

Strategy updated, implementation ahead

The updated strategy sets the company's focus back to Finland. We see potential upside through successful exploration and mining efforts in the Karelian gold line, on the other hand, we see clear risks in the value realization of the company's United States asset portfolio. The increasing real interest rates put further pressure to gold prices and the investment case. We decrease our TP to SEK 1.6 (1.7), HOLD-rating intact.

Issues in the United States have continued to weaken the performance

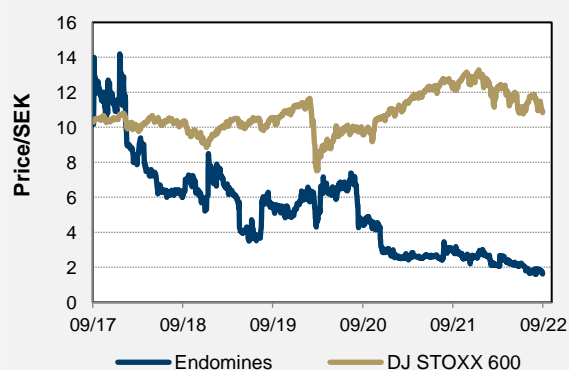
During the recent years, the company has faced issues in the Friday mine and processing plant ramp-up. According to the new strategy, the company's assets in the United States are developed through partnerships, additionally, divestments are considered as a potential option. In our view, the company's ability to realize value in the United States is essential for the investment case.

Focus on the Karelian gold line

Production in Pampalo mine was commenced in Q1 2022 supported by the current favorable gold prices. Endomines was able to produce 2 227 ounces of gold in the second quarter of 2022 and posted a positive EBITDA for the Pampalo operations. In the coming years, Endomines is planning to commence production from the satellite deposits and conduct a wide scale exploration campaign in the Karelian gold line. There is also likely to be life of mine increases in Pampalo underground mine as the company is currently extending the decline deeper. We see potential upside for the valuation via successful exploration and mining efforts.

HOLD with a target price of SEK 1.6 (1.7)

We decrease our target price to SEK 1.6 (1.7). The positive assumptions changes regarding the Pampalo underground potential and the Karelian Gold Line satellite deposits are outweighed by adjustments to gold price estimates driven by souring gold market sentiment.

 Rating 🟡 HOLD


Share price, SEK (Last trading day's closing price)	1.61
Target price, SEK	1.6

Latest change in recommendation	12-Nov-21
Latest report on company	19-Aug-22
Research paid by issuer:	YES
No. of shares outstanding, '000's	265,198
No. of shares fully diluted, '000's	266,698
Market cap, SEKm	427
Free float, %	86.3
Exchange rate EUR/SEK	10.880
Reuters code	ENDO.ST
Bloomberg code	ENDO SS
Average daily volume, SEKm	0.2
Next interim report	-
Web site	endomines.com/investors

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🟢 BUY 🟡 HOLD 🔴 SELL

KEY FIGURES

	Sales SEKm	EBIT SEKm	EBIT %	FCF SEKm	EPS SEK	P/E (x)	EV/Sales (x)	EV/EBIT (x)	FCF yield %	DPS SEK	
2020	13.1	-184.7	-1,410.0%	-103.5	-1.50	-1.9	38.8	-2.8	-28.2	0.00	
2021	5.0	-255.1	-5,102.0%	-168.8	-1.20	-2.1	144.4	-2.8	-29.4	0.00	
2022E	150.2	-114.9	-76.5%	-72.1	-0.26	-6.1	3.8	-4.9	-16.9	0.00	
2023E	206.7	-13.8	-6.7%	-46.3	-0.12	-13.2	3.0	-44.6	-10.8	0.00	
2024E	202.6	-13.8	-6.8%	-10.3	-0.13	-12.3	3.1	-45.2	-2.4	0.00	
Market cap, SEKm				427	Gearing 2022E, %				44.0	CAGR EPS 2021-24, %	-52.2
Net debt 2022E, SEKm				141	Price/book 2022E				1.3	CAGR sales 2021-24, %	243.5
Enterprise value, SEKm				568	Dividend yield 2022E, %				0.0	ROE 2022E, %	-22.1
Total assets 2022E, SEKm				579	Tax rate 2022E, %				-0.1	ROCE 2022E, %	-9.1
Goodwill 2022E, SEKm				0	Equity ratio 2022E, %				55.3	PEG, P/E 22/CAGR	0.1

All the important disclosures can be found on the last pages of this report.

Investment summary

Endomines is a mining company operating in Finland and in the United States

Endomines is a mining company active in exploration, development and mining of gold deposits in Finland and in the United States. The company was founded in 2005 and employs 72 people (31.12.2021). The company's Pampalo mine located in Eastern Finland is currently in production with targeted volume of 10 000 – 11 500 ounces of gold per annum. Endomines other Finnish assets consists of exploration and development projects along the Karelian Gold Line. Endomines United States asset portfolio consists of several mine projects and processing facilities in Idaho and Montana.

The market environment has been favorable for the last two years

The gold market price has developed favorably during the recent years driven by low interest rate environment and heightened global uncertainty. Gold spot price is currently trading at little under USD 1700 per ounce, substantially higher than the levels of USD 1000 – 1400 per ounce seen during 2014-2019. The gold price development in the very near-term has been unfavourable due to interest rate hikes after the zero interest rate period, despite gold being considered a safe haven asset in similar times of macroeconomic uncertainty as currently seen.

Strategic focus is on Finnish assets

Endomines Pampalo mine was put into care & maintenance in 2018 as the market environment did not support continuing the mine operations. Due to the favorable gold price development during the last two years, the company decided to invest into Pampalo mine deepening and subsequent reopening of the mine and mill. The work was finished in late 2021 and the Pampalo mine began producing gold concentrate in Q1 of 2022. The total gold production for the first half of 2022 in Pampalo was 3478 oz. Current ore reserves include 18 400 ounces of gold equivalent of roughly one and a half years of production. The Pampalo mine is open at depth and therefore there is potential to increase the life of mine. The ramp-up of Pampalo underground and East open pit are the focus areas for the company in 2022. For 2022-2023 we estimate that the bulk of production will come from Pampalo deep ore zone and East open pit. In our view, Endomines could commence production in the permitted Karelian gold line satellite deposits rather quickly, but the company has not published any plans for the assets yet and therefore we have not included the production potential into our estimates. The biggest value creation potential lies in the unexplored parts of the Karelian gold line and the company is currently seeking for sources of financing to fund a large-scale exploration campaign during 2023-2024 in the area.

Endomines seeks partnerships and divestments in the United States

Endomines expanded its operations globally in 2018 by acquiring five gold projects from Idaho, United States. In 2020, the company further acquired two high-grade underground deposits from Montana. Endomines has not yet been able to commence any of the projects in the United States, the company's most developed US project, the Friday mine in Idaho, has suffered from difficulties in the ramp-up phase. The idea of the company's new strategy is to seek partnerships and/or divestments in the United States. The company's ability to extract value from the potential partnerships and/or divestments in the United States is essential for the investment case.

Further financing needed to fund the exploration campaign

In our view the company's current liquidity situation is manageable, yet, to execute the new strategy, the company will need additional financing. The company is planning to conduct a wide scale exploration campaign in the Karelian gold line during 2023-2024.

HOLD with a target price of SEK 1.6 (1.7)

We made multiple assumption changes for the company's Finnish asset portfolio driven by the new strategy and promising drill results in Pampalo. The adjustments are outweighed by revisions to gold price estimates due to the souring gold market sentiment.

Company overview

Endomines is a mining company active in exploration, development and mining of gold deposits in Finland and in the United States. The company was founded in 2005 and is headquartered in Stockholm, Sweden with shares traded on Nasdaq Stockholm and Nasdaq Helsinki.

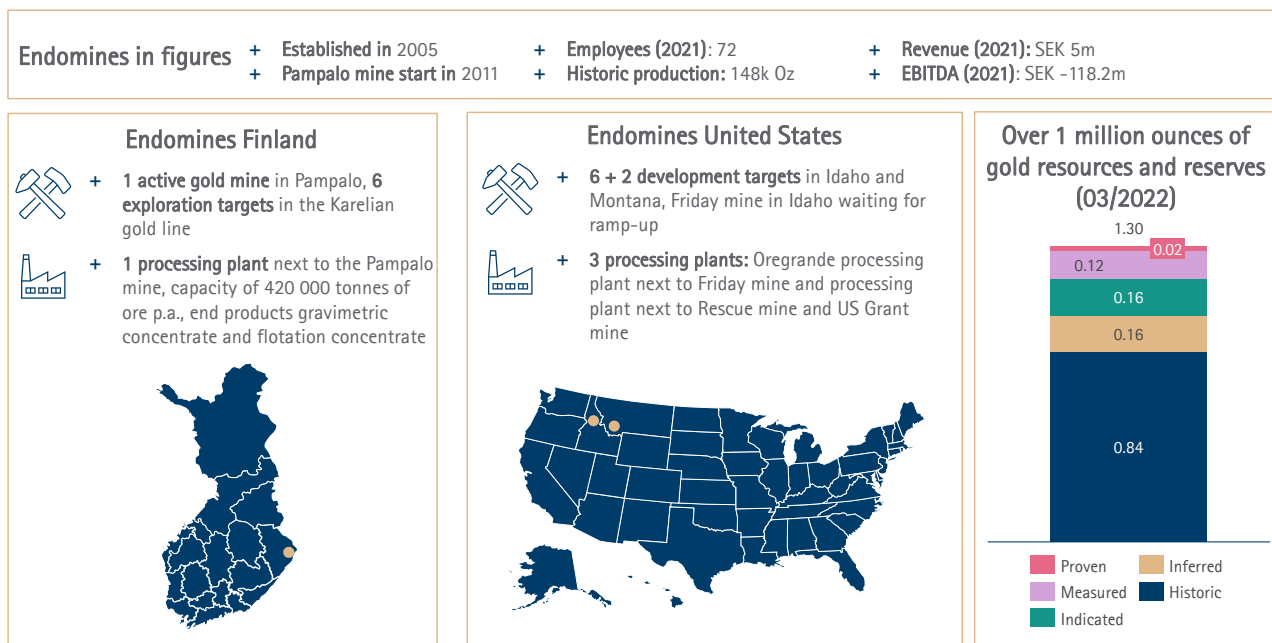
Pampalo mine in production with 420tpa processing facility

During 2005-2011 the company developed Pampalo mine which began production of gold in 2011. The Pampalo mine was active during 2011-2018, after which it was put into care & maintenance because of low gold market prices. The company also owns a processing plant at the Pampalo site, current processing capacity of the plant is 420 000 tonnes of ore per annum. In addition to the Pampalo mine and processing plant, the company holds exploration rights for 40-kilometre-long greenstone belt in Eastern Finland ("Karelian Gold Line").

The ramp-up of Friday has not gone according to plan which has slowed down the company's overall development

In 2018, the company acquired TVL Gold, which held rights to five gold projects in Idaho. The acquired assets in Idaho are situated in three different mining districts: Orogrande, Warren and Marshall Lake mining districts. The Friday mine is the most developed asset in the company's Idaho asset portfolio. Endomines continued acquiring assets in United States in 2020; the company acquired two mines and a processing plant in Montana. Endomines has not been able to produce gold in significant quantities after 2018 as Pampalo was put into care and maintenance and the ramp-up of the acquired Friday mine has not gone according to plan. Because of the lack of production, the company has been in constant need of external financing to be able to finance its project development. During the last few years, Endomines has issued new shares multiple times and agreed to several high interest loan facilities. As the company's financial resources are limited, the current focus is on Pampalo production ramp-up and development and exploration in the Karelian gold line which is supported by the current gold market prices.

Figure 1: Endomines overview



Source: Evli research, Endomines

Endomines focus is on assets with limited CAPEX requirements and short time to production

The company's strategy is to develop assets in its asset portfolio ranging from early-stage exploration targets to producing mines, the core idea of the strategy is to create value by developing and de-risking the projects. Endomines focuses on assets located in tier 1 mining jurisdictions which are possible to get into production quickly and require limited amount of capital expenditure for ramp-up. In our view, this is a core strength of the company, especially, as it is currently dependent on external financing to finance the asset development. Historically the company has operated its assets by itself but is currently also investigating partnership options especially for its assets in United States. The company's strategic goal is to define a deposit with over 1 million ounces of resources and reach yearly production of 100 000 Oz in the long-term.

Figure 2: Endomines SWOT-analysis

<p>Strengths</p> <ul style="list-style-type: none"> + Pampalo in production with functional processing facility able to process ore from nearby deposits + Assets with short time to production and limited capital expenditure requirements + Assets located in tier-one jurisdictions + Half of the satellite deposits in Finland have environmental permits 	<p>Weaknesses</p> <ul style="list-style-type: none"> + Lackluster profitability track record + Low head grades and high cash cost in Pampalo + Majority of the current resource base classified as historic with low geological confidence and knowledge + Majority of the assets in early development phase
<p>Opportunities</p> <ul style="list-style-type: none"> + Pampalo life of mine increase + New resources through exploration of the unexplored areas in the Karelian gold line + Partnerships and/or divestments in United States + Transforming resources classified as historical to comply with modern standards 	<p>Threats</p> <ul style="list-style-type: none"> + Cost inflation + Issues in project ramp-up + Availability and terms of financing + Gold price weakening + Issues in permitting of the unexplored areas in the Karelian gold line

Source: Evli research, Endomines

Strategy update

The company published its new strategy in August 2022

The company's new strategy was published in August 2022 concurrently with the company's first half 2022 report. The update was expected as the company communicated on the upcoming strategy update already during Spring. In May 2022, the company released a plan to re-open the Pampalo East open pit, this was the first step in the company's new strategy which focuses on Pampalo and the Karelian gold line. The core of the new strategy is both production and exploration activities in the Karelian gold line.

Endomines updated strategy in brief:

- Pampalo production: Pampalo acts as the foundation for the business.
- Development of the other Karelian gold line assets: Better utilization of the Pampalo processing plant by increasing feed from other deposits along the Karelian gold line.
- Exploration activities along the Karelian gold line: Long-term goal is to define a deposit with over 1 million ounces of resources.
- US operations through partnerships: The company actively seeks for partners in the United States which could advance the projects together with Endomines.
- ESG focus: ESG activities guide the general development of the company.

Pampalo mine as the foundation for the business

Production from the Pampalo mine creates the foundation for the business in the company's new strategy. Pampalo is especially important during the next few years as the company doesn't have other producing assets. The company's management has commented on the possibility to further increase the Pampalo mine life. The current ore reserves in Pampalo represent only roughly two years worth of production based on the current mining rate. Endomines has reported inferred resources of approximately 20 000 oz below the current reserves, this would increase the life of mine by additional two years. The company is also planning to continue the exploration drilling in the deeper sections (below 875 meter level) of Pampalo underground mine and the true mine life is hard to assess at this point.

Development and exploration in the Karelian gold line

Based on Endomines inhouse estimates, there are currently approximately 19 000 ounces permitted among the Karelian gold line in Hosko, Pampalo East and Rämepuro deposits. In addition to these deposits, there are further 26 000 ounces in the Pampalonlammit, Muurinsuo and Korvilansuo deposits. If these resources are compared to the Endomines historic production and guidance, the resources represent roughly 4-5 years of production. The company's long-term target is to define a deposit with over 1 million ounces of resources in the Karelian gold line, a bold target that requires a lot of greenfield exploration work of which successfulness is hard to assess at this point. Endomines has identified Korvilansuo (located roughly 20km south of Pampalo mine) as one of the most interesting exploration targets in the gold line with historical samples containing over 6 grams of gold per ore ton, Exploration drilling is expected to start during H2 2022 in the Korvilansuo area.

The updated strategy is logical but decreases visibility

The new strategy clearly sets the company's focus back to Finland. In our view the new strategy change is logical as the company has faced issues in the ramp-up of the US operations and the Karelian gold line remains largely unexplored. However, the visibility into the future of the company decreases as both the future production in Pampalo and other Karelian gold line projects depends on the company's ability to find new resources and reserves. As the company's focus shifted to Finland, Endomines switched their approach in the United States from owner and operator model to partnership model. The switch decreases the visibility as the future cash flows from these possible partnerships depend on the terms of the agreements. In addition, the company is more dependent on gold prices as the focus is currently on lower grade and higher cash cost deposits

(Karelian gold line), rather than higher grade and lower cash cost deposits (Friday, US Grant, Kearsarge, Rescue).

Asset portfolio

The project portfolio is heterogenic

Endomines owns gold mining assets in every asset lifecycle stage: exploration targets, development projects and producing mines. For a mining project to develop from exploration target to a mine site, the company must conduct geological and engineering work and assess the economic feasibility of the deposit. In the process, mineral resources are turned into reserves as the economical and geological confidence increases.

Mineral resources and ore reserves are the basis for future production

Mineral resources and ore reserves: Mineral resource is defined as concentration or occurrence of solid material of economic interest that has reasonable prospects for eventual economic extraction. Resources are further divided into inferred, indicated and measured mineral resources where inferred resources have the least amount of geological confidence and measured mineral resources the most. Reserves are the economically mineable part of the measured and indicated mineral resources. There are multiple resource classification standards globally, arguably the most used standards are NI 43-101 (National Instrument 43-101, by CIM Canada) and JORC (Joint Ore Reserves Committee Code, Australia).

