial crisis has especially tested the mining companies that had not yet commenced operations, as the market suspended most long-term investment. This tendency has become even harder, such as Lincoln Mining Corp., which had to suspend its exploration activity in Chihuahua since 2007 because of a severe lack of financial resources. In 2009, it re-started its precious metals exploration slowly. However, already by mid-2009, most exploration companies had found a new flow of capital, facilitated by the boom in metal prices. “2008 was a difficult year for Pediment and other exploration companies. Due to uncertainty, it was difficult to raise money for exploration and activities almost stopped completely until mid-2009,” said Filiberto Lopez Navarro, Lincoln Mining Corp.’s director. “Today we are already back to the levels of 2006-7,” said Alberto Orozco, Argonaut’s exploration manager.
“Our strategy is to support financially the exploration activity with our operating projects,” said Daniel Tellechea, Dia Bras’ president and CEO. Dia Bras is a Canadian-listed mining company focused on precious and base metals targets in both countries.

With the metal prices boom, several foreign exploration companies arrived in Mexico since 2009, taking advantage of easier conditions to raise funding for long-term exploration projects. A good example is Kootenay Gold, which entered Mexico to start grassroots exploration projects. They intend to develop their Promontorio silver project, which is now at advanced drilling stage and resource evaluation, while at the same time investing in other early stage grassroots projects.

Prospero Silver built up an exploration portfolio for about 20 properties, based on 50 years of geology experience in the country. “Some are grassroots properties completely, and some have advanced drilling, which we are going to develop further with the hope of developing about three of them into production in the next two years,” said Tawn Albinson, president of Prospero Silver. Prospero Silver’s president might consider the option of proceeding on to the production stage. “If the project is too big for us we will sell the project or take in a partner. We would focus on a medium size site with a good enough grade if we decide to start our own production. The areas we are exploring are of the safe type, the easy accessible ones, and we stay away from the south of Mexico, the canyons in the western mountain range, and the agriculture type that would complicate project progress. We stick to the Plano Alto, the higher part of the Sierra Madre Occidental or we go to the coastal areas. Mainly in northern and central Mexico. Zacatecas, Chihuahua, Durango and Sinaloa,” said Albinson. Since the early 2000s, foreign and especially Canadian companies, such as Alamos Gold and Gammon Gold (now AuRico Gold), were the ones investing more in exploration than Grupo Mexico and Peñoles. However, over the last two years, the giant domestic producers, such as Fresnillo, Empresas Frisco and Grupo Mexico are strongly investing in exploration in the country and matching foreign dollars with Mexican pesos.

Energy supply for mining operations

Despite the fact that Fresnillo is not currently investing in its own energy sources, cost control was one of the reasons for Fresnillo’s excellent financial performance in 2010. So far the company has an agreement with Peñoles, which has its own energy plant, receiving support in case of electricity shortages. “Electricity is one of the highest costs for a mine operation,” said Salvador Garcia, Goldcorp’s vice president in Mexico. In January 2011, Goldcorp announced the signing of a Power Delivery Agreement with a subsidiary of Intergen, a global power generation company with power plants located in Mexico, UK, Netherlands, Philippines and Australia. The agreement will see Intergen construct and operate a 200-250 MW gas-fired combined cycle power plant to deliver electricity to the Peñasquito mine in Zacatecas for a minimum term of 20 years. “This agreement helps secure a long-term supply of electricity to Peñasquito at stable pricing with anticipated substantial cost savings compared to current arrangements,” said Garcia’s management at the time of the agreement.

Peñasquito is one of three operating mines that Goldcorp owns in Mexico and the single largest mining investment in the country. The electricity sector in Mexico is federally owned, with the Federal Electricity Commission (CFE) essentially controlling the whole sector. Therefore, the energy sector in Mexico has certain limitations in terms of private participation. Foreign companies are allowed to operate in the country only through specific service contracts. For example, Intergen provides power supply in Mexico. Frank Thiel, Intergen’s vice president and general manager for Mexico and Latin America, said: “We provide efficient, low cost, reliable power with the best available technology for each specific project. Mining operations require a lot of power and we hope to expand operations with other mining companies. We also look for opportunities for renewable energies.”

Grupo Mexico is also building its own combined natural gas cycle power plant with 500 MW capacity, which will be supplying several operations, including La Canadita, El Arco, Cananea and its metallurgical complex. Peñoles has recently begun contributing power generation to San Luis Potosí, integrating all of its needs in order to become more competitive. “Extraction costs plus treatment and refining fees, which are almost 50% of the production costs for zinc, are a critical part of the business. For Peñoles the metallurgical complex is a strength, but it consumes a lot of energy, which is expensive in Mexico,” said Fernando Alarza, Peñoles’ general director. Power is a potential opportunity for mining contractors that, within their services, build power plants. “Constuplan’s team has gained experience in building thermo-electrical plants and this sector represents an interesting business opportunity for us,” said Alfonso Reina Villegas, general director of the mining contractor company Constuplan. “Constuplan has already built a gas pipeline big enough to prove our ability. Furthermore we participate in the development of our country by building different facilities necessary for gas network including several diameters gas lines, gas compression stations and distribution networks in urban areas.”

At its El Boleo project, Baja Mining is building a cold generating plant for power, which will produce about 40MW. “Due to the lack of fresh water we are going to use seawater for the loach and the fresh water only later for the electro winning process. It is an expensive procedure because we rely on a cold generating plant for power, but it is cogenrated. When you produce sulphatic acid you liberate a lot of heat with which you can turn steam turbines. So, power is mainly free except for the maintenance. In addition we have generators running on fossil fuels, not generally diesel, but less refined oils which can produce about 10MW,” said Tawn Albinson, country manager at El Boleo in Baja California.
Our strategy is to support financially the exploration activity with our operating projects,” said Daniel Tellechea, Dia Bras’ president and CEO. Dia Bras is a Canadian listed mining company focused on precious and base metals in Peru and Mexico. The company’s projects include the Bolivar Property in Chihuahua State, Mexico and the Cusi Property, while they are also exploring several base and precious metals targets in both countries.

