
NEW BOLIDEN
From past to present

The Boliden ore was discovered on 10th December 1924 during drilling work at Fågelmyran.

A shift of miners in the lift coming up from or going down into the mine in 1945.

It all started in 1924...

FROM GOLD DISCOVERY TO METALS COMPANY – 90 YEARS OF KNOWLEDGE

1924
Gold was discovered at Fågelmyran in Boliden.

Ore transport from the Boliden mine in 1926. The ore truck, including the trailer, weighed around 2 tonnes.

The town of Boliden was built in the shape of a fan. This picture was taken in the early 1930s.

It was a cold winter's day in December. Out in the forests, some 30 km northwest of Skellefteå, the persistent grinding sound of a drilling machine can be heard.

It falls silent and the final drill core is pulled up.

"What on earth…. Good heavens! It's pure gold! I have to call Stockholm!"

On 10th December 1924, gold fever broke out in Boliden. That was the day test drilling in the area known as Fågelmyran discovered the Boliden ore – Europe's richest ore.

A new community, Sweden's Klondike, grew up and the gold rush was on. But the whole thing had really started much earlier. Gold fever sprang up for the first time in Skellefteå and its surrounding area shortly after the dawn of the 20th century. A company was formed to stake claims and carry out surveys, but the average gold head grade was not much to cheer about and the shareholders' interest began to wane. In 1918, the company declared bankruptcy.

The metal shortage during the latter years of World War I meant an increased interest in the area as a possible source of ore.

Surveys were launched by the then Centralgruppens Emissionsaktiebolag. Geophysical research began – new, faster and safer methods of searching for ore were developed, and new instruments were designed.

The first drill hole was drilled in the Boliden Area in November 1924 and yielded a drill core that contained interesting samples. Several more holes were drilled and the Boliden ore was discovered on 10th December. The first tub of ore was brought to the surface on16th March 1926.

The town of Boliden grew quickly alongside the mine.

The first draft city plan was drawn up in 1926 and was unique in that it was shaped like a fan. The mining community developed into an extremely well organised, peaceful and idyllic village community.

As time went by, more deposits were found within Boliden's vicinity and more mines were opened – 30 to date. Operations at the actual Boliden mine continued until 1967.

1925
Västerbottens Gruvaktiebolag and Skellefteå Gruvaktiebolag are formed.

1928
Construction work begins on the Rönnskär plant.

1929
The first ore train to Rönnskär leaves Boliden on 24th September.

Zinc production begins at Odda.


DAGENS NYHETER.

Guldmiljonerna hägra.
Gruva på varje gård.

Klondyke Boliden
med grammofoner,
biograf och kaféer.

The Swedish Newspaper "Dagens Nyheter", 24 October 1926. The deposit in Boliden created quite a commotion as "Europe's richest gold mine".

Strategic port location

The location of the smelter at Rönnskär has nothing to do with luck and coincidence. Proximity to both an efficient workforce and transportation were crucial factors when the time came to process the newly-discovered Boliden ore.

The Boliden ore's composition was complex and contained large quantities of arsenic, among other things. In those days, at the end of the 1920s, there were only two smelters in the world capable of processing this type of ore – one in Germany and one in the USA. Furthermore, they could only cope with small quantities at a time. On top of this, the Boliden mine was in a fairly inaccessible area, with neither its own process plants nor acceptable transport systems.

It was for these reasons that the company, back in 1927, had resolved to build its own smelter. The initial idea was to locate the smelter close to the mine, but for many reasons – of which environmental consideration was one – the company stopped to think again. On the coast, near Skelleftehamn, they would have access to a working port, railway, electricity and a workforce. So the smelter was built on the two islands called Hamnskär and Rönnskär. The islands were filled in, joined together, and connected to the mainland. Rönnskär had been created.

In 1928, construction started on the actual plant, including a 145 m high chimney – Europe's tallest! The smelter came into operation in January 1930.

Production comprised unrefined copper, so-called blister copper, cast into ingots. For the first few years, until 1933 when the precious metals plant was built, the blister copper contained gold and silver.