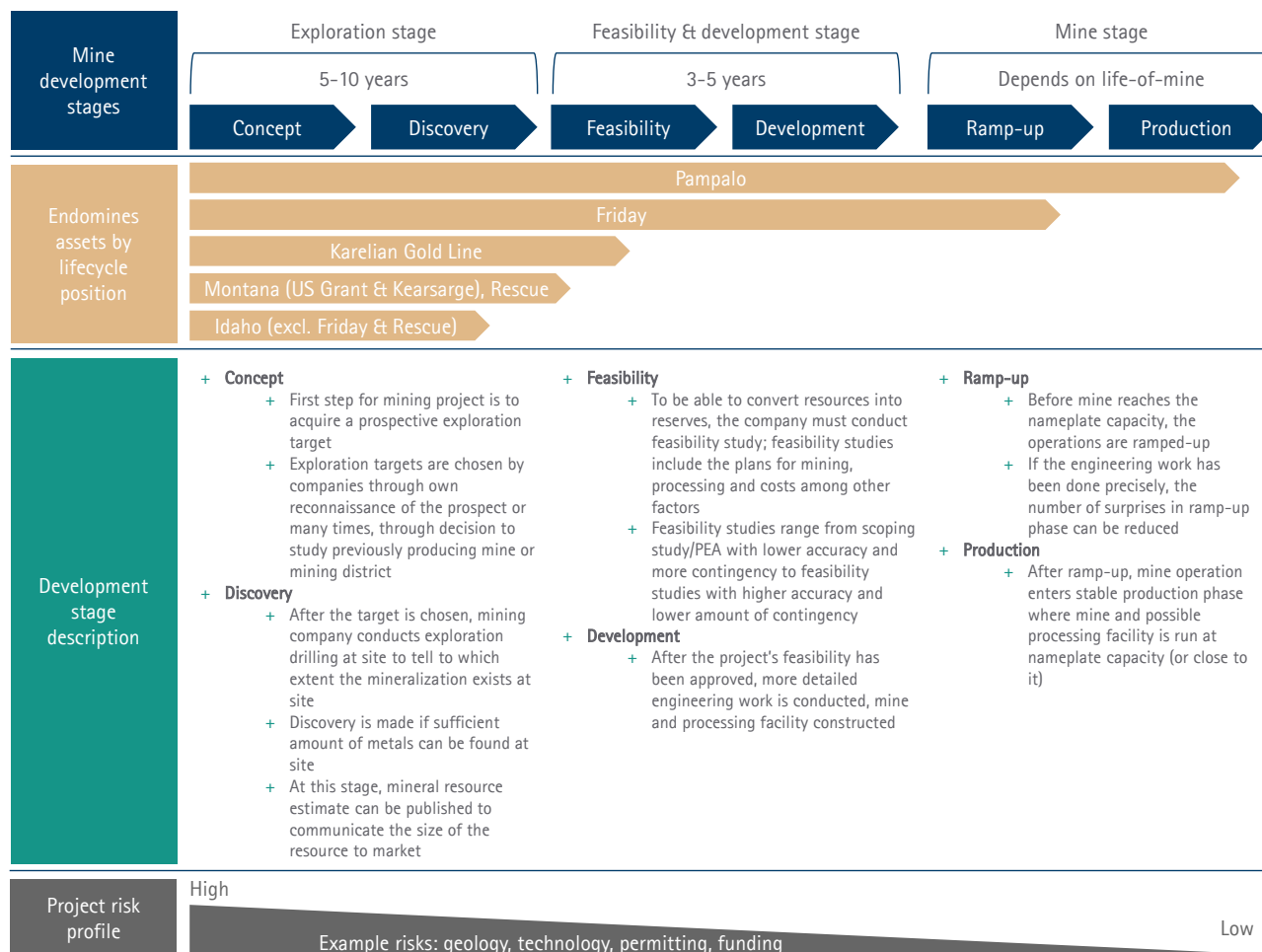
Most of the company's resources are classified as historic

Endomines Finnish resources are estimated according to the JORC-code, Friday & Buffalo Gulch resource are classified according to NI 43-101. Other US assets that the company owns in Idaho and Montana are classified as "historic resources" as a qualified person has not done sufficient work to classify the resources according to the NI 43-101 code. Even though the company has commented that the historic resources appear to be in general accordance with NI 43-101 standards, they do not fully comply with modern standards and therefore contain the highest amount of geological risk. Resources that comply with modern standards are divided rather evenly between measured, indicated and inferred resource classes. The majority of the measured and indicated resources are located in the Friday and Buffalo Gulch sites in the company's US portfolio. Additionally, the company holds reserves of 18 400 Oz which are situated in Pampalo, this is equivalent to almost two years of production at the rate of 10 000 – 11 500 Oz per annum.

Endomines develops assets throughout the lifecycle

Endomines business model differs from many junior mining companies as it develops assets from the exploration phase all the way to the production phase. Typically, exploration companies do not develop assets to production phase, rather, most of the exploration companies develop the project to feasibility stage where they sell it to a mining company. The project generally requires more capital as it progresses through the development lifecycle which small exploration companies typically lack. Additionally, the required skill set is very different in exploration when comparing to mining operations.

Figure 3: Endomines asset lifecycle



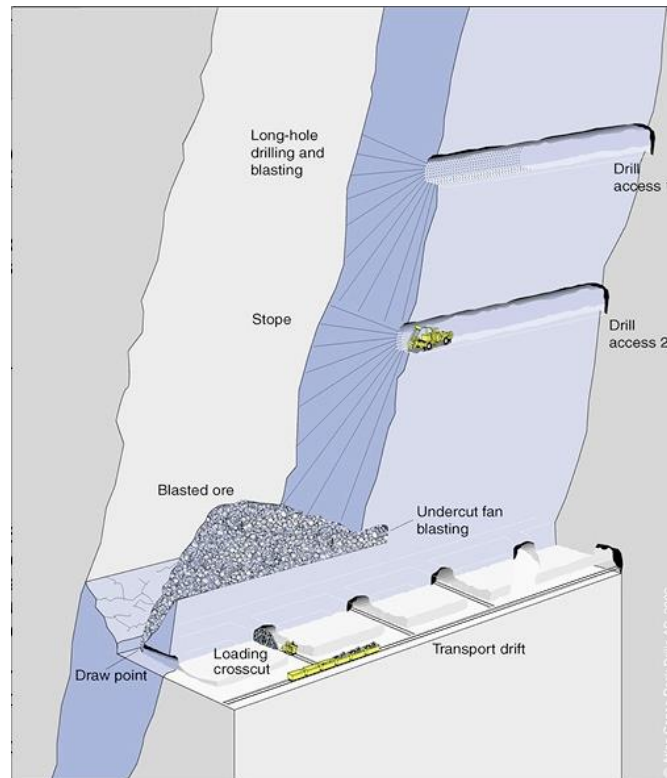
Source: New Age Metals, Evli Research, Endomines

Endomines has both open pit and underground projects

Open pit mining is used to exploit near surface deposits; the deposits that exist near surface are economically more feasible to mine with an open pit as opposed to an underground operation. The advantage is based on few attributes: powerful load, haul and dump vehicles can be used to move large volumes and much larger equipment can maneuver in open pit. These factors lead to faster production in an open pit operation. In addition to the productivity factors, an open pit mine is much faster to setup and typically demands lower initial investment cost. Average grade for an open pit gold mine is roughly 0.5-1.5 Au g/t, while, average grade for an underground gold mine is roughly 5.0-9.0 Au g/t. Buffalo Gulch, Deadwood, parts of Pampalo and the Karelian Gold Line satellite deposits are designed to be extracted via open pit method. The Idaho open pit deposits are relatively low grade as Buffalo Gulch average grade (M+I+I) is roughly 0.5 Au g/t and Deadwood historic resource grade is 0.8 Au g/t. The open pit deposits located in Finland are of higher grade; Karelian Gold Line deposits have average grade (M+I+I) of 1.6 Au g/t and Pampalo open pit assets 1.2 Au g/t. Underground mines use different mining methods to extract the ore, including for example block caving, cut-and-fill, room-and-pillar, and stoping mining methods. The mining method chosen depends on the geology of the deposit. Most of the Endomines asset portfolio, roughly 3/4 can be considered as underground deposits. Pampalo underground mine uses mainly sublevel stoping mining method, cut-and-fill mining method is only used in the Northern ore lense where the ore is associated with talc. The grade of the deposit prevents wider use

of the higher cost cut-and-fill mining method, which requires cemented fill. Long-hole sublevel stopeing is the most common mining method in Finland, it is suited for an ore body that is very tall and vertical or steeply dipping. In long-hole sublevel stopeing, the ore body is divided into sublevels roughly 15-40 meters from each other. The ore is blasted from the different sublevels and removed from one level at the bottom.

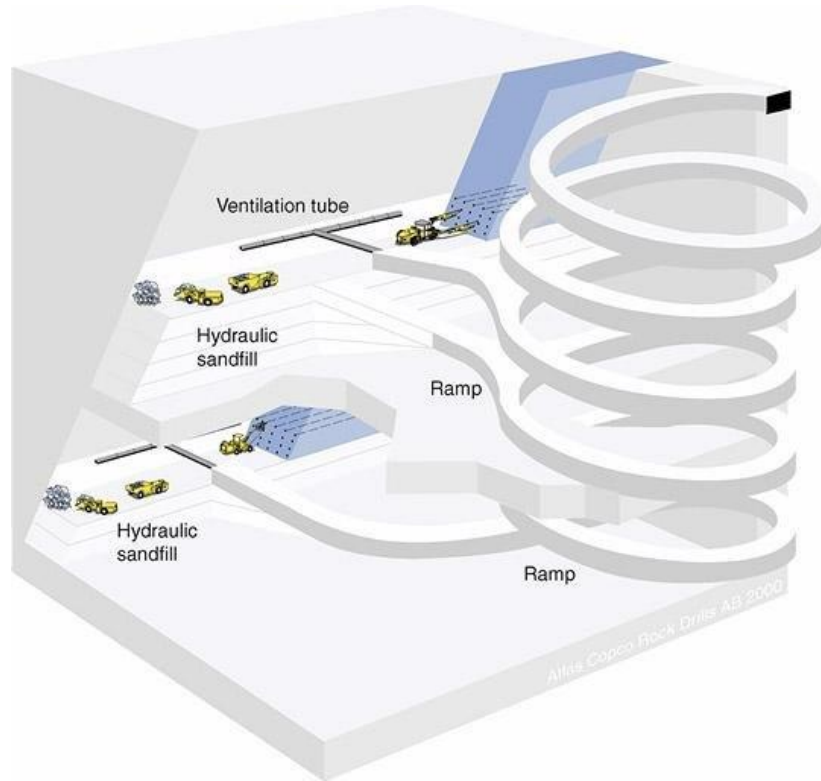
Figure 4: Example of long-hole sublevel stopeing mining method



Source: Atlas Copco

The Friday mine is designed to use the cut-and-fill mining method. The original plan according to the 2017 preliminary economic assessment (PEA) was to use shrinkage stopeing, which was widely used in North America until mid-1990s. The shrinkage stopeing method was replaced by other mining methods mainly due to health and safety concerns and new improved technology. According to the company, the benefits of the mining method change to cut-and-fill include increase in production over the life of mine, lower OPEX, improved safety and acceptance. The negatives of cut-and-fill when comparing to shrinkage stopeing include lower grade of production during the first year of production, longer ramp-up and increased need for working capital and sustaining CAPEX during the early stages of production. The cut-and-fill mining method removes ore in horizontal slices, typically from bottom up. The personnel and equipment working in the development level are supported by backfill underneath.

Figure 5: Example of cut-and-fill mining method



Source: Atlas Copco

Endomines uses conventional processing methods

The processing method depends on the quality and characteristics of the ore mined. Gold processing methods can be divided into concentration and cyanidation. Generally, cyanidation is a processing method used in low-grade ore deposits. Due to the highly poisonous nature, usage of cyanide is banned in many jurisdictions, for example state of Montana was the first US state to ban usage of cyanide at open pit mines in 1998. The low-grade open pit ore deposits in Idaho; Buffalo Gulch and Deadwood, are designed to use heap leaching processing method. Permitting is difficult for the heap leach assets mainly because of the cyanide used in the process, therefore Buffalo Gulch and Deadwood are further down in the company's development pipeline. Concentration methods include gravity concentration and froth flotation. Both concentration methods are used in the Pampalo and US Grant processing facilities. Orogrande processing facility uses froth flotation concentration method. In brief, the gravity concentration method relies on using gravity separators to separate particles based on their density while froth flotation relies on floatation machines to separate particles based on their hydrophobic nature.

Finland

Pampalo

Pampalo mine has been owned by multiple different companies throughout its history

The Pampalo gold mine is located in Eastern Finland, approximately 45 kilometers northeast of the municipality of Ilimantsi. Pampalo was first discovered by the Geological Survey of Finland (GTK) in 1990. After the initial discovery, Outokumpu Mining was the owner of the deposit from 1994 to 2003 until Dragon Mining (Polar Mining at the time) purchased the deposit. Dragon Mining held the deposit for less than five years as Endomines acquired the deposit in 2007. The first section of the Pampalo underground tunnel was mined during 1997-2003 by Outokumpu. Before the underground mine, Outokumpu operated the Pampalo open pit until 1998. Endomines commenced production in February 2011 after the mine construction project was completed in December 2010.

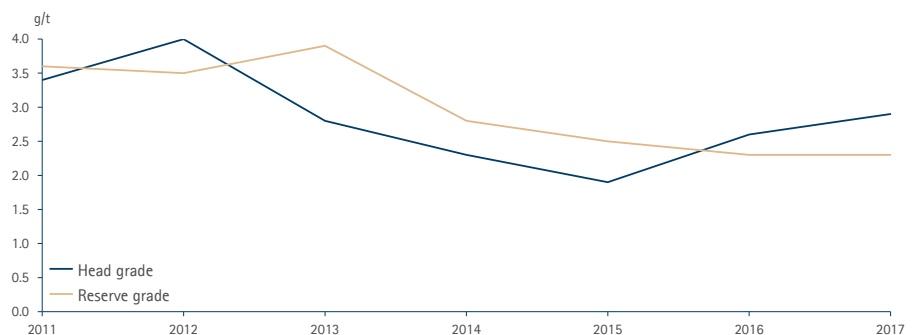
Production from 2011 to 2018, care and maintenance from 2018 to 2021

Endomines has historically produced approximately 10 000 to 20 000 ounces of gold per year from the Pampalo mine. Head grades have typically been between 2-4 gold grams per tonne of ore. The asset was put into care & maintenance in 2018 as the gold price levels at the time did not allow for economically feasible mining operation and did not support the investment needed to deepen the mine to a new production level. In 2019 gold prices started to increase from the low levels seen during 2015-2018 and in January 2021, Endomines started planning and preparations for the mine deepening because of the favorable price development.

Current market prices made production in the East open pit and investment into mine deepening profitable

Endomines had calculated that by deepening the mine some 100 meters, it could access deep ore zones where start-up of the production could be feasible at gold prices above 1500 USD per ounce. The first production area of the deep ore zone was reached in November 2021 and ore production was started; during Q2 2022 Endomines' gold production from the mine amounted to 2 227 ounces. In May 2022, the company announced that it will start production in the East pit. The ore in the East pit is significantly lower grade when comparing to the underground mine (1.2g Au/t vs. approx. 3.0g Au/t at the underground mine). Mining such low-grade ore is justified because of the current high spot gold prices and because open pit mining operations have generally lower cash cost. According to the company, mining operations in the East open pit will increase gold production by 10-20% annually.

Figure 6: Pampalo head grade vs. Pampalo reserve grade, 2011-2017 (reserve grade status at the start of the year)

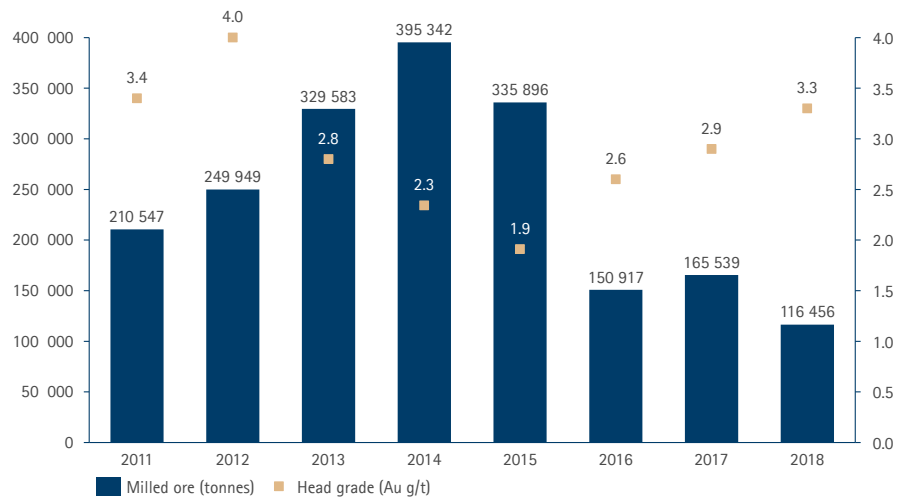


Source: Endomines, Evli Research

Pampalo processing facilities capacity is 420 000 tonnes p.a.

The company owns a processing facility at the Pampalo site capable of processing ore from both the Pampalo mine and possible other satellite mines in the Karelian gold line that the company could commence in the near future. Construction of the Pampalo processing plant was completed in 2009, maximum capacity of the plant is 420 000 tonnes of ore per annum. The ore is processed with conventional processing technologies. The ore from the mine is transported first to the crusher where it is crushed into smaller grain size (under 13 millimeters). After crushing, the ore goes through milling where it is milled into <0.1mm grain size. After milling, based on grain size, the material is led to gravity or froth flotation from which it is finally moved into concentrate storage after dewatering.