With the metal prices boom, several foreign exploration companies arrived in Mexico since 2009, taking advantage of easier conditions to raise funding for long-term exploration projects. A good example is Kootenay Gold Gold, which entered Mexico to start grassroots exploration projects. They intend to develop their Promontorio silver project, which is now at advanced drilling stage and resource evaluation, while at the same time investing in other early stage grassroots projects.

Prospero Silver built up an exploration portfolio for about 20 properties, based on 30 years of geology experience in the country. “Some are grassroots properties completely, and some have advanced drilling, which we are going to develop further with the hope of developing about three of them into production in the next two years,” said Tawn Albinson, president of Prospero Silver.

Prospero Silver’s president might consider the option of proceeding on to the production stage. “If the project is too big for us we will sell the project or take in a partner. We would focus on a medium size site with a good enough grade if we decide to start our own production. The areas we are exploring are of the same type, the easy accessible ones, and we stay away from the south of Mexico, the canyons in the western mountain range, and the agriculture type that would complicate project progress. We stick to the Plano Alto, the higher part of the Sierra Madre Occidental or we go to the coastal areas. Mainly in northern and central Mexico. Zacatecas, Chihuahua, Durango and Sinoax, said Albinson. Since the early 2000s, foreign and especially Canadian companies, such as Alamos Gold and Gammon Gold (now Auico Gold), were the ones investing more in exploration than Grupo Mexico and Peñoles. However, over the last two years, the giant domestic producers, such as Fresnillo, Empresas Frisco and Grupo Mexico are strongly investing in exploration in the country and matching foreign dollars with Mexican pesos.

Energy supply for mining operations

Despite the fact that Fresnillo is not currently investing in its own energy sources, cost control was one of the reasons for Fresnillo’s excellent financial performance in 2010. So far the company has an agreement with Peñoles, which has its own energy plant, receiving support in case of electricity shortages. “Electricity is one of the highest costs for a mine operation,” said Salvador Garcia, Goldcorp’s vice president in Mexico. In January 2011, Goldcorp announced the signing of a Power Delivery Agreement with a subsidiary of Intergen, a global power generation company with power plants located in Mexico, UK, Netherlands, Philippines and Australia. The agreement will see Intergen construct and operate a 200-250 MW gas-fired combined cycle power plant to deliver electricity to the Peñasquito mine in Zacatecas for a minimum term of 20 years. “This agreement helps secure a long-term supply of electricity to Peñasquito at stable pricing with anticipated substantial cost savings compared to current arrangements,” said Golodron’s management at the time of the agreement.

Peñasquito is one of three operating mines that Goldcorp owns in Mexico and the single largest mining investment in the country. The electricity sector in Mexico is federally owned, with the Federal Electricity Commission (CFE) essentially controlling the whole sector. Therefore, the energy sector in Mexico has certain limitations in terms of private participation. Foreign companies are allowed to operate in the country only through specific service contracts. For example, Intergen provides power supply in Mexico. Frank Thiel, Intergen’s vice president and general manager for Mexico and Latin America, said: “We provide efficient, low cost, reliable power with the best available technology for each specific project. Mining operations require a lot of power and we hope to expand operations with other mining companies. We also look for opportunities for renewable energies.”

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Panamerican Silver’s La Colorada mine

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The importance of Canadian investment in Mexico

According to the Mexican Mining Chamber (CAMIIMEX), in 2010, total investment in the mining industry increased by 16% to US$3.32 billion ($458 million more than in 2009). Investments between 2007-2010 amounted to US$11.986 billion. Additionally, US$9.3 billion in further investment is expected over the next two years.

In terms of foreign investors, Canada has emerged as the number one source of capital, providing approximately 76% of the total foreign investment in the Mexican mining sector.

Some of the interest stems from the economic proximity of Canada and Mexico’s membership of the North American Trade Agreement. Today, however, there are around 210 Canadian mining companies active in Mexico, managing more than 580 projects. Most of these companies are active in the exploration phase of mining, but there are 44 producing mines in Mexico operating with Canadian capital, management and Canadian and Mexican engineering.

“It is Canada’s strongest ability to generate and obtain financing. The Toronto Stock Exchange has been fundamental in this entire boom of investment for the past three years. Especially in financing mining projects, not only in Mexico but also worldwide,” said Rosalind Wilson, former president of the Canadian Chamber of Commerce in Mexico (CANCCHAM).

Prospects for Canadian companies

The Toronto Stock Exchange and the Mexican Bolsa are to offer double listing. This means Canadian small and medium companies will be listed on the Mexican Bolsa to reach a broader-based public and attract additional investors and Mexican companies serve and a negative impact in execution capacity are the factors that have hindered this type of funding. So we aim to find the financial gaps and build a bridge in terms of funds,” said Charvel.

A positive example in support of Mexico’s efforts is Peru, which operates one of the best performing stock exchanges in the world and where 60% of the listed companies are mining companies.

Chinese investments in Mexico

ProMexico, a Mexican government institution in charge of strengthening Mexico’s contribution to the international economy ran Mexico’s participation in the Shanghai World Expo in October 2010. On that occasion, ProMexico held a series of activities to showcase Mexico’s infrastructure and mining potential. ProMexico’s chairman at the time, Bruno Ferrari, has now become Minister of Economy.

Ferrari believes the diversification of trading partners is a good way to decrease Mexico’s excessive dependence on the U.S. market. “We are getting rid of the restriction caused by the single U.S. market gradually. The economic and trade activities between Mexico and European or Asian countries have become more frequent. Mexico and China should strengthen their mutual understanding and investment to bring economic and trade relations to a new stage,” said Ferrari.

Chinese investors are going to invest up to US$12 billion in the Mexican mining sector in the short-term. Of the first US$2 billion, 30% in developing operations, 30% in developing projects close to the production site, and 30% will go into exploration. A total of US$50 billion will be invested in Mexico by China, distributed between energy, ports, railways and mining. These investments plans also include a US$3 billion refinery, which will compete with Peñoles’ Torreon.

China will be a new player in the Mexican mining industry.
Finance
Mexico draws heavy investment from Canada, second only to U.S.

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“Such a capitalization is going to be necessary for the development of the mining sector,” said Mauricio Candiani, president and CEO at Candiani mining.

