

A record-breaking year

The hunt for Europe's reserves is attracting money from across the globe



EUROPEAN exploration expenditure is estimated to have reached approximately €400 million (US\$300 million) in 2011, an all-time high, both for the Nordic countries and Western Europe in total.

Raw Materials Group (RMG) expects exploration spending to increase during 2012 by 10-15% to reach €450 million, of which €265 million will be in the Nordic region.

The exploration efforts are to a large degree concentrated in Sweden, Finland, Norway and Greenland. These countries, together with Poland, accounted for €288 million, or two-thirds of total exploration expenditure in Western Europe.

There are no reliable official exploration statistics available but the European exploration survey published by RMG gives detailed independent data for countries in the region.

“The political interest in exploration and mining in Brussels is increasing after a trough in the late 1990s and early 2000s”

In addition to the Nordic countries and Poland on the southern shore of the Baltic, smaller exploration programmes are underway in the remaining mining countries of the European Union: Ireland, Portugal, Spain and Bulgaria. Exploration in other countries such as Greece, Austria and Italy is minimal.

Spending in the Nordic countries of €231 million in 2011 was up 13% from 2010. Compared with the recent low of 2009, when expenditure was just €146 million, the exploration sector has established itself on a much higher level than in the first part of the 2000s, when

expenditure was hovering between €65-95 million.

The Nordic countries continue to cement their position as the premier European exploration and mining hub. The corollary is that the dominance of the Nordic countries in the mining sector will continue for the next decade or more.

Poland is among the most important mining countries in Europe, with the major copper producer KGHM Polska Miedz SA, but exploration in the country is limited and most of it done by KGHM in the vicinity of its existing mines in Lubin in Silesia. The likelihood of finding greenfield deposits is limited, to say the least.

NORDIC STABILITY

The exploration sector in the Nordic countries is less volatile and more stable than the global industry. In 2011, its growth was much lower than the 54% growth globally, but on the other hand the decrease during 2009 following the financial crisis was much less dramatic than in the rest of the world.

The attractiveness of the Nordic countries has increased all through the past decade and there are many indications that this trend will continue in the next five to ten years at least, as a result of the following:

- These countries, as well as other prospective parts of Europe, are underexplored compared with other regions with similar geological endowment in Canada, Australia and West Africa.
- The infrastructure, including transport lines, such as railways and roads, and telecommunications are well developed. Furthermore, the availability of experienced staff to carry out of exploration is still good;
- The attitudes of the public and authorities towards exploration and mining are, in spite of some protests, in general positive – in particular in the regions where mining is most important, for example the northern parts of Sweden, Finland and Norway; and,
- A trend of “resource nationalism”, which is spreading in developing countries has few proponents in Europe. On the contrary, the political interest in exploration and mining in Brussels is increasing after a trough in the late 1990s and early 2000s.

The focus of European exploration efforts have traditionally been base metals, and particularly nickel as well as platinum group metals (PGM) have also been attracting growing interest, but the fastest growth has been in iron-ore exploration – especially in the Nordic countries. Some potential rare-earths projects have also been identified and are being explored at present.

Exploration in Europe serves an important role in regional economics. Most of the efforts are made not only in countries far from the political centre in Brussels, but in peripheral regions of these countries such as Norrbotten and Västerbotten in the far north of Sweden, and Lapland in the Arctic regions of Finland. Exploration is also happening in the easternmost parts of the EU on the Finnish border with Russia and Finnmarka in northern Norway.

In Greenland, most exploration efforts are concentrated to the west and south coast. All these regions are areas in which every additional economic activity is important and where unemployment is relatively high and the economy stagnant.

Tertiary Minerals plc's Storuman Fluorspar project



ARCTIC GOLD



Arctic Gold is planning on a rapid re-start of gold mine in Norway

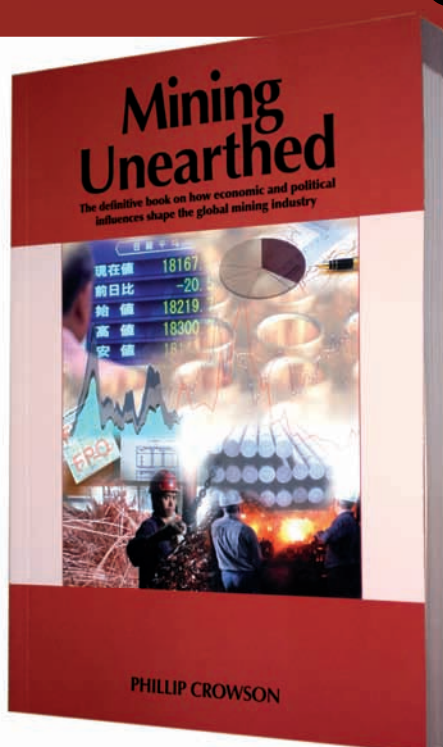
Arctic Gold AB is a Swedish exploration and mining development company. Its main project is the gold and copper deposit in Bidjovagge in northern Norway. Profitable gold and copper production was previously taking place in the Bidjovagge mine during the 70's and 80's. The current high prices on gold and copper make re-opening the mine interesting.