The gold value was high and exceeded the copper value several times over. Today, copper accounts for the lion's share of metal production. The raw materials are supplied by Boliden's own mines, Aitik in particular, and by external suppliers.

Rönnskär has undergone expansion and reconstruction at various intervals over the years, always with a view to meeting the demands made on a modern and efficient smelter. Reverbatory furnaces, converters, anode and cathode furnaces as well as an copper refinery were built as early as the 1930s.

The lead processing operations began in earnest in the 1940s. In

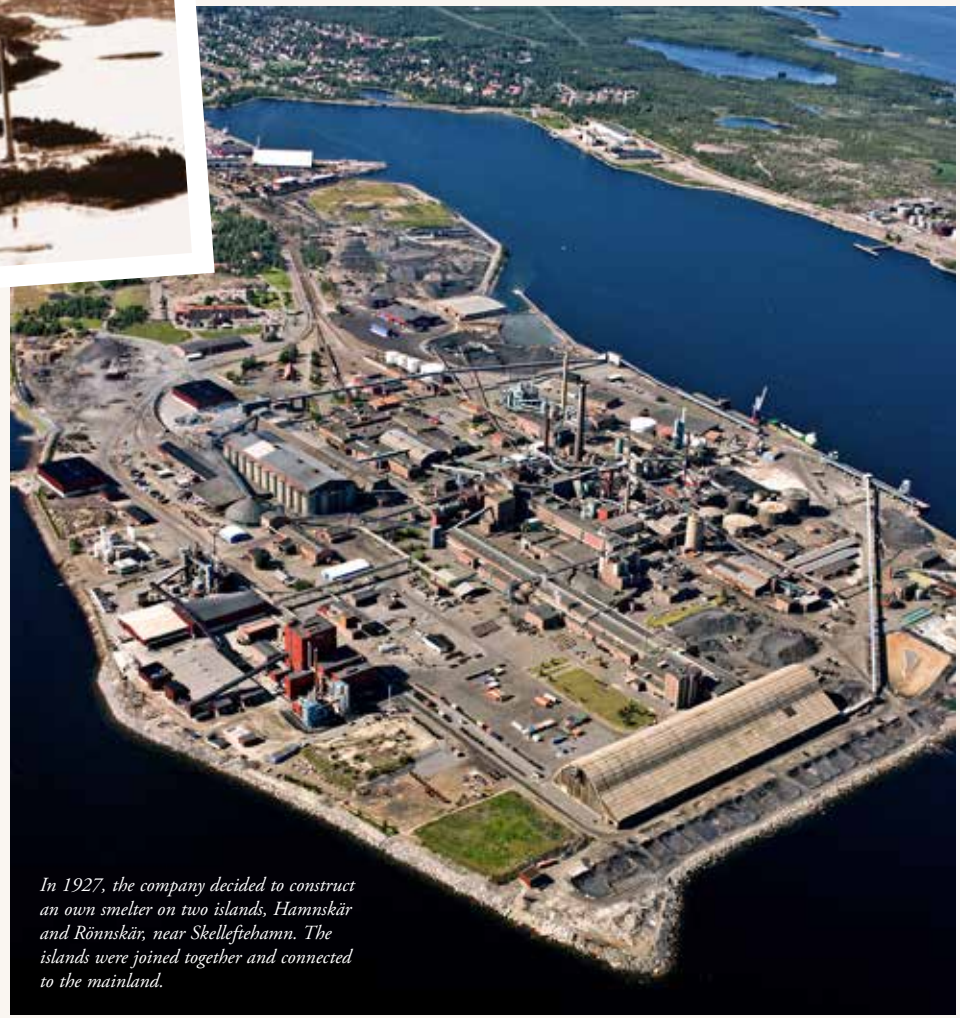
1930
Operations start at the Rönnskär smelter.