Canada is the second largest investor in Mexico, behind the United States. This Canadian influx of capital is also testimony that Canadian companies are at an advantage over their Mexican counterparts due to the support they receive from their banks at home. “Based on terms of liquidity and their stable position, the Canadian banking sector supports Canadian mining companies and we are going to support it. We see benefits to both of our stock markets by this more closely listing of companies,” said Wilson.

Prospects for Canadian companies
The Toronto Stock Exchange and the Mexican Bolsa are to offer double listing. This means Canadian small and medium companies will be listed on the Mexican Bolsa to reach a broader-based public and attract additional investors and Mexican companies are looking for to accelerate the development of the mining sector,” said Guillermo E. Rischchynski, former Canadian Ambassador and honorary president at the CANCHAM.

“Companies with capital in excess of US$100 million will then be able to access institutional investors, including pension funds and other public investors,” said Luis Tellez, president of the Mexican Stock Exchange.

Challenges and opportunities
If the Canadian companies are so successful in raising capital to invest, the mining industry in Mexico remains financially underserved for its size and sophistication. “We believe mining in Mexico has the largest gap of financial investment of all the industries,” said Roberto Charvel, manager at Vander Capital Partners.

The Vander Fund is the first Mexican fund raising private equity funding with a special focus on the Mexican mining industry. “Lack of specialized financial structures and institutions, difficulty accessing debt or equity financing, an incomplete market for monetizing revenue and a negative impact in execution capacity are the factors that have hindered this type of funding. So we aim to find the financial gaps and build a bridge in terms of funds,” said Charvel.

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China will be a new player in the Mexican mining industry.
Security Concerns
How they can impact on mining

The U.S. government estimates that 50% of the cocaine shipped by Colombia’s or-
ganized crime groups to the United States transits through Mexico. Although the
Mexican drug war among various cartels for regional control has gone on for a few de-
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A total of 34,612 people have died in
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taking place in the three northern states.
Victims include police troops and gang
members, but also civilians have been
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President Calderon admitted 2010 was
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“We have high production demand from
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Moreover, many mining projects are lo-
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“Security is the main problem facing the
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nies and the Mexican economy as a whole.
Securing our delivery services by value of
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“The La Colorada mine in the State of
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surrounding villages and towns have had
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Employees of various mining companies
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the roads to the mines by gangs that steal
valuable ores and equipment, and in some
cases even kidnapped them for a ransom.
Service companies compete to provide the
best service to their customers in the field
and have to get organized to cross these
remote areas. “In terms of security issues,
the situation has become worse in the last
few years. Suppliers are gathering in groups
in order to deliver to the mine sites. They
organize caravans to visit clients; travel
during the day and never send a vehicle on
the road alone,” said Javier Schmal, Latin
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“Mining furthers development in remote
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Thanks to clearly defined goals, we at COMINVI
are proud to be the mining constructor with
the highest quality standards and the greatest
quantity of the most up-to-date mining
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Moreover, many mining projects are located in remote areas in the forest where most of the marijuana and poppy cultivation are and where drug traffickers hide. Nevertheless, mining activity is only indirectly impacted by the drug wars.

“Security is the main problem facing the national and international mining companies and the Mexican economy as a whole. Securing our delivery services by value of the load increases transportation costs,” said Jaime Ponce, commercial director of Freight and Cargo.

“The La Colorada mine in the State of Durango has not been immune to the ongoing drug cartel war in Mexico. It has not had a direct impact on the mine, but the surrounding villages and towns have had their police and military taken away to other major urban areas to combat the problems of the cartel war, leaving these towns and villages vulnerable to other opportunist crime in the area.”

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Environment and Water
Water is worth more than gold

Grupo Mexico’s mega copper-gold project, El Arco, is located in a semi-desert area in Baja California, Mexico, between two large protected natural areas, Vizcaino and Valle de los Círios. This is a location that needs to adhere to strict environmental standards to protect its diverse environment.

“This project is the second largest after Pescapacito in Mexico in terms of investment. The planned investment is close to US$2 billion,” said Joaquín Rojo de la Vega Ulloa, project director at Grupo Mexico. Proximity to protected areas is a serious aspect that has to be taken into account by mining companies, since it might cause the project’s delay or blockade. This happened in Baja California last January, when citizens mobilized against two Canadian mining firms. Protesters alerted officials of the risk of cyanide and “ kìnico contaminating the Sierra de La Laguna aquifers from the operation of an open pit gold mine. This forced the Secretariat of Environment and Water to not allow mining in the area.

“Agua vale más que oro!” (Water is worth more than gold!), was shouted repeatedly by the protesters. Water is a very important aspect of any mining project in Mexico, since there is scarcity of water and the governmental rules on water use are increasingly strict. Quarrying and mining (crushing, screening, washing, and flotation of mined materials), are operations that require vast amounts of water. “Many companies realize they need water just when they are ready to start the production. If the mines are starting to look for water sources when in need, they won’t be prepared on time,” said Miguel Rangel Medina, general director at IDEAS, a Mexican company focused on water supply for mining operations. Medina is also professor of hydrogeology and hydrochemistry at the University of Sonora.

“The infrastructure of a mine must also be calculated in relation to the logistics of the operations’ water supply network. Often, the mining companies have complete drilling projects, but no information on water resources. There is no sensitivity about this topic. Hydro-geological exploration must be considered as an investment and not like an expense, as buying water concessions from other users is expensive,” said Medina.

“Water concessions are increasingly tougher to obtain. It is not necessarily related to the reluctance or resistance of the National Water Commission, who grants them, but to the scarce resources and, especially, political issues. In the state of Baja California, exploiting a well has become very politicized due to pressure from vested interests that tend to argue that mining will affect tourism, agriculture, etc. Management of water is problematic. So, we companies need to work together with the communities and, in some coastal areas, desalinate seawater,” said Armando Ortega, vice president of New Gold and director general of Minera San Xavier.

Ashland Chemicals provides chemical solutions for the mining sector, which aim to increase its clients’ production and efficiency. In Mexico, the company focuses on water technology solutions, which include, for example, anti-scaling solutions for salt water and dust control solutions. “We have a constant market share in anti-scaling and we are developing products focused on the polymers niche market for mining companies,” said Angel M. Pedraza, commercial director for Latin America.

