

NICKEL EXPLORATION AND MINING IN FINLAND – AN OVERVIEW

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INVEST IN FINLAND

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Introduction

The importance of nickel, platinum-group metals, and cobalt as industrial commodities is increasing. Stainless steel production is the major end use for nickel and accounts for some two thirds of total global consumption, while the production of steel alloys, non-ferrous alloys and plating each account for approximately ten per cent.

Currently, global demand for nickel exceeds production, and the gap between demand and supply appears likely to widen as a result of expansion in stainless steel production, especially in China. While a major proportion of nickel production has traditionally come from sulphide ores, it is the general view among geologists that the number of known nickel sulphide deposits is insufficient to meet future demand. Nickel prices have therefore risen to historic highs.

Finland offers interesting prospects for nickel exploration and mining, and several projects are currently under way. The main reason for increased interest in Finland is the internationally-accepted belief that the Finland's shield geology, which is of the same age and type as shield areas in Russia, Canada and Australia, has similar potential for exploitation. Other important factors are Finland's political and economic stability, mining and environmental legislation, and the clear pro-mining attitude, especially in the north and east of the country. Efficient infrastructure, a relatively-sparse population, and the exceptional quality and coverage of the geological data available from the Geological Survey of Finland (GTK) are also valued highly.

Companies considering mining in Finland have acknowledged that mine operations located in the country can be extremely cost-competitive: both a skilled and experienced mining workforce and the latest mining technology, in which Finland holds a world-leading position, are available.

This overview of nickel exploration and mining in Finland starts by focusing on two companies - Finn Nickel Ltd (Suomen Nikkeli Oy) and Vulcan Resources Limited - and their current projects, provides information about mining in Finland and then introduces some of the key players in the mining industry: the Ministry of Trade and Industry (KTM), the Geological Survey of Finland (GTK), Finnish Industry Investment Ltd and Invest in Finland.

I. Strong reasons to invest in Finland's mining industry

For the mining exploration industry, the Finnish investment and operating environment is favourable, and there is significant potential for new discoveries. Many commodities are still very much under-explored, and the political risks associated with extraction are very low. The excellent potential offered by the Fennoscandian Shield in connection with a variety of commodities has attracted a number of international companies to Finland. Currently, exploration activities are focused on nickel, gold, platinum-group metals, base metals, diamonds and industrial minerals. Finland offers excellent geological databases, good infrastructure, progressive mining legislation and readily-available exploration services.

Recent exploration and mining trends in Finland are positive. The volume of mining has been slowly increasing since 1995, and four metal mines, 40 industrial mineral mines, and approximately 60 dimension-stone quarries are currently in operation. Several advanced projects are heading towards mine decisions, some of which are expected to be quite large operations with timescales of many years.

Finland's infrastructure is well developed with good port facilities open all year round, extensive high voltage power transmission, and a comprehensive road network even in remote areas. Finland offers investors three important incentives: the acknowledged geological potential, excellent infrastructure, and a positive attitude towards mining.

For companies considering nickel mining, good infrastructure means real savings and makes mining profitable in locations where wages are at European levels. Finland has a long mining tradition and a well-qualified labour force. Interest on the part of municipal authorities and local residents is high, and surveys of public opinion indicate that an absolute majority of residents are favourably disposed towards mining. The Finnish government, regional and local authorities are strongly committed to developing the mining industry. Although legislation regarding mining is stringent, Finland's mineral-resources policy is well defined and a new fund for mining investment is about to be established.

Increased awareness of the excellent potential, the fact that Finland's resources are clearly under-explored, and the positive attitude towards mining operations are expected to result in continuing positive trends in both exploration activity and mining.

Nickel deposits in Finland



II. Finn Nickel Ltd

Finn Nickel Ltd is a new, privately-owned junior nickel mining concern whose mission is to develop and run new nickel mining operations in Finland. The company's stated vision is to grow to a medium-size mining company with a business concept of beneficiating known ore deposits using mining contractors and existing concentration capacity. Finn Nickel has a total of fifteen mining concessions, claims and claim reservations.