1931
The two mining companies, Västerbottens and Skellefteås Gruvaktiebolag, are merged to form Bolidens Gruvaktiebolag.

1936
The copper smelter at Imatra in Finland comes on line.

1940
Operations begin at Kristineberg.

1941
The copper refinery at Pori comes on line.



In 1927, the company decided to construct an own smelter on two islands, Hamnskär and Rönnskär, near Skelleftehamn. The islands were joined together and connected to the mainland.

1952 a sulphuric acid plant was built to recover the sulphur dioxide gases emitted from the chimney.

Zinc recycling gained momentum in the mid-1960s.

In 1976, Rönnskär inaugurated the world's first lead Kaldo plant. The plant was built with a view to using the residue products from the copper smelter. Metal recycling from electronic scrap started in 1980. Smelting of electronic scrap and lead is done in batches. Over the years, the Kaldo process has proven very flexible and able to be used for a number of different smelting materials – and there are substantial environmental advantages to be gained, too.

At the turn of this century, the time had come again for major investments. Rönnskär +200, the largest and most comprehensive modernisation project ever witnessed at the plant, was carried out 1998 – 2000. This SEK 1.9 billion investment increased production capacity by 70 per cent, among other things. Today, Rönnskär can produce 250,000 tonnes of copper per year, making it one of the world's largest smelters, and most modern.

In 2012, a new facility for recycling electronic scrap opens. This strengthens Boliden's position as world leader within this field.

1942
A lead plant is constructed at Rönnskär.

1943
The 96 km-long ropeway conveyor between Kristineberg and Boliden is completed.

Tin and lead smelting starts at Bergsöe.

1945
Copper production starts at Harjavalta.

1949
The flash smelting method is introduced at Harjavalta.

1952
A sulphuric acid plant is built at Rönnskär to exploit the sulphur dioxide content of the chimney gases.

The world's longest ropeway conveyor

In summer 1943, the world's longest ropeway conveyor – 96 km long – was commissioned between Boliden's mines in Kristineberg and Boliden. Forty-four years later, the final ore basket left the loading station in Kristineberg.

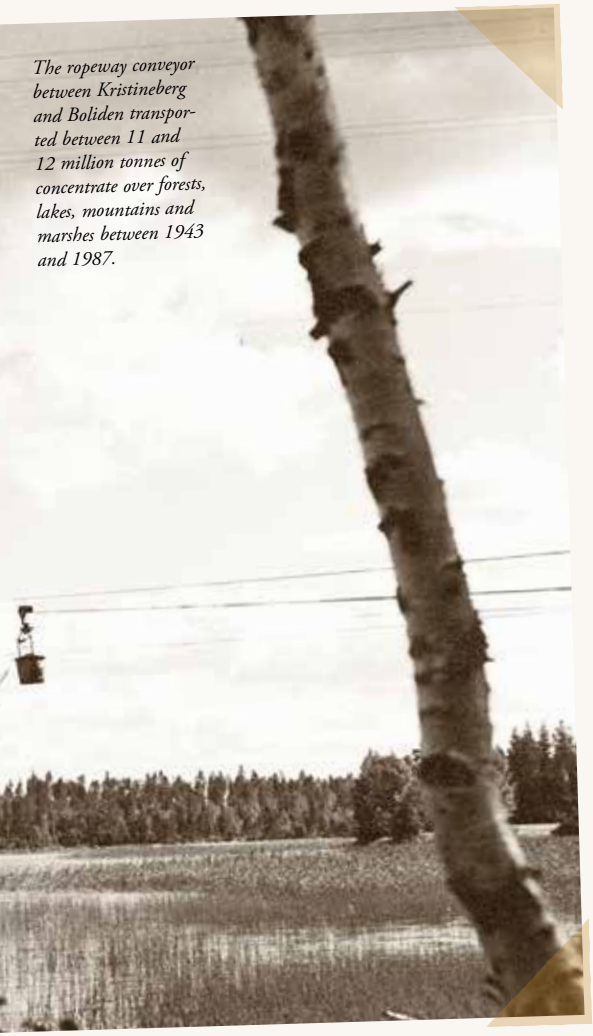
1954
The Rönnskär concentrator is closed down and a new one comes on line at Boliden.

