Betolar

Extensive report

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Inderes corporate customer

This report is a summary translation of the report “Kasvuun tai tuntuvaan laimennukseen” published on 19.2.2024 at 7:26 am EET.

Growth or significant dilution

We reiterate our Reduce recommendation and EUR 1.10 target price for Betolar. Betolar has been listed for just over 2 years, and we believe 2024 is a critical year for the company's investment story, as the commercialization of more environmentally friendly concrete has so far been slow and raising financing is likely to be costly for existing owners without further solid evidence of growth. In our view, risks continue to drive the company's investment story, although the potential for investor returns would be huge if commercialization succeeds even close to the company's goals.

Betolar remains an early-stage development company with a high risk profile

In recent years, Betolar has developed and commercialized Geoprime, a solution based on geopolymer technology to reduce CO_2 emissions from the concrete production process. Traditional concrete (mainly cement) accounts for around 7% of global CO_2 emissions, making a viable solution a pressing issue as part of climate change mitigation. Various players are attempting to address this need with a number of different solutions, none of which, as far as we can tell, has yet gained traction. The commercialization of Betolar has also progressed slower than external and probably also internal expectations, with a revenue of only 0.5 MEUR last year. In order to increase momentum, the company has shifted its focus in the spring 2023 strategy update from the faltering small-customer concrete products segment to larger customers in the mining and precast sectors. Betolar's business model is license-based and scalable, enabled by the development of its own AI tool. For the next few years at least, the company palette will also include project-type service business related to piloting and side stream research, so there is still a long way to go to achieve a larger scale of valuable license revenue. This illustrates Betolar's profile as an early-stage development company with high potential against a genuine risk of losing capital.

End-of-decade potential, but current year critical for investment story

In connection with the Q4 report, Betolar updated its financial targets for 2026. The company is now targeting a revenue of 50-100 MEUR in 2026 (was 200 MEUR) and a positive operating cash flow (unchanged). The change was expected in our view, but the new targets are also ambitious. In the neutral scenario of our forecasts, revenue development is below the company's targets and we expect Betolar to reach the 2026 range towards the end of the decade. However, we estimate that the company can achieve positive operating cash flow also at slightly lower revenue than targeted, given the expected revenue mix (incl. services) in the coming years and the 5 MEUR savings in H2'24 (we forecast positive operating cash flow in 2027). The margins of error in our forecasts are huge and the potential scenarios still range from moon to dumpster. Based on our forecasts and the company's liquidity reserves (including the minimum cash level), we expect Betolar to raise additional financing roughly at the turn of 2024-2025. Carrying out a funding round without concrete evidence of growth would result in significant dilution for existing owners. This means that the Betolar's investment story will reach a critical point already this year.

The numerator and denominator of the risk/reward ratio at the highest end of the stock market

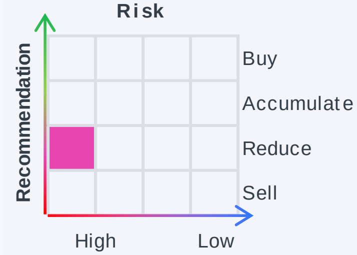
The EV/S multiples in our forecasts for Betolar's rapid growth are 7x-2x. The valuation is broadly in line with the peer group. Our DCF model is slightly above the share price. However, options and financing needs put upward pressure on the number of shares in the model, which we believe limits the expected return too much given the high risks. Therefore, Betolar's risk/reward ratio remains insufficient in our view and we will have to wait and see how the company manages and minimizes the dilution risk by accelerating growth.

Recommendation

Reduce
(previous Reduce)

EUR 1.10
(previous EUR 1.10)

Share price:
EUR 1.20



Key figures

	2023	2024e	2025e	2026e
Revenue	0.5	3.0	15.0	22.4
growth-%	79%	483%	400%	49%
EBIT adj.	-13.3	-6.6	-7.1	-6.2
EBIT-% adj.			-47%	-27.5 %
Net Income	-13.2	-6.6	-8.0	-6.8
EPS (adj.)	-0.67	-0.34	-0.41	-0.35

P/E (adj.)	neg.	neg.	neg.	neg.
P/B	1.7	3.3	neg.	neg.
Dividend yield-%	0.0 %	0.0 %	0.0 %	0.0 %
EV/EBIT (adj.)	neg.	neg.	neg.	neg.
EV/EBITDA	neg.	neg.	neg.	neg.
EV/S	28.6	7.4	2.2	1.9

Source: Inderes

Guidance

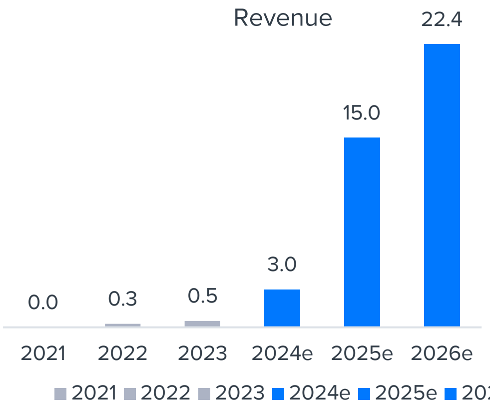
(New guidance)

No guidance

Share price

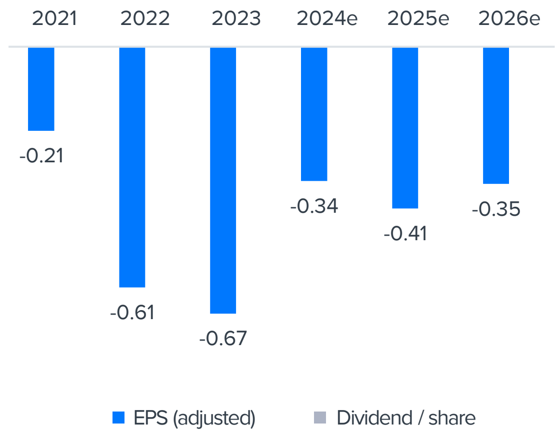
Source: Millistream Market Data AB

Revenue



Source: Inderes

EPS and dividend



Source: Inderes

Value drivers

- Very high market potential
- Green transition is shaking up the otherwise conservative industry
- Betolar offers a green transition solution for the emission-intensive sector
- Inherently scalable business model

Risk factors

- Commercialization of the business is still at an early stage
- The company will be cash negative for several more years and the business will scale up years from now
- Betolar needs additional funding
- More competitive technologies may seek to enter the market
- We estimate that business scalability requires the success of the AI project

Valuation	2024e	2025e	2026e
Share price	1.20	1.20	1.20
Number of shares, millions	19.6	19.6	19.6
Market cap	23	23	23
EV	22	33	42
P/E (adj.)	neg.	neg.	neg.
P/E	neg.	neg.	neg.
P/B	3.3	neg.	neg.
P/S	7.8	1.6	1.0
EV/Sales	7.4	2.2	1.9
EV/EBITDA	neg.	neg.	neg.
EV/EBIT (adj.)	neg.	neg.	neg.
Payout ratio (%)	0.0 %	0.0 %	0.0 %
Dividend yield-%	0.0 %	0.0 %	0.0 %

Source: Inderes

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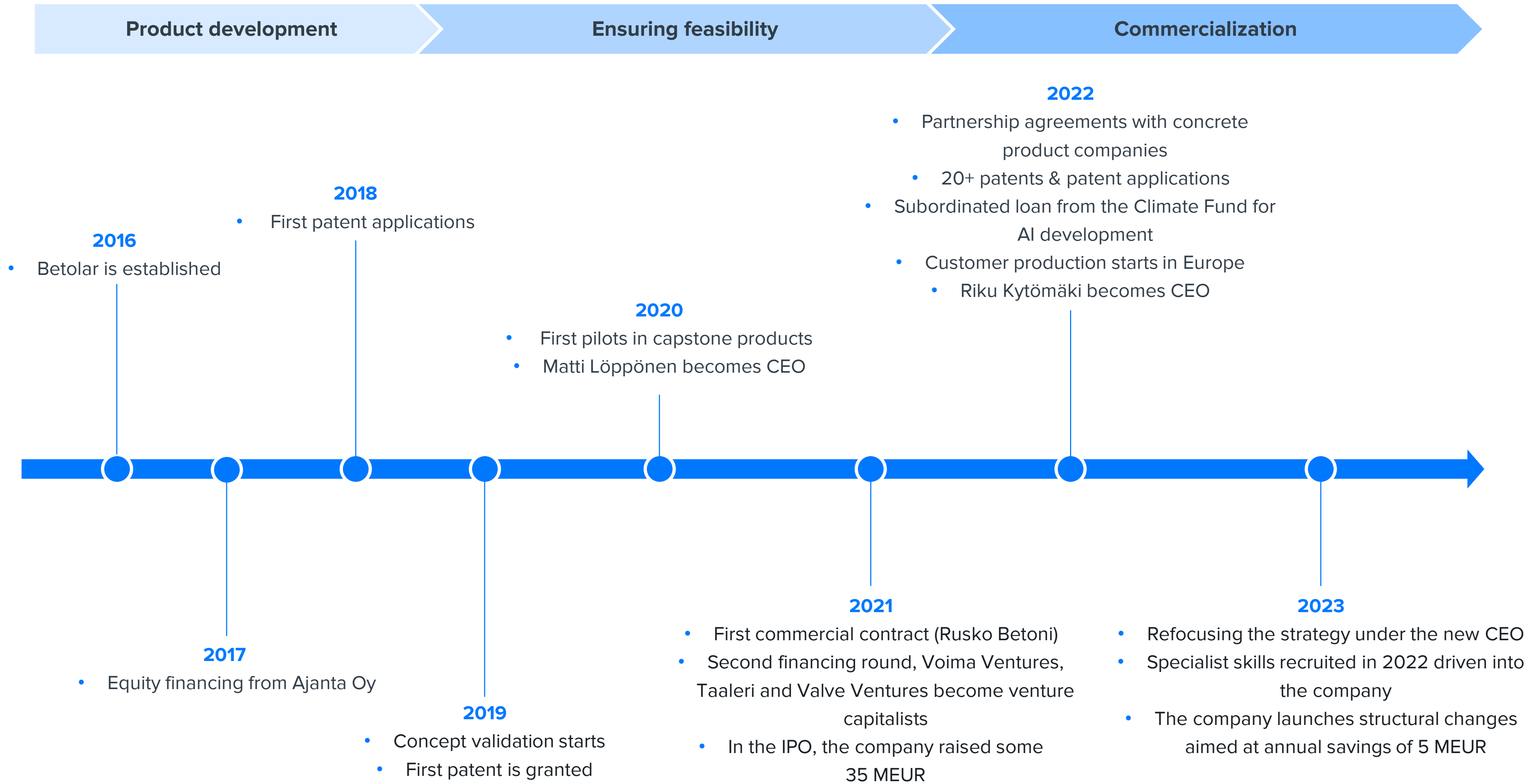
Betolar's development path



Source: Betolar, Inderes

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Betolar in brief

Betolar, which was listed in 2021, is a Finnish early growth materials technology company whose aim is to enable the concrete industry to move to greener concrete and concrete products using Betolar's Geoprime geopolymer solution that is significantly more environmentally friendly than conventional concrete. The emission reduction (CO_2) can be up to 80%. The solution consists of industrial side stream (or partially even waste) and an activator, which form the binder needed for the solution. The solution enables Betolar's customer to replace cement in concrete production which generates the bulk of the high carbon dioxide emissions in concrete production. The Geoprime concept is primarily based on manufacturers' existing production capacity so customers do not have to make significant investments in new production lines.