Figure 7: Pampalo milled ore tonnes & head grade 2011-2018

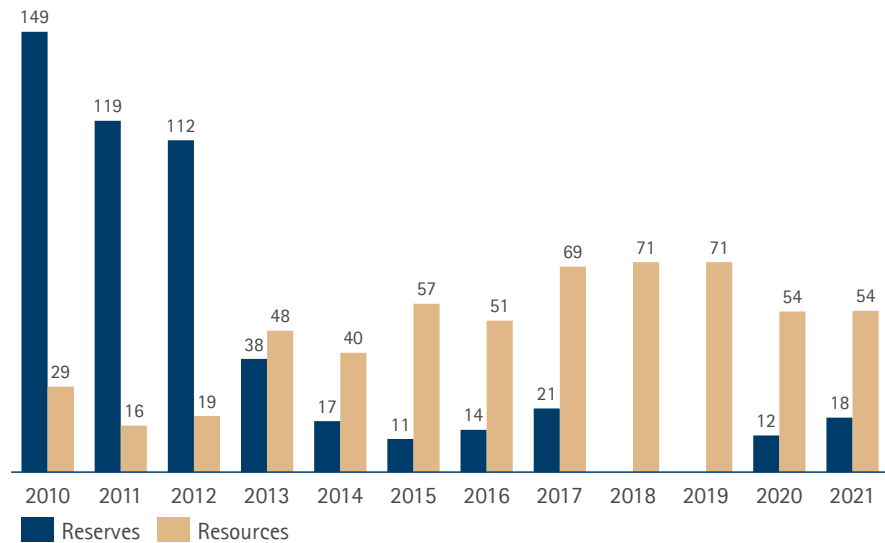


Source: Endomines, Evli Research

Geological work has been conducted by the previous owners

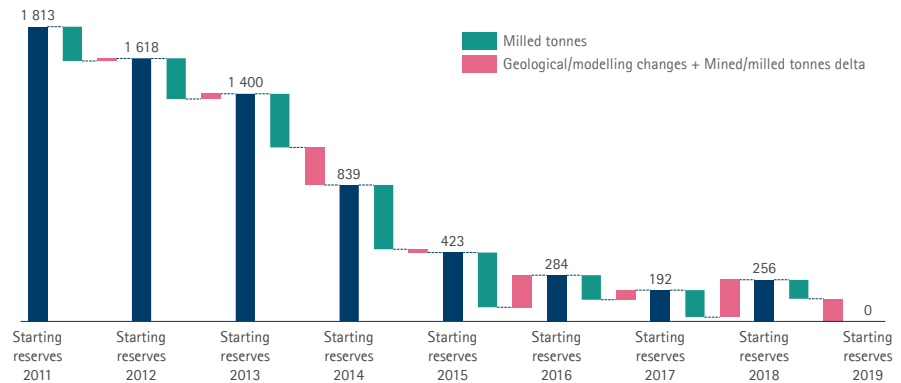
Pampalo, like the company's other projects in Finland, is located among a 40-kilometer-long section of the almost 300-kilometer-long Ilomantsi-Kostamuksha greenstone belt. After the initial discovery by GTK, Outokumpu Mining acquired the deposit in 1994. During the ownership period from 1994 to 2003, Outokumpu conducted core drilling at site as hundreds of holes were drilled both from surface and underground (approximately 12 780m of core drilling in total) and, as a result of the drilling, mineral resources were defined for the first time in Pampalo. Outokumpu also carried on a feasibility study in Pampalo and defined the first ore reserves at site. Construction of the Pampalo underground decline was initiated by Outokumpu in 1997. Dragon Mining (Polar Mining at the time) acquired the deposit from Outokumpu in 2003. Core drilling was continued during Dragon Mining ownership but to a lesser extent. Endomines acquired the deposit in 2007, the company has conducted extensive drilling and other detailed geological work at site since the acquisition. In 2018, the remaining reserves at the time were depleted, the Pampalo mine was put under care & maintenance from 2018 to 2021 and there was limited amount of geological work done at the site.

Figure 8: Historic development of Pampalo mineral resources and ore reserves 2010-2021, in thousands of ounces



Source: Endomines, Evli Research

Figure 9: Pampalo + Karelian Gold Line reserve development 2011-2019, in thousands of ore tonnes



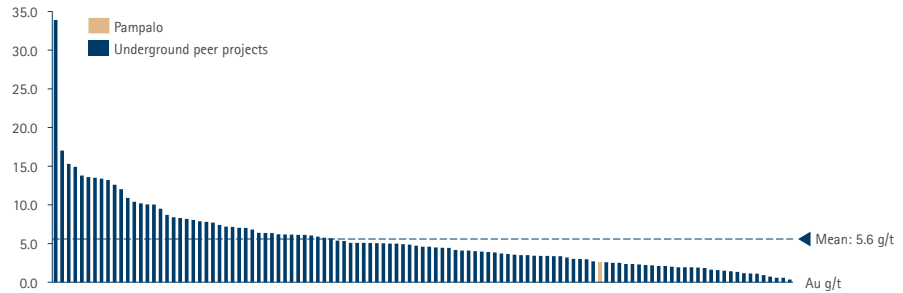
Source: Endomines, Evli Research

Underground drilling is conducted simultaneously with mining to identify the geology in the next production level

The total life of mine potential of Pampalo underground mine is hard to assess as Endomines conducts underground drilling simultaneously with mining to identify the geology in the next production level. This is cost effective for the company as there is no need to invest into an exploration tunnel but decreases the visibility beyond the next production level. During 2021, the company conducted a diamond drilling program to outline the ore quality and quantity between the mine levels 755 and 815, the results were positive as the sample contained some of the highest-grade gold intercepts ever received at the Pampalo mine. Due to the good drilling results, the company updated the Pampalo reserve estimate in March 2022. The updated estimate increased ore reserve tonnage by 23% and ounces contained by 49%. Most of the increase came from drilling previously undrilled extension of the southern ore body. There are currently 18 400 Oz of reserves at 3.6g Au g/t and 54 186 Oz of resources at 2.5g Au g/t. In addition to the updated reserves, Endomines announced that inferred resource of 122,000 tonnes with a grade of 5.2 Au g/t gold for 20 600 ounces gold has been reported for the area directly below the ore reserves. In August 2022, Endomines reported promising drill results below

the current ore reserves, total of 53 drills holes and 4330 meters were drilled between the 815 and 875 mine levels. The drill results were promising as the widths and the grades were similar to the current production level (755-815). The Pampalo deposit continues to be open at depth and therefore there is still potential for new discoveries and increase in life of mine. The company plans to conduct underground infill drilling between 815 and 875 levels and update its mineral resource estimate during the H2 of 2022.

Figure 10: Pampalo mineral resources and ore reserves average grade vs. average grades of operating underground gold mines located in tier-one jurisdictions



Source: Evli Research, S&P Mineral Intelligence

The current Pampalo resources are of rather low grade when comparing against mine stage underground gold projects in North America, Europe, Australia and New Zealand (5.6 Au g/t vs. Pampalo reserves at 3.6g Au g/t and 54 186 Oz of resources at 2.5g Au g/t). The open pit grades for the mine stage gold projects in North America, Europe, Australia and New Zealand are approximately 1.9 Au g/t, approximately 60% higher when comparing to Pampalo East open pit.

Karelian Gold Line

Karelian Gold Line open-pit assets could be brought to production quickly with low capital costs

Endomines other Karelian assets are located in the same gold line as Pampalo, both in the North and South side of the Pampalo mine. The Rämepuro satellite deposit was in production from 2014 to 2016 producing nearly 170 000 tonnes of ore. Endomines has carried out a pilot plant processing test for the Hosko deposit. Major benefit for company's operations in the Karelian gold line is that the Pampalo mine and its processing plant is situated approximately at the middle of the gold line. Because of similar geology, ore from the Karelian gold line satellite deposits could be processed in the Pampalo processing facility. If a good enough deposit is found, the company could also consider constructing another processing facility in the Karelian gold line. Three of the six targets in Karelian gold line have environmental permits (Hosko, Pampalo East and Rämepuro). As the deposits already have the essential infrastructure (processing facility in Pampalo, roads throughout the gold line) and half of the deposits have environmental permits, the company could commence mining operations in the Karelian gold line fast and with low capital costs. The initial plan is to utilize open pit mining in the projects situated in Karelian gold line, because of this, we estimate that the operational expenditures should be similar to the Pampalo open pit.

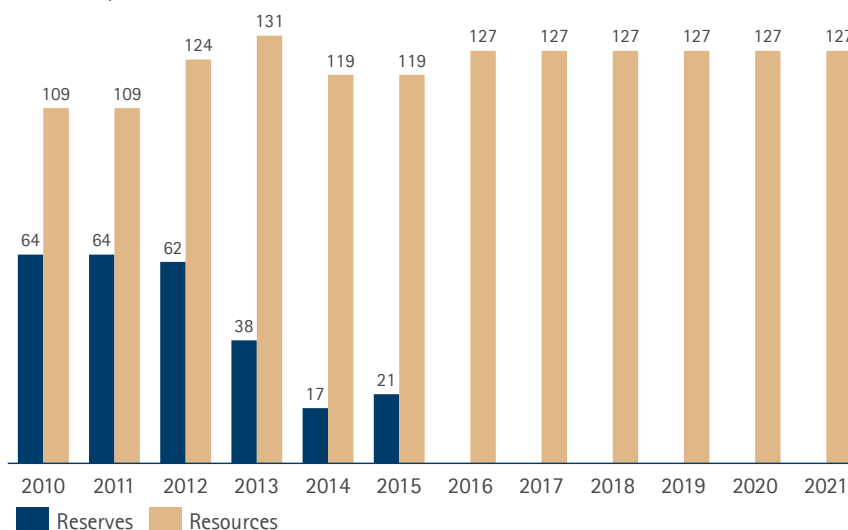
Current M+I resource 56k Oz with further exploration potential

Current measured and indicated resources in the other Karelian projects (excl. Pampalo) are 56 204 oz of gold at 1.6 Au g/t. The grades in other Karelian deposits are similar to grades seen in the Pampalo open pit. Most of the measured and indicated resources in the Karelian gold line are located in Hosko and Muurinsuo deposits. Endomines expects to update the resource estimate for other Karelian gold deposits during 2022, there has been no update in the resources after 2016. The exploration potential of the Karelian gold line is not limited to the deposits with current identified resources; Endomines has multiple exploration targets along the gold line and the area remains still largely unexplored.

New strategy shifted the focus to Karelian gold line

The new strategy released in August 2022 shifted the focus to the known satellite deposits and the exploration potential in the Karelian gold line. The company's long-term goal is to define a deposit with more than 1 million ounces of gold resources in the gold line. The company aims to achieve this goal by focusing strongly on exploration efforts; the company commenced a drilling campaign in August and is currently investigating potential sources for financing to fund a large-scale exploration campaign during 2023-2024. The company started producing ore from the Pampalo East open pit already during August, after the East pit, Rämepuro and Hosko are the most developed satellite deposits which both have environmental permit already in place.

Figure 11: Historic development of Karelian gold line mineral resources and ore reserves 2010-2021, in thousands of ounces



Source: Endomines, Evli Research

Endomines expanded operations in Ilomantsi

In September 2022, the company reported that it has been granted an exploration reservation to the historic Huhus Zinc-Lead and iron prospects in the Ilomantsi area. The Huhus deposit is situated 32 kilometers southwest of the company's Pampalo mine and therefore located within the gold prospective Ilomantsi Greenstone Belt. There has been historical exploration drilling in the area conducted by Outokumpu Oy among others. The historical exploration activity has not focused on gold and therefore the deposits potential for gold is still unknown. The old drill cores are located in the GTK's national archive in Loppi, the company's plan is to re-assay the historical drill cores, compile existing information and prepare a new geological model of the deposit. The exploration reservation is valid for two years and it gives the right to apply an exploration permit. We see the move logical as the deposit is located near the company's current operations in the Karelian gold line and the gold potential has not been adequately assessed by the previous owners. In addition, because of the existing information and drill cores, we see that assessing the potential of the Huhus deposit will require limited amount of the company's resources.

United States

Endomines entered United States in 2018 by acquiring assets in Idaho

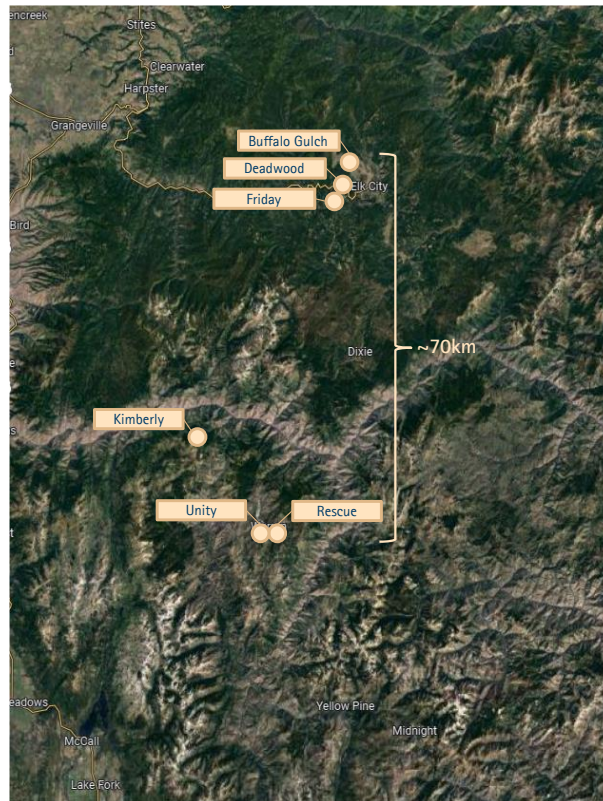
Through acquisitions and agreements, Endomines has developed a project portfolio in United States that consists of six projects in Idaho; Buffalo Gulch, Deadwood, Friday, Kimberly, Unity and Rescue (of which Unity is under lease contract) and two projects in Montana; US Grant and Kearsarge (of which Kearsarge is under lease contract). Endomines expanded its operations in 2018 as it acquired five gold projects in Orogrande, Warren and Marshall Lake Mining Districts located Idaho, United States for a total consideration of USD 31.3m. In 2019, the company entered into a lease agreement with GoldSilver mines to lease the Unity mine located in the Warren district of Idaho. Unity is located close to the company's Rescue deposit. Additionally, in late 2020, the company announced acquisition of US Grant & Kearsarge deposits in Montana, USA. Assets were acquired from Transatlantic Mining Corporation, total consideration amounted to approximately USD 12.4 million. The company has not been able to advance the projects located in United States to a full-scale commercial production.

Idaho

Endomines owns assets in various development stages

Endomines acquired the Idaho project portfolio from TVL Gold in 2018 for a total consideration USD 31.3m. Half of the company's assets in Idaho are spread out along the Orogrande mining district with Buffalo Gulch at the northern end and Friday at the south. Rescue and Unity are located in the Warren mining district and Kimberly project is located in the historic Marshall Lake mining district. Historically Idaho has been very active location for hard rock gold mining, and it hosts number of historical mining districts. The company's project portfolio in Idaho is very heterogenic as the projects are at various different development stages. Friday and Buffalo Gulch have resource estimates that are conducted in accordance with the NI 43-101 code.

Figure 12: Location of Endomines Idaho assets



Source: Endomines, USGS, Evli Research

Friday

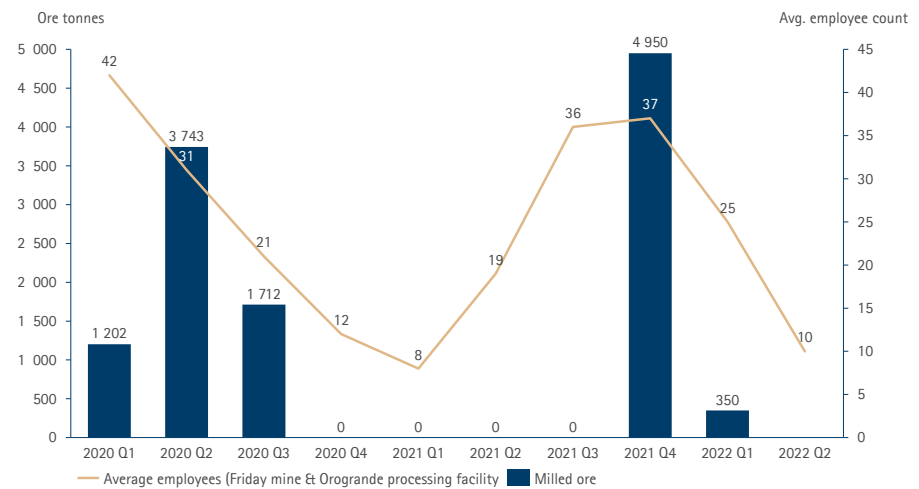
Friday is situated in the middle of the company's Idaho asset portfolio

Friday is an underground deposit situated in the middle of the company's five owned projects in Idaho. According to Endomines, Friday's planned production is approximately 7 000 - 9 000 ounces of gold p.a. and life-of-mine is approximately 7 years. When comparing to Pampalo mine, Friday is expected to have much higher head grades (approx. 8g/t vs. 3g/t), higher recoveries (>90% vs. 83-84%) and lower cash cost (650-900 USD/Oz vs. approx. 1200 USD/Oz).