1955
The world's deepest railway, between the Långsele and Boliden mines, is completed.

1957
Boliden acquires the Garpenberg mine.

1958
A new copper refinery is completed at Rönnskär.

1960
Production of nickel cathodes starts at Harjavalta.



The ropeway conveyor between Kristineberg and Boliden transported between 11 and 12 million tonnes of concentrate over forests, lakes, mountains and marshes between 1943 and 1987.

Over the years, many tonnes of concentrate were transported between Kristineberg and Boliden – some 11 to 12 million tonnes. Translated into truckloads, that would mean about 300,000 trucks, each with a load capacity of 40 tonnes.

During World War II, Sweden was essentially restricted to domestic production for some of the country's important base metals. The ores mined were largely located in the inland parts of Norrland, and were freighted by truck between the mines and the concentrator at Boliden. But the war also meant a shortage of rubber and oil, so road transport was only possible in exceptional circumstances. This is why the decision was taken to build the 96-km long ropeway conveyor between Kristineberg and Boliden.

In many respects, the construction of the ropeway conveyor was an adventure, because it ran through areas that were largely wilderness, across forests, lakes, mountains and marshes.

These were also the days of rationing and the materials, fuel and manpower shortages were severe, but the ropeway conveyor was still completed within the scheduled timescale. This magnificent construction project took one year and five days to complete.

The maiden journey took place in the summer of 1943. The ropeway conveyor's initial transport capacity was 50 tonnes per hour at a speed of 2.38 metres per second, over seven driving stations and 503 concrete masts of heights varying between 7 and 38 metres. The ropeway conveyor's route also passed several of the deposits that were being investigated at the time and which the company planned to bring on line.

The ropeway conveyor survived the competition from trucks all the way up until 1986, but increasing breakdowns made it harder to operate satisfactorily, from a financial viewpoint.

A review determined that better roads and trucks with a higher load capacity meant it was cheaper to transport the ore by truck. In 1986, Boliden decided to close down the ropeway conveyor, and it was decommissioned after 44 years of faithful service in January 1987.

The world's longest ropeway conveyor had served its time, at least as a means of transporting ore. But the ropeway conveyor lives on, nowadays as a tourist attraction and the world's longest cableway – 13.6 km – thanks to the association that was formed and which has preserved a stretch for carrying people instead of ore.

The association was founded on the initiative of 'old ropeway conveyor repairmen' to preserve parts of the ropeway conveyor between two of the driving stations, Örträsk and Mensträsk.

The ropeway conveyor between the Kristineberg mine and Boliden was built in 1943.

1962
Tara begins exploration work in Ireland.

1964
Boliden buys half of the shares in the Norwegian zinc smelter, Det Norske Zinkkompani A/S (Odda).

PHOTO: SCANPIX

PHOTO: UR ALLERS 1929

PHOTO: PUBLICERAD I SVENSK DAMTIDNING 2005

Ivar Kreuger was Boliden's principal owner in the late 1920s. On the photo to the right he is together with Mary Pickford.

An odd bird in Boliden's past

Ivar Kreuger is probably best known as 'the Matchstick King', for the biggest bankruptcy of all time, and for his dramatic death in Paris in 1932.

A fact that is little known, however, is that this businessman became Boliden's main owner at the end of the 1920s. In 1929, he bought 90 per cent of the shares and over the course of a few dramatic years, he put his stamp on the company. He made new demands and was keen to dramatically increase production. This was a controversial decision opposed by the management of the time, because it would shorten the mine's lifespan by several years.

He got his way, however, and production increased from 70,000 tonnes to 200,000 tonnes of ore per year. People spoke of the 'Breakneck Drift'.

Kreuger died in Paris in 1932. His death naturally affected Boliden's operations. Much of the extensive building work that was taking place in the town came to a halt. Fairly soon, however, it became clear that the actual company had survived without too much economic damage.