Betolar is an early-stage technology company

We feel Betolar's business model is that of a technology company whose core business is developing new materials technologies and selling and marketing them. So Betolar does not produce cement or concrete itself but offers its customers the opportunity to manufacture these products by selling licenses for the use of the Geoprime concept (incl. technical and commercial support) and the activator needed as a sub-component in Geoprime concrete production. This enables growth with reasonable capital needs in an industry where the capital requirements for manufacturing companies are typically high.

We feel that Betolar is a reformer of a traditional and conservative industry (incl. regulation). In order to promote the green transition of the entire industry, Betolar supports its customers in selling and marketing the product further along the value chain. We believe that this is important for the whole new concept to be successful.

Building a customer base is just beginning

In the early stages of commercialization, the Geoprime concept has been used to make products that are less demanding or at least less regulated, such as paving stones and concrete pipes. However, the strategy updated in spring 2023 aims to shift the focus toward more demanding products, such as load-bearing structures and concrete utilized in mines. However, we feel Betolar is still in a strategic phase where the company must prove to its customers and investors that its concept and business model work.

We estimate that measured by revenue the size of the customer companies in Betolar's concrete segment will initially be in the range of 10-200 MEUR. In load-bearing structures and mining concrete, which are at the heart of the strategy, customers can be significantly larger players, which naturally also increases Betolar's potential for customer-specific sales. We find this sensible, given that commercialization among small customers in the concrete product segment has proven more difficult than expected in 2022-2023.

BETOLAR

A materials technology company founded in Kannonkoski in 2016 specializing in the circular economy

Betolar is developing a substitute for cement that utilizes industrial side streams, which enables significant emission reductions in the concrete value chain

At the end of 2024, the company employed an average of 53 employees.

The company targets a scalable business model with license-based pricing and by developing a digital tool that automates the optimization of concrete binder dosing.

Betolar has conducted pilots with some 60 different potential customers, but there is no significant revenue yet

As a result of Betolar's R&D work, the company has been granted several patents

By the end of 2026, Betolar aims to generate 50-200 MEUR in revenue and positive operational cash flow in 2026.

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In the mining sector, the management of side streams may also become easier, as many mines generate materials that can be utilized as side streams.

For example, Consolis Parma that has developed more environmentally friendly hollow core slab products based on the Geoprime concept in cooperation with Betolar in 2022, is part of the Consolis Group that globally generates revenue of around one billion. By convincing individual country organizations of these types of groups Betolar could in principle also have access to large customers. Geographical expansion could also be easier within large customers if Betolar had good references from other subsidiaries within the same group.

According to the prospectus, Betolar's potential customer base includes more than 450 customers in Europe and Asia. According to our estimates, this figure is still accurate and does not include large companies or small local players. In our opinion, Betolar should not aim for the latter, as the revenue potential from the customer is too low and the output/input ratio for Betolar is therefore unsatisfactory, considering that in the initial phase launching the customer relationship (incl. pilots) requires manual work.

Initial focus on Europe and Asia

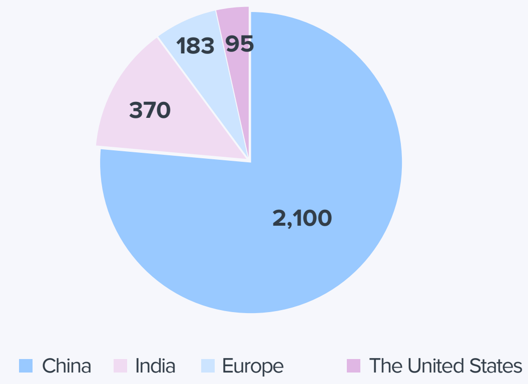
Betolar's commercial customers are currently located in Europe and Asia. The company has not limited itself to a specific target market, but potential customers are sought based on "green demand" and availability of side streams. We consider this justified, as a technology company typically has global business operations and does not need to build a larger organization in every country, at least before proceeding to the commercial phase. In addition, due to the early development stage, the possibility of breakthroughs must be explored with a broad radar.

We estimate that green demand is strongest in Europe, while the availability of side streams is best in Asia and especially in China. Expansion to North America can take place through global customer relationships, which would not necessarily increase Betolar's fixed cost structure as much as expansion merely through new customer acquisition. There may be good side streams in the mining sector globally, and the most potential area here is, at least initially, Europe and even Finland and the other Nordic countries, which are at the forefront of spreading green values and requirements.

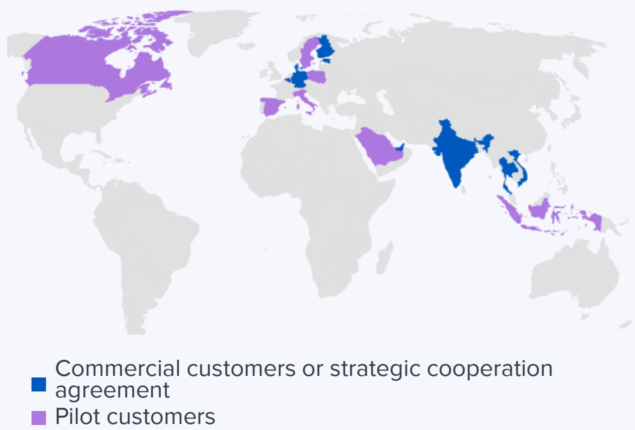
Revenue is mainly generated from licenses and activators, and initially also from services

Betolar aims to sell the licenses for using the Geoprime solution and the activator needed for production. In the future, revenue will also be generated from arranging material logistics, side-stream analyses and product development fees related to pilots and cooperation projects. We believe that the margin profiles of activators, logistics and development fees are quite low. Thus, the role of these components is primarily to enable high-margin licensing sales. So far, the company's cumulative revenue of some 0.6 MEUR includes sales of all

Cement production by region 2022 (Mt)



Location of Betolar customers



Source: CEMBUREAU, Betolar

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components, but the share of one-off development and cooperation project fees account for at least half of the cumulative revenue.

We estimate that Betolar primarily seeks long-term contracts that set preconditions for revenue flows. However, even long contracts do not in themselves guarantee Betolar's future revenue and we believe that the license component is also largely tied to the customer's production volume, which naturally is determined by the end demand for applications by builders and real estate developers and ultimately by consumers. License components can also include a fixed element, the share of which we estimate to also be small in contracts signed in the initial stages of commercialization. Chemical fees is naturally an item tied to the customer's volume, while pilot and development fees are service revenue.

End demand may vary based on seasons (i.e., the annual cycle in construction), but in the bigger picture the trajectory of demand is defined by the desire and ability of concrete end-users to pay a somewhat higher price for a more environmentally friendly product. In addition, demand is also heavily driven by regulation, which is likely to increase the price of CO_2 emissions in the future and cause additional costs, e.g., in the production of industrial waste.

The gross margin of revenue items and their values in the eyes of investors differ clearly

Betolar has planned that license-based revenue would cover costs related to the development of the company's technology as well as consulting work in the customer interface concerning, e.g., dosing and production optimization. In these cases, Betolar naturally must help its customers, because the customers' expertise in the partly demanding materials technology field would not otherwise enable implementation of Betolar's concept

Selling additional licenses does naturally not cause any additional variable costs for the company from direct purchases, so the sales margin of the revenue flow is very high (at best almost 100%). In contrast, Betolar has to buy the activator chemicals needed for the Geoprime recipe from the chemical industry, which means that the gross margin for activator sales is substantially lower than for license sales also in the medium and long term. The gross margin of pilot and development fees may vary significantly, e.g., in terms of the project's side stream needs and its processing, but generally we expect it to be quite good given the people-driven nature of the business.

In addition, license sales and chemical sales are, at least to some extent, predictable and even recurring revenue items at the normal commercial stage, while initial piloting and research fees are non-recurring project sales. Due to sales margins and continuity, the value of Betolar's potential revenue streams is very different in the eyes of investors (license > chemicals > service), but due to limited cumulative sales, we do not find structural analysis meaningful at this time.

Revenue components

Licenses

- Production and marketing support
- Geoprime brand
- Constantly evolving dosing

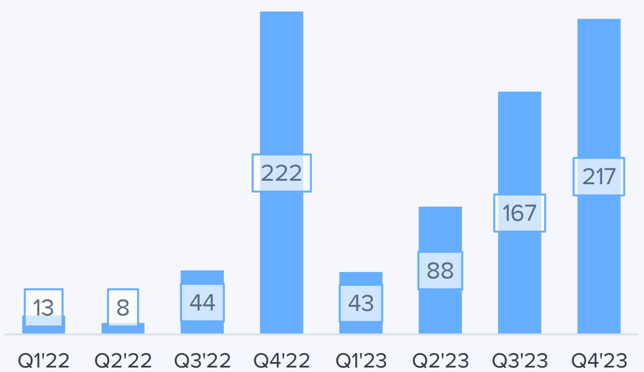
Activators

- Activator chemicals needed to manufacture Geoprime concrete
- Betolar orders for the customers as subcontracting from chemical industry players

Consulting

- Pilot implementation and side stream research
- Project-based services designed to attract license customers

Revenue development (TEUR)



Source: Betolar, Inderes

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Similarly, a significant share of Betolar's personnel costs and other operating expenses are related to underlying factors of license sales, such as continuous R&D and customer support. In the long run, due to the high sales margin potential and fixed cost structure, Betolar's business model is, in principle, scalable as long as Betolar is able to keep the share of license sales high enough. However, we stress that commercial proof of the concept and business model is still ongoing.

Licenses play a key role in the long-term business model

Overall, we expect Betolar to avoid contracts that do not include a license component to make it easier to keep the long-term value promise in the eyes of the customer. We believe that some of the first customers in the concrete product segment have been granted regional and time-limited exclusive rights to the Geoprime concept. Exclusive rights would limit Betolar's commercial potential, as the market for the manufacture of load-bearing structures or concrete products, in particular, is local and fragmented and too detailed exclusive rights could limit Betolar's market size. We therefore suspect that Betolar will try to avoid exclusive contracts in the future.

We believe that committing to the license is not a disproportionately risky decision from the customer's viewpoint as the license is volume-based and not fixed-priced. This should make sales somewhat easier even though we suspect that invoicing for two separate components is not the easiest solution from the customer's viewpoint. In the long run, we assume that the customer's value from Betolar comes especially from the expertise in materials technology, and not from the simple chemicals that are sourced fairly easily from the chemical industry. Thus, we believe that placing the focus of invoicing on licenses is possible, but not easy.

We suspect that Betolar is prepared to also sign license-free contracts with some individual customers, but in these cases the activator price must be higher in order for the customer's overall profitability to reach the targeted long-term sales margin. In Asia, in particular, customers are typically less used to paying for licenses and/or giving royalties to their suppliers, while in Europe, including licenses in contracts can be somewhat easier, especially with a mainly volume-based structure.