Friday ramp-up has been delayed multiple times

During the last few years, Endomines has focused its efforts on Friday in the United States because of its later-stage development status. The original plan was that the mine would be commissioned in December 2018 and that the ramp-up would take place during early 2019. In Q3 2020, mine and processing facility (mine in July 2020, Orogrande Processing Facility in October 2020) was put under care and maintenance. The main issue at the time was related to water management in the processing facility as the tailings dewatering system encountered a breakdown and no replacement equipment was found that could match the design. At the end of 2020, the company decided to impair Friday assets by SEK 25.8m because of the delayed ramp-up. In early 2021, the company was able to replace the dewatering system with a low-cost solution which did not require new permitting. In late 2021, the Friday project faced more headwinds as the ore drilled during mining of the first stopes appeared to be more irregular than was originally planned. Because of the additional issues Friday project faced in 2021, the company further impaired the asset at the end of 2021 by SEK 73.8m.

Figure 13: Friday milled ore tonnage and average employee count 2020-2022



Source: Endomines, US MSHA, Evli Research

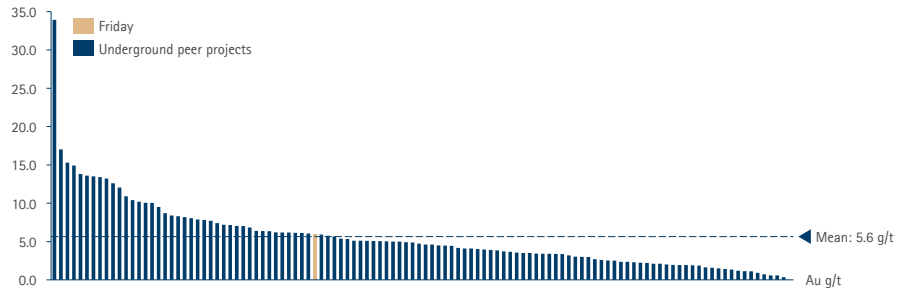
Ore irregularities in Friday shifted the focus back to Pampalo

In May 2022, the company's management commented that more infill drilling has to be conducted for mine planning purposes. Because of the company's limited resources, the focus is currently shifted from Friday to Finland. Employment data from US MSHA supports the shift as average employment hours during Q2 2022 were down nearly 50% for the mine and nearly 30% for the Orogrande processing facility. As the company updated its strategy in August 2022, the management commented further that the mine will be placed under care & maintenance and only a small number of employees will be kept at site. Endomines focus on Friday is currently solely on finding the potential partners for the mine and/or the processing facility.

First gold discovery in the 1850s

The project is situated at the juncture of the Orogrande shear zone and the Petsite shear zone. Gold was first discovered in the Friday project region in the 1850s. During the more recent history, Bema Gold began an intensive exploration programme at Friday site in the 1980s. In the 1990s, further exploration drilling was conducted at the Friday site by Idaho Consolidated Metals Company, Cyprus Gold Exploration Corporation and Kinross at a cost of approximately USD 2.2m (over 41 000 meters of drilling to date).

Figure 14: Friday mineral resources and ore reserves average grade vs. average grades of operating underground gold mines located in tier-one jurisdictions



Source: Evli Research, S&T Mineral Intelligence

Recovery potential of over 90%

Various prior owners of the Friday project have conducted metallurgical test work of the Friday ore. The most recent metallurgical tests conducted by SGS Canada in 2011 and 2016 suggested that recoveries of over 90% can be achieved. The 2016 tests showed stronger recoveries (average 95.6%) but included only two samples for testing. Friday is fully permitted both for mine operations at site and processing operations at Orogrande processing facility.

Promising drill results in 2022

The current resource estimates include 97 200 ounces of measured and indicated resources and 46 700 ounces of inferred resources. In May 2022, the company released new drill results from the Friday mine; total of eight holes (342 meters) were drilled of which five holes intersected over 8 Au g/t gold mineralization. Five of the drill holes intersected >8 Au g/t gold mineralization extending up to 60 meters below the current mining level. The company will not do additional exploration work in Friday during the second half of 2022 because of the limited resources.

Other Idaho

Endomines project portfolio in Idaho (excl. Friday) consists of five deposits of which four deposits are owned by the company (Buffalo Gulch, Deadwood, Rescue, Kimberly) and one leased (Unity).

Buffalo Gulch is a low-grade open-pit heap leach project

Buffalo Gulch is situated north of the Friday project, it is an open pit project with very low head grades (approx. 0.5g/t). Because of the low head grades, Buffalo Gulch project is designed to use heap leach processing. Heap leaching is a widely used processing technology in nickel, copper and gold production. Heap leaching has proved to be the most economical processing method especially for lower grade ores. In addition to Buffalo Gulch, heap leaching processing method is expected to be used in the Deadwood project with similar geology situated just south of the Buffalo Gulch project. Heap leach processing is more difficult to permit; in 2019 the company expected that permitting process for the Buffalo Gulch and Deadwood open pit projects would take 3-5 years. No modern testwork or feasibility studies have been conducted for Deadwood and Buffalo Gulch. Bema Gold completed a heap leaching metallurgical test in 1987 for Buffalo Gulch which showed recovery percentage of 95% over 32 days of leaching. The Buffalo Gulch and Deadwood deposits are considered to be the furthest from production stage.

Rescue and Kimberly are high grade historically producing underground projects

Both Rescue and Kimberly have been historically producing gold mines with attractive grades. Kimberly was in production in the early 20th century, silver was produced as a side product. Rescue is located in the Warren mining district and Kimberly project is located in the historic Marshall Lake mining district. In addition to the owned projects (Rescue and Kimberly), Endomines entered into a lease agreement with GoldSilver Mines to lease Unity project which is located right next to the company's Rescue project. Endomines pays annual lease cost of 30k USD and 3% net smelter royalty when in production, in addition, according to the agreement, Endomines is obliged to spend USD 500k to development of the project in the first two years of the agreement. The Rescue and Unity deposits are very close to each other and therefore planned to be operated as one mine, Endomines estimates that the annual production could be more than 7 000 oz p.a.

Most of the resources are classified as historic, exploration efforts have been limited and poorly documented

The company has classified the resource estimates of Rescue, Kimberly and Deadwood projects as historical as the estimates have not been conducted according to modern resource estimation standards. The Kimberly and Rescue projects are located south of Friday in the Warren and Marshall Lake mining districts. The assets are drastically different from each other as Kimberly and Rescue are high grade underground deposits (Kimberly historic resources 261 000 tonnes at 19.2 Au g/t and Rescue historic resources 67 000 tonnes at 21.3 Au g/t) and the Deadwood and Buffalo Gulch projects are low grade open pit deposits (Deadwood historic resources 2 375 000 tonnes at 0.8 Au g/t and Buffalo Gulch NI 43-101 compliant resources 8 873 000 tonnes at 0.5 Au g/t). There exists significant exploration potential especially in the higher-grade underground deposits as the exploration efforts have been limited and poorly documented.

Montana

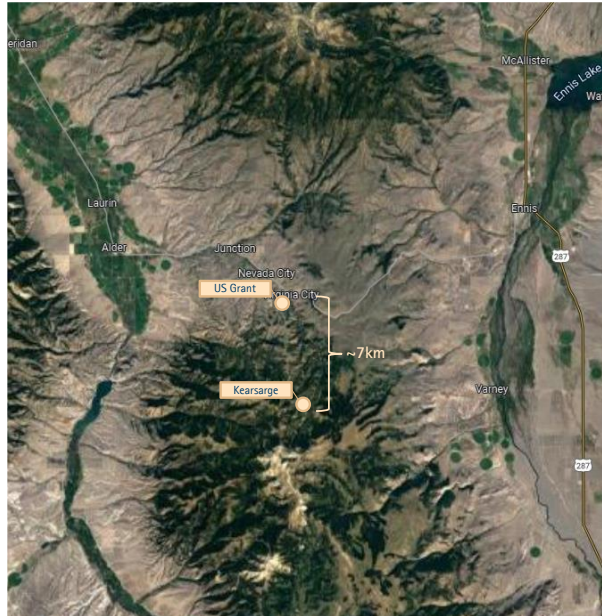
The company acquired Montana asset portfolio in 2020

Endomines project portfolio in Montana comprises of US Grant and Kearsarge projects which were acquired from TransAtlantic Mining Corporation in late 2020. Both the US Grant and Kearsarge underground mine projects are located in the Alder Gulch mining district in Montana. The assets were acquired for a total consideration of USD 12.7m. The US Grant project consists of a group of patented and unpatented claims (5 patented and 28 unpatented claims totaling approximately 2.1 square kilometers) within the Alder Mountain project in the Virginia City Mining District of Madison County, Montana. The Virginia City deposits were first discovered in 1863, the US Grant mine has been active historically for number of periods between 1864 and 1988. The more recent owners have kept the deposit under care & maintenance. The Kearsarge mine consists of 35 patented claims covering approximately 2.8 square kilometers. It is located 8 kilometers south of the US Grant mine.

The Small Miner's Exclusion Statement simplifies permitting in Montana

There exists a gravity and flotation mill on site constructed in 1975 with daily capacity of 150 tonnes. According to the Montana state law, the US Grant mine could be brought online under "Small Miner's Exclusion Statement" or SMES as the area of total ground surface disturbance for the mine operations if less than 5 acres. The SMES is the only permit required for an operation the size and scope of that currently contemplated at the US Grant Mine. The gravity and flotation mill predates the SMES permitting and therefore is not calculated in the area of disturbance for the mine, therefore there is no need for additional permitting for the mill unless its footprint exceeds the original plan for the mill's capacity. According to the company, the SMES permitting for the US Grant project has expired and has to be applied for again.

Figure 15: Location of Endomines Montana assets



Source: Endomines, USGS, Evli Research

Prior owner has conducted PEA on US Grant based on 3.6 year LoM

Based on a preliminary economic assessment (PEA) report published in 2016, mine life of US Grant is 3.6 years and gold production over life of mine 21 959 Oz. The report estimates that total recovery would be 86.5% and gold head grade roughly 4g/t on average. All-in-sustaining-cost for US Grant was estimated at 905 USD per gold ounce. The PEA was based on only 4 500 Oz of Measured + Indicated resources and 30 000 Oz of Inferred resources, these resources represent only roughly 20% of the total historic resources in the US Grant mine.

The deposits have not been adequately explored

US Grant and Kearsarge deposits are located in the Virginia City mining district dominated by crystalline metamorphic and related igneous rocks of the Precambrian Cherry Creek Formation. Similar to Rescue, Kimberly and Deadwood, the Montana resources are historic in nature. US Grant historical resources are 346 000 tonnes at 14.9 Au g/t (in addition there are roughly 4.47m ounces of silver according to historic resource estimate) and Kearsarge 4 100 000 at 3.0 Au g/t. US Grant and Kearsarge have exploration potential as both deposits are open to depth and along strike with traceable strike lengths of 1200m and 1000m respectively. The US Grant PEA study conducted by the previous owner concluded that the US Grant Mine property has not been adequately explored as the property has had only a limited amount of exploration drilling during its history.

Market

Supply

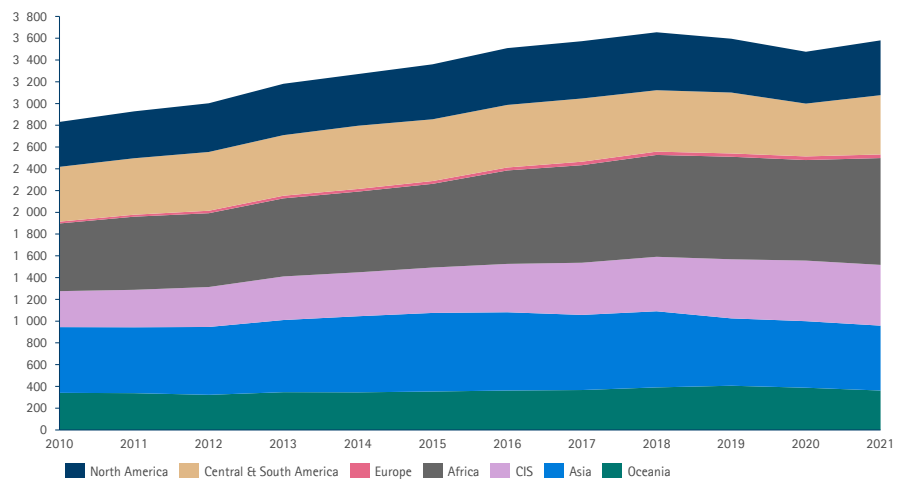
Finland is one of the largest gold producers in Europe, still small in global scale

Finland is relatively active in gold exploration; Finland had the highest gold exploration budget in Europe during 2021 (excl. Russia) with USD 59.8m according to S&P. Finland's share of the global gold exploration budget was just under 1%. In 2021, 14 companies were active in gold exploration in Finland. Agnico Eagle which currently operates Finland's largest gold mine in Kittilä has been the most active in gold exploration. Of Finland's total gold exploration budget of 59.8m USD in 2021, Agnico Eagle's gold exploration budget was 19.3m USD. Other active companies were Rupert Resources, Aurion Resources, B2 Gold, Dragon Mining and Mawson Gold. According to S&P, Endomines gold exploration budget in Finland in 2021 was 0.8m USD or approximately 1.3% out of the total budget. There were seven mines active and producing gold in Finland in 2020: Kittilä (Agnico Eagle), Otso (Otso Gold Corp), Jokisivu (Dragon Mining), Kylylahti (Boliden), Kevitsa (Boliden), Sotkamo (Sotkamo Silver) and Pyhäsalmi (First Quantum Minerals). Out of these seven, only three (Kittilä, Otso and Jokisivu) had gold as the primary commodity produced. To our knowledge, in 2022, there are only three active gold mines in Finland where gold is the primary product: Jokisivu (Dragon Mining), Kittilä (Agnico Eagle) and Pampalo. Finland's share of the global gold supply is very minimal, less than one percent. When comparing to other European countries, Finland has the second highest gold production, slightly behind Bulgaria.

United States was the 4th largest gold producer in the world in 2021

United States has the third highest exploration budget globally with 699m USD in 2021. The most active companies in gold exploration in United States are global gold mining industry giants such as Barrick Gold, Newmont and Kinross. According to S&P, Endomines gold exploration budget in United States in 2021 was 0.4m USD. There are many companies active in gold exploration in both Idaho and Montana and the majority of the exploration activity is focused on areas where gold has been historically produced. According to United States Geological Survey (USGS), in 2021, there were roughly 40 lode mines, several larger placer mines and numerous smaller placer mines in the United States producing gold. Gold mine production in 2021 was estimated to be approximately 180 tons, which is roughly 6% of the total global production. Idaho and Montana have not been the most active states in the recent years for gold mining. To our knowledge, there is currently one gold producing mine in Idaho; Golden Chest mine which is owned and operated by Idaho Strategic Resources. Golden Chest is an open-pit and underground mine with annual production of approximately 5000 Oz of gold and cash cost of 1200 USD/Oz. There are currently no active larger gold mines in Montana, in 2019, the last active mine Golden Sunlight owned by Barrick Gold was shut down. According to the USGS, in 2021, Nevada was the leading gold-producing state producing 74% of the total supply of the United States. In addition to Nevada, Alaska is an important gold producing state.

Figure 16: Development of gold mine supply, 2010–2021, tonnes of gold



Source: Metals Focus, Evli research

European supply growing quickly, albeit from a relatively small base

During 2011–2021, gold mine production increased 2% per year. The highest production increase was seen in Europe, as the production increased over 6% per year. Although growing fast, European production was just under 1% of the total global output in 2021. The world's largest continent for gold production, Africa, increased its production by nearly 4%. Africa produced less than 30% of the global gold output in 2021. The most important African gold producing countries are South Africa, Mali, Burkina Faso and Sudan.

Recycling is an important part of total supply

In addition to production from mining, recycling accounts for approximately 25% of the total supply. The main source of recycled gold (at least 90% according to World Gold Council) is jewellery. Gold recycling is a notably more agile source of gold when comparing to mine production, because of the responsiveness, recycled gold helps to keep the global gold market in balance. During 2011–2021, recycling supply has decreased from over 1600 tonnes in 2011 to over 1100 tonnes in 2021. The decrease is mainly due to decreased gold prices, in 2011, the gold market witnessed nearly all-time high gold prices that reached well over 2000 USD/tonne. According to WGC, gold price is the main driver for recycling as gold price changes account for approximately 75% of annual changes in recycling output.

Demand

Jewellery is the largest end-market, India and China being the most important markets

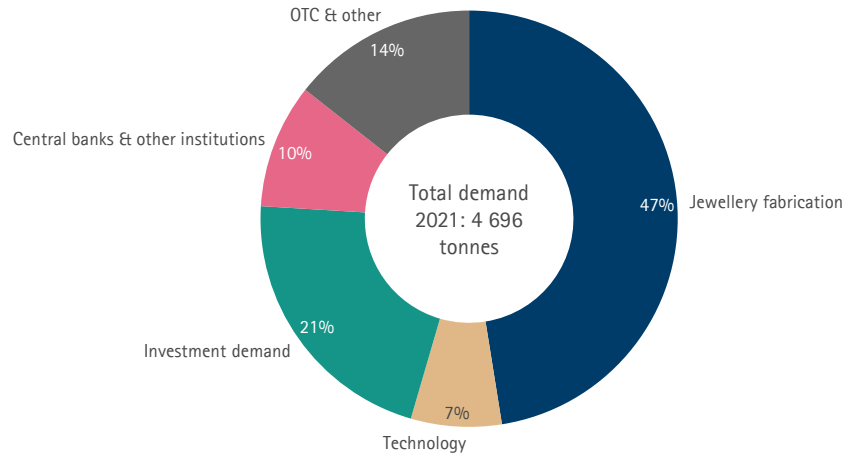
Gold demand is divided into four categories: jewellery, investment, technology (or industrial) and central bank demand. The most important end market for gold is jewellery fabrication. China and India are the two most important countries for gold jewellery demand. Historically, India has been the largest market for gold jewellery, but in the recent years, China has caught up and surpassed India as the largest buyer. In 2021, India and China together accounted for over 60% of the total demand. Other important regions for gold jewellery demand are Middle East and Northern America. Gold jewellery demand has been historically rather steady between 2000–2700 tonnes of gold during the last decade. In 2020, gold jewellery demand experienced a sharp decline of 38% y/y as COVID-19 hit consumer confidence globally, in 2021 the demand normalized to levels seen before COVID-19.