After Kreuger's death, both his estate and the bankrupt estate of Kreuger & Toll made claims on the Boliden shares. The issue was resolved by Skandinaviska Banken redeeming the shares at a public auction. After discussions about the risk posed by a potential foreign acquisition of the shares, the government decided to tighten up legislation governing the ability of foreign interested parties to acquire and control Swedish companies holding natural resources in Sweden. The new law, which would be known as Lex Boliden, was passed by Parliament in May 1934 and repealed in 1983.

1968
Operations begin at the Aitik mine.

1969
Operations begin at the zinc smelter in Kokkola.

1970
Production of aluminium fluoride begins at Odda.
Tara discovers the big deposit of zinc and lead in Ireland.

1977
Production commences at Tara Mines.

1979
Boliden buys Paul Bergsöe & Son.

Garpenberg: A CROWN MOUNTAIN

Boliden's mine at Garpenberg, in the mineral-rich Bergslagen district, is Sweden's oldest mine still in operation.

When Gustav Vasa became king, he made a point of raising the status of the Swedish mining industry. The facilities were improved and output from the mines was increased.

Processing of ores in the area began in the thirteenth century, and during the fourteenth century German mining experts were engaged to teach effective mining methods. Local residents called the Germans "garpar", which gave the village of Garpenberg its name.

Anyone who knew how to exploit new ore deposits could acquire great wealth. Royal houses and church magnates therefore took an early interest in mining, but the deeper the mine, the more complicated the work. Substandard drainage pumps and mine collapses were not uncommon. When Gustav Vasa became king, therefore, he put mining in focus. The facilities were improved and production increased. From 1553, the mine at Garpenberg was operated as a state enterprise, but it was closed in 1579 after less than successful attempts at smelting silver.

In 1601 Charles IX ordered mining to be resumed. The growing problem of flooding, however, involved huge costs and by the end of the 1630s, the mining operation had been transferred to merchant Thomas Funck from Stockholm. Over the next 200 years, the mine would be operated by various families, and from the 1850s in the form of a company.

In the early 1900s, a railway was established for ore transport and attempts were made to invest in a cableway, but recessions and bankruptcies hit the mining company hard. In 1942 the shaft was affected by a major rockfall. As there was a huge risk that water from Lake Gruvsjön would fill the mine, the northern part of the lake was drained. The aboveground infrastructure was also affected, and the station building was moved 500 metres north. Mining activities were also subsequently moved to this area, and in 1957 the new facility was bought by Boliden.

Since then, Boliden has found several deposits and in recent years has invested significantly in expanding production. Boliden Garpenberg currently has very good ore reserves and mining operations are expected to continue for many years

PHOTO: LASSE JOHANSSON

Garpenberg is home to Sweden's only preserved and intact mining chapel of its kind, dating from the 1600s. For a long time it was mandatory for miners to gather at six o'clock for morning prayers before descending into the mine.

1980
Capacity at Aitik is expanded from 8 to 12 Mtonnes of ore.

1985
Rönnskär builds Europe's longest copper refinery – 365 metres.

1987
Trelleborg AB acquires a majority shareholding in Boliden.

The art of moving *a copper smelter*

When the Head of the Finnish wartime economy issued an order on 1st July 1944 to move the copper smelter from Imatra to western Finland, away from the war, the disassembly of the smelter immediately began.

It had been agreed for some time that, if and when an order was given, all available manpower would be mobilised to evacuate the old smelter and to plan and build a new one. The time had now come. The bitter defensive battles of summer 1944 meant that the situation in Finland was truly dire. Virtually all commercial links had been broken with Europe, where the war was at its height. Obtaining new machinery or equipment to build the new copper smelter was completely out of the question. And building materials were in short supply. The plans for the new factory were based on moving everything that could be of use at the new site in Harjavalta from Imatra. The plant's steel constructions were disassembled, water pipes were dug up out of the ground, and even cork flooring from the houses was rolled up. Everything was loaded onto the few railway wagons that were available and in early September, the final wagons rolled out from Imatra's copper smelter heading for Harjavalta.

Planning the new smelter was difficult, because virtually everything depended on which resources could be transported from Imatra. The situation was further complicated by the fact that it had previously been decided that the new smelter would have double the production capacity of the old one.