Achieving the targeted sales margin in the long term also requires that Betolar as a whole achieves a critical volume mass as we believe the scale affects the company's unit costs and its power to negotiate commercial terms with its customers.

We believe that accounting reflects Geoprime's volume growth in the longer term

Betolar does not yet open the distribution of revenue between licenses and activators, and analyzing the structure of revenue is not yet be meaningful. We expect that license fees will be recorded based on the actual volume and in terms of the small recurring component over time, so in principle we do not expect Betolar's revenue to fluctuate with the timing of when license contracts are signed, but rather to develop with the production volume growth of Geoprime concrete. By contrast, activator payments are recognized on a straight-line basis according to actual deliveries. However, due to the project nature of initial service revenue, Betolar's revenue may fluctuate with the timing of projects until Geoprime volumes grow to a larger size range.

FX risks are mainly reasonable

We believe that Betolar's contracts are invoiced either in euro or US dollars for both revenue components. We, therefore, estimate that the currency risks borne by the company will be reasonable, even though Betolar is already operating in developing Asian countries and emerging markets are part of the company's strategy.

The threshold for introducing Geoprime is supposed to be low

The threshold for starting concrete products based on Geoprime should be reasonable, as the investments required to implement the Geoprime concept are small. In terms of product properties, geopolymer concrete does not differ in principle from concrete made from conventional cement, but in load-bearing structures, the service requirement of cement based on construction standards are a certain slowdown for the company (e.g. adding cement to concrete made with Geoprime slightly reduces the end product properties). In the mining sector, handling side streams probably requires

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investments of a few millions from the mine to introduce Geoprime. Although increasing supply (incl. availability of side streams) is not without problems, we feel the limiting factor for Geoprime's growth is the demand side and the competitive situation in particular.

Process begins with preparing the right dosing

After identifying a potential customer and preliminary discussions, Betolar creates at least a product commercialization and utilization plan for the customer that is at least partially tailored to the target market. The plan includes the steps for the dosing of the final product and productization (incl. certification, etc.). In the case of mines, there may be no need for productization, but concrete produced as the final product replaces concrete used in, e.g., various support structures and reinforcements in the mine.

Replacing cement in concrete production with the Geoprime solution requires, in addition to Betolar's activator, a suitable industrial side stream, which forms a chemical reaction with the activator and hardening water and the stem material into concrete like cement. Betolar has so far studied several hundreds of side streams. Of these, some 15 applications have been examined in more detail. At this stage side stream substances that have been recognized as potentials include, e.g., different types of fly ash, slags from metallurgical processes, mining tailings and natural pozzolans. So far, blast-furnace slag has been used as the side stream in concrete products produced with the Geoprime solution.

A suitable side stream is a key component of the solution

We believe the potential of Betolar's business model relies on the Geoprime concept working with several industrial side streams. The use of these side streams should be based on new innovations, since charging high margins for a well-known and low value added application (i.e. using blast-furnace slag) is not realistic in our view. We also believe that this is a major challenge for the business model. The creation of new environmentally friendly and price-competitive technologies is a demanding and competitive playing field.

Some of the mentioned side streams are global and some local. Their available volumes, current use and prices also vary significantly. However, in the big picture, we expect regulations to tighten the processing requirements for industrial side streams and limit the possibility of exporting side streams to landfills (incl. stricter environmental permit requirements), especially in Europe. Thus, an increasing number of side streams will gradually become a bigger cost problem for industry, so the supply side of side stream raw materials should in principle develop favorably for Betolar, as long as the volume of potential side flows continue increasing.

Customer segments

Concrete products	**Applications:** Paving stones, concrete barriers, bases for EV charging stations **Several customers** in production phase **Potential** is limited due to moderate volumes (revenue/customer)
Construction elements (load-bearing structures)	**Applications:** Hollow core slabs, frame elements, pillars and beams **No customers** so far, a research project was conducted with Parma **Potential** is high due to the large volume of construction
Mining	**Applications:** Paste filling, sprayed concreting and stabilization **No customers** so far, the first pilots are planned **Potential** is high due to the high use of concrete in mines
Waste upcycling	**Applications:** Side stream research offered to side stream producers **Some customers**, but research is project-based **Potential** is based on the findings of the research and can be significant

Source: Betolar, Inderes

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Side streams are a big cost component

We believe, the key to long-term cost competitiveness of the Geoprime concept is optimization of side streams in terms of prices, price differences and availability as our view is that most of the costs of Betolar's solution are generated from the side stream (incl. its logistics). For example, in blended cement the demand for common GGBFS and fly ash and highish market prices in Europe have made the use of new side streams more attractive.

In China, where coal is an important source of energy also in the medium term, these more traditional side streams remain highly available. Therefore, Betolar's concept is likely to be able to compete faster in the same price class with common Portland cement-based concrete in Asia. Similarly, in Europe, the price level of the end product is still higher, but on the other hand, the green demand trend is further along and the price pressure on emissions is likely to increase more quickly. Thus, the willingness and ability to pay a premium is probably higher in Europe.

In the geographic market of Betolar's customers, the side stream must be available at a suitably low price for the customer relationship to make sense for Betolar. Thus, we believe the local price and availability of blast-furnace slag makes some customers more attractive than others. Innovations to exploit new side streams could change the situation quickly. Sustainable commercialization in the long term requires that the availability of the side stream is secured in the long term, and that the stream and activator mixture provides sufficient product characteristics. Mines do not necessarily have a side stream problem, as concrete production relies on the waste produced by the mine itself.

As stated, as part of the Geoprime license, Betolar offers its customer continuous side stream research, customer support and recipe development. Thus far, these are mainly manual expert work that requires a trained workforce as well as customer-specific or side stream based customization. Therefore, successful development of Betolar's AI-based platform is key to achieving the scalability and target profitability of the business model. Betolar has also actively continued to develop AI, although in the fall 2023 savings program, extensive external consultancy purchases were reduced and replaced with the company's own resources.

There may be flow-through items in the income statement and balance sheet from the side streams

Most likely, at least some of the customers require a comprehensive solution from Betolar in the concrete products and load-bearing structures, where both side streams and activators are delivered directly to the customers' factories. Betolar's current strategy recognizes this, and one of the objectives of the revised strategy is to strengthen the value chain position. Thus, Betolar must be able to price the increased resource needs and capital commitment in the license and activator components and possibly raise separate financing to cover the committed capital. Possible running of side stream procurement and sales would probably increase the company's revenue with a low additional margin. We believe that this should be considered when assessing the company's future growth rate, although this is difficult to date due to the limited reporting of revenue.

After the right dosing comes industrial piloting

After finding the suitable dosing, Betolar and the customer validate the solution by piloting the design in industrial production. In recent years, Betolar has carried out some pilots for customers for free but has now started billing customers for pilots to be implemented. The purpose of this is to cover the direct costs of piloting and ensure the customer's commitment to implementing the solution.

The cost and duration of the pilot phase varies significantly depending on the customer. In the concrete product segment, where Betolar's current customers are, we estimate that implementing pilots is fairly routine and the costs for the customer are relatively low (estimated EUR 5,000-15,000). Possible pilots for the mining industry in turn last several months or even a couple of years, the costs of which we estimate to be significantly higher. Thus, pilots in the mining industry can generate revenue growth compared to history. In the load-bearing structures, the duration and costs of the pilot is mainly between these extremes. During the pilot, the product's features, quality and cost-effectiveness are optimized to maximize the conditions for commercial success.

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Pilots have been carried out at the planned pace

Customers' transition from the pilot phase to license billing has been slow in the concrete product segment. We suspect that Betolar currently has several customers between the pilot phase and a commercial contract (cumulatively we estimate that there has been some 60 pilot customers). Betolar's pilot customers form a well-known group of dozens of potential customers, so the number of potential customers does not limit the progress of commercialization. However, the progress of commercialization depends on the demand for the green option among end-users (developer), the development of construction standards and the competitiveness of the Geoprime solution compared to other competitors.

If Betolar's concept is successful, the company becomes better known and the reorganization of production becomes more routine, and we believe the company could shorten or in some cases even skip the pilot phase. This could boost commercialization in the concrete product segment, but for the time being, we believe investors should consider pilots part of Betolar's business model. Especially in the mining sector, skipping pilots is an unlikely option in the near future.

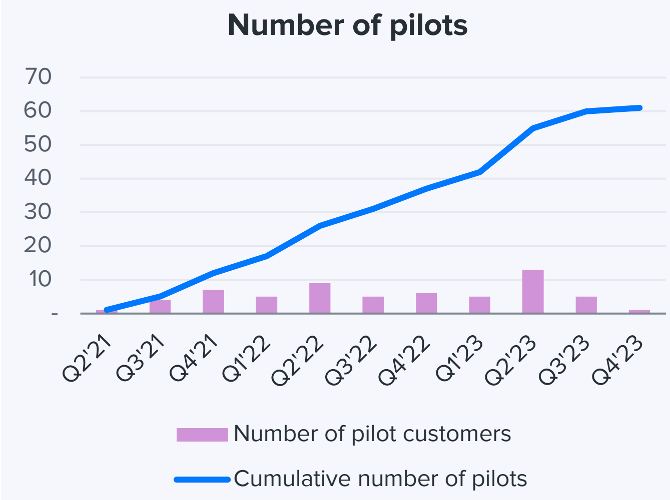
Significant investments in R&D

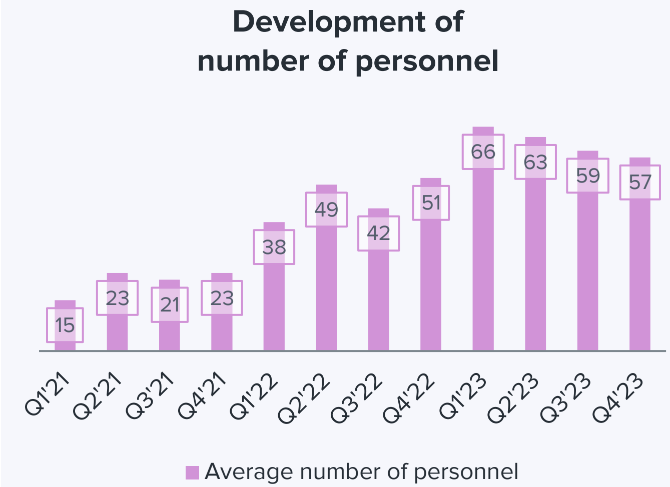
R&D is a critical part of any technology company's business model. Betolar increased its investments in this sector during the initial stages of commercialization. With the company's nature, research starts as a relatively early-stage basic research and the company also cooperates with universities at the very beginning of the research chain.

As part of the savings measures announced in the financial year 2023, the company announced that it was aiming for savings of 5 MEUR. The savings are largely related to other operating expenses, which we suspect are largely related to R&D. We believe the company aims to transfer resources in R&D from outside services to its own operations, thereby organizing its operations more efficiently. In particular, the development of an AI project with external consultants has probably been very costly in 2022-2023. However, we find it clear that with significant savings the company's R&D resources will decrease in 2024.