Investment demand is roughly one fifth of the total demand

End-use as an investment is the second biggest demand area for gold. Investment end-use includes demand for gold coins, bars, ETFs and similar gold backed securities. Global investment demand for gold in 2021 was little over 1000 tons or 21% out of the total demand. Investment demand decreased drastically in 2021 from 2020 when it was 1770

tonnes of gold. A major reason for the decrease in demand y/y was due to decrease in gold demand from ETFs and similar gold linked investment vehicles.

Figure 17: Gold demand in 2021 by end-use category, tonnes of gold

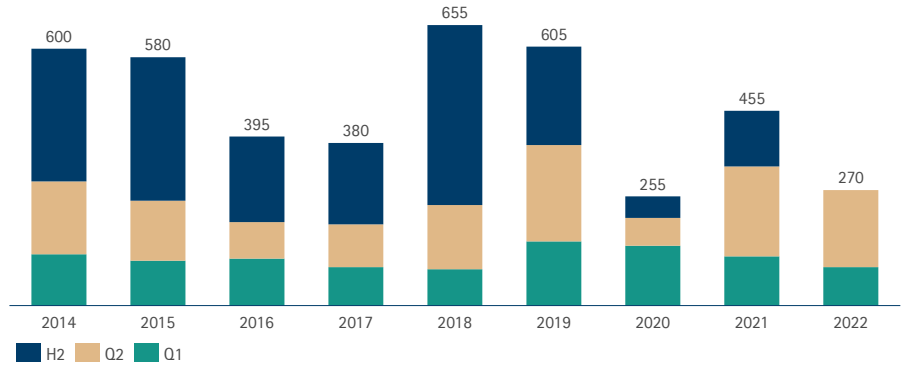


Source: World Gold Council, Evli research

Technology is the smallest end-use of gold and shrinking further

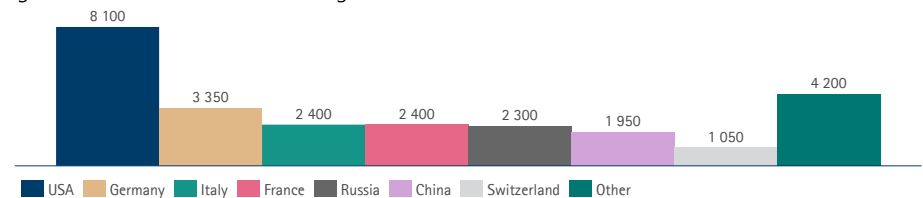
Technology demand was just 7% out of the total demand in 2021. The trend for gold usage in technological devices has been on downward trajectory throughout the recent history. Major reason for this is the relative high price of gold, therefore, companies are incentivized to decrease the usage of gold in technological devices produced.

Figure 18: Gold demand by central banks, tonnes of gold



Source: World Gold Council, Evli research

Figure 19: Q2 2022 Central bank gold reserves in tonnes



Source: World Gold Council, Evli research

Central bank demand fluctuates from year to year, demand drivers similar to investment demand

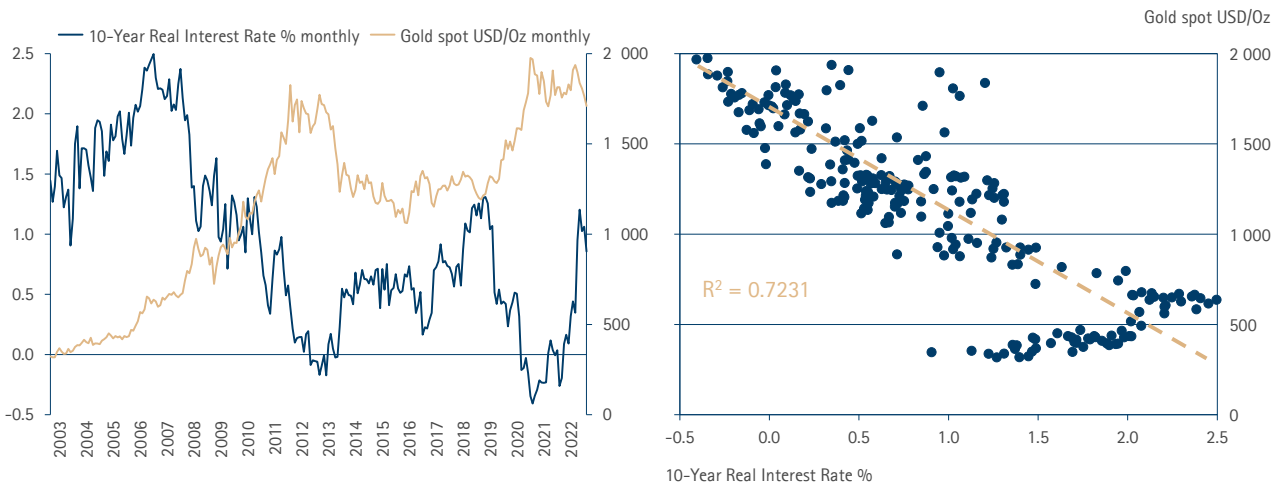
Central bank demand in 2021 was roughly 10% out of the total gold demand globally. In the first half of 2022, the central bank demand was approximately 12% of the total demand, driven by large net purchases from Turkey. Central bank demand is mainly driven by the need of global central banks to diversify their reserves. According to a survey conducted by the World Gold Council in June 2022, the most relevant topics for central bank gold reserve management decisions were interest rates, inflation, geopolitical instability and COVID-19.

Pricing

Gold price is driven by daily trading

Gold price is quoted by the ounce in USD, gold spot price is driven by daily gold trading. The bulk of daily gold trading occurs in the London OTC market (Loco) and various futures exchanges such as COMEX and SHFE (Shanghai Futures Exchange). Comparing to many other commodities, gold has high stock to flow ratio meaning that the above ground gold stock is much larger than yearly output from gold mines. According to WGC, total above-ground stocks at the end of the 2021 were 205 238 tonnes of gold (while mine output was 3 580 tonnes; 57x stock to flow ratio). Gold above-ground stock consists of gold in form of jewellery (46% of above ground stock), bars and coins (22%), gold held by central banks (17%) and other (15%). Because of high stock to flow ratio, in short term, the trading of above ground stock drives gold pricing rather than mine output fundamentals.

Figure 20: Gold spot USD/Oz vs. US10y Real Interest Rate Constant Maturity



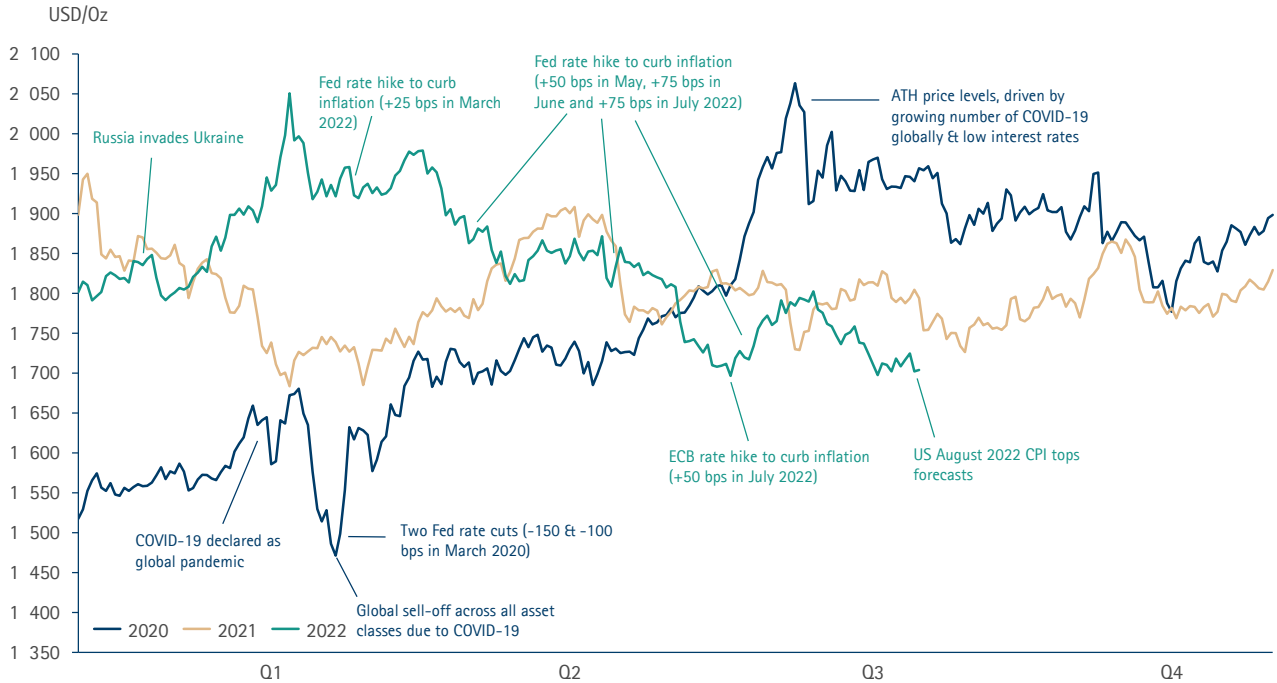
Source: Bloomberg, FRED, Evli Research

Gold price is affected by various factors: political and financial turmoil, interest rates and inflation among others

The sentiment in the daily trading of gold fluctuates due to political and financial turmoil and changes in factors such as currency exchange rates and real interest rates. Gold has historically performed well during political and financial turmoil; therefore, gold is considered as a safe-haven asset. During the first phase of COVID-19 in 2020, gold was trading at all time high levels, more recently after Russia started war against Ukraine, gold price hit 2050 USD/Oz in March 2022. The attractiveness of gold as a safe-haven asset depends on the opportunity cost of holding gold. High real interest rate environment makes holding gold less desirable as fixed income instruments provide investors with competitive low-risk steady cash flow. Gold has historically had inverse relationship against real interest rates (see figure 20). During 2022, the real rates have increased at rapid rate as the FED has hiked the rates by 225 bps, further 75 bps hike is expected in September. Even though the real rates have increased, the gold price has not moved down accordingly, the likely reason for the current dislocation is the combination of stagflation and recession fears and geopolitical tensions. There is further upside risk to

the real interest rates and therefore a clear risk for gold prices to fall to significantly lower levels.

Figure 21: Gold price development 2020-2022

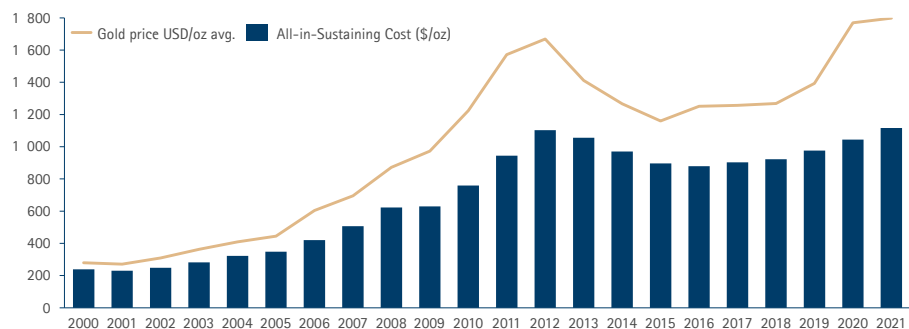


Source: Bloomberg, Evli Research

Gold prices are currently at high levels

Both the Fed and ECB have increased rates in 2022 to curb inflation; ECB increased its policy rate by 50 bps in July 2022, first increase in 11 years. Because of the tightening monetary policy globally, gold price has decreased from the all-time high levels seen in early 2022. Gold is currently trading at over 1700 USD/Oz, current price is well over the 1000-1400 USD/Oz range where gold traded from 2014 to 2019 and approximately at the levels seen after global financial crisis. Gold miners are very profitable at the current gold price levels as the average total cash cost globally is roughly 900 and all-in-sustaining cost roughly 1100 USD/Oz, the industry has witnessed the history's highest total cash margin levels globally during 2020-2021. The current price supports mining of the Pampalo deep extension which the company has commented is profitable at gold prices above 1500 USD/Oz.

Figure 22: Gold price vs. avg. AISC globally 2000-2021



Source: S&P Mineral Intelligence, Evli Research

Financials

The company has not been able to post positive earnings after 2012

The company has had difficulties with profitability throughout its history. During the Pampalo operational years 2011-2018, the company was able to reach positive EBITDA in 2011 (SEK 22.8m), 2012 (SEK 88.7m) and 2014 (SEK 5.5m). The year 2012 was the company's best operationally as also the net profit and free cash flow were on the positive side. The reason for strong financial results were higher head grades, improved mining methods and high gold prices. Endomines has not been able to post positive earnings after 2012 because of the operational issues and lower gold prices.

Ramp-up issues have overshadowed the company's financial performance during the recent years

The recent years have been difficult for the company as the ramp-up of the Friday mine in Idaho has not gone according to plan. According to the original schedule, ramp-up of the Friday mine was expected to be completed in early 2019. The project has been delayed multiple times and therefore Endomines has not been able to produce significant amount of gold during 2019-2021. In 2021, Endomines focus was on the Pampalo mine restart and ramp-up of the Friday mine. The Friday project was further delayed as the ore proved more irregular than first expected. The Pampalo mine was deepened into new production level according to plan and in December, mill maintenance was successfully completed. Because of unexpected hiccups at Friday and restarting of Pampalo in Finland, the company's revenue in 2021 was near zero at SEK 5m. Because of non-existent revenue, yet, increased operational costs related to ramp-up at both Friday and Pampalo mine sites, the company's EBITDA in 2021 amounted to SEK -118.2m down from SEK -108.0m in 2020. In the first half of 2022, EBITDA was at SEK -38.0m, up from SEK -40.3m the year prior. The company was able to post positive EBITDA for Pampalo mine operations as the Pampalo's EBITDA was SEK 2.0m in the first half of 2022. Endomines was able to increase the Pampalo's profitability in Q2 2022 as the EBITDA was SEK 7.7m vs. SEK -5.7m in Q1 2022.

Revenue

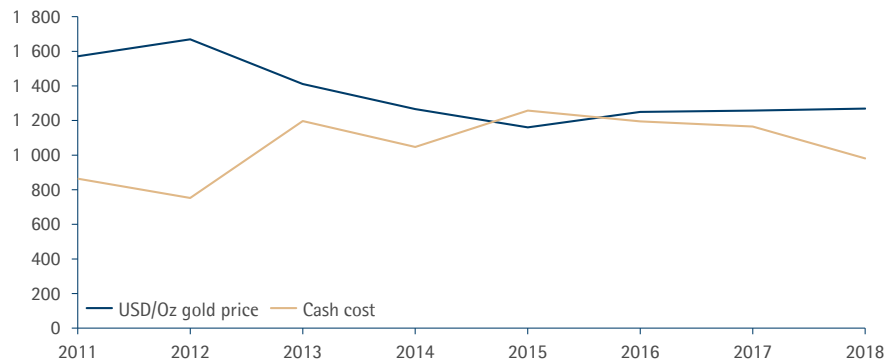
Endomines revenue generation is affected by volumes and payability

Endomines revenue generation is affected by life of mine, ore mined, gold head grades, ore milled, recoveries at refining plant and payability of the product. Before acquisition of assets in United States, Endomines was practically a single-asset company with 100-400k tonnes of milled ore from Pampalo mine and approximately 10 000 – 25 000 Oz of gold produced annually.

Pampalo has historically produced roughly 10-25k of gold p.a.

Grades at Pampalo have historically hovered around 2-4 Au g/t, while recoveries have been around 82-87%. Pampalo gold production peaked in 2012 at 27 860 Oz, the production was reached by milling 250 000 tonnes of ore. In comparison, in 2014, the company milled nearly 400 000 tonnes of ore yet, gold production was only 24 497 Oz. Even though milled ore tonnes in 2014 were 58% higher, gold production was 12% lower. This highlights the importance of gold head grade in the ore and the recovery levels in processing facility; head grade in 2014 was 2.3 Au g/t when in 2012 head grade was 4.0 Au g/t, similarly, gold recovery in 2014 was 82.1% when in 2012 recovery was 86.1%. The company aims to produce approximately 10 000 – 11 500 ounces of gold per annum in the Pampalo underground mine. The production from other sources depends on the successfulness of the company's exploration efforts and permitting in the Karelian gold line. Currently, the only area in production besides Pampalo underground is the East open pit which is expected to produce approximately 10-20% of the Pampalo underground production. The production in the first half amounted to 3 478 ounces, the company's production guidance for the FY 2022 is 8 000 – 9 400 ounces.