Commenting on the situation in August 2005, Vesa-Jussi Penttilä, Finn Nickel's CEO, said "Fennoscandia needs nickel for several reasons. First of all, there is a large stainless steel production unit in Tornio and downstream smelting capacity already exists. From our point of view, access to Outokumpu's 50 years of experience in nickel means we can benefit from that. We also acknowledge that there are many as-yet-unexplored opportunities in nickel exploration and mining in Finland and that the potential for advanced projects is huge."

Finn Nickel has expressed an interest in both joint ventures and partnerships. The company has acquired ore deposits from both Outokumpu Oyj and Geological Survey of Finland.

Open pit and underground nickel-mining projects

Finn Nickel currently has several open-pit and underground mining projects under way. Production at the company's Särkiniemi project in Leppävirta, 50 kilometres south of the City of Kuopio, will commence during 2005. Ore reserves in the Särkiniemi project are 66,600 tons @ 1.17% Ni, 0.50 Cu, and the total Ni content is 830 tonnes.

In Äetsä in southern Finland, Finn Nickel has a deposit at Mäntymäki where reserves total 99,000 tons @ 0.61% Ni and 0.18% Cu. The total Ni content is 603 tonnes. This project's environmental permit is currently being processed and the mining lease is valid until autumn 2009.

Leppävirta in Valkeisenranta in eastern Finland is one of Finn Nickel's promising underground nickel projects. Processing of the environmental permit for this project was initiated in 2005. According to Vesa-Jussi Penttilä, the mine operation will be completely underground between the +100 and +250 levels and plans include the building of a ramp down to the +200 metres level, infill drilling and trial mining. Ore reserves in this project total 800,000 tonnes @ 0.91% Ni, 0.30 Cu and 6.55 Ni(sf). Geophysical studies indicate that this deposit has extremely-prospective depth extensions, and the total Ni content currently stands at 9,468 tonnes.

In addition to these three major projects, Finn Nickel has several other smaller deposits, all of which also contain copper and cobalt. Development studies concerning these deposits are currently being carried out.

Further information: www.nikkeli.fi

III. Vulcan Resources Limited

Vulcan Resources Limited (Vulcan) is a Western Australian company based in Perth. The focus of its activities is on the exploration, development and mining of base and precious metal deposits in Finland. Vulcan has a strategic alliance with Cambrian Mining plc, a London-based mining finance house which holds a 20% stake in Vulcan.

In March 2005, Vulcan announced that it had significantly increased its resources by acquiring the Saramäki and Vuonos copper deposits, projects discovered, drilled and estimated by Outokumpu Oyj, a Finnish producer of stainless steel. According to Vulcan, it is now the dominant landholder



Dr. Alistair Cowden

in the Outokumpu mining district. The company's nickel assets in Finland are held by its subsidiary Kuhmo Nickel plc which is planning an AIM listing in 2005.

Resources wholly-owned by Vulcan in the Outokumpu district are in three deposits: Kylylahti, Saramäki, and Vuonos. Commenting on the acquisition of Saramäki and Vuonos, **Dr Alistair Cowden**, Chairman of Vulcan Resources, said "Outokumpu is one of the world's major mining camps, more than three billion pounds of copper has been mined here over 80 years and Vulcan now dominates this camp. Vulcan's strategy is to build a significant copper business at Outokumpu and maximising available resources is a key part of that strategy."