Business development will require additional funding

Equity raised in the IPO. With the help of the Climate Fund's debt financing and Business Finland's support for material research of side streams, Betolar has built its business model, invested in an innovation center, carried out research and cooperation projects, and recruited significant personnel. Due to the tightening of the financial markets since the listing and the weakening business environment, Betolar slowed down its growth investments for funding to last longer.





Source: Betolar

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We estimate that in 2025, the company will have to obtain financing to continue systematically implementing its commercialization and R&D strategy.

We see the savings as justified, as the current tight financial market combined with Betolar's modest track record of the competitiveness and commercialization of Geoprime technology would make the conditions for additional financing unfavorable to current owners. Thus, by slowing down the rate at which Betolar burns cash it gains more time to prove its concept works, and passing the potential interest peak would at least not impede the acquisition of financing.

Betolar has not directly disclosed its R&D investments, but we estimate that a significant part the company's personnel and other operating expenses are related to this area as the company is developing its concept. Overall, the cumulative losses of Betolar at EBITDA level have been some 28 MEUR in 2019-2023. In addition, losses also occurred on a small scale in 2016-2018. As a whole, we estimate that the losses and investments are roughly just over 30 MEUR level. This illustrates the resource needs required to reach the threshold of the concept's commercialization phase.

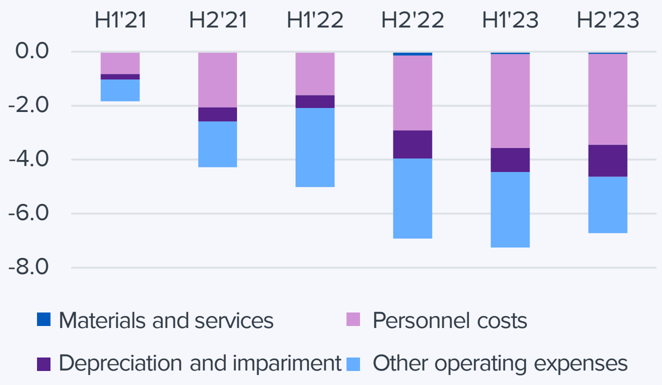
Development work relies on side stream research and AI application

Betolar's R&D function currently focuses on developing a digital tool needed to research the use of new side streams and for optimization of dosing. R&D work has also been carried out in cooperation with parties producing side streams or players using concrete. Cooperation projects have been carried out with, e.g., Metso (analcime sand), Eesti Energia (fly ash) and Consolis Parma (low-carbon hollow slabs).

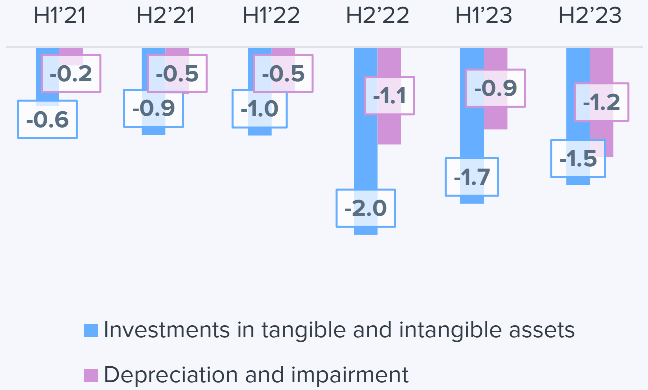
Betolar developed the digital platform in cooperation with the AI laboratory Silo AI, but se suspect that the development is currently carried out with Betolar's own resources. The aim of AI is to, e.g., automate dosing-related issues and create tools for the customer to optimize production. Development of tools related to production optimization is expected to start gaining more weight once the company collects more data on customer production when volumes grow.

We believe the AI project is still at a very early stage and clearer benefits that become visible in the company's financial data are only expected in the long term. If the development is successful, we expect it to support the value added generated by licenses to the customer. In terms of the scalability of the business model, we believe the development work is critical as thus far Betolar's operating model is rather manual and requires frontloaded investments in the cost structure (e.g. personnel).

Development of the cost structure (MEUR)



Capitalized investments and depreciation (MEUR)



Source: Betolar

Company description and business model 9/9

IPR protection an integral part of the concept

Betolar's business is based on the company's technological expertise, which the company has also sought to protect as far as possible. Betolar received its first patent in 2019 and now it has several patents. Patents have been granted in Finland and are partly international. These cover and protect certain business areas for a fixed period (until the 2030s according to our estimate), but we believe that Betolar cannot, e.g., protect the composition of the activator except at the level of a business secret. For example, using placebo chemicals could make it more difficult to determine the composition of the activator but this is hardly a particularly robust copy protection.

In our opinion, breaking a contract between Betolar and the customer would not prevent the customer from legally using an existing recipe. Therefore, we believe it is critical for Betolar to continuously develop its dosing, both in terms of product quality and cost-effectiveness, so that the customer's motivation to pay Betolar would continue. We therefore believe that soft IPR protections, competence maintenance and continuous development play a key role in the company's IPR strategy.

A scalable cost structure is the goal

So far, most of Betolar's costs are related to personnel costs. In addition, a significant share of the costs has so far been related to external experts' fees, as well as business and administrative development that are recognized as other operating expenses. These cost items are more flexible in the short term than those related to the company's payroll, but investments are necessary to sustain growth and, in the long run, significant use of external services is naturally also expensive. In addition, due to the company's high investment rate we do not find a closer inspection of Betolar's current cost structure very fruitful. Instead, we believe that investors should monitor the growth of the company's cost structure in particular and how it relates to revenue growth and cash assets.

The structural changes announced and initiated by the company in fall 2023 will significantly slow down the growth of investments in personnel costs and, in particular, external service costs. The company aims to achieve annual savings of 5 MEUR, which is a significant target, as, e.g., in the financial year 2022 personnel expenses and other operating expenses totaled 10.2 MEUR. We feel slowing down the investment rate is necessary and after the heavy increase in the cost structure, it may also include items that can be cut. On the other hand, we see a risk that, as the investments slow down the result may also be delayed.

Capital commitment is moderate in principle

Typically, for a technology company, Betolar records most of its long-term development work as an expense, but the company has also capitalized development costs on a small scale in its balance sheet. Tangible investments and lease liabilities under IFRS accounting have been low. As a whole, we believe the company strives to keep its balance sheet light and investments low. Thus, we feel the company has preconditions to achieve a high return on capital if the commercialization is successful and Betolar can achieve profitable growth.

In addition to intangible assets, creating new customer relationships may also require investments. In the future, this could mean, e.g., giving customers favorable terms of payment, which would be visible as an increase in working capital. As a rule, we believe the company should also be able to keep its working capital commitment low, as long as no greater flow-through items from side stream procurement need to pass through the company's balance sheet.

As a whole, we feel the potential capital lightness of Betolar's business model is very positive for investors, as it allows capital allocation to more profitable targets. However, we stress that the hypothesis can only be confirmed when Betolar has progressed further on the commercial front.

Business model

License-based business based on the Geoprime brand

Optimizing dosing with AI-based side stream research (scalability)

Continuous commercial and production support for the license customer

BETOLAR

"Binder-as-a-Service"
An environmentally friendly solution for operators using concrete in their business

Revenue:
Volume-dependent license
Fixed license
Volume-dependent activator fee

Company database of side streams and side stream characteristics

Binder recipes tailored to the customer's needs

Betolar reports the number of operators for whom Geoprime production has been piloted

Project-based side stream research for large customers

Identification of major side stream producers

Published side stream research projects with e.g. Metso and Eesti Energia

Analysis of the side stream and identification of the potential for upcycling using Betolar's expertise and research infrastructure

Research subjects include ash generated as a side stream in oil shale combustion and analcime sand

Mapping of business opportunities for Betolar utilizing the researched side stream

Ideally, the side streams can be utilized in the production of concrete, but we believe that Betolar is ready to consider alternative possibilities.

Betolar will from now on report the number of side stream research customers

Source: Inderes

Business model based on the Geoprime solution

BETOLAR

OPERATING SEGMENTS

Betolar Plc (parent company)

Developing and owning the Geoprime solution and IPR portfolio

Betolar Chemicals Ltd (100% owned subsidiary)

Procurement and sale of chemical additives to support Geoprime recipes

- Geoprime solution and brand
- Materials and production technology as a service
- Expert services

- License fee
- One-time service sales
- Invoicing currency EUR or USD

- Chemicals that act as activators

- Fees for chemicals
- Invoicing currency EUR or USD

Long-term license contract of some 5-10 years and a contract for activator purchases

CUSTOMERS

Solution

- Reduces the CO_2 emissions from concrete production quickly
- Quality corresponds to conventional concrete
- No substantial production investments
- Quick implementation
- Suitable at least in theory for large volumes of side streams and thus for global scalability
- Price of the end product in Europe is higher than for conventional cement, but in Asia relative competitiveness can be better

Earnings model Betolar Chemicals

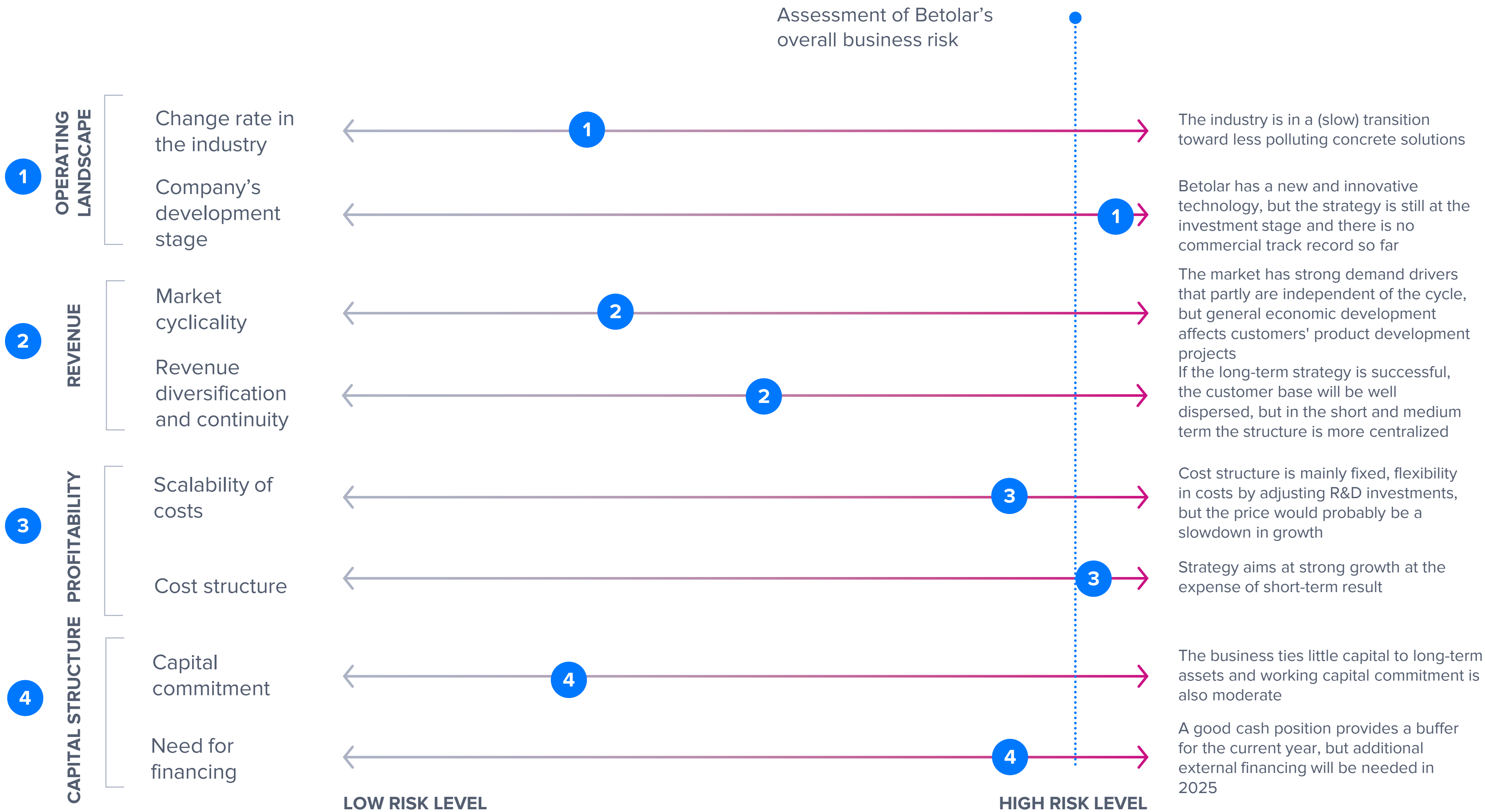
- Pricing is based on the customer's volume
- Initially activators are likely to form a larger share of revenue, but in the long-term the scalable business model relies more on licenses
- The license fee can also be charged as part of the activator fee
- The sales margin is at the typical level of an industrial company's material sales, as long as the volume reaches a sufficiently high level (i.e. the initial margin may be low)