Figure 23: Pampalo historic cash cost vs. average gold price 2011-2018



Source: Endomines, World Gold Council, Evli Research

Gold price is an important factor for the company's revenue

Besides the operational factors (life of mine, ore mined, ore milled, head grades, recoveries) affecting the company's revenue generation ability, gold price is arguably the most important factor. Gold prices were at high levels during the first two years of production in Pampalo, high gold price levels combined with favorable operational performance (high head grades, strong recoveries) led to record revenue of SEK 235m in 2012. During 2013 gold price started to decline and stayed at relatively low levels from 2014 to 2019. In 2015, as gold prices were at low levels, the company announced start of selective mining of higher-grade areas in order to improve the profitability of the mine. Because of selective mining, the mined ore volumes from 2016 to 2018 were significantly lower when comparing to the years where the focus was not on head grade. Currently gold prices are above levels seen in 2011-2012, therefore the company can mine lower grade deposits such as the Pampalo East Pit open mine.

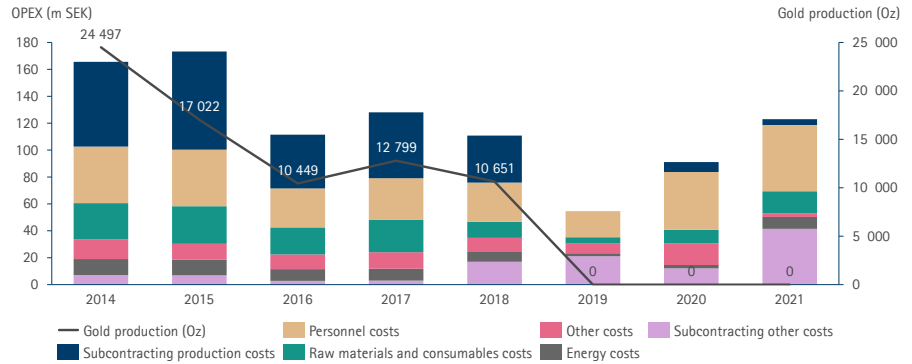
Endomines final products are gravimetric and flotation gold concentrates

Endomines final product is gold concentrate that is sold to refiners. The refiners demand a processing fee/treatment charge from the refining process so the price of gold concentrate produced by Endomines does not equal to refined gold spot price. The payability percentage of Endomines gold concentrate from Pampalo has not been disclosed, historically clients have included K.A. Rasmussen from Norway for the gravimetric concentrate and Boliden Harjavalta for the flotation concentrate. In 2020 company signed agreement with H&H Metals regarding Friday gold flotation concentrate where payability percentage was set to 95%. In January 2022, the company entered into a sales agreement with Boliden regarding the gold concentrate production from Pampalo for the next two years.

Cost

During the recent years the company has not been able to produce gold, because of this, personnel costs have been the single biggest cost item. When looking at years when the Pampalo mine was operational, subcontracting production costs, personnel costs and raw materials costs were the biggest cost items.

Figure 24: Endomines operational cost development vs. gold production 2014–2021

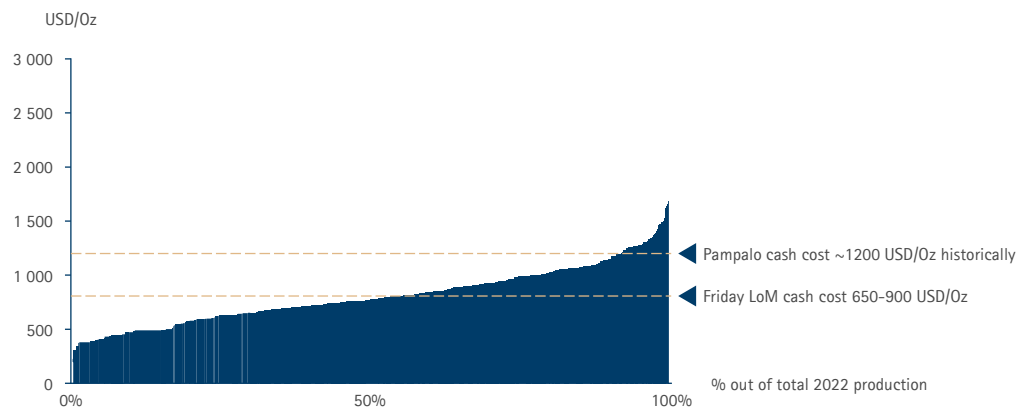


Source: Endomines, Evli Research

TCC and AISC are typical cost measures for mining companies

Total cash cost (TCC) and all-in sustaining cost (AISC) are commonly used metrics in the metals & mining industry to benchmark and demonstrate the costs of operations. TCC consists of mining costs, ore processing costs, mine site general & administrative costs and royalty & production tax costs. Potential by-product credits/revenues are deducted from the TCC. In addition to the cost items included in TCC, AISC includes corporate overheads, reclamation costs, exploration costs and sustaining capital expenditure. The Pampalo mine has historically operated at total cash cost of roughly 1200 USD/Oz. According to S&P the median estimated total cash cost for both underground and open pit gold mines in 2022 is estimated to be little over 900 USD/Oz. Pampalo's relatively high TCC is based on rather low head grades for underground mining. According to WGC, gold head grades between 1.0 – 4.0 Au g/t are considered lower quality underground deposits. For the Friday project, the company has commented that the cash cost is expected to be approximately 650 – 900 USD/Oz depending on the area of production. Friday's cash cost is notably lower when comparing to Pampalo, the more favorable cost position is driven mainly by higher head grades.

Figure 25: Pampalo & Friday projected total cash cost (TCC) vs. 2022 global gold TCC

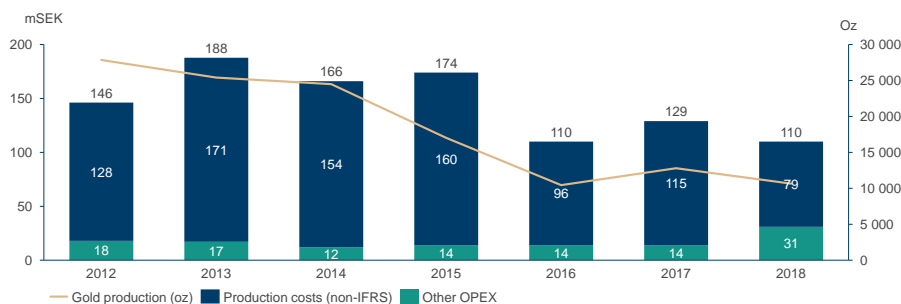


Source: S&P Mineral Intelligence, Evli Research

Cost inflation puts pressure on gold miner margins

Historical Pampalo actual cash costs and Friday estimated cash costs are not directly comparable to current gold miner cash costs but give rough indication of the cash cost curve position. The current inflationary environment has affected gold miners as prices of input costs such as energy, wages and consumables have increased. According to Metals Focus, the gold mining industry cash cost reached highest level on record in Q1 2022. The cost pressure is expected to increase during Q2 2022 and onwards as the effects of Russia's invasion of Ukraine to energy costs were still limited during Q1 2022.

Figure 26: Production & other OPEX vs. gold production 2012-2018



Source: Endomines, Evli Research

Balance sheet

Endomines has issued stock and agreed to numerous financing agreements during the last few years

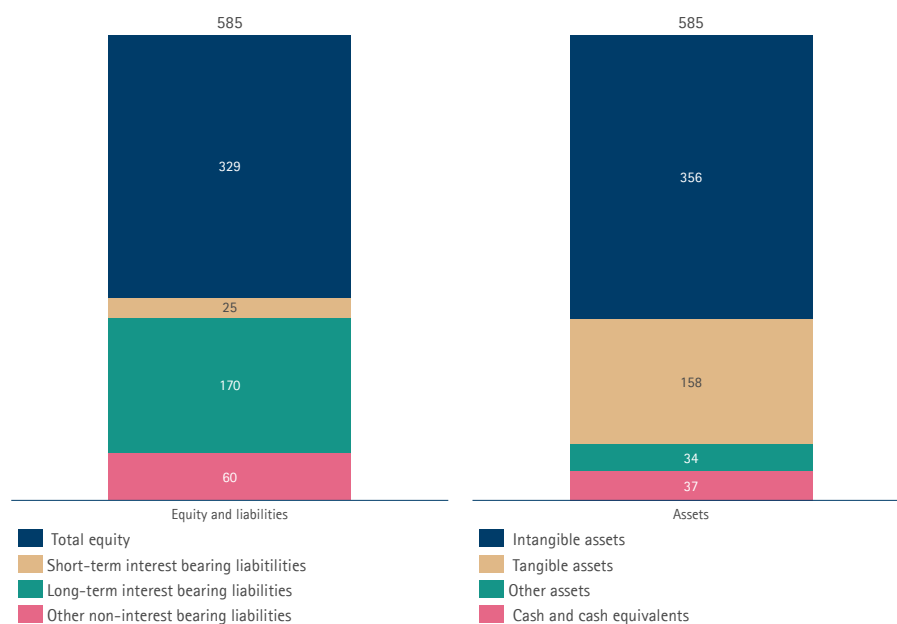
The company's liquidity situation has been tight during the recent years as issues in the Friday ramp-up have dampened profitability and cash flow generation. At the end of H1 2022, Endomines cash balance was SEK 36.9m. During the last years, Endomines has frequently raised additional financing to fund acquisitions, asset development and exploration activities. The company has been able to secure financing by raising funds through share issues, loan instruments offered for Nordic institutional investors as well as more recently through a financing agreement with LDA Capital that consists of a convertible note facility and a put option agreement. The terms for financing have been tight as the company is not currently producing, annual interest rate for loan facilities have been in the range of 10-12% per annum.

- March 2018: Acquisition of TVL Gold for USD 31.25m (Endomines Idaho assets)
 - 2/3 paid in convertible loan (SEK 171m with 6% annual interest)
 - Additional SEK 189m rights issue to finance the acquisition and pay off debt
- March 2019: EUR 3.7m secured bond issued (three-year tenor, 12% annual interest, callable after one and two years at 103% and 101% of the nominal amount) for Finnish institutional investors to finance Friday's ramp-up and exploration efforts in the Karelian Gold Line
- June 2019: Rights issue, SEK 156m raised in total, 94.4% of the rights issue was subscribed. Proceeds used for payment of Idaho assets, ramp-up of Friday, exploration in US and Finland.
- April 2020: EUR 3.4m loan facility raised (loan has two-year tenor with 12% annual interest) from Finnish institutional investors. Proceeds used for Friday mine and mill ramp-up.
- April 2020: SEK 30m short-term loan facility raised (loan has six-month tenor with 1% monthly interest) from Swedish and Danish institutional investors. Proceeds used for acquisition of US Grant & Kearsarge mines from Transatlantic Mining.
- April 2020: EUR 1.3m direct share issue, proceeds used for Friday ramp-up

- September 2020: EUR 2m short-term loan facility raised (loan has six-month tenor with 1% monthly interest and upfront fee of 6%) from Finnish institutional investors. Proceeds used for ongoing transactions and current asset portfolio.
- January 2021: SEK 214m rights issue raised, 76% of the rights issue was subscribed. Proceeds used to ramp-up Friday, further exploration in both US and Finland and Pampalo mine deepening and restart.
- May 2021: EUR 14m financing agreement with LDA Capital consisting of a EUR 6m convertible note facility and a EUR 8m put option agreement.
- July 2021: EUR 5m financing package (financing agreement has maturity of 24 months with annual interest of 10%) consisting of EUR 3m loan and EUR 2m loan option. Proceeds used for Friday and Pampalo ramp-up.
- November 2021: EUR 2.5m financing agreement (maturity of 24 months, interest of 10% per annum) with Finnish investors.
- June 2022: EUR 3.3 - 3.6m convertible loan (maturity of 24 months, interest of 10% per annum) with Finnish investors. Proceeds used to implement strategy and start activities in Karelian gold line.
- September 2022: EUR 3.0m financing package (maturity of 24 months, interest of 10% per annum with an arrangement fee of 5%) with a group of Finnish investors. Proceeds used to repay USD 2m interest-bearing liability due in September 2022 and to invest in the exploration activities in Karelian gold line.

In addition to debt financing, the company has issued shares multiple times during the recent years, at the end of H1 2022, Endomines share count was 264.6m vs. 35.1m shares outstanding at the end of 2018. Endomines assets are mostly fixed which is typical for a mining company, over half of Endomines fixed asset base consists of intangible assets, largest portion of intangible assets are related to acquisitions in 2018 (Idaho assets, TVL Gold) and 2020 (Montana assets, Transatlantic Mining). Tangible fixed assets are roughly 30% out of total fixed assets, tangible fixed assets consist of buildings and land, machinery and mines.

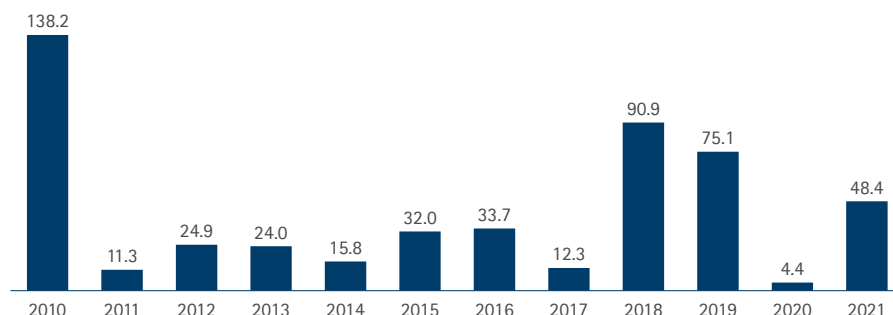
Figure 27: Endomines balance sheet composition at the end of H1 2022, mSEK



Source: Endomines, Evli Research

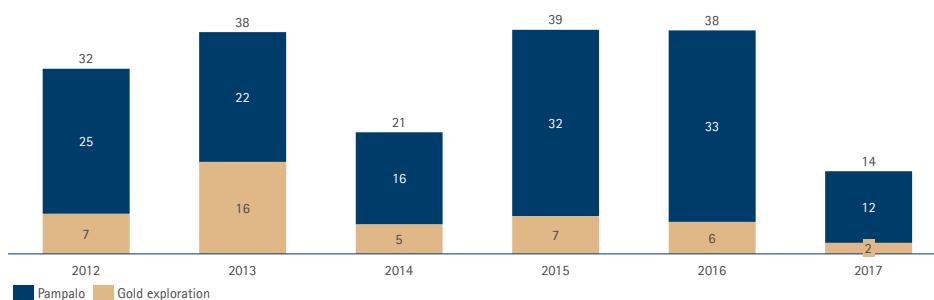
Because the company has not produced significant amounts of gold during years 2019–2021, the relative portion of current assets out of total assets has been rather low; 7% or less. During the years when Pampalo was operational, the portion of current assets out of total assets hovered around 20–30%.

Figure 28: Endomines tangible CAPEX profile 2010 – 2021, mSEK



Source: Endomines, Evli Research

Figure 29: Endomines investments into Pampalo mine & gold exploration 2012–2017, mSEK



Source: Endomines, Evli Research

Endomines CAPEX consists of mine development and gold exploration

Capital expenditures during 2012–2017 were approximately SEK 20–30m per annum. Investments into the Pampalo mine were over half of the total capital expenditure per annum. The leftover was used for gold exploration in the Karelian gold line; the investments into exploration were roughly SEK 5m per annum. According to the World Gold Council, typical sustaining capital expenditure level for gold mining company is approximately 200–300 USD/Oz, Pampalo mine sustaining capital expenditure was roughly 100–300 USD/Oz during 2012–2017. The amount of capital expenditure used for exploration cannot be benchmarked similarly as it depends on the strategy of the company. Endomines has not published detailed capital expenditure data for years 2018–2021. Capital expenditures were high during 2018–2019, mainly related to construction projects linked to the Friday mine and the enrichment plant. During 2021, the company invested into deepening of Pampalo underground mine and upgrading the Orogrande processing facility.

Future investments are targeted towards Karelian gold line

The management has commented that the current target is that the operations in Finland and in the United States should not require additional external funding. The company is currently investigating the financing options to fund the large-scale drilling campaign during 2023–2024.

Estimates

The company's operations in the Karelian gold line are currently difficult to forecast in the long-term as the future depends largely on the successfulness of the planned exploration efforts. Both the company's ability to increase the life of mine of Pampalo and find new resources and reserves in the Karelian gold line determine the future production potential. In addition, visibility into the company's operations in the United States is currently low as Endomines focuses solely on partnerships. The future potential and cash flows of the partnerships depend on the terms of the partnership agreements. Ramp-up of the Pampalo underground and East open pit are the focus areas for the company in 2022. For 2022-2024 we estimate that the bulk of production will come from Pampalo deep ore zone and East open pit.

Finland

Endomines short to mid-term gold production relies on Pampalo

Pampalo mine deepening motivated by the current higher gold prices was completed in late 2021. The total gold production during H1 2022 amounted to 3 478 ounces, the company was able to ramp-up the production as the ounces produced increased 78% to 2 227 ounces in Q2 when compared to Q1 production of 1 251 ounces. In March 2022, the company announced increase in Pampalo ore reserves as a result of the 2021 drilling campaign. The current ore reserves in Pampalo are 18 400 Oz of gold, enough to satisfy approximately one and a half years of production at the production rate. In addition to the deep ore zone, the company announced that it will start production at the East Pit which increases Pampalo production by 10-20%. The East Pit has life of mine of two years and the company was able to commence the production during August 2022. At the end of August 2022, the company released promising drill results from Pampalo underground mine, which showed that the mineralization continues below the current mining area and there were no indications that the mineralization wouldn't continue below the drilled levels. The company secured financing for the mine deepening in June 2022 and was already progressing at 830 level during August 2022. On the back of the promising drill results and discussions held with the company's management, we have included the Pampalo deep mineral resources into our Pampalo mine production estimates. We estimate gold production of 8 880 ounces for the FY 2022 which is slightly higher than the guidance middle point (FY 2022 guidance 8 000 – 9 4000 ounces). We expect that the company can meet the middle of the East open pit production guidance (10-20% increase to Pampalo production) in the second half and that the underground mine will slightly improve its performance vs. Q2 2022. We estimate annual production of roughly 11 500 ounces for 2023 and 2024 in Pampalo, the forecast is based on the current Pampalo ore reserve, Pampalo deep mineral resources and the East open pit mineral resources. We have not included any potential resources below the 815 – 875 level, the production estimates will be update when the company releases new resource estimates.