During 2011 the company has started the work on a planning program for the Bidjovagge project. The planning program is an important step where all parts of the project are described and all possible consequences are illuminated.

The development of our mining project in Bidjovagge is progressing according to plan, and we have published estimations of the mineral resource in Bidjovagge totaling 1.83 million tons indicated resource with 2.45 g/t gold and 1.10% copper which corresponds to around 4,500 kg of gold and 20,000 tons of copper. The company was recently granted a "utvinningsrett" (roughly equivalent to exploitation concession) for the mine field by the Norwegian authorities, and this is a major step forward for our continued work in Bidjovagge. The goal is to within three years make investment decisions for the mine and processing plant for gold and copper production.

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In many of these neighbouring regions the importance of mining is such that regional mineral strategies have been developed to make sure that the sector is supported and given reasonable conditions to develop, even if the understanding of the exploration and mining sectors in the national capitals and Brussels is still in its infancy.

NORTHERN ACTIVITY

Finland has emerged as the most exciting exploration country in Europe during the past couple of years. The dynamics of the Finnish exploration scene are staggering, aptly shown during the 8th Fennoscandian Exploration and Mining (FEM) Conference held in Finnish Lapland. In November 2011 around 1,000 visitors attended the bi-annual event, a record participation.

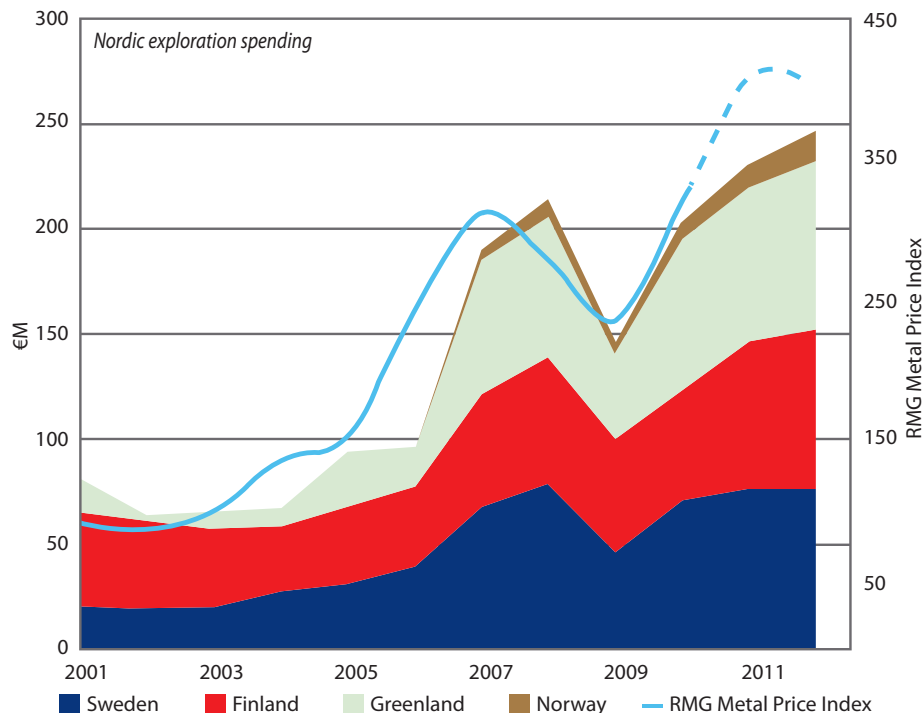
During the conference, Anglo American plc announced its greenfield copper-nickel-PGM project at Sakatti in northern Finland. The significance of this new discovery was demonstrated during Anglo's announcement of its preliminary results for 2011 as it was the only project highlighted.

It is not the only world-class project in Finland, as Gold Fields Ltd is reviewing its Arctic Platinum project, also in northern Finland. In the same region are First Quantum Ltd's Kevitsa nickel project and Northland Resources SA's iron-ore project on the border with Sweden.