Earnings model Betolar Plc

- Small fixed license fee
- Higher volume-related component
- In the long term, probably a larger part of Betolar's revenue
- Income flow margin is very high and correspondingly development costs are high
- In the initial phase, service sales with varying sales margin

Source: Inderes, Betolar

Risk profile of the business model



Source: Inderes

Strategy and financial targets 1/3

Key strategy drivers

Annual cement production volume — **+ 4 billion tons**

Annual CO2 emissions from cement production — **+ 3 billion tons**

Drivers supporting the strategy

- Climate change
- Circular economy
- Urbanization
- Localization & geopolitical uncertainty

Partner of the concrete producer to enable carbon-free production

Strategic focus areas

1. Development and productization of alternative **side streams**
2. Creating **a stronger position** in the **value chain** of side streams, e.g. through cooperation agreements or investments
3. Accelerating solution development to **high volume and scalable** customer segments
4. Focusing sales and marketing on selected key markets based on **green demand**, **availability** of side streams and application **suitability**
5. Building a **data-**based business ecosystem where Betolar's **AI platform** plays a key role

Inderes estimates that implementing the strategy will require additional funding by 2025

>50–100 MEUR

Revenue by 2026

>1,000 MEUR

Revenue by the end of 2033

>30%

EBITDA-% by the end of 2033

Source: Betolar

Strategy and financial targets 2/3

	1	2	3	4	5
Betolar's strategic priorities	Development and productization of **alternative** side streams	Creating a **stronger position** in the **value chain** of side streams, e.g. through cooperation agreements or investments	Accelerating solution development **to high volume** and **scalable** customer segments	Focusing sales and marketing on selected key markets based on **green demand**, **availability** of side streams and application **suitability**	Building a **data**-based business ecosystem where Betolar's **AI platform** plays a key role
Measures	• Investing in advance material testing to assess the potential of new side streams • Accelerating the development of alternative low-cost side streams to maximize value and meet the growing demand for green construction solutions	• Building business around utilizing side streams, e.g., by taking a position in further processing, storage and distribution • Creating a stronger position and value creation potential	• Betolar's solutions will next be directed at the construction and mining industries, with a higher scalability potential thanks to larger customers • For example, hollow slab and mine filling projects are potential targets	• Continuous evaluation and prioritization of geographic markets based on best compatibility with the go-to-market strategy • New pilots, e.g., in NAM and MEA areas* based on the availability of side streams	• Accelerating the development of recipes and customer applications with systematic data collection and using AI in R&D processes • Bringing ecosystem partners together to scale the green transition and create data-based platform services on Betolar's AI platform
Background	• The supply of side streams decreases and the commonly used blast-furnace slag is an expensive raw material	• Opportunities related to future supply chains and circular economy-related operating models	• Lessons learned in concrete products are valid in the segment • In the mining industry, the side stream is on site and the pressure for green solutions is high	• Demand for the green transition, availability of side streams, and product requirements vary by region	• Developing customized materials using conventional methods is time-consuming and costly
Inderes comment	• Competition is fierce in conventional materials, so Betolar's competitive advantage and Geoprime's scalability rely heavily on material innovations	• Wider customer service makes the solution more attractive and creates added value for the customer • Strengthening the value chain position is likely to require investments for which the company has limited resources	• A high customer-specific volume would generate efficiency gains for Betolar and also a certain continuity • Revenue has been low in the concrete product segment with a smaller customer size	• The company discusses with potential customers globally, which means that understanding of the location of demand and side streams should be excellent	• The AI platform is important for the scalability of the company's business model, and so far, progress seems to have been limited

Source: Betolar
*MEA: the Middle Eastand Africa, NAM. North America

Strategy and financial targets 3/3

Medium-term financial objectives

50-100 MEUR revenue by 2026

- We believe that reaching this goal would require dozens of commercial customers from two continents
- Capital-light and partnership-based business model in principle enables rapid growth
- The target market is large and Betolar's market share even with the 2026 target revenue would not be significant
- As the company is in an early stage, there is no track record of growth yet, and we believe the development in 2022-2023 has not been in line with the company's expectations
- We think the target is ambitious and the roadmap to the new targets is not particularly clear so far.

Positive operating cash flow

- In the early stages of global scaling, costs increase in a frontloaded manner, particularly in terms of personnel costs and other expenses
- Licenses represent about 50% of total revenue and the sales margin for activators is healthy
- We estimate that achieving positive cash flow is possible with lower revenue than the target, but growth in line with the target does not necessarily push the company clearly beyond the cash flow target due to front-loaded costs
- We estimate that the company will continue making small investments in intangible assets and fixed investments will be low, which means that free cash flow is only slightly lower than operating cash flow

Long-term financial objectives (by 2033)

Revenue 1 BNEUR

- We estimate that achieving the target would require hundreds of customers and a significant increase in average invoicing compared to 2026
- We consider the target to be more of a vision considering the early stage of the company and it is based on the global business model and the large achievable market
- We do not believe the objective includes flow-through of significant industrial side streams through the balance sheet, which could result in clearly higher revenue
- If the target is reached, Betolar would naturally be the global market leader in 'green concrete'

Adjusted EBITDA % at least 30 %

- We estimate that a 30% EBITDA margin would require a sales margin of some 70-75%, which in turn requires significant license sales and success of the underlying AI and digitalization development
- In the long term, we estimate other operating expenses will be about 20-25% and personnel costs around 10% of the company's revenue to be able tomeet the target
- We consider the margin target realistic for the company's business model if revenue exceeds the half a billion mark and scalability gradually strengthens around the turn of the decade

Long-term non-financial objective: Cumulative emission reduction of 150 million tons of carbon dioxide within 10 years:

- According to Betolar, the calculation is based on the average CO2 emissions of Portland cement at 2021 emission levels. The concrete industry is aiming to reduce emissions, so the actual "reduction" will probably be smaller. The price of emission allowances in Europe has been EUR 59-105 per ton in the last year. Globally, the price of emission allowances is still clearly lower, but on the other hand, the price of CO2 emissions is likely to rise in the pursuit of climate objectives. Based on the target reduction and current European price levels, the value of the cumulative "emission reduction" would be in the order of a billion. We believe this primarily describes Betolar's large target market, but it is still difficult to draw more precise conclusions from this objective.

Market and competitive field 1/4

Concrete production determines the demand for cement

As a technology, cement has stood the test of time, as cement has been used for construction even before the beginning of the western era, e.g., in ancient Rome, and modern Portland cement was developed in the 19th century. In 2022 a total of 4.1 billion tons of cement was produced globally which roughly corresponds to a market of around 300-400 BNEUR. Cement is primarily used to manufacture concrete. The cement is mixed with water and sand and when dried, these ingredients form concrete. Concrete is the most common building material in the world, so it has a large and well-established user base.

Market growth is slow

By far the largest cement producer is China, which accounted for 51% (2022) of world cement production. The main applications of cement are residential construction, construction of commercial real estate and infrastructure construction. Thus, the drivers of the cement and concrete industry lie in the global construction industry.

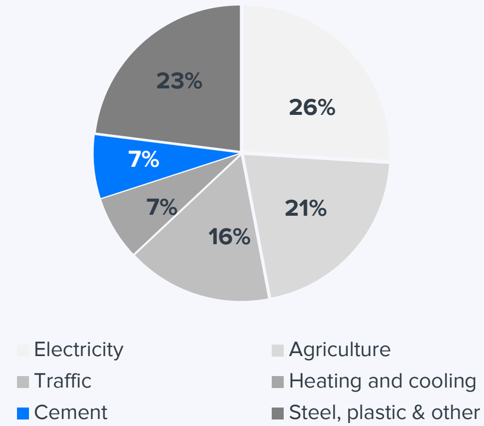
Global cement production growth is driven by urbanization. The growth rate in China where more than half of the world's cement is produced, has, however, slowing down. In Africa and India, cement production is growing more rapidly, but in Europe growth is also slow. According to CEMBUREAU and KPMG, the growth in cement production has been around 2% in 2016-2021 and the expected value for the next decade is at most at the same level. Therefore, the market is very stable at the upper level. The concrete and cement markets are huge in size relative to Betolar, so we do not see the lack of top level market growth as a constraint for the company. In addition, the company is positioned in a growth pocket of very low-emission cement.

The problem with Portland cement is emissions

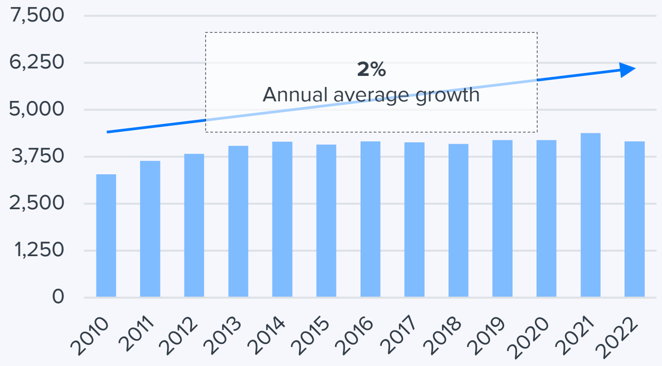
Most cement produced in the world is Portland cement (CEM I/OPC). Portland cement is produced by heating limestone mix in a kiln, which releases carbon dioxide from the limestone, leaving clinker used as cement raw material as the end product. This reaction generates most of the CO2 emissions from the cement manufacturing process. As a whole, the carbon dioxide emissions from cement account for 7-8% of global CO2 emissions, so the sector is a significant source of emissions and innovation in the cement production process plays an important role in reducing global CO2 emissions. In many other carbon-emitting uses, emissions can be eliminated by switching to renewable energy, but in the manufacture of Portland cement the release of carbon dioxide from raw material (limestone) is inevitable even if the energy for the process was produced with renewable energy sources.