The Kylylahti Copper-Cobalt-Nickel-Gold Deposit

"One of the world's most significant copper-mining camps"

At the end of April 2005, Vulcan announced that the pre-feasibility study concerning its wholly-owned Kylylahti copper-cobalt-nickel project in Finland is on track, with geological reinterpretations showing potential for extension of the resource. In June 2005, the company said that drilling at the Kylylahti copper project "exceeds expectations". According to Vulcan, Kylylahti, which is located 24 kilometres to the northeast of Outokumpu and is one of a cluster of 'Outokumpu'-type deposits, has a resource of 3.4 million tonnes grading 1.8% copper and 0.3% cobalt, 0.21% nickel, 0.9 g/t gold or 8.2% copper equivalent. Vulcan acquired the Kylylahti project in December 2004.

On the 21st September 2005, Vulcan announced that it had commenced a 6,500-metre diamond-drilling programme at Kylylahti which will focus on areas of the deposit that will have the most impact on early mining schedules. Vulcan also said that a second drill rig will start work in October 2005. In an earlier statement, the company said that it plans to develop an underground decline mine with an annual production rate of 300,000 to 400,000 tonnes and to grow the resource inventory through infill, extension and near-mine drilling. The deposit remains open at depth.

Commenting on its activities in Kylylahti, Dr. Cowden said "The company has been very active in commencing new studies and compiling, translating and evaluating the extensive metallurgical, mining and geological studies completed by Outokumpu when it held the project earlier. It continues

to be our strategy to build Vulcan's dominant position in one of the world's most significant copper mining camps to become a producer of copper, cobalt and nickel in Finland.”

Vulcan has said it is confident that a mine operating in Finland will be extremely cost-competitive due to access to a skilled and experienced mining workforce and through the implementation of the latest mining technology of which Finland is a world leader. The company expects that a mine will be operated with a mix of owner-operator equipment and contractors.

Vulcan operations in Finland



The Kuhmo Nickel Project

The Kuhmo Nickel Project is a 95% owned joint venture between Vulcan Resources Limited and the Dragon Mining NL subsidiary Polar Mining Oy (“Polar”) which holds a 5% free carried interest. The Kuhmo-Suomussalmi Greenstone Belt is directly analogous to Western Australian greenstone belts and the six nickel sulphide deposits already identified by drilling are identical to the type examples of komatiite-hosted nickel deposits at Kambalda and elsewhere in Australia.

Little exploration has been undertaken in the last two decades on the bulk of the deposits at Kuhmo. The exploration that has taken place has largely focused on thick high-magnesium ultramafic lenses containing disseminated nickel sulphides. Australian experience has highlighted the high prospectivity of basal ultramafic contacts in thin komatiite units along strike from such occurrences. In April 2005, Vulcan commenced a major nickel exploration campaign focused on the Peura-aho and Hietaharju nickel sulphide occurrences.

In addition to drilling, a comprehensive review of all available geological, geophysical and geochemical data from the Kuhmo-Suomussalmi belt has highlighted numerous untested targets. Vulcan has prioritised these targets and commenced a program of airborne geophysics and geochemical till drilling to further delineate targets for drill testing.

The Peura-aho and Hietaharju deposits

Peura-aho and Hietaharju were discovered in the 1960s and have not been revisited for more than 20 years. Four additional nickel sulphide deposits were identified by historic exploration and will be tested in future programmes.

At Peura-aho, up to nine holes will be drilled to test beneath a 20-metre-long outcrop of low-tenor massive nickel sulphides. These massive sulphides are coincident with a 250 metre long mise a la masse anomaly which will also be tested in this programme. The highest values obtained in previous drilling were 3.6% nickel, 2.2% copper and 2.9g/t Pt plus Pd. The best intercept was 2.25 metres at 2.3% nickel and 0.3% copper. Mineralisation is hosted in a northerly-plunging antiform in which a 50-metre-thick komatiite flow unit sits on a felsic volcanic substrate. A significant airborne electromagnetic anomaly occurs on the western limb of this antiform some 0.5 kilometre along strike from the Peura-aho deposit.