Ashland works with some of the main players in the Mexican mining industry, such as Goldcorp, First Majestic and Panamerican Silver. The market is very competitive and Ashland Chemicals is an expanding global company providing technology and resources to grow within the market sector. “We are developing new solutions and applications and consolidating our global expertise,” said Pedraza.

Another global company offering environmental services to help mining and exploration companies to meet the on-going challenges, is the Canadian SGS. “Corporations are constantly confronted with new laws and regulations,” said Leslie Clark, SGS Mexico’s operations manager.

SGS provides a wide range of environmental services, including water treatment and laboratory testing services to assist their clients worldwide in the preparation of environmental audits and impact studies, as well as in the resolution of existing environmental problems. “This can include adapting extraction processes, investing in emission-reducing and energy saving technologies and conducting ongoing environmental investigations,” added Leslie Clark.

Mexican law establishes that an aquifer is an administrative region and that a company is allowed to extract water at least 1,000 m away from another well. Another issue related to water usage in mining operations is the risk of contamination, which can create strong conflicts with the communities living nearby. “Many mining projects are situated on the top of a hill or a mountain and they risk contaminating the water with arsenic or mercury that later flows down to communities living at the bottom,” said Medina.

In case of old mines, active since the time of the Spanish colonizers that have now been transformed into new projects, soil contamination would have been created by the previous mining activity. Cyanide and arsenic remaining in the soil from old mining projects are prone to contaminate the water. It is important to eliminate passive contamination in the new project’s fields in order to avoid further pollution.

Mining companies conserve water by investing in exploration, channeling and extraction projects, but more importantly by re-circulating, mixing and treating waste water.

For any mining project, the Profepe (the Federal Attorney for Environmental Protection) requests companies perform an environmental impact study to evaluate and reduce damage to the environment before-hand and to plan “remediation” once the mining operation has been terminated. Environmental Resources Management (ERM) is a leading global provider of environmental, health, safety and social consulting services, and has been present in the Mexican market for 20 years.

“ERM provides sustainability consulting services, which include environmental compliance, climate change project, clean development mechanisms, energy audits as well as social impact studies, not only according to Mexican regulation, but also according to global standards”, said Manuel Ortiz Monasterios, general director at ERM. All major banks require an environmental impact report for a new project and ERM is a leader in providing such services.

“ERM is also preparing and implementing plans to achieve environmental goals to minimize waste and optimize re-use, and where appropriate, recycling of resources,” said Monasterios.

The consultancy provides its clients with technical excellence and innovative solutions to help them respond to the challenges of sustainable development.

According to Xavier Garcia de Quevedo, Grupo Mexico’s CEO, the best international technologies for sustainable mining will be used at El Arco, and there won’t be a discharge of waste into water.

In relation to environmental impact, Grupo Mexico’s management has established and maintained close contact with environmental authorities and the region’s inhabitants, to ensure environmental sustainability for their mining projects right from the start. The center built for this purpose will be converted into a center of economic development and true sustainable development, which not only retains the environmental wealth, but also strengthens it. This is the first mining project to be allowed in a protected area.

Grupo Mexico has carried out various environmental studies to ensure environmental conservation in an efficient manner. For example, as the project rises among two bi-regions, the Sonoran Desert and the California Floristic Province, they are collecting seeds of native plants and conserving them in a special field, turning it into a constant source of regional species.
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“The infrastructure of a mine must also be calculated in relation to the logistics of the operations’ water supply network. Often, the mining companies have complete drilling projects, but no information on water resources. There is no sensitivity about this topic. Hydro-geological exploration must be considered as an investment and not like an expense, as buying water concessions from other users is expensive,” said Medina.

“Water concessions are increasingly tougher to obtain. It is not necessarily related to the reluctance or resistance of the National Water Commission, who grants them, but to the scarce resources and, especially, political issues. In the state of Baja California, exploiting a well has become very politicalized due to pressure from vested interests that tend to argue that mining will affect tourism, agriculture, etc. Management of water is problematic. So, we companies need to work together with the communities and, in some coastal areas, desalinate seawater,” said Armando Ortega, vice president of New Gold and director general of Minera San Xavier.

Ashland Chemicals provides chemical solutions for the mining sector, which aim to increase its clients’ production and efficiency. In Mexico, the company focuses on water technology solutions, which include, for example, anti-scaling solutions for salt water and dust control solutions. “We have a consistent market share in anti-scaling and we are developing products focused on the polymers niche market for mining companies,” said Angel M. Pedraza, commercial director for Latin America.

Ashland works with some of the main players in the Mexican mining industry, such as: First Majestic and Panamerican Silver. The market is very competitive and Ashland Chemicals is an expanding global company with technology and resources to grow within the market sector. “We are developing new solutions and applications and consolidating our global expertise,” said Pedraza.

Another global company offering environmental services to help mining and exploration companies to meet the on-going challenges, is the Canadian SGS. “Corporations are constantly confronted with new laws and regulations,” said Leslie Clark, SGS Mexico’s operations manager.

SGS provides a wide range of environmental services, including water treatment and laboratory testing services to assist their clients worldwide in the preparation of environmental audits and impact studies, as well as in the resolution of existing difficult problems. “This can include adapting extraction processes, investing in emission-reducing and energy saving technologies and conducting ongoing environmental investigations,” added Leslie Clark.

Mexican law establishes that an aquifer is an administrative region and that a company is allowed to extract water at least 1,000 m away from another well. Another issue related to water usage in mining operations is the risk of contamination, which can create strong conflicts with the communities living nearby. “Many mining projects are situated on the top of a hill or a mountain and they risk contaminating the water with arsenic or mercury that later flows down to communities living at the bottom,” said Medina.

In case of old mines, active since the time of the Spanish colonizers that have now been transformed into new projects, soil contamination would have been created by the previous mining activity. Cyanide and arsenic remaining in the soil from old mining projects are prone to contaminate the water. It is important to eliminate passive contamination in the new project’s fields in order to avoid further pollution.

Mining companies conserve water by investing in exploration, channeling and extraction projects, but more importantly by re-circulating, mixing and treating waste water.