No revolutionary innovations have been seen in cement manufacturing since the 1800s, instead, innovations have been small and gradual process improvements. Revolutionary technologies in production technology are slowed down by strict construction standards, which are expensive and slow to pass. The industry is also conservative when it comes to material use.

Global annual CO_2 emissions
(~50 billion tons)



Global cement production
million tons in 2010-2022



Source: Breakthrough energy, IEA

Market and competitive field 2/4

There is no clear consensus on reducing emissions in the industry. There are several alternative potential technologies, but we believe no commercially superior solution has been found. Not all technologies are in direct competition with each other, and it is technically possible to use multiple solutions simultaneously. Betolar's Geoprime solution is based on binders to replace cement and geopolymer technology. Its biggest challenge in replacement binders is the availability of replacing materials.

A possible compatible with many technologies is carbon capture and storage (CCS) and utilization (CCUS). The biggest weakness of the technology is the comprehensive infrastructure it requires, which means that only large players have the resources to pilot the technology. In addition, new interesting openings have emerged, such as the use of an alternative raw material (e.g. calcium silicate) in the production of Portland cement or developing a completely substitutable binder (e.g. organic biocement).

The market for other cements or cement substitutes is still small, but growing

In addition to Portland cement, the European cement standard identifies four other lower-emission blended cement types. It is worth noting that there is still no standard for cement-free concrete in the EU or elsewhere. We believe that this is a challenge for Betolar for the time being and that getting a standard would create better conditions for commercialization.

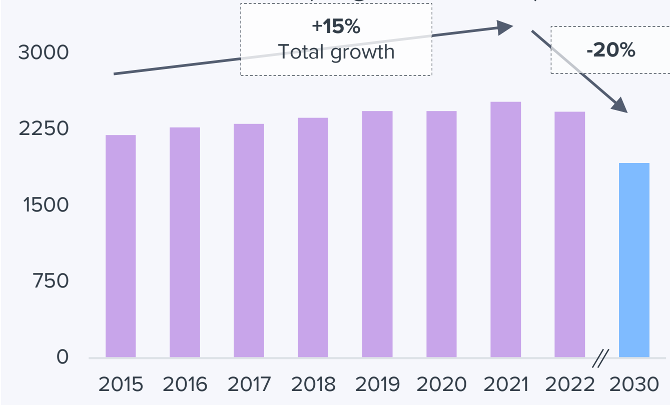
The problem with blended cement has been, e.g., the slow hardening and the availability of obtaining regulatory approvals for construction use.

According to KPMG's market research the combined size of the markets for alternative cement types to Portland cement is still small but will grow rapidly to around 1.5 BNEUR by 2026. We believe the expected market for this niche segment paints a better picture of Betolar's short-term market potential than the value of the entire cement market. However, in the long run, the playing field is bigger, although the availability of suitable side streams may limit the potential of the overall market to some extent. Compared to Betolar's current size and growth ambitions we feel the size of the market is sufficient for the company and factors that limit growth will for a long time be found elsewhere in the market.

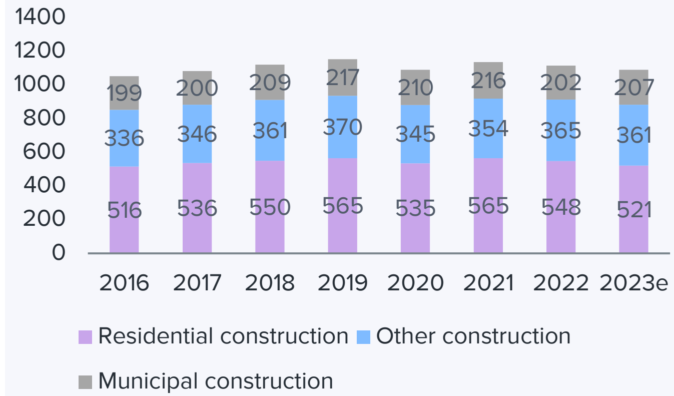
The cement market is dominated by global giants

Changes in the cement market have been slow due to extreme capital intensity, market conservatism and centralization. In this mature market, global giants have sought economies of scale by expanding in size and industry integration has advanced. Investments in cement mills are long-term and investment payback periods are very long. Therefore, replacing existing infrastructure with more environmentally friendly and efficient production facilities is not easy as pie.

CO_2 emissions from cement production
2015-2030 (target level IEA[1])



Development of Betolar's key markets in Europe (BNEUR)



Source: FIEC, IEA
[1]Level in accordance with the Paris Agreement assessed by IEA

Market and competitive field 3/4

Cement mills are usually located close to the raw material source due to logistics costs. In the concrete market, the location and availability of raw materials is even more important, as the stem material that makes up about 70% of the volume of concrete must be transported to the production site. This, together with the simple production process of the stem material (sand, crushed stone), means that there are many local concrete producers, while the number of cement producers is small (e.g. Finnsementti is the only cement producer in Finland). We estimate that the low number of competitors in the cement market and the high number of players in the concrete market reflect the strong bargaining power of cement producers in the value chain. Therefore, concrete manufacturers should welcome a player that offers an alternative to cement.

The homogeneity of the end product and the standard production process leaves limited possibility for players to differentiate with product characteristics. Thus, we estimate that the role of price has become emphasized in market players' decision-making. Environmental friendliness is one of the few ways for concrete producers to stand out from the competition. In addition, we believe that cement companies that enjoy economies of scale have limited incentives to bear the technology risk or to shake up the prevailing market situation.

The technology competition includes large generalists and small specialists

Environmentally friendly solutions are being developed by the largest Western cement and/or concrete producers in the world, as well as new players with disruptive start-up like qualities.

The world's largest listed cement manufacturers include, e.g., Cemex, LafargeHolcim and HeidelbergCement. The large listed players have increasingly started investing in environmentally friendly technologies, which is driven by, e.g., the pressure for responsible business operations stemming from consumers and the capital markets. Large companies have naturally approached the challenge by examining their own production chain and seeking solutions across a wide range of production chain stages and technologies. This approach is logical, as simultaneously developing of several technologies will result in a decentralized technology risk when the winning technology remains unclear. We believe that large players are seeking solutions that do not require too much adaptation or replacement of current valuable production lines.

Young and innovative companies naturally operate with different strategies than large companies. With limited resources and expertise, technology companies in the cement market focus on strictly limited technologies and solutions that could fundamentally shake up cement production. The business models of these companies are typically still taking shape, and we are not aware of a profitable new generation cement technology company. However, regulation and emissions trading may change the dynamics in the near future. So far, we believe the French company Hoffmann Green Cement is the most advanced in commercialization, and it is aiming for positive EBITDA in 2024. However, in H1'23, Hoffmann was still clearly in the red with a revenue of 1.6 MEUR and an EBITDA of -3.4 MEUR.

Betolar's solution appears competitive on paper

For the time being it is difficult to assess the competitiveness of Betolar's solution compared to competing solution providers given the emerging market and the early development phase of the company. On paper, the potential of Betolar's Geoprime appears to be competitive with other players thanks to the scale of the emission reductions, AI and digitalization. On the other hand, commercial progress and production volumes have fallen behind the best in the market during the past year.

We feel the best indicators for the relative competitiveness of different solutions will be concrete production volume, revenue growth and profitability. These meters indicate the commercial and industrial performance of the solution and we will continue to monitor them in the industry. In terms of competition, it is important to note that in an emerging and fast technological development market, the risk of new and stronger competition is always acute. There are no indications of solutions coming out of the left field that would technically be much better than Betolar and/or have greater financial resources.

Market and competitive field 4/4

	Limestone quarrying	Cement manufacturing	Concrete mixing
Production stages	*Local availability of limestone is a basic requirement for cement production*	*Limestone chippings and other raw materials are finely ground. Clinker is produced by burning the raw mix. The clinker is ground into cement with plaster and blend components.*	*The cement is mixed with water and rock material, which produces concrete as the final product*
Emissions	Environmental impacts at the level of conventional mining	The most emission-intensive part of the production chain. **Limestone releases a lot of carbon dioxide when incinerated**, and the kiln often uses non-renewable energy sources	Emissions are mainly generated in logistics. Concrete binds some carbon dioxide when produced (carbonation).
Green technologies	**Alternative Portland cement ingredients like calcium silicate**	**Supplementary cementitious materials (SCMs) and geopolymer technology** **Carbon capture and storage and utilization** **Improving the energy efficiency of the kiln**	
Players	BRIMSTONE	COOLBROOK HEIDELBERGCEMENT, HOLCIM, CARBON CURE HOFFMANN GREEN CEMENT, BETOLAR, SERATECH, BIOMASON	
Inderes' comments	It is difficult to find a competitive raw material due to the good availability of limestone and the infrastructure built around it	So far, no clear winning technology has been found, and the technologies partly work in parallel. Large players have increased their investments simultaneously in several parts of the production chain and in several technologies. Smaller innovative players focus their resources on developing more limited innovations.	

Financial position 1/1

Cash is the biggest asset

At the end of the financial year 2023, cash (14 MEUR) constituted most of Betolar's assets. The net assets of some 31.5 MEUR collected in the IPO in December 2021 strengthened the cash position to 37 MEUR by the end of 2021. From this, cash has dwindled by an average of good 1 MEUR/month until Q4'23, but due to the savings made, we estimate that the burning of cash will fall to around 0.7 MEUR/month in the future and continue to decrease depending on revenue development.

The second largest asset item in Betolar's balance sheet is development costs, into which the company has capitalized R&D related personnel costs and other operating expenses to the tune of 4 MEUR. In addition, the balance sheet contains around 1.5 MEUR in property, plant and equipment, of which some 0.4 MEUR consisted of right-of-use assets under IFRS16. The balance sheet total at the end of the financial year 2023 was 21 MEUR. The balance sheet is very light excluding cash. We believe maintaining a light balance sheet is a key and sensible objective for the company. If business scales successfully, a light balance sheet would support the company's valuation.