Cost improvement vs. H1 2022 expected in Pampalo

We have estimated that in the second half of 2022, the company will be able to improve its cash cost compared with Q2 2022, but with current inflationary pressure unlikely achieve historic cash cost levels. In our view, the likely production cost per ounce range for Pampalo mine is SEK 11 000 – 12 000 per ounce. There is upside to the cost estimate if the company can further reduce the costs and reach cost levels seen during 2011-2014, depending largely on head-grades of the milled ore. We see further cost reductions possible but rather unlikely as the volumes are likely to stay at the levels seen during 2016 – 2018 in the coming years. In addition, gold miners are currently facing strong inflationary pressure, the global gold producer cash costs have increased rapidly during H1 2022. Global major gold miners such as Agnico Eagle have commented that the cost inflationary pressure will likely continue in the second half of 2022.

United States

We do not include production estimates for the US assets

According to the new strategy, the company is currently focusing on partnership models for the United States asset portfolio to gain more local operational knowledge and financing. The company's short-term goal is to finalize a partnership agreement for the Friday mine within the next 12 months. As the drilling work needed to update the mine plan for Friday is currently on hold, our view is that it is unlikely that the Friday mine will be operational in 2023, even if the company would find a suitable partner for the project. Endomines has commented that the Orogrande processing facility could potentially be utilized by other mining companies for ore processing. According to data provided by the US MSHA, there are no active established gold mines near the operating facility, therefore we see the possible tolling agreements with partners for the ore processing rather difficult in the short term. In Montana, the company is planning to continue permitting activities and studies in the second half of 2022. The company is preparing a PEA level study which is the first phase in determining the feasibility of the project. Because of the current situation in Friday, uncertainties regarding the partnership model and the early development phase of the company's other US assets, we do not include production estimates for the company's United States asset portfolio.

Table 1: Estimate summary

Endomines (SEKm)	2020	H1/'21	H2/'21	2021	H1/'22	H2/'22E	2022E	2023E	2024E
Net sales	13.1	0.1	4.9	6.7	59.1	91.1	150.2	206.7	202.6
sales growth %	>100%	-10.4%	88.5%	-48.9%	>100%	>100%	>100%	38 %	-2 %
EBITDA	-108.0	-40.3	-77.9	-118.2	-38.0	7.2	-30.8	24.8	24.0
EBIT	-184.7	-95.5	-159.8	-255.1	-107.1	-7.8	-114.9	-13.8	-13.8
EBIT margin	<-100%	<-100%	<-100%	<-100%	<-100%	<-100%	-76.4%	-6.7%	-6.8%
Gold production (Oz)	538	0	460	460	3 478	5 402	8 880	11 693	11 462
Finland	2020	H1/'21	H2/'21	2021	H1/'22	H2/'22E	2022E	2023E	2024E
Net sales	5.5	0.0	0.0	0.0	59.1	91.1	150.2	206.7	202.6
Gold production (Oz)	0	0	0	0	3 478	5 402	8880	11693	11462
United States	2020	H1/'21	H2/'21	2021	H1/'22	H2/'22E	2022E	2023E	2024E
Net sales	7.6	0.0	4.9	6.7	0.0	0.0	0.0	0.0	0.0
Gold production (Oz)	538	0	460	460	0	0	0	0	0
Assumptions	2020	H1/'21	H2/'21	2021	H1/'22	H2/'22E	2022E	2023E	2024E
Gold price USD/Oz	1769	1805	1792	1799	1874	1722	1798	1750	1750
Gold price EUR/Oz	1552	1499	1543	1521	1712	1729	1721	1786	1786
USD/SEK	9.20	8.41	8.76	8.89	9.59	10.77	10.18	11.10	11.10
EUR/SEK	10.49	10.14	10.16	10.13	10.48	10.72	10.64	10.88	10.88
EUR/USD	1.14	1.20	1.16	1.14	1.10	1.00	1.04	0.98	0.98

Source: Endomines, Evli Research

Valuation

Target price decreased to SEK 1.6 (1.7), HOLD-rating intact

We have adjusted our assumptions based on the new strategy, promising drill results in Pampalo and the new information regarding the Karelian gold line satellite deposits. The positive adjustments to our models are outweighed by adjustments to gold price estimates driven by souring gold market sentiment and accordingly adjust our target price to SEK 1.6 (1.7). Our target price is based on a sum-of-the-parts valuation of Endomines assets, overhead costs and net cash. We retain our HOLD-rating. The current valuation relies heavily on the company's ability to realize value in the United States through partnerships or divestments of the assets. The successfulness depends on the terms of the agreements that Endomines is able to negotiate. There is potential upside for the valuation if Endomines exploration efforts in the Karelian gold line prove to be successful and if the company is able to improve cash cost levels more rapidly than expected.

Table 2: Sum of the parts valuation

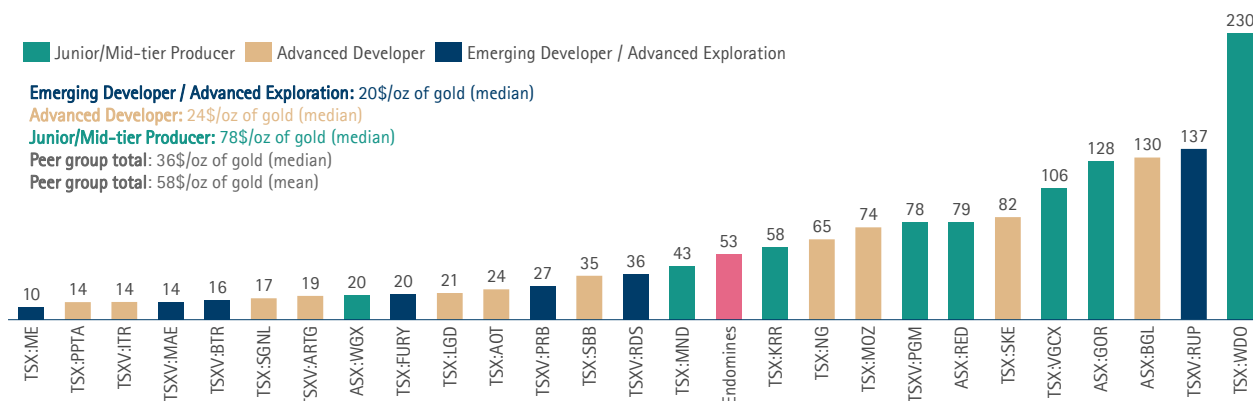
	Evli est.	Gold spot	Estimate basis
US assets	559	530	In-situ & purchase price analysis
Pampalo	105	74	DCF LOM 2.5y, 28 500 ounces produced + LOM increase option value
Karelian gold line	74	56	Real option value for Karelian gold line satellite deposits
Overhead	(114)	(114)	Discounted overhead costs for Finnish operations
Net cash	(154)	(154)	H1 2022 + Convertible loan conversion 07-08/22
Total	470	392	
Per share	1.8	1.5	
Long-term gold price (USD/Oz)	1 750		Evli
Spot price (USD/oz)		1 660	
Shares (m)	266.7	266.7	08/22

Source: Evli Research

We apply sum-of-the-parts method to value Endomines asset portfolio

We base our valuation of Endomines on a sum-of-the-parts valuation. In our view, sum-of-the-parts is suitable because of the heterogenic nature of Endomines project portfolio. For Pampalo, our valuation is based on the net present value of the project. Cash flow-based valuation is possible for Pampalo as it is in production and therefore the production and cost parameters can be estimated. The valuation of the company's project portfolio in United States is based on a purchase price in-situ value analysis. The new partnership strategy decreases the visibility for future cash flows in the United States and therefore in our view, cash flow-based methods are not suitable. As the current gold prices are higher than the gold prices during the acquisitions, we have adjusted the value of the United States asset portfolio accordingly. We use real option models to determine the value of the company's satellite deposits situated in the Karelian gold line. The model considers key variable inputs in a gold mining project such as the start year, life of mine, gold head grades, recoveries, gold production, costs and gold price. The real option model is based on resource data presented in conjunction with the company's H1 report. Cash flows from the Pampalo mine and overhead expenses are discounted using a cost of capital of 9%. The discount rate used is significantly lower than the group wide discount rate of 12% as the Pampalo mine is already in production and therefore of significantly lower risk when comparing to the company's other assets. Net cash estimate includes the latest net cash position according to the H1 2022 report.

Figure 30: Endomines advanced exploration & emerging developers, advanced developer and junior producer peer group, EV USD/ R&R Oz (both 2P reserves and M+I+I resources included)



Source: Bloomberg, investor presentations, Evli Research

Peer group is divided by asset portfolio development stage

Advanced exploration / Emerging developer: Advanced exploration and emerging developer peer group consists of companies with assets in exploration and early feasibility study phases. These companies are typically conducting exploration at site or have started early feasibility study work such as scoping study/preliminary economic assessment on their assets.

Advanced developer: Advanced developers consist of companies that have assets in late development phase, these companies have typically completed the early phase feasibility studies such as scoping study and pre-feasibility study. Some of the companies have already completed definitive feasibility study and are heading towards construction depending on the permitting and financing situation.

Junior / Mid-tier Producer: Junior producers are gold miners that produced less than 300k ounces per year, companies that produce over 300k ounces per year but less than 1m ounces are considered mid-tier producers. Gold producers that produce over 1m ounces per year are considered major miners. Endomines long-term target is to produce 100k ounces per year, reaching the target would put Endomines into the junior producer category.

Enterprise value to resources multiple is a crude but commonly used metric to value both exploration and mining companies. The metric divides the company's enterprise value by the total attributable reserve & resource (in some cases, just the resource) gold ounces. The main weakness for EV/Resources is that the metric doesn't consider the economics of the assets owned by the company, therefore, we only use it for illustrative purposes. Based on EV/Resources, Endomines current valuation is roughly in line with the peer group. Endomines looks expensive on EV/Resources basis if the company's historic resources are excluded from the resource base. Identifying new resources in the Karelian gold line would create value if done at reasonable cost. Endomines has set a long-term target to define an over one million ounce deposit in the Karelian gold line, if the company would succeed in this goal, the value creation potential would be significant based on the current trading multiples.

Investment risks

Junior mining and exploration companies are risky by nature

Junior mining and exploration companies are typically considered risky investments as the risk associated with a mining project is substantial. The number of projects that progress all the way from exploration phase to mine phase is minimal.

Geological confidence increases throughout project development and decreases overall risk

Geological risk is the biggest project risk for mining companies as the production depends on it. Geological risk is alleviated through studies where the geological understanding of the deposit increases. Endomines saw geological risk realizing in early 2022 as the Friday mine ore proved to be more irregular than first expected. Resources and reserves indicate the geological knowledge of the company's assets. Resources are divided into inferred, indicated and measured mineral resources where inferred resources have the least amount of geological confidence and measured mineral resources the most. Reserves are the economically mineable part of the measured and indicated mineral resources. Most of the Endomines resources in the United States are classified as historic as they do not comply with JORC or NI 43-101 code, therefore the geological risk of Endomines project portfolio in the United States can be considered high.

Metallurgical risks are alleviated with pilot-scale tests

Metallurgical risk is similar to geological risk as it affects the production and costs of a mining project directly. To produce the final product, the ore from the mine must go through series of processing measures that include steps such as crushing, milling and flotation/gravity separation. In addition to concentration processing techniques (gravity separation & flotation), gold can be processed through cyanidation (heap leaching is a cyanidation processing technique). The processing method depends on the particle size and the gold's association with other minerals among other factors. The metallurgical risk is alleviated with metallurgical tests that are typically conducted together with feasibility studies. The tests are conducted by processing a sample of the ore from the deposit in laboratory conditions (or larger test facilities/demonstration plants). Endomines Pampalo mine recoveries have been quite steady historically hovering around 82 – 84%, the Friday mine managed to reach gold recoveries of 71.5% in 2020 and 84% in 2021. The most recent metallurgical tests conducted by SGS Canada in 2011 and 2016 suggests that recoveries of over 90% can be achieved in the Friday mine and processing facility.

Cost overruns are typical in mining

According to survey study conducted in 2019 by McKinsey, only 37% out of mining projects completed during 2008-2018 came in within 15% of the announced budget in the feasibility study phase. Over half of the projects exceeded the budget by at least 15%, with average capital expenditure overrun of 49%. Every fifth project exceeded the original budget set in feasibility study by over 100%, the average overrun in these "disaster projects" was 3 times the original feasibility study estimate.

Permitting is a mandatory step before reaching mine stage

Permitting is a binary risk by nature, mining company must receive the necessary permits to be able to proceed to the mine stage. Permits vary by jurisdiction, typical permits needed for a mining project include exploration, mine, construction and environmental permits. Three out of six deposits in the Karelian Gold Line have environmental permits in place, Friday is fully permitted and US Grant is likely to be permitted through SMES permitting.

Financing is costly for junior mining and exploration companies

Mining projects require significant amount of financing to proceed all the way to the mine stage. Exploration and early-development mining companies typically rely on equity financing, late-stage and mine-stage projects can be financed via debt instruments as the cash flows are more certain. Endomines has issued shares and entered into financing agreements multiple times during the recent years as the company has lacked production and therefore cash flows. The company has managed to find funding during the recent years, but it has been relatively costly.

Market risk is present throughout the mine lifecycle

Market risk differs from the other risks associated with mining projects. The differentiating factor is that market risk doesn't decrease as the project progresses; the market risk is the same for both junior and major mining companies. The current high gold market prices make it possible to utilize lower grade and higher cash cost projects. In 2021 Endomines announced re-opening of the Pampalo mine, the company had calculated that the start-up of the mine production will be feasible at gold prices at/or above USD 1500 per ounce. If the gold price would decrease to the USD 1100 – 1300 per ounce levels seen during 2015-2019, mine operations in both Pampalo and other Karelian Gold Line deposits would likely be unprofitable.

Appendix

Table 3: Endomines resources & reserves 03/2022

Karelian Gold Line				
Reserves	Tonnes	Grade	Oz	Kg
Propable	161 000	3.6	18 376	572
Total Pampalo reserves	161 000	3.6	18 376	572
Resources	Tonnes	Grade	Oz	Kg
Measured	0	0.0	0	0
Indicated	258 000	1.8	15 181	472
M + I	258 000	1.8	15 181	472
Inferred	451 571	2.7	39 264	1 222
Total Pampalo resources	709 571		54 445	1 694
Resources	Tonnes	Grade	Oz	Kg
Measured	35 000	4.1	4 557	142
Indicated	1 066 000	1.5	51 647	1 606
M + I	1 101 000	1.6	56 204	1 748
Inferred	1 283 000	1.7	70 453	2 191
Total other Karelian resources	2 384 000		126 657	3 939
Total Karelian resources	3 093 571		181 102	5 633
United States				
Resources	Tonnes	Grade	Oz	Kg
Measured	245 000	6.9	54 200	1 686
Indicated	217 000	6.2	43 000	1 337
M + I	462 000	6.5	97 200	3 023
Inferred	296 000	4.9	46 700	1 453
Total Friday resources	758 000		143 900	4 476
Resources	Tonnes	Grade	Oz	Kg
Measured	3 515 000	0.6	64 800	2 016
Indicated	3 230 000	0.5	49 900	1 552
M + I	6 745 000	0.5	114 700	3 568
Inferred	2 128 000	0.4	25 700	799
Total Buffalo Gulch resources	8 873 000		140 400	4 367
Resources	Tonnes	Grade	Oz	Kg
Rescue Historic	67 000	21.3	45 980	1 430
Kimberly Historic	261 000	19.2	160 930	5 005
Deadwood Historic	2 375 000	0.8	58 601	1 823
US Grant Historic	346 000	14.9	165 700	5 152
Kearsarge Historic	4 100 000	3.0	381 000	12 218
Total Historic resources	7 149 000		812 211	25 628
Total United States resources	16 780 000		1 096 511	34 471