The consultancy provides its clients with technical excellence and innovative solutions to help them respond to the challenges of sustainable development. According to Xavier Garcia de Quevedo, Grupo Mexico’s CEO, the best international technologies for sustainable mining will be used at El Arco, and there won’t be a discharge of waste into water. In relation to environmental impact, Grupo Mexico’s management has established and maintained close contact with environmental authorities and the region’s inhabitants, to ensure environmental sustainability for their mining projects right from the start. The center built for this purpose will be converted into a center of economic development and true sustainable development, which not only retains the environmental wealth, but also strengthens it. This is the first mining project to be allowed in a protected area.

Grupo Mexico has carried out various environmental studies to ensure environmental conservation in an efficient manner. For example, as the project rises among two bio-regions, the Sonoran Desert and the California Floristic Province, they are collecting seeds of native plants and conserving them in a special field, turning it into a constant source of regional species.
**Communities**

It is crucial that mines ensure a healthy social environment for them to succeed.

Miners are the backbone of the Mexican economy, with mining being the country's second most important industry. However, the development of mining projects can cause significant social and environmental impacts. It is therefore essential for mining companies to engage in community relations and social responsibility programs to mitigate these impacts.

**Ejidos and labor relations**

Mexico's policy of the ejido (communal system of surface land rights) was designed during the Mexican revolution to take the land from rich landowners and put it into the hands of the people for the purposes of farming. These rights are inalienable and are passed from generation to generation within individual communities.

Mining companies negotiate the use of land with local ejidos with different outcomes. "We have been very successful to manage community relations, for example in Pitarilla. All of our projects display a similar positive relationship with the surrounding community," said a company official.

"Pinos Altos is a model mine with very good facilities for our employees," said Luis Felipe Medina Aguirre, Agnico-Eagle's vice president, Mexico division. In 2007, Agnico-Eagle signed an agreement with the Chihuahua state government on a social responsibility program currently titled to three ejidos: Jesus del Monte, Besaseachi and Gosachi. "Our challenge is to improve the local communities' quality life," said Aguirre.

Minera Dolores, a subsidiary of Minefinders Corporation, has developed social projects in the town of Madera, such as building a church, and investing in education and health programs. The company has also built a new village of Dolores in the land of the ejido Huizopa with a school, clinic, event hall and a church. "Minera Minefinders has an incredible program of Social Responsibility and has been the subject of national award," said Ana Gonzalez, community manager at Minefinders. Minefinders also subsidizes scholarships for students of geology and mining at the University of Chihuahua.

Ana Maria Gonzalez, community manager at Minefinders, and director general of Minera San Xavier, has navigated complicated community relations for the company's mine site, "Cerro San Pedro has been a great challenge for the company. It has been operating despite opposition from some groups claiming we are not fit to operate it in a sustainable way. So, working in Cerro San Pedro has given us the opportunity to show them wrong, in the sense that our operations are environmentally sustainable and our process is safe. We care about the protection of our environment. We have a closed circuit for the handling of cyanides and a strict management of water resources. We enforce a zero-tolerance safety and health system and constantly train our workers. Finally, New Gold has improved the relationship with the surrounding community because of this," he said.

A social and environmental conflict has emerged in San Luis Potosi around First Majestic Silver's intentions to reintegrate mining activities in the area. Wirikuta is the main religious and ceremonial center of the Wixaritari peoples and the indigenous community has protested in the first part of the year against First Majestic Silver Corp.'s project, saying that it threatens the lands inhabited by their communities and their religious and ceremonial center. The project is still on hold. Issues with ejidos and local communities have stopped many companies from investing in Southern Mexico. "In the South of Mexico there is potential for gold in Jalisco, copper and gold in Michoacan and Chiapas, and Guerrero is the place for lead, zinc and silver. The problem for these areas is that there are a lot of conflicts with narcotics dealers and local communities. The size of the deposits that we know of at this stage might not compensate for the costs of troubles one would encounter exploring in these areas," said Lozano, Silver Standards CEO, who has vast experiences in the Mexican mining industry.

"The southern part of the country has not seen much exploration yet. The communication is much more difficult in the south. The very large communities of indigenous groups are not interested in exploration businesses and many companies are faced with strong opposition from local NGOs. To avoid all the little problems that appear exploring in this area, we simply stay away. Being able to deal with the ejidos and local communities is essential for the success of a mine. "Right now it is all about the relation maintenance with the communities. In many cases people just have no idea what a mining project is and what they can expect from it when it is announced. It is essential to build up communication channels. We use small cartoons, for example, with the community to explain what mining is about and what purpose the mining industry has and what it can do for them. Employing locally, cleaning creeks, building infrastructure for the local communities are all an important part of the social responsibility we like to take care of," said Carlos E. Pacheco Téllez, Dremex's general director.

**Women in mining**

Since the 1990s, the mining industry has begun to hire women as part of the industry's personnel. Before that, women were not allowed to enter underground mines because of superstition: it was believed the vein was a jealous woman that disappeared if another woman came near it. "The role of women in mining has been difficult because in Mexico there are many taboos," said Ana Maria Gonzalez, community manager and government relations for Minera Minefinders. When immigration to the United States increased, it became difficult to meet the demand for mine workers, and this is when women started working in mining. In the last 10 years the increase in women workers at mines has grown substantially in all positions, from machine operators, drillers, handling explosives, etc. to presidents and CEOs of major international companies. According to CAMIMEX, Industrias Penoles was a pioneer in the field, training several women in 1997 to work at La Heradura mine in Sonora.

"Since then, there are female mining engineers, metallurgists, geologists and technicians in practically every mining company in the country," said Ana Maria Gonzalez, who is also co-chair of the Mining Task Force of the Chamber of Commerce of Canada in Mexico and nominated representative of Mexican women in mining.
Communities

It is crucial that mines ensure a healthy social environment for them to succeed

Mining in Mexico existed before the Spaniards’ arrival and, during the colonial period, it represented the mainstay of the New World’s economy. In 2010, mining amounted to 3.6% of the Gross Domestic Product and it is the second most important industry in the country. Mining in Mexico is a source of employment in areas that lack other possibilities of economic development. The industry fosters the building of roads and the distribution of community services, and contributes to healthcare and education.