Balance sheet is mainly financed by equity

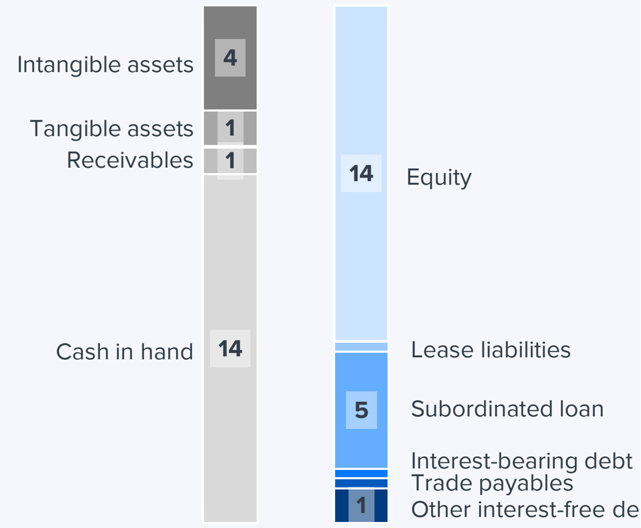
As is typical for an early-stage company, Betolar's balance sheet has largely been financed by equity (14 MEUR at the end of 2023). The capital loan from the Climate Fund is recorded in liabilities in Betolar's balance sheet. The loan terms include, e.g., an interest rate based on the company's credit rating (exact terms not disclosed) and a dividend ban before repayment of the loan capital. We believe the loan terms are very tolerable and therefore Betolar's financial expenses will be moderate until possible new loans are taken.

In view of the balance sheet indicators, Betolar's balance sheet is still strong. We do not think it is sensible to assess conventional indicators at this stage, and we focus on the cash position, how much cash is burned and new financial arrangements based on which the indicators will fluctuate. We expect that the company will allocate all available capital to growth in this decade, so no dividend is expected from Betolar.

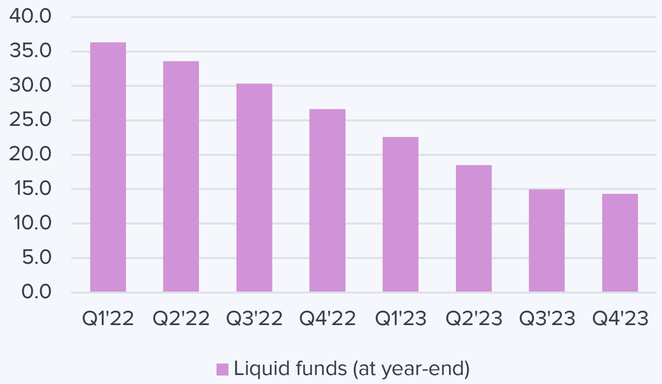
Need for financing looms in 2025 at latest

Within a year, we estimate that Betolar's cash position is currently secured for 2024, considering the remaining assets, the slowing cash burning and Business Finland's 2.7 MEUR support as well as the unused portion (2.5 MEUR) of the capital loan granted by the Climate Fund. However, we estimate that the company will need additional funding during 2025. Betolar's debt capacity is low, as the company does not generate cash flow nor own significant real assets. Therefore, we consider equity financing to be the company's primary form of financing. Prior to any future financing round, it would be important for the company to have proof of the competitiveness of its business model in the form of revenue, so that additional financing can be obtained on reasonable terms for the current owners.

Betolar's balance sheet at the end of H1'23 (MEUR)



Development of cash position (MEUR)



Source: Betolar, Inderes

Estimates 1/5

Growth potential is obvious, but on the other hand, predictability is very low

Betolar operates in a market with weak long-term growth but aims to benefit from the main trends that shake the industry as a whole (i.e. emission reduction) and to win market share within a huge market. We expect the green revolution in the concrete industry to progress clearly over the next decade, driven both by consumer demand for more environmentally friendly solutions and regulation (incl. an increase in the price of carbon dioxide emissions and the impact on the relative competitiveness of its new solutions). However, there is considerable uncertainty concerning the timing of growth and the relative competitiveness of different technologies. The timing of market formation is uncertain and introduction of green applications on a larger scale can take a long time in a conservative market.

As said, Betolar is still an early-stage growth company that is only building a commercial basis for its business. Betolar's growth relies both on increasing the number of commercial Geoprime customers in different geographical areas and on increasing customer-specific sales. Due to the nature of the business in a commercialization phase, the company's history, or even the market history does not provide support for estimates.

Thus, our growth estimates are based on a number of assumptions, whose accuracy will only be established over time. The assumptions concern both revenue and required growth investments (incl. income statement and balance sheet). It is therefore important for the investor to be aware of the exceptionally high uncertainties in our estimates. In addition to the neutral scenario included in our estimates, we also outline a significantly more positive (i.e. the company's financial targets are met) and more negative scenario (i.e. commercialization fails at least in the short term) in the valuation.

Key estimate drivers

We estimate Betolar's revenue as one item, because the company does not publish revenue distribution. However, our revenue estimate includes assumptions about the change in customer volume and annual invoicing per customer. We also stress that the differences between customers are likely to be very large and that an average approach to customers is a huge generalization.

In our model Betolar's profitability and earnings growth are defined especially by revenue distribution into high-margin licenses, low-margin chemicals and non-recurring services (high gross margin), the development of the number of personnel and average salary, and the ratio of other expenses to revenue. Especially for the first two parameters, predictability is weak considering the reporting method of the company's revenue and margins, but we feel the achieved gross margin and its direction provides a certain indication of sales distribution and its development at least when the revenue level grows. Deprecation development is based on our estimates of the level of product development capitalization and the rate at which they are depreciated.

Drivers for income statement estimates

Estimate	Key parameters
Revenue	• Number of customers won • Development of customer-specific invoicing
Costs	• Gross margin % (sales mix) • Number of personnel • Personnel costs per person • Other operating expenses relative to revenue • Development of R&D capitalization

Defining predictable customer groups

Customer group	Description	Amount* in the main market
Large customers (Sales > 1 MEUR)	• **Large customers** Concrete manufacturers/ users (incl. mining and infrastructure) with a revenue of over 100 MEUR.	~100-300
Medium-sized customers (Sales 0.5-1.0 MEUR)	• **Medium-sized customers** with a revenue of 50-100 MEUR. Includes mining and infrastructure companies.	A few hundred
Small customers (Sales< 0.5 MEUR)	• **Local small concrete manufacturers** revenue under 50 MEUR, low potential for Betolar	Several hundred

*The amounts are indicative and not all companies in the sector are identified as potential customers for Betolar. Main markets are Asia and Europe.

Estimates 2/5

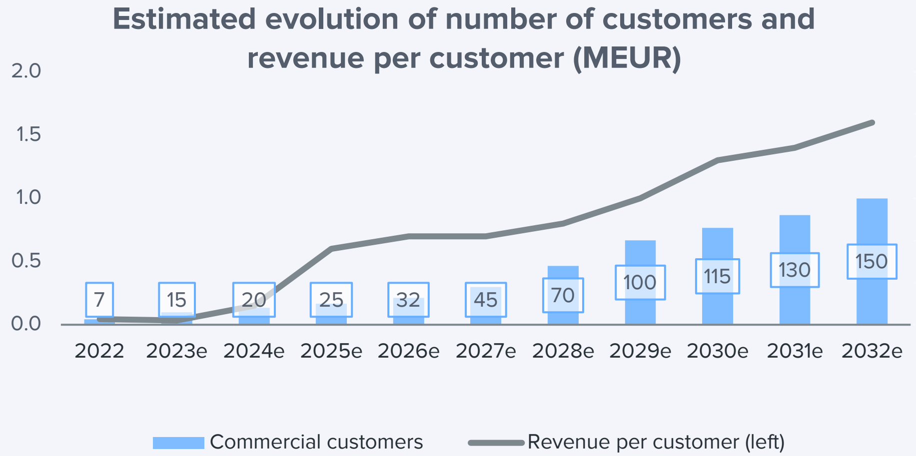
Key assumptions underlying the estimates

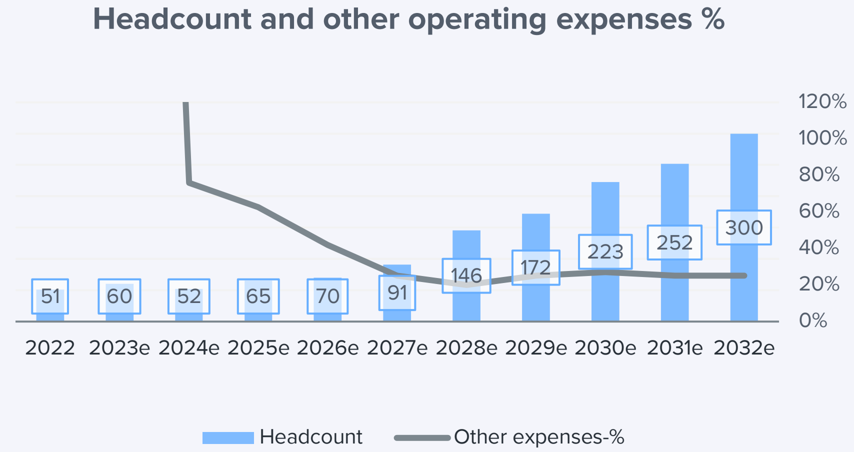
After its first 8 commercial customers, Betolar has followed an information policy, based on which new customers are only reported in connection with new market openings. We estimate that the number of customers is currently roughly 15. Of the nine known customers, one is a large company with a revenue of over 200 MEUR, while the other customers are smaller players in the concrete product segment. Our long-term estimate on the number of customers is based on the potential customer base of around 400 customers thus far indicated by Betolar and the estimated success rate of Betolar's sales.

We estimate that revenue per customer will grow from low levels, but in the medium and long term an average customer should be able to reach millions (naturally with very large customer-specific fluctuations). Our estimates do not expect significant direct invoicing sales from side streams, but later this type of low-margin items can increase growth and lower the sales margin.

We estimate that the sales of licenses and activator chemicals will initially focus on activators, while the focus will gradually shift toward licenses as the pricing power of the concept increases. We estimate that the license sales margin will remain stable at a high level of about 95%, while the activator gross margin will gradually start rising from a low level of about 20% with the volume. At the end of the estimate period, we expect the sales margin of activators to drop slightly.

We expect the number of personnel to develop at a much slower pace than the target set at the time of the IPO (target 250 employees in 2025). Of course, the company's previously communicated personnel target is no longer valid with the update of the financial targets, but the slow development of the number of employees also reflects the slower than expected pace of business. We expect average wages to grow slightly over time, as the company is recruiting specialist skills in tightening labor market. We believe that the internationalization of the personnel and dispersion also to lower wage level countries will act as a balancing driver but we do not expect this to fully prevent wage inflation. In the long term, however, personnel costs are a cost item that should scale clearly if Betolar succeeds in implementing its business model.





Source: Inderes

Estimates 3/5

We estimate that other operating expenses will decrease rapidly in the short term (i.e. the 5 MEUR savings program started in Q4'23, the full impact of which will be seen in Q1'24) with the savings measures. As growth accelerates, we expect the cost item to make a clear upturn. However, considering Betolar's profile as a technology company, we expect other operating expenses to be around 30% of revenue in the long term since R&D, IPR protection, as well as procurement and logistics operations require investments both in personnel and other operating expenses.

In our forecasts, Betolar's investments mainly consist of R&D capitalizations, as we do not expect the company to make any fixed investments. Overall, we expect investments to fall to just under 10% of revenue in the medium term. We expect, the intangible depreciation resulting from capitalization to be 5-8% of revenue in both the medium and long term, so we estimate that Betolar's EBIT % will be this much lower than the EBITDA %.