Source: Endomines, Evli Research

INTERIM FIGURES

EVLI ESTIMATES, SEKm	2021Q1E	2021Q2E	2021Q3E	2021Q4E	2021E	2022Q1E	2022Q2E	2022Q3E	2022Q4E	2022E	2023E	2024E
Net sales	0.0	0.1	0.0	4.9	5.0	0.0	59.1	0.0	91.1	150.2	206.7	202.6
EBITDA	0.0	-40.3	0.0	-77.8	-118.1	0.0	-38.1	0.0	7.2	-30.8	24.8	24.0
<i>EBITDA margin (%)</i>	<i>0.0</i>	<i>-40,707.1</i>	<i>0.0</i>	<i>-1,588.1</i>	<i>-2,362.0</i>	<i>0.0</i>	<i>-64.4</i>	<i>0.0</i>	<i>7.9</i>	<i>-20.5</i>	<i>12.0</i>	<i>11.9</i>
EBIT	0.0	-95.5	0.0	-159.6	-255.1	0.0	-107.1	0.0	-7.8	-114.9	-13.8	-13.8
<i>EBIT margin (%)</i>	<i>0.0</i>	<i>-96,464.6</i>	<i>0.0</i>	<i>-3,257.8</i>	<i>-5,102.0</i>	<i>0.0</i>	<i>-181.2</i>	<i>0.0</i>	<i>-8.5</i>	<i>-76.5</i>	<i>-6.7</i>	<i>-6.8</i>
Net financial items	0.0	-25.4	0.0	9.4	-16.0	0.0	55.3	0.0	-10.0	45.3	-18.6	-21.0
Pre-tax profit	0.0	-120.9	0.0	-150.2	-271.1	0.0	-51.8	0.0	-17.8	-69.6	-32.3	-34.8
Tax	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	-0.1	0.0	0.0
<i>Tax rate (%)</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>-0.1</i>	<i>-0.1</i>	<i>-0.1</i>	<i>-0.1</i>
Net profit	0.0	-120.9	0.0	-150.3	-271.2	0.0	-51.9	0.0	-17.8	-69.7	-32.4	-34.8
EPS	0.00	-0.54	0.00	-0.67	-1.20	0.00	-0.20	0.00	-0.07	-0.26	-0.12	-0.13
EPS adjusted (diluted no. of shares)	0.00	-0.54	0.00	-0.67	-1.20	0.00	-0.19	0.00	-0.07	-0.26	-0.12	-0.13
Dividend per share	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SALES, SEKm												
Endomines	0.0	0.1	0.0	4.9	5.0	0.0	59.1	0.0	91.1	150.2	206.7	202.6
Total	0.0	0.1	0.0	4.9	5.0	0.0	59.1	0.0	91.1	150.2	206.7	202.6
SALES GROWTH, Y/Y %												
Endomines	-100.0	-98.7	-100.0	600.0	-61.8	0.0	59,059.2	0.0	1,760.1	2,904.9	37.6	-2.0
Total	-100.0	-98.7	-99.9	599.9	-61.8	0.0	59,597.0	0.0	1,760.5	2,904.9	37.6	-2.0
EBIT, SEKm												
Endomines	0.0	-95.5	0.0	-159.6	-255.1	0.0	-107.1	0.0	-7.8	-114.9	-13.8	-13.8
Total	0.0	-95.5	0.0	-159.6	-255.1	0.0	-107.1	0.0	-7.8	-114.9	-13.8	-13.8
EBIT margin, %												
Endomines	0.0	-95,595.6	0.0	-3,257.2	-5,102.0	0.0	-181.2	0.0	-8.5	-76.5	-6.7	-6.8
Total	0.0	-96,464.6	0.0	-3,257.8	-5,102.0	0.0	-181.2	0.0	-8.5	-76.5	-6.7	-6.8

INCOME STATEMENT, SEKm	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E
Sales	122.2	104.0	5.8	13.1	5.0	150.2	206.7	202.6
<i>Sales growth (%)</i>	<i>21.0</i>	<i>-14.9</i>	<i>-94.4</i>	<i>125.9</i>	<i>-61.8</i>	<i>2,904.9</i>	<i>37.6</i>	<i>-2.0</i>
EBITDA	-5.7	-5.5	-48.8	-108.0	-118.1	-30.8	24.8	24.0
<i>EBITDA margin (%)</i>	<i>-4.7</i>	<i>-5.3</i>	<i>-841.1</i>	<i>-824.5</i>	<i>-2,362.0</i>	<i>-20.5</i>	<i>12.0</i>	<i>11.9</i>
Depreciation	-59.1	-43.0	-3.6	-76.7	-137.0	-84.0	-38.6	-37.9
EBITA	-64.8	-48.5	-52.4	-184.7	-255.1	-114.9	-13.8	-13.8
Goodwill amortization / writedown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EBIT	-64.8	-48.5	-52.4	-184.7	-255.1	-114.9	-13.8	-13.8
<i>EBIT margin (%)</i>	<i>-53.0</i>	<i>-46.6</i>	<i>-903.4</i>	<i>-1,410.0</i>	<i>-5,102.0</i>	<i>-76.5</i>	<i>-6.7</i>	<i>-6.8</i>
Reported EBIT	-64.8	-48.5	-52.4	-184.7	-255.1	-114.9	-13.8	-13.8
<i>EBIT margin (reported) (%)</i>	<i>-53.0</i>	<i>-46.6</i>	<i>-903.4</i>	<i>-1,410.0</i>	<i>-5,102.0</i>	<i>-76.5</i>	<i>-6.7</i>	<i>-6.8</i>
Net financials	-4.5	11.0	-7.7	-12.3	-16.0	45.3	-18.6	-21.0
Pre-tax profit	-69.3	-37.5	-60.1	-197.0	-271.1	-69.6	-32.3	-34.8
Taxes	0.0	0.1	0.0	0.1	-0.1	-0.1	0.0	0.0
Minority shares	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net profit	-69.3	-37.4	-60.1	-196.9	-271.2	-69.7	-32.4	-34.8
Cash NRIs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-cash NRIs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BALANCE SHEET, SEKm								
Assets								
Fixed assets	130	476	573	568	527	496	487	464
Goodwill	0	0	0	0	0	0	0	0
Right of use assets	0	0	0	0	0	0	0	0
Inventory	2	2	0	2	8	30	41	41
Receivables	12	4	1	3	18	30	41	41
Liquid funds	16	19	16	11	12	23	21	14
Total assets	161	501	590	585	566	579	591	560
Liabilities								
Shareholder's equity	45	252	336	331	310	320	288	253
Minority interest	0	0	0	0	0	0	0	0
Convertibles	0	169	175	0	0	0	0	0
Lease liabilities	0	0	0	0	0	0	0	0
Deferred taxes	0	0	0	0	0	0	0	0
Interest bearing debt	84	44	46	154	161	163	208	212
Non-interest bearing current liabilities	0	0	0	0	0	0	0	0
Other interest-free debt	32	36	32	100	95	95	95	95
Total liabilities	161	501	590	585	566	579	591	560
CASH FLOW, SEKm								
+ EBITDA	-6	-5	-49	-108	-118	-31	25	24
- Net financial items	-4	11	-8	-12	-16	45	-19	-21
- Taxes	0	0	0	0	0	0	0	0
- Increase in Net Working Capital	9	8	-5	4	3	-34	-23	2
+/- Other	2	-22	-17	40	13	0	0	0
= Cash flow from operations	1	-8	-79	-77	-119	-19	-16	5
- Capex	-14	-100	-82	-27	-50	-53	-30	-15
- Acquisitions	0	-59	0	0	0	0	0	0
+ Divestments	0	0	2	0	0	0	0	0
= Free cash flow	-13	-167	-159	-103	-169	-72	-46	-10
+/- New issues/buybacks	0	244	144	192	250	80	0	0
- Paid dividend	0	0	0	0	0	0	0	0
+/- Other	-1	-74	12	-93	-81	3	44	4
Change in cash	-14	3	-3	-4	1	10	-2	-6

KEY FIGURES	2018E	2019E	2020E	2021E	2022E	2023E	2024E
M-cap	211	448	366	574	427	427	427
Net debt (excl. convertibles)	25	30	143	148	141	187	197
Enterprise value	405	654	509	722	568	614	624
Sales	104	6	13	5	150	207	203
EBITDA	-5	-49	-108	-118	-31	25	24
EBIT	-48	-52	-185	-255	-115	-14	-14
Pre-tax	-37	-60	-197	-271	-70	-32	-35
Earnings	-37	-60	-197	-271	-70	-32	-35
Equity book value (excl. minorities)	252	336	331	310	320	288	253
Valuation multiples							
EV/sales	3.9	112.7	38.8	144.4	3.8	3.0	3.1
EV/EBITDA	-73.7	-13.4	-4.7	-6.1	-18.4	24.7	26.0
EV/EBITA	-8.4	-12.5	-2.8	-2.8	-4.9	-44.6	-45.2
EV/EBIT	-8.4	-12.5	-2.8	-2.8	-4.9	-44.6	-45.2
EV/OCF	-53.2	-8.3	-6.6	-6.1	-29.4	-37.6	133.8
EV/FCFF	-2.3	-4.3	-5.6	-4.7	-4.8	-22.1	58.6
P/FCFE	-1.3	-2.8	-3.5	-3.4	-5.9	-9.2	-41.3
P/E	-5.6	-7.5	-1.9	-2.1	-6.1	-13.2	-12.3
P/B	0.8	1.3	1.1	1.8	1.3	1.5	1.7
Target EV/EBITDA	0.0	0.0	0.0	0.0	-18.3	24.6	25.9
Target EV/EBIT	0.0	0.0	0.0	0.0	-4.9	-44.4	-45.0
Target EV/FCF	0.0	0.0	0.0	0.0	-7.8	-13.2	-60.2
Target P/B	0.0	0.0	0.0	0.0	1.3	1.5	1.7
Target P/E	0.0	0.0	0.0	0.0	-6.1	-13.1	-12.2
Per share measures							
Number of shares	35,148	79,957	131,305	225,794	265,198	265,198	265,198
Number of shares (diluted)	35,148	79,957	131,305	225,794	266,698	265,198	265,198
EPS	-1.06	-0.75	-1.50	-1.20	-0.26	-0.12	-0.13
Operating cash flow per share	-0.22	-0.99	-0.59	-0.53	-0.07	-0.06	0.02
Free cash flow per share	-4.74	-1.99	-0.79	-0.75	-0.27	-0.17	-0.04
Book value per share	7.16	4.20	2.52	1.37	1.21	1.09	0.95
Dividend per share	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dividend payout ratio, %	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dividend yield, %	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FCF yield, %	-79.0	-35.6	-28.2	-29.4	-16.9	-10.8	-2.4
Efficiency measures							
ROE	-25.2	-20.5	-59.1	-84.6	-22.1	-10.7	-12.9
ROCE	-9.9	-10.3	-35.5	-53.4	-9.1	-2.8	-2.9
Financial ratios							
Inventories as % of sales	1.7	0.6	18.8	163.9	20.0	20.0	20.0
Receivables as % of sales	3.6	22.8	25.4	365.3	20.0	20.0	20.0
Non-interest bearing liabilities as % of sales	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NWC/sales, %	-20.8	-310.5	-456.7	-1,075.6	-13.4	1.2	0.4
Operative CAPEX/sales, %	95.9	1,414.7	202.8	9,99.7	35.2	14.5	7.4
CAPEX/sales (incl. acquisitions), %	39.0	1,414.7	202.8	9,99.7	35.2	14.5	7.4
FCFF/EBITDA	32.3	3.1	0.8	1.3	3.8	-1.1	0.4
Net debt/EBITDA, book-weighted	-4.6	-0.6	-1.3	-1.3	-4.6	7.5	8.2
Debt/equity, market-weighted	0.2	0.1	0.4	0.3	0.4	0.5	0.5
Equity ratio, book-weighted	84.0	86.7	56.5	54.8	55.3	48.7	45.2
Gearing, %	6.0	6.0	43.1	47.9	44.0	65.0	78.1

COMPANY DESCRIPTION: Endomines engages in exploration, mining, and extraction of gold deposits. Its sites are found in Eastern Finland along the Karelian Gold line and in Idaho, USA. The company was founded in 2005 and is headquartered in Stockholm, Sweden. Endomines focuses its operations to assets in stable jurisdictions that can be brought to production rapidly and with limited investment.

INVESTMENT CASE: Endomines new strategy focuses on development of the company's Finnish assets, the US assets are developed through partnership models. The company has proceeded well with reinitiating production at the Pampalo site, Endomines produced 3 478 ounces of gold during H1 2022. The company's focus in the near term is on Pampalo underground and East open pit production and on gold exploration activities in Karelian gold line.

OWNERSHIP STRUCTURE	SHARES	SEKm	%
Joensuun Kauppa ja Kone	32,504,393	52.332	12.3%
Clearstream Banking S.A.	31,457,513	50.647	11.9%
Northern Trust Global Services	29,387,519	47.314	11.1%
Nordea Bank Abp (Publ)	16,423,415	26.442	6.2%
Skandinaviska Enskilda Banken	12,941,429	20.836	4.9%
Evli Plc	10,404,345	16.751	3.9%
Mariatorp Oy	8,000,000	12.880	3.0%
Wipunen Varainhallinta Oy	8,000,000	12.880	3.0%
K22 Finance Oy	5,103,669	8.217	1.9%
Aktia Bank Abp	4,130,050	6.649	1.6%
Ten largest	158,352,333	254.947	60%
Residual	106,846,045	172.022	40%
Total	265,198,378	426.969	100%

EARNINGS CALENDAR

OTHER EVENTS

COMPANY MISCELLANEOUS

CEO: Kari Vyhtinen
CFO: Mikko Sopanen
IR:

Ahventie 4 A, FI-02170 Espoo
Tel:

DEFINITIONS

P/E	$\frac{\text{Price per share}}{\text{Earnings per share}}$	EPS	$\frac{\text{Profit before extraord. items and taxes} - \text{income taxes} + \text{minority interest}}{\text{Number of shares}}$
P/BV	$\frac{\text{Price per share}}{\text{Shareholders' equity} + \text{taxed provisions per share}}$	DPS	Dividend for the financial period per share
Market cap	Price per share * Number of shares	OCF (Operating cash flow)	EBITDA – Net financial items – Taxes – Increase in working capital – Cash NRIs ± Other adjustments
EV (Enterprise value)	Market cap + net debt + minority interest at market value – share of associated companies at market value	FCF (Free cash flow)	Operating cash flow – operative CAPEX – acquisitions + divestments
EV/Sales	$\frac{\text{Enterprise value}}{\text{Sales}}$	FCF yield, %	$\frac{\text{Free cash flow}}{\text{Market cap}}$
EV/EBITDA	$\frac{\text{Enterprise value}}{\text{Earnings before interest, tax, depreciation and amortization}}$	Operative CAPEX/sales	$\frac{\text{Capital expenditure} - \text{divestments} - \text{acquisitions}}{\text{Sales}}$
EV/EBIT	$\frac{\text{Enterprise value}}{\text{Operating profit}}$	Net working capital	Current assets – current liabilities
Net debt	Interest bearing debt – financial assets	Capital employed/Share	$\frac{\text{Total assets} - \text{non-interest bearing debt}}{\text{Number of shares}}$
Total assets	Balance sheet total	Gearing	$\frac{\text{Net debt}}{\text{Equity}}$
Div yield, %	$\frac{\text{Dividend per share}}{\text{Price per share}}$	Debt/Equity, %	$\frac{\text{Interest bearing debt}}{\text{Shareholders' equity} + \text{minority interest} + \text{taxed provisions}}$
Payout ratio, %	$\frac{\text{Total dividends}}{\text{Earnings before extraordinary items and taxes} - \text{income taxes} + \text{minority interest}}$	Equity ratio, %	$\frac{\text{Shareholders' equity} + \text{minority interest} + \text{taxed provisions}}{\text{Total assets} - \text{interest-free loans}}$
ROCE, %	$\frac{\text{Profit before extraordinary items} + \text{interest expenses} + \text{other financial costs}}{\text{Balance sheet total} - \text{non-interest bearing debt (average)}}$	CAGR, %	Cumulative annual growth rate = Average growth per year
ROE, %	$\frac{\text{Profit before extraordinary items and taxes} - \text{income taxes}}{\text{Shareholder's equity} + \text{minority interest} + \text{taxed provisions (average)}}$		

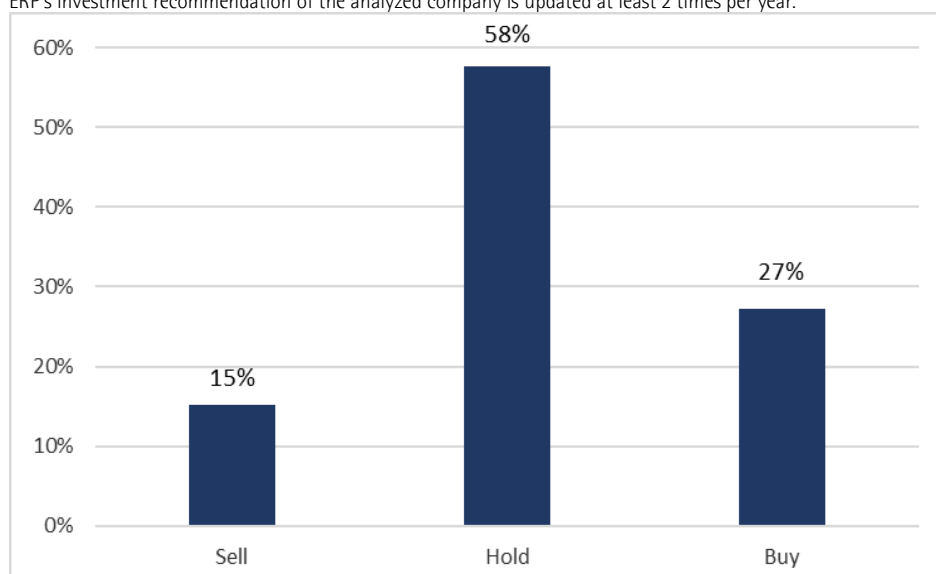
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Investment recommendations are defined as follows:

Target price compared to share price	Recommendation
< -10 %	SELL
-10 – (+10) %	HOLD
> 10 %	BUY

ERP's investment recommendation of the analyzed company is updated at least 2 times per year.



The graph above shows the distribution of ERP's recommendations of companies under coverage in 11th of May 2020. If recommendation is not given, it is not mentioned here.

Name(s) of the analyst(s): Jortikka, Salokivi

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