Companies employ people locally when they start a new project. For example, Agnico-Eagle de Mexico, in coordination with the federal authorities, has implemented infrastructure and a hydraulic pipeline, electric chairs and streets at Pinos Altos, in the Ocampo municipality. The junior Canadian mining company has also implemented a program of Social Responsibility with a school, clinic, event hall and a church. “Pinos Altos is a model mine with very good facilities for our employees,” said Luis Felipe Medina Aguirre, Agnico-Eagle’s vice president, Mexico division. In 2007, Agnico-Eagle signed an agreement with the Chihuahua state government on a social responsibility program currently titled to three ejidos: Jesús del Monte, Besaseachi and Gosachi. “Our challenge is to improve the local communities’ quality life,” said Aguirre.

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Mining companies negotiate the use of land with local ejidos with different outcomes. “We have been very successful to manage community relations, for example in Pitaalá. All of our projects display a similar positive case. Nevertheless, in Mexico mining companies might encounter issues with the ‘ejidos.’ Every solution will cost money and time to solve the issues, but I do not see a problem in finding one in the end,” said Guillermo Lozano, general manager at Silver Standard.

The Cerro San Pedro mine is located within the municipality of Cerro San Pedro, which consists of eleven small communities. Armando Ortega, vice president of New Gold and director general of Minera San Xavier, explained: “Pinos Altos is a model mine with very good facilities for our employees.”

Ana María González, community manager at Minfinders, added: “Cerro San Pedro has given us the opportunity to show them wrong, in the sense that our operations are environmentally sustainable and our process is safe. We care about the protection of our environment. We have a closed circuit for the handling of cyanide and a strict management of water resources. We enforce a zero-tolerance safety and health system and constantly train our workers. Finally, New Gold has improved the relationship with the surrounding community because of this,” he said.

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In the last 10 years the increase in women workers at mines has grown substantially in all positions, from machine operators, drillers, handling explosives, etc. to presidents and CEOs of major international companies. According to CAMINEX, Industrias Penoles was a pioneer in the field, training several women in 1997 to work at La Herradura mine in Sonora. “Since then, there are female mining engineers, metallurgists, geologists and technicians in practically every mining company in the country,” said Ana María Gonzalez, who is also co-chair of the Mining Task Force of the Chamber of Commerce of Canada in Mexico and nominated representative of Mexican women in mining.

“The southern part of the country has not seen much exploration yet. The communication is much more difficult in the south. The very large communities of indigenous groups are not interested in exploration businesses and many companies are faced with strong opposition from local NGOs. To avoid all the little problems that appear exploring in this area, we simply stay away. Being able to deal with the ejidos and local communities is essential for the success of a mine.”

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Small Domestic Players
Smaller players are financially squeezed and require encouragement

Not just the major and junior mining companies are taking advantage of the current mining boom, small companies are also cashing in on the ongoing bonanza. Minera Atocha, founded in 2005, produces 120 m$t of lead, zinc, gold and silver. “We are expanding the mine’s production to 440 m$t. Lately, we are also producing a little copper,” said Bernardo Ysita, general manager at Minera Atocha. Since May 2011, Minera Atocha has increased its production by three times and expanded the mine. “The mine has a life of 20 years and we keep expanding it,” explained Ysita. But not all of the small producers are able to invest sufficiently in order to evaluate the current resources of their property, buy equipment and expand the mine to take it into production in a profitable way. “We are a dying breed,” said José Jaime Gutierrez Nuñez, Minas de Bacis’s general director. “Small miners often do not have sufficient liquidity to develop their business and are forced to sell their properties,” said Arturo Perea Saenz, leader of mining association in Chihuahua. For example Comisionistas y serv. industriale, managed by Marcos E. Escudero and which owns different deposits in Chihuahua, is trying to sell some of them in order to develop at least one of them. This fact also creates opportunities for investors with capital ready to invest and willing to buy mining properties.

Essential to supporting the small-medium producers is the Mining Fostering Trust (FIFOMI), which is Mexico’s Economy Secretary’s financial arm for financing the mining industry and its productive activities. FIFOMI has granted credits to mining companies, as well as financing, training and technical assistance to small- to medium-sized mining companies. This allows more than 14,900 companies to have the resources for work capital and the acquisition of fixed assets, as well as improving their exploration and production techniques and abilities. However, with the mining industry boom, FIFOMI has so much demand for loans, it is only able to attend just about 50% of the requests. Moreover, FIFOMI organizes safety and updating workshops, in particular for coal miners, who tend to be inexperienced. These courses aim to avoid accidents like the gas explosion that happened in Cahuatitlan at the beginning of May in a small coal mine, where 14 miners died.

The world’s second largest independent trader of non-ferrous concentrates, has a strong market share in Mexico. Trafalgra trades non-ferrous metals in all grades of transformation. 70% of minerals traded by the company are exported to China, so small mining companies are able to sell the mineral they produce with a better added value. Trafalgra covers all of the mining states in Mexico. “Our work in the mining sector goes beyond the buying and selling of metals. We offer financial services, logistics and storage. In this sense we have managed the integration of all services, being very competitive with the terms and conditions that are offered to mining companies,” said Edmundo Vidal, general director at Trafalgra Mexico.

In recent years, the mining sector has faced problems and difficulties with recruitment of professional to support and drive the mining growth cycle. “Due to the crisis in the mid-1990s and 2008, some of the universities had to close down their mining, earth sciences and geological departments. Today, we lack professionals because we lacked the long-term view back then,” said Jorge Ordonez, general director of Minera Cima.

“FLSmith is characterized by innovative thinking and a desire to find the best possible technological solutions. Today, more than 650 of the 9,000 people who make up the company’s workforce are directly involved in developing the technology of the future,” said Richard E. Fangel, general director of FLSmith Mexico. Handling the entire production flow sheet for a complete mine plant, their services includes crushing, grinding, classifying, flotation, thickening and clarifying, vacuum and pressure filtration, pyroprocessing, slurry handling, materials handling, OEM quality replacement parts, modernization services, and other after-sale services. “We believe we are one of the few suppliers that have the most complete flow sheets within gold, copper, silver, coal, iron ore and aluminum,” said Fangel.

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In the last 20 years mining has evolved significantly thanks to technological advances in almost every aspect of production, from mineral extraction to the final steps of processing. Specific extraction methods are developed for different minerals and extraction has become a high-tech operation with strict safety codes. Drilling methods and the use of explosives have revolutionized and highly sophisticated machinery is designed for mineral exploration. Simultaneously, new systems and logistic strategies are introduced to maximize the obtained quantity of minerals at the lowest possible cost.