Much of the technology and most of the construction components from Imatra were very heavy and the only way to transport them to Harjavalta was by rail. But there was no railway link to the new factory area, so a new line had to be quickly built. It took only three days to build the about 1 km-long spur, despite the lack of materials and manpower. People were forced to improvise, so they took a seldom used spur built for maintaining the power station in Harjavalta, and moved it to the copper smelter instead. There was a rumpus following the 'railway theft', but the anger soon died down – this was, after all, a project designed to help ensure the country's very survival.

The question of manpower was solved in the same 'creative' way. Senior Engineer, Ilmari Harki, Copper Plant Manager at Pori, called his former fellow student – now a Senior Physician at the mental hospital in Harjavalta – and asked if there might be 30 men among the patients who could work on the construction of a railway. A group of "unstable but able-bodied" men were gathered together at the hospital. It was thanks to their hard work that the provisional railway could be built within the designated time.

When the work on Harjavalta began, conditions throughout Finland were chaotic and difficult. The men were at the front and there was great concern about Finland's future.

1988
Aitik is expanded.

1990
The concentrator at Boliden is expanded and modernised.

1993
The Copper Shuttle starts transporting copper cathodes from Skelleftehamn to Elektrokoppar in Helsingborg.

1995
The Harjavalta smelter expands. Copper production increases by 60 per cent and nickel production by 200 per cent.

In early August 1944, there were chaotic scenes on the moor in Torttila. Machines and equipment that had been freighted from Imatra had to be dumped in the forest because there was no access to cranes or other tools to load the railway trucks.

Initially, getting the manpower needed to build a new copper smelter seemed almost impossible, and the rate of staff turnover was high. At one point in time, there were just over 200 Russian prisoners of war and 30 or so psychiatric patients working on the construction site. But despite all the difficulties, the construction work progressed according to schedule.

Under the terms of the peace treaty signed in Moscow in September 1944, Finland was to pay massive war reparations to the Soviet Union within the next ten years or so, largely in the form of metal industry products, so work on Harjavalta was accelerated. The company had worked very hard during the war years to supply the military with copper and brass products. Now the pressure continued, this time applied by a monitoring committee, and this time to produce materials for war reparations.

On Christmas day 1944, electricity was connected up to the first smelter and on 6th January, the first copper matte was cast from the furnace. The first converter blow moulding was finished the following day – almost exactly six months since production had ceased at the Imatra copper smelter and five months after the ground to what would become the site of the new smelter was first broken on the moor in Harjavalta.

1996
Åkulla Östra, near Boliden, becomes the biggest new gold deposit in Sweden for 70 years.

1997
Boliden establishes a head office in Toronto.

The share is quoted on the stock exchanges in Toronto and Montreal.

1998
The Spanish mine, Los Frailes, was closed after a serious dam breach.

A decision is taken to expand Rönnskär, +200 – an investment totalling SEK 1.9 billion.

The direct leaching method is implemented at the Kokkola smelter.

1999
Operations were restarted at the Spanish mine, Los Frailes.

Recycling in the soul

He was a man looking towards the future, and in many ways, light-years ahead of his time. The Dane, Paul Bergsöe, realised very early on that there was money to be made from metal recycling.

Inauguration of Bergsöe's lead section in 1953.

The originally Danish firm of Boliden Bergsöe actually has a longer history than Boliden itself. It was way back in 1902 that Paul Bergsøe & Søn A/S opened its doors for business in Copenhagen.

In those days, the business recycled tin from old tin cans. The company eventually grew out of its premises in central Copenhagen and moved to a farm in Glostrup. It was on this site that a larger factory was opened in 1941.

The company moved to Sweden in 1942, when Paul Bergsöe & Son AB was formed in Landskrona, and where the metal refinery gradually began to specialise in lead products. Operations in Sweden started on a small scale in late 1943. The 'head office' was initially located in the home of the then President of the company, Jens Krag Juel Vind Frijs, in central Landskrona. A modest office building was, however, built in the factory area in late 1943/early 1944.