At Hietaharju, nickel sulphide mineralisation is hosted in a komatiite unit up to 100 metres thick and more than 800 metres long. Mineralisation occurs over 500 metres along strike both as basal contact mineralisation and as internal disseminated and vein sulphides. In shallow bedrock drilling, values up to 2% nickel have been recorded and historic diamond drilling has returned values up to 3.6% nickel, 3.1% copper and 18g/t Pt plus Pd. The best intercept is 2.45 metres at 1.9% nickel and 0.8% copper.

Drilling at Hietaharju will be targeted at basal contact mineralisation in two locations approximately 400 metres apart, at coincident outcropping nickel sulphides, and at a geophysical anomaly in a parallel komatiite unit to the east.

A characteristic of both the deposits to be drilled is that they are hosted by lower magnesium komatiites than is usual in Australia, and the nickel sulphides are therefore higher in platinum group elements and copper but lower in nickel tenor than 'Kambalda-style' deposits.

For further information on this project and Vulcan Resources Limited visit:

www.vulcanresources.com.au

IV. Mining in Finland

Mining history and operations

Finland's history of mining activity dates from 1540, and Finnish metallurgical technology and manufacturers of mining equipment are well known throughout the international mining community. The exploitation of copper, nickel, cobalt, zinc and lead ores as well as chromium, vanadium and iron deposits has provided the raw material base for the Finland's metal industry, with significant processing and refining of copper and nickel concentrates at Harjavalta, zinc at Kokkola, chromium at Kemi and iron at Raahe. The major industrial minerals mined in Finland are carbonates, apatite and talc.

While exploration for nickel in the Archaean greenstone belts of eastern and northern Finland has been undertaken since the 1960s, activity increased in the 1990s. Only one Archaean komatiite-

hosted nickel deposit has so far been exploited: small-scale mining at Tainiovaara in 1989 yielded 20,000 t at 1.40% Ni. Recent exploration within the Archaean Suomussalmi and Kuhmo greenstone belts in eastern Finland has outlined several nickel occurrences, with broad lateral and vertical, largely-unexplored extensions. In both Archaean and early Proterozoic greenstone belts, komatiitic lava flows are associated with sulphur-rich sediments, implying good potential for massive nickel sulphides.

Summarising the situation regarding Nickel exploration and mining in Finland in June 2005, Finland's Ministry of Trade and Industry, said "There are 191 claims where nickel is first listed (June 6, 2005), and furthermore there are several advanced projects, some of which will probably become new mines". For companies considering base metal mining activity in the north or eastern part of Finland, the ministry points out that in contrast to similar regions in Africa and Australia, where deposits may be situated many hundreds of miles away in the wilderness, the supporting infrastructure in Finland is in excellent condition. This in turn means that mining expenditure will be low relative to production costs in areas where heavy capital expenditure is necessary to make deposits accessible.

V. Important players in mining

The Ministry of Trade and Industry (KTM)

The Ministry of Trade and Industry, KTM, www.ktm.fi, promotes the use of mineral resources by securing a favourable operating environment for mineral exploration and mining activities. The Ministry grants reservations for claims, claims and mine concessions. The environmental permits required before mining operations can begin are handled on a case-by-case basis by environmental authorities. The principles on which this part of the process is carried out are cooperation, client service, and flexibility. Compliance monitoring is intended to halt pollution and eliminate harmful effects as quickly as possible.