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“The demand for Geologists in Mexico is immense,” said Elena Centeno, director of the Institute of Geology at UNAM (Universidad Nacional Autonoma de Mexico). UNAM, rated among the top 200 universities in the world, according to Times Higher Education, is one of the leading universities in the country for earth sciences and mining engineering careers, together with Guanajuato, Sonora and Chihuahua’s universities.

“It is evident that earth science, geology and mining are not saturated fields of study, thus we need professionals on the job. Not only in the mining business, but the geotechnical part for developing anything from roads to a building is in need of a geological survey. The demand for geologists in Mexico is immense. UNAM tries to attract more young people, as the job prospects are strikingly better than in any other saturated field,” said Centeno.

The advertisements of companies unfortunately lack the connection between course-of-study and career opportunity to encourage young people to take on a geology degree. “I would advise any English speaking, young mining engineer to learn Spanish, or any other language for that matter, and prepare for the unexpected. I have been in Mexico for nearly five years and I have no regrets on my decision to come here to live and work,” said Chris Warwick, country manager Mexico, Pan American Silver Corp.
importance of good services and local presence
Training, assistance and support services are so important for clients that the smaller regional suppliers that are able to develop a closer relation with clients and offer quicker delivery times, are more competitive compared to global suppliers. “For certain articles, there is a very high demand and we have long delivery times, up to one year. To meet this high demand, we try to plan orders in advance and import in time the articles, there is a very high demand and we compared to global suppliers. “For certain articles, there is a very high demand and we have long delivery times, up to one year. To meet this high demand, we try to plan orders in advance and import in time the ordered equipment,” said Zubia.

Local presence is an essential factor for a service provider’s business success in Mexico, as it shortens delivery times and guarantees quicker maintenance and assistance services, which distinguish a company from its competitors. “Martin Engineering started its activities in the Mexican market 26 years ago and since then has expanded its presence all over the country, mainly through distributors. The company produces in Mexico for the country’s market and also for some other Latin American markets. Mexico isn’t one of the most important markets for Martin Engineering but one of the most profitable,” said Javier Schmal, Latin American director for Martin Engineering, which is a leading developer and manufacturer of engineered conveyor belt cleaning and conveyor belt scraping systems. Schmal plans to transform Martin Engineering’s training center in Chihuahua into a technical university for the Latin American region.

Watson-Marlow, the world’s leading specialist on peristaltic pumping, has a very strong distribution in the country, with at most 70 logistic centers. “During 2012, we will improve services and increase the number of offices and staff in Central America,” said Guillermo Tellez, sales manager, who targets a strong consolidation and expansion in Central America in the next year. Cofiasa sells steel for the plaques that some mining contractors use in the mines’ sites. “With 49 active distribution centers within the six states of Mexico, Cofiasa is the company with the highest number of sales points in the northwest of Mexico. Therefore we can offer good services and quick delivery times,” said Juan Carlos Ares, Cofiasa’s commercial director.

In some cases, a strategic position next to key operations can help a small business to become a key supplier for major players. “Swift, initiated in Cuauhtemoc, near Chihuahua, is a distributor for industrial machinery and handles the maintenance and reconstruction of mining equipment,” said Jeff Unger, general director at Swift. Cuauhtemoc is located on a major industrial corridor connecting Chihuahua to the big mines in the Sierra. “There are not many competitors in the area, so it is a strategic location with excellent growth potential,” said Unger.

The explosives market in Mexico is dominated by the world’s three largest companies; Orica, Austin Powder and Dyno Nobel. Depending on requirements, some mining companies choose only one provider based on its proximity to their mine or plant, or for the product quality, or sometimes they buy various explosives from different companies. However, the main player in the explosive market is the Australian company Orica, dominating more than 50% of the Mexican market. “Orica’s commitment to research and development, both directly and in partnership with a wide range of research bodies, made us a clear market leader in product and service innovations. Our investment in research and development is seven to eight times more consistent than the other industry players,” said Felix Torres, Orica’s North Region vice president. This investment creates significant returns. Through the development of market leading technologies, Orica has improved the efficiency, productivity and safety of its customer operations. “Orica’s recent breakthrough in the development of wireless initiating systems and single-pass bolt installation demonstrates our clear focus on continuous improvement and the provisions of innovative solutions for our customers,” said Torres.

“Another important element in Mexico is the regulation on explosives, which
Next to FLSmidth, suppliers such as Caterpillar and Komatsu work on their competitiveness in terms of technological advances and providing extra services. Caterpillar’s official distributor for Chihuahua, Maqsa, offers multiple services to its customers, including field services, component repair, technical analysis, preventive maintenance services and operation and maintenance training. To complete the service, Maqsa’s teams monitor Caterpillar’s equipment with special software from its head-office. This allows the specialized personnel to get in touch with the equipment operators before the machines encounter a problem.

Maqsa’s service does not end with the sale. With each purchase, Maqsa can provide all the expertise to support its product and provide the needed attention to the mining companies. To purchase our equipment is only the beginning of a great support,” said Mariano Zubia, Maqsa’s director of operations.

Importance of good services and local presence
Training, assistance and support services are so important for clients that the smaller regional suppliers that are able to develop a closer relation with clients and offer quicker delivery times, are more competitive compared to global suppliers. “For certain articles, there is a very high demand and we have long delivery times, up to one year. To meet this high demand, we try to plan orders in advance and import in time the ordered equipment,” said Zubia.

Local presence is an essential factor for a service provider’s business success in Mexico, as it shortens delivery times and guarantees quicker maintenance and assistance services, which distinguish a company from its competitors. “Martin Engineering started its activities in the Mexican market 26 years ago and since then has expanded its presence all over the country, mainly through distributors. The company produces in Mexico for the country’s market and also for some other Latin American markets. Mexico isn’t one of the most important markets for Martin Engineering but one of the most profitable,” said Javier Schmal, Latin American director for Martin Engineering, which is a leading developer and manufacturer of engineered conveyor belt cleaning and conveyor belt scraping systems. Schmal plans to transform Martin Engineering’s training center in Chihuahua into a technical university for the Latin American region.