Then the business really got going. There turned out to be plenty of scrap in Sweden that had previously been unusable, due to the lack of an appropriate smelter. As a result, the company reported a profit for its first full year of operations, 1944. The company expanded over the years, and by 1967, a new copper section was ready to come on line, a new head office was inaugurated, and the company also boasted Landskrona's highest chimney – all 76 metres of it.

From an early stage, the company developed a close business relationship with Boliden, which, among other things, produced primary lead from ore. In 1979, Boliden bought Paul Bergsöe & Son AB, at which point the company changed its name to Boliden Bergsöe AB. Nowadays, Boliden Bergsöe is a clearly profiled recycling company that plays an important part in establishing a socio-economically sustainable eco-cycle.

2000

Harjavalta's nickel operations are sold.

Maurliden, the 28th mine in the Boliden Area, opens.

2001

Boliden's head office is moved from Toronto to Stockholm and the company is listed on the Stockholm Stock Exchange.

Kokkola is expanded for the fourth time, increasing capacity to 260,000 tonnes per year, making it one of the world's biggest zinc smelters.

2002

Tara acquires the Nevinstown ore body and commences the SWEX Project.

2003

Boliden acquires Outokumpu's mining and smelting operations and sells the Fabrication and Technical Sales operations to Outokumpu.

Directors and founders on a joint trip to Eitrheim in 1926.

PHOTO: NATHALIE LUBOWIDSKY

A French-speaking White Russian documented

Odda's early history

The Odda smelter's history stretches all the way back to 1924 when Det Norske Zinkkompani (DNZ) was founded. The site was chosen due to its excellent access to electricity, among other things.

The establishment of the smelter saw Odda, a small community of just 800 inhabitants who had so far lived off fruit growing, fishing and tourism, transform into an industrial town of just over 10,000 inhabitants. Operations started in 1929 and have since gradually expanded.

When Det Norske Zinkkompani wanted to document the construction phase in the mid-1920s, the job was given to a linguistically gifted secretary with an exciting history of her own.

Nathalie Lubowidsky was born in White Russia in 1875. She came to Norway as a refugee during the Russian Revolution. Little is known about her background in Russia. What is known, however, is that her father was a General in the Tsar's army and that this was one reason why she was forced to flee the country. In 1923-24, she came to Odda to work as a home help.

When trial zinc production operations began at Odda in 1925, Nathalie was employed as a secretary for the French engineer, Creplet, who was the Tyssedal Site Manager at the time. Miss Lubowidsky, a very linguistically gifted lady, spoke English, French and German fluently. Her duties largely involved correspondence and translation, plus some draughting work in the engineering office.

When construction work began at Eitrheim in 1926, Nathalie moved there as secretary to the construction manager. In addition to her earlier duties, she now also began taking photographs. Photography eventually became her primary task. Her testimonial when she left the company states, among other things, that she was a very talented photographer with a well-developed sense of how to capture the essential elements of every motif.

During the depression in the late 1920s and early 1930s, Nathalie was just one of the many employees forced to leave the company. She and a female friend moved to Austria, where she lived under extremely difficult circumstances.

When her former colleagues at Odda heard how tough her life was overseas, they organised a collection which resulted in them being able to send her a sum of money.

Some while later, probably when Hitler annexed Austria, Nathalie moved again, this time to Africa, where she lived in great poverty until her death in 1956.

Nathalie Lubowidsky

2004

A new Group was formed through the structural transaction with the Finnish company, Outokumpu.

Work begins on creating Boliden's new strategic platform – The New Boliden Way.

2005

Kvarnberget – a new deposit – is discovered in Garpenberg.

2006

A decision to invest SEK 5.2 billion in the expansion of the Aitik mine is taken.

An all-new lead section is opened in Bergsöe.

Tara Europe's biggest zinc and lead deposit

Boliden Tara Mines Limited history of Tara Mines goes back to 1953 in Canada.

It all started when four Irishmen who had emigrated to work on the buildings became involved in the Canadian uranium exploration boom and formed Tara Exploration and Development Company.