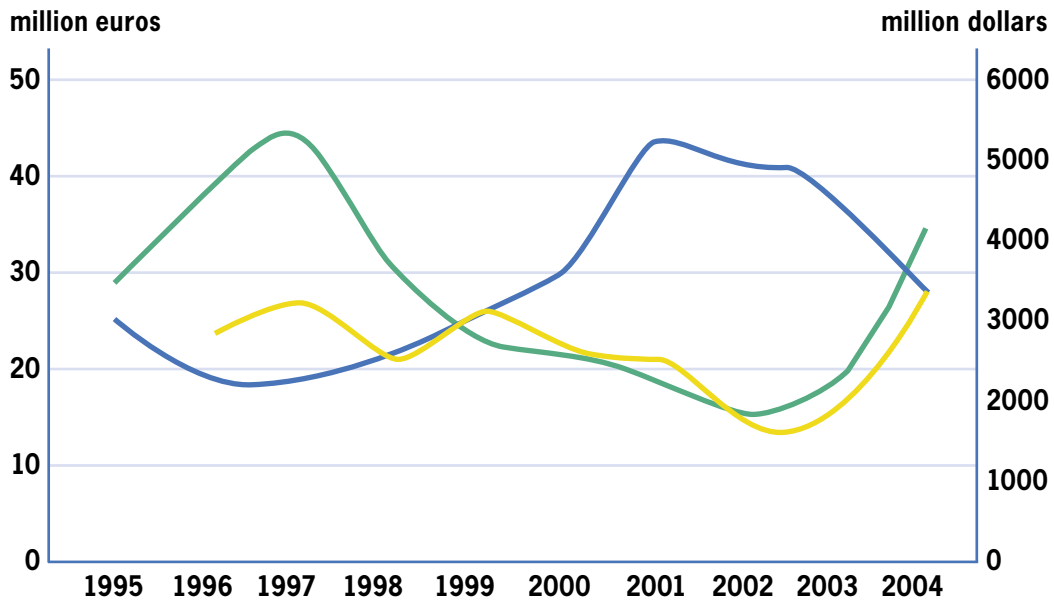
Environmental legislation in Finland is strict, but pragmatic. Environmental permits are valid for some years, and must be regularly updated via the submission of new applications.

The Ministry of Trade and Industry is currently preparing a mineral policy for Finland to clarify the government's attitude and policy for companies interested in exploration and mining. The Ministry also confirms that political support for a mining industry is strong. In 2002-2004 several new international companies initiated exploration activities in Finland.

In 2004, Finland saw continuing expansion of investment in gold exploration and renewed interest for nickel, talc and diamonds. The number of claim reservations granted in 2004 was twice the number in 2003, and the number of new claims also grew by approximately 45%.

The significant drop in exploration expenditure from the peak year of 1997 that was seen elsewhere in the world did not occur in Finland. Instead, exploration spending has been fairly stable, at around EUR 40 million per annum - the highest level in Europe. The diagram below shows how non-ferrous exploration activities in Finland have increased over the last eight years while global investigation has declined:

Non-ferrous Global Exploration, in Sweden, and in Finland 1995–2004
Finland and Sweden left scale, Global right scale



For further information, contact
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http://www.ktm.fi/index.phtml?menu_id=12&lang=3&fs=10

For an introduction to Finnish mining legislation, visit:
http://www.gsf.fi/explor/eco_legis_frame.htm

The Geological Survey of Finland (GTK)

The Geological Survey of Finland, www.gtk.fi, operates under Finland’s Ministry of Trade and Industry and is responsible for national mapping and geoscience information related to bedrock and quaternary geology, geophysics, geochemistry and mineral occurrences. It is a modern research organisation that provides geoscientific information and services essential for assessment of raw materials, environmental studies, construction and land-use planning. GTK has a staff of some 700 people and is internationally recognized for its pioneering activities in granite research since the organisation’s foundation in 1885.

One of GTK’s primary duties is to promote mineral exploration and mining in Finland. Involved in projects of all sizes, GTK acquires data concerning prospects which is sufficient to encourage further evaluation by the private sector. All prospects are tendered to the private sector through the Ministry of Trade and Industry.

The Fennoscandian Shield

Well-known for its prospectivity and extensive mining tradition, the Fennoscandian Shield is the largest exposed area of Precambrian rocks in Europe and is similar to regions in Canada and Australia. Finland, some 1100 kilometres from north to south and up to 400 kilometres from east to west, occupies an area of 330,000 square kilometres in the central section of the shield. The northern and eastern parts of the country comprise Archean greenstone belts and granite gneisses, the southern part consists of early Proterozoic arc and granite terranes. Nickel-bearing mafic-ultramafic magmas were emplaced during Archean and Early Proterozoic time and related nickel deposition took place whenever additional crustal sulphur was available to form nickel sulphide deposits.