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During the current metals boom, many contractors’ businesses in the field have grown exponentially. Mining companies are rushing to start projects, smaller construction companies, such as Desarrollos Rod, Cminvi, Construplan and Desarrollos Mineros y Voladuras are growing rapidly.

"The company has grown quickly in the sector and has not been impacted by the global financial crisis, as we have a high demand of construction work," said Leonides Rodriguez Sifuentes, general director of Desarrollos ROD Construcciones.

"In some cases we have less than 15 days after the contract is signed to hire people and start building the project. Speed is the competitive advantage of Desarrollos ROD Construcciones, as we are able to satisfy our clients’ requests in the quickest possible way. For example, Goldcorp’s project Los Filos needed to be developed before mid-May, since in that particular location, mid-May is the beginning of the raining season. The company receives so many requests that we need to narrow them down to the projects we want to participate in. Then we decide which projects to develop, according to the individual project’s potential. We intend to accept long-term projects, including more elaborate infrastructure," said Rodriguez, general director of Desarrollos ROD Construcciones.
Mining boom drives mining contractors’ businesses

During the current metals boom, many companies are enjoying high demand for their services and positive business expectations. When Grupo Sincom was founded in 1985, they had 17 employees. “We currently have about 1,000 employees which provide alimentation service, laundry, cleaning, transportation, medical care, hotel, maintenance and industrial security services. The company delivers 30,000 meals per day. We expect to grow rapidly, by 50% in the following five years,” said Rodolfo Loya Pineda, Sincom’s founder.

Rodriguez Del Bosque, who specializes in waiting times to obtain it,” said Enrique Rodriguez, general director of Desarrollos Rod, Cominvi, Construplan and Desarrollos Mineros y Voladuras are growing rapidly.

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Rafael Villagomez, general director, Cominvi Grupo Frisco, Agnico-Eagle and AMSA. “We have a specialized know-how in installing huge equipment and can program automation processes. EDC Ingenieria mainly manages foreign brands’ electronic equipment, including Endress and Hauser, Siemens and Thermo,” said Duarte.

Construction companies

With the mining sector’s boom, small businesses in the field have grown exponentially. Mining companies are rushing to start their production. Mining contractors, such as Cominvi, Desarrollos ROD, Cominvi, Construplan and Desarrollos Mineros y Voladuras are growing rapidly.

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Rafael Villagomez, Cominvi’s general director, believes the same. “Currently, we intend to be very selective when choosing the projects we take part in, to work on the ones with the highest quality standards, and we are more interested in long-term contracts. We have the ambition to accept challenging projects and to achieve extreme quality standards in our work,” he said.

Although more than 5,000 construction companies are registered in the Mexican Association of Construction Companies association, for the procurement of a big mining contract, just four to five companies have the abilities in terms of expertise, or the equipment to compete. “To respond to ambitious requests, Cominvi offers continuous training to its staff,” said Villagomez.

“We do not intend to have the cheapest prices available on the market, but to deliver the highest quality projects. Hence, we accept projects from companies that see us as their industrial partners. They trust us enough in order to deliver the full service. Accordingly, we strive to expand in other countries, as there are other Latin American markets that represent good opportunities for experienced mining contractors as Conga,” said José Martínez, Conga’s general director.

“Our strategy is to grow in the mining sector, offering verified experience and highly technological services. Automation is an important sector of our business, as companies are increasingly automated. The mission and value Construplan cares to establish is that we are known as a responsible and quality company, which works with high safety standards and leading skills and quality,” said Alfonso Reina Villegas, Construplan’s general director.

With the increasing amount of mining projects, smaller construction companies, such as Desarrollos Mineros y Voladuras, have a high demand for their services. “In the recent years, we have rapidly grown thanks to the Canadian investment in Durango,” said Francisco Alanis, Desarrollos Mineros’s general director.

Consequently, material suppliers catering for the construction teams have evolved their strategies. “For us to differentiate ourselves from our competitors, we intend to achieve a vertical integration of our products. If we offer elaborate pieces, with the best quality in a short delivery time, we believe we will grow rapidly,” said Juan Carlos Ares, Colfisa’s director.
Conclusion
Restored to Glory

2010 was a constructive year for the mining industry in Mexico. According to CAMIMEX, mining and metallurgical production amounted to US$13.16 billion. This result surpassed the revenue generation of the tourism industry and established the mining industry as the country’s second most productive sector after oil and gas. The high price of minerals supports the rapid growth of the sector. This positive cycle has led to an increasing amount of exploration projects and the opening of new mining operations.

After five years, Mexico has regained the position of world’s top producer of silver, along with substantially increased output of gold, lead, molybdenum, iron, manganese, fluoride and sodium sulfate production. In 2010, Penasquito, Mexico’s biggest project, began operations. In addition, the Buenavista Cobre project, formerly known as Cananea, reactivated its operations reaching 100% of its production capacity already in the first quarter of 2011.

Investments grew by 16% to US$3.32 billion in 2010, totaling a sum of US$11,986 million from 2007 until 2010. According to the Metals Economic Group, Mexico ranked fourth in the world in attracting exploration capital, marginally below the first three Canada, Australia and United States. Official sources state that in the next two years, more than US$9 billion will be invested in mining in Mexico. Based on recorded data and the predictions for the future, a total investment of more than US$21 billion will have been generated between 2007 and 2012. “The good cycle of mining led to the creation of 14,000 new jobs in the country,” said Jimena Valverde, Mexican general coordinator for mining.

The mining industry remains one of Mexico’s most important drivers for economic development. This is a vital advantage in some areas of the country, where mining operations are essential for the generation of quality employment, technological development, environmental stewardship, generation of local and federal taxes and the establishment of social services for communities.

GBR team wants to thank FIFOMI for the wonderful help the association has given us to organize the logistics of our project. Thanks to FIFOMI’s headquarters and also to all the directors and employees who have supported us during our trips to the Mexican mining states. We would also like to express our gratitude to the Association of Engineers (AIMMGM - Asociacion de Ingenieros de Minas, Metalurgistas y Geologos de Mexico), in particular to Sergio Trelles Monge, chairman of the board and Cesar Vazquez, general manager have welcomed us to the Mexican mining family since the beginning of our project.