Kevitsa is planned to come into production in 2012 and reach its full capacity of 10,000t nickel and 20,000t copper in 2013. Northland's production will start between late 2012 and early 2013. Canadian Agnico-Eagle Mines Ltd operates the largest gold mine in Europe at Kittilä, while Inmet Mining Corp manages the Pyhäsalmi base-metal mine that has operated successfully for many years.

In addition there are approximately 20 locally based and overseas juniors active in Finland. Endomines AB started its Pampalo gold mine in early 2011 and Nordic Mines AB plans to take its Laiva open-pit gold mine into operation in early 2012. Both these companies are listed in Sweden. The Talvivaara nickel-zinc-uranium mine is already in operation and is another product of the Finnish mining boom.

Among the international juniors are Belvedere Resources Ltd, Taranis Resources Inc, Magnus Minerals Ltd, Mantle Diamonds Ltd, Altona Mining Ltd, Western Areas NL, Tertiary Minerals plc, Sotkamo Silver AB and Mawson Resources Ltd. The Finnish Geological Survey has played a substantial part in these successes as it generates targets that are auctioned to the private



sector to take them further in the value chain.

The situation in Sweden is similar to Finland in that both local and international companies are active. Exploration is dominated by the three majors Boliden AB (base- and precious metals), Lundin Mining Corp (zinc) and LKAB, the state-owned iron-ore giant. All of them have had long-standing major exploration

programmes for many years and each spend significant amounts. The success rate is, so far at least, not as good as in Finland and the only recent new deposit discovered is the small Svartliden gold mine operated by Australian company Dragon Mining Ltd.

The share of junior companies in the total exploration expenditure in Sweden is expanding rapidly

“Finland has emerged as the most exciting exploration country in Europe during the past couple of years”



Sotkamo Silver AB's Tailvaljärvi mine



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and they account for some 50% of the total exploration and the expansion continues. There are more than 25 international juniors active in Sweden, including: Scandinavian Resources Ltd; Northland Resources SA, Beowulf Mining plc; Tasman Metals Ltd; Avalon Minerals Ltd, Continental Precious Minerals Inc; Aura Energy Ltd; Drake Resources Ltd; and Gold-Ore Resources Ltd. Among the locally listed companies are: Nordic Iron Ore AB; Grängesberg Iron AB; Dannemora Minerals AB; Lappland Goldminers AB; Kopparberg Mineral AB; IGE Resources AB; and Botnia Exploration Holding.

Activities in Greenland are also running at high speed. In 2011, more than 50,000m of core drilling was completed and the number of exclusive exploration licences increased from 74 to 83. The trend has continued in the new year, with 94 current applications.

Greenland attracts interest from all over the world – Tanbreez Mining Greenland AS and Greenland Minerals & Energy Ltd are both Australian-based. Tanbreez is looking for tantalum, niobium, rare earths and zirconium at Killavaat Alanguat, while the latter company is exploring the Kvanefeld deposit, both in southern Greenland.

Ironbark Zinc Ltd is also based in Australia and studying the Citronenfjord zinc deposit in the far north of Greenland. London Mining plc, listed on London's AIM market, is at the final stages of a feasibility study for the Isua iron-ore deposit.

Angel Mining plc, likewise based in the UK, is planning to re-open the previously-producing Black Angel zinc mine on the west coast of Greenland. The company has also restarted the Nalunaq gold mine in



An aerial view of the Tailvaljärvi mine

southern Greenland. The formerly government-owned Nuna Minerals AS, focusing on gold, is now trading on the Copenhagen stock exchange and looking for a secondary listing in Toronto.

In Norway the growth has been impressive, having almost doubled between 2009 and 2011, albeit from a low level of €6 million. The conditions for continued growth in exploration expenditure are now present. New mining legislation is in place and the focus of Norwegian authorities has shifted from only offshore oil and gas to include land-based minerals.

The geology of Finnmarka in northern Norway is an extension of the Fennoscandian shield that starts in

Russian parts of Karelia and continues across Finland into northern Sweden. There are only a limited number of companies active in Norway, including: the locally-owned Nussir (copper); state-owned Store Norske Spitsbergen Grubekompani (operates coal mines in Svalbard); and Stockholm-listed companies, Arctic Gold AB and Sotkamo Silver AB are exploring the Karasjok greenstone belt for gold deposits. In 2011 Canadian-based Dalradian Resources Inc took out exploration licences over a 17,000km² area covering four greenstone belts and a historic silver mining district. The exploration scene in Norway is getting hot indeed.

This report was sourced on behalf of Euromines using information from the RMG Exploration Survey

Minjng Journal

April 20, 2012

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