The Precambrian in Finland contains several sulphide deposits derived from mafic-ultramafic magmas. They can be subdivided into three distinct groups: Archean komatiite-hosted volcanogenic deposits in eastern and northern Finland; early Proterozoic deposits in northern Finland; and early Proterozoic deposits in synorogenic mafic-ultramafic intrusions in southern and central Finland. Historically, early Proterozoic orogenic deposits have been the most rewarding exploration targets.

Confidential chemical, mineralogical and GIS laboratory services

The geological data coverage provided by the Geological Survey of Finland is probably among the best in the world, and GTK also offers the minerals industry confidential expertise in Fennoscandian economic geology, customer-tailored exploration services, and modern chemical, mineralogical and GIS laboratory services on a confidential basis both in Finland and worldwide. GTK has carried out successful surveys under contract in several countries in Africa and Europe.

The Geological Survey of Finland is also actively developing new technology such as advanced tools that can be used with mineral exploration data. Information provided includes the extensive Fingold and Finzinc databases, freely available on the internet, and an 'active map explorer' that allows users to plot a variety of exploration data on different backgrounds at different scales. The 'active map explorer' also includes data on Land Tenure (extracted from Ministry of Trade and Industry title database), Drilling Sites, Mines and Deposits and Igneous Ages. A Finnickel database is under production and is scheduled to be available at the end of 2005.

For further information, contact:

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<http://www.gsf.fi/explor/>

Finnish Industry Investment Ltd

Finnish Industry Investment Ltd, FII, www.industryinvestment.com, is a government-owned investment company which engages in equity capital investment and invests in venture capital funds, private equity funds and directly in selected target companies. Finnish Industry Investment Ltd is administered by the Ministry of Trade and Industry and its investment capital is generated from the proceeds accrued from the privatisation of state-owned companies.

The main objectives of Finnish Industry Investment Ltd are:

- to encourage more efficient functioning of the venture capital investment market by investing actively in new venture capital and private equity funds in Finland,
- to promote the commercialization of innovations by investing in seed and growth stage enterprises together with private investors to promote regional venture capital investments, and
- to use direct investments to enable major investments in corporate development, corporate restructuring and the launch of new industrial projects.

Finnish Industry Investment Ltd's investment portfolio consists of 58 venture-capital, private-equity funds and 45 direct investments (including seed financing), and on the 31st December 2004 its investment commitments amounted to EUR 282 million.

To date, direct investments by FII in the development of mineral resources have been of a limited nature. Recently, an initiative to pool institutional investments in a new private equity fund has been undertaken with a view to meeting an increasing market appetite for a wider range of funding avenues in the mining and minerals sector in northern Europe. The operational launch of such a fund is expected to take place in 2005, with a primary investment focus on Finland and Sweden. A broad range of metallic ores and industrial minerals will be covered, with a clear investment focus on the upstream natural resources sector.

For further information, contact

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Invest in Finland at your service

Invest in Finland, www.investinfinland.fi, is an expert service organisation promoting foreign direct investment in Finland. With over a decade of experience in investment services we offer an effective link between your company and the Finnish mining industry.

In addition to offering practical assistance in establishing operations in Finland, we provide you with professional advice and support, including all the relevant information required to expand your mining business into Finland. We have an extensive network of contacts and unique, in-depth knowledge of local business sectors. We can help you find and contact the right commercial, municipal and national organisations. Naturally, our services are free of charge and always tailored to meet your specific needs.

If you have any questions regarding establishing a mining business in Finland, please contact Taneli Saari, tel. +358 10 773 0311, taneli.saari@investinfinland.fi.



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