Having made some money on uranium exploration in Canada, they turned their attention to exploration in Ireland, and began searching for mineral deposits around Navan in 1969. A major breakthrough occurred in 1970 when a shallow soil geochemical survey indicated very high concentrations of both zinc and lead. An extensive drilling programme confirmed that they had discovered the largest zinc and lead deposit in Europe.

The acquisition of a mining lease and the necessary planning permission took some time, and while early development began in 1973 actual production did not commence until June 1977. Experienced Canadian miners were employed to work in the mine, and to train local men to be miners. This influx of foreigners caused quite a stir in what was then a quiet rural Irish town.

The early years were troubled with production disruptions and industrial relations problems, which culminated in a strike that closed Tara Mines for most of 1981 and 1982. Things settled after the strike and in 1986 the Finnish company Outokumpu acquired 75 per cent of Tara Mines and subsequently gained full control three years later, when it bought the remaining 25 per cent.

Production was increased and the employee numbers were reduced from almost 1,100 to just over 700.

On 1st January 2004 Tara Mines became part of the Boliden Group. Under this new ownership, Tara Mines' production has continued to grow to over 2.7 million tonnes milled in 2006. Major capital investments are ongoing with the intention of providing a better working environment for all employees as well as improving efficiencies, thereby helping to secure the future of Tara Mines.

Tara Mines has been a very important industry nationally and in particular for the town of Navan and the surrounding area. It is estimated that additional indirect employment is supported at up to three times these direct employment levels.

Tara in the early 1970s. Training miners.

2007
Gold ingot no. 50,000 is cast at Rönnskär.

2010
The Aitik expansion is inaugurated.

A dynamic Youngster

Compared with Boliden's other units, Boliden Kokkola is still a youngster. Zinc production at Kokkola began in 1969.

Finnish society underwent major changes during the 1960s. Reconstruction work after the war had helped bring about strong economic growth, the country was industrialising, and people were moving from the countryside to the towns, looking for work.

The Kokkola of that time resembled a Finland in miniature – and on the shores of the bay of Ykspihlaja, Kemira and Outokumpu were expanding their operations and attracting a young workforce. When the first zinc ingots were cast in the zinc works, Kokkola was already a significant industrial town in Finland.

So why did the zinc smelter end up in Kokkola? The history of Finnish zinc production begins in the 1930s, when Outokumpu began separating zinc concentrate from the ore produced by the mine in Outokumpu. Zinc mining production gradually increased over the following decades, but the critical factor in Outokumpu's decision to found its own zinc smelter was the opening of the mines in Vihanti (1954) and Pyhäsalmi (1962). The lack of a single zinc smelter in Finland at that time meant that all zinc concentrate was exported.

In 1967 it was decided to build a zinc smelter in Kokkola. The choice was a given, because the company already had a power station, a sulphur plant and a cobalt plant there. There was also plenty of suitable land available, and proximity to communications in the form of railways, ports and airports was good too.

The cell house at Kokkola in the beginning of 1969. Production started in December the same year.

Kokkola had plenty of available manpower and was only just over 160 km from the Pyhäsalmi mine, while Vihanti was even closer.

The smelter's production capacity during its first few years was 70,000 tonnes per annum. Production has increased since then, thanks to technological developments, and a range of expansion and modernisation programmes were implemented in 1974, 1988, 1998 and 2001. 1998 was a particularly important year – the year when Kokkola became the first smelter in the world to introduce the direct leaching process for concentrates. The same process is also used nowadays for instance at the Odda zinc smelter.

Boliden Kokkola is now Europe's second largest zinc smelter and the sixth largest in the world.

2011
The decision was taken to significantly expand capacity at Garpenberg.

2012
Rönnskär's new facilities for recycling electronics are inaugurated.

Kankberg, Boliden's fifth gold mine, opens.

The decision is taken to start recycling silver at the Kokkola smelter.

2014
The Garpenberg expansion is inaugurated.

A new process at Kokkola enables silver recovery from zinc concentrate.

1924 2014

NINETY YEARS OF KNOWLEDGE

NEW BOLIDEN