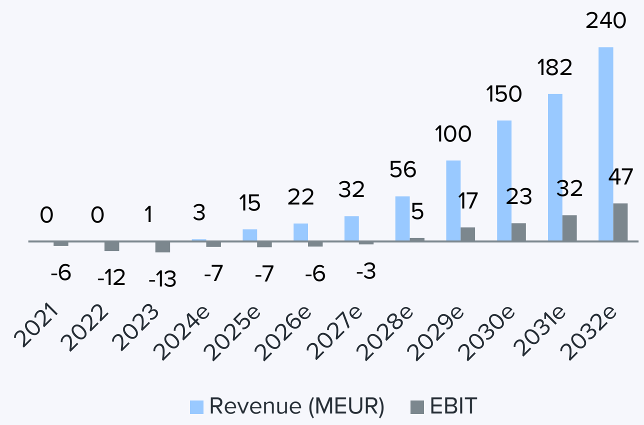
Savings will reduce losses this year

In the next few years, Betolar will aim to ramp up Geoprime-based production with existing customers, find larger customers in the mining industry and load-bearing structures for the pilot pipeline, and develop solutions for new side streams.

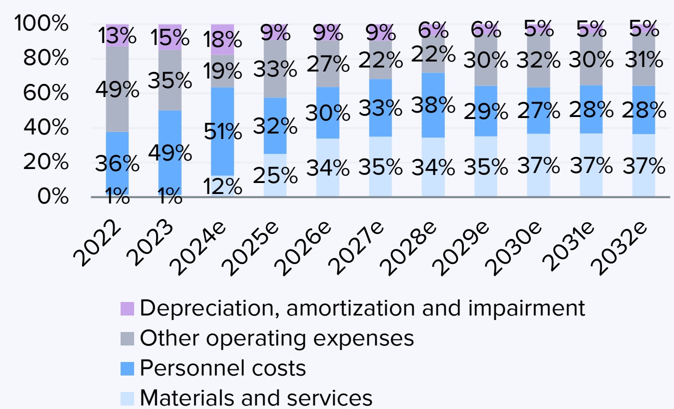
Starting in Q1'24, we expect the company to slow down cash burning with savings measures and achieve a slight increase in revenue due to the acceleration of current customers' production and service sales. Our 2024 revenue forecast is 3 MEUR, based on an average number of 20 commercial contracts and service sales. We estimate that the company's cost structure will decrease significantly due to the savings measures, especially in terms of other operating expenses. Thus our EBITDA estimate for 2024 is -4.7 MEUR. We estimate that Betolar will have about 7 MEUR in cash assets at the end of 2024 . Therefore, we estimate that the funding is sufficient for implementing the strategy, but by the turn of the year at the latest, additional funding will be needed. We also expect the company to raise additional funding before the notional value of cash falls below the 12-month time limit (i.e., going concern).

This year, we expect Betolar's customer base to grow only slightly as the pilots carried out in recent years mover to the commercial phase. Despite the weak economic situation, we expect the company's average billing to increase as the awareness and availability of environmentally friendly concrete and concrete products improve, and the first pilots carried out for mining companies are clearly larger in scale than before. In the ongoing financial year, successes in the form of revenue are critical to obtaining additional funding and thus also to implementing the current strategy.

Revenue and EBIT estimates (MEUR)



Development of the cost structure,
% of operating costs*



*Expenses recorded in the income statement before EBIT
Source: Inderes

Estimates 4/5

In 2025, we expect Betolar's revenue to be 15 MEUR, based on average invoicing of about 25 customers during the year and growth in non-recurring service sales. Customers are European and Asian (excl. China). We estimate that the company will invest in the transition of mining companies from the pilot phase to production on the commercial side next year. Success in this would clearly increase customer-specific billing, but we still expect the growth of customer numbers to be subdued.

We expect Betolar's sales margin to improve next year, in light of the growing volume and more valuable side stream studies. We estimate that the number of personnel will return to growth as the company's business expands. Other operating expenses will also return to growth with revenue. Due to the growth in the cost structure, we expect the cash burning rate to accelerate slightly from the low level in 2024, although our forecast already expects significant revenue. Thus our EBITDA estimate for Betolar for 2025 is -5 MEUR. A prerequisite for accelerating the business in 2025 is successful collection of additional funding, which will also determine the company's financing situation at the end of 2025.

In the medium term, our forecasts include a breakthrough of the business model

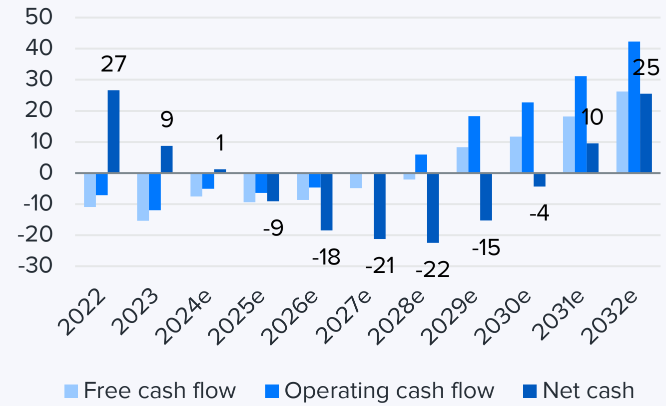
In 2026-2029, the company achieves accelerating growth in absolute euros in our forecasts. We expect growth to come both from increased numbers of customers and higher average revenue from customers. We estimate that Betolar's revenue will grow by 49% in 2026 to 22 MEUR, by 41% in 2027 to 32 MEUR and by 80% in 2028 to 56 MEUR. Our forecasts are significantly below the target level set by Betolar for 2026 (revenue 50-100 MEUR), as the company's concept still has a lot to prove in terms of a commercial breakthrough. We also stress that our neutral scenario must be considered as one of many possibilities, as the predictability associated with Betolar, especially in terms of revenue, is currently virtually non-existent.

In 2026 and 2027, Betolar's cost structure will continue to grow strongly, both in terms of personnel (especially number of personnel) and other expenses. Our gross margin estimate improves slightly both in light of the growing volume of activator sales and the slight increase in the share of licenses. In 2026-2027 our EBITDA estimates are -3.5 MEUR and 0 MEUR. In our forecasts, Betolar will achieve a neutral operational cash flow in 2027. After annual investments of 4-10 MEUR, free cash flow will turn positive in our forecasts in 2028. In our forecasts, the company's additional financing need for the implementation of its current strategy is over 20 MEUR, part of which could be possible to finance with debt capital as revenue starts growing. A further 2.5 MEUR can be withdrawn from the capital loan from the Climate Fund.

Estimated long-term distribution of Betolar's revenue streams

Licenses	Activators
55-70%	30-45%

Development of net cash and cash flow (MEUR)



Source: Inderes

Estimates 5/5

We expect the company to apply for a majority of the funding on equity-basis, as debt financing is not necessarily available on reasonable terms for an early-stage company.

Despite the weaknesses and uncertainties on the financial markets we find it likely that the company will receive the necessary additional funding one way or another at this stage if commercialization progresses at least to some extent in line with our estimates. This is also supported by the company's strong shareholder base. Therefore, the currently likely need for additional funding is a risk for existing investors, mainly in terms of price. Of course, the situation may be substantially weaker if Betolar does not succeed on the commercial side and in promoting the whole story in the near future.

Scalability at the turn of the decade

In 2029-2033, we expect Betolar's strong growth to continue, driven by regulatory support for green construction solutions and the company's well-established offering. Growth is especially driven by growth in customer-specific invoicing and the number of customers. At the end of the estimate period, our neutral scenario expects the company to have 150 customers, which corresponds to approximately one-third of the potential customer base identified in connection with the IPO. Average invoicing rises gradually in our estimates to around 1.5 MEUR. Our 2033 revenue estimate is about 250 MEUR, which is clearly below the company's over 1 BNEUR target. Due to the huge size of the market and the expected transformation, the target cannot be condemned as impossible, but we find it unlikely that the target is achieved within the timeframe due to slower than expected commercial development in recent years. Visibility to 2032 is non-existent in all respects and the margin of error is huge.

In 2026-2032, we expect the growth in the company's cost structure to slow down gradually in terms of personnel costs and other operating expenses, which, together with revenue growth and slightly improving sales margin will gradually scale profitability. In 2032, we expect Betolar will reach a 23% EBITDA margin, which is below the company's target level. We consider this possible despite lower revenue, but it requires successful AI and digitalization development and a business model that relies heavily on licenses. In 2032, the company's sales margin is 70% in our estimates, personnel expenses are about 23% and other operating expenses about 25% relative to revenue.

Stabilization of growth and profitability in our model

After 2033, Betolar's growth saturates to 2.5% and EBIT stabilizes to 7.5% (in the terminal ROI is approximately at the level of WACC %) in our model. In practice, however, the company's market is not saturated at this stage, but we feel investors should not even try to look further because events in this time window only have limited importance for investors who invest in Betolar now considering the typical investment horizon. Survival of the present form of Betolar (i.e. successful commercialization) for more than a decade is not a given either.

Option schemes increase the number of shares

Betolar has several ongoing option schemes (options 2019, 2021, 2022, 2023). The subscription prices of options vary between EUR 0.64 to 5.96 per share depending on the scheme and are on average EUR 2.8 per share. Subscription periods vary in key employee incentive schemes based on the date of issue. Less than half of the options have been released for subscription, and the remaining option programs will be released for subscription in 2025 and 2026. The total size of the stock option schemes is approximately 2.1 million shares, which corresponds to an increase of about 10% compared to the current number of shares in the company. We consider the size of the option schemes reasonable relative to the nature of the company's business. On the other hand, only a fraction of the options entitles subscription of shares below the current price, so the number of shares will only increase if the company's share price develops favorably. We note, however, that further commitment of key personnel may still be necessary, and thus further dilution may occur in coming years. Changes in the terms of option schemes are not unheard of either.

As we expect rather strong operational development from Betolar, we have expected the options to be converted into shares as they mature. As a result, Betolar's share capital grows by 10% in our estimates at the end of the decade and its equity strengthens moderately.

Estimate revisions

Estimate revisions 2024e-2026e

- With license-based revenue below our expectations, our forecasts rely increasingly on side stream research and progress in commercializing higher-volume segments
- Given the risk of fluctuations in project-based revenue streams, we have increased the safety margin on our projections of rapid revenue growth in 2025 and 2026
- With revenue more heavily weighted towards the services business, our forecasts for gross profit-% increased and our forecasts for other operating expenses decreased slightly, resulting in a reduction in the revenue forecast that is reflected in smaller reductions in our earnings forecasts
- We revised our cost structure forecast for the current year based on the 2023 outcome and added the 0.4 MEUR grant from the Ministry of Foreign Affairs of Finland to Betolar

Operational earnings drivers 2024-2026e:

- The revenue growth we expect from Betolar is based on the growth in the number of customers and average customer invoicing
- Due to weak sales in the concrete products segment, our forecast relies more heavily on the early-stage customer segments of construction elements, mining and waste upcycling
- Savings in personnel costs and other operating expenses implemented as part of the restructuring will significantly improve the cost structure
- With lower operating costs, losses and cash burning will slow down significantly in 2024 compared to the previous year

Estimate revisions	2023e	2023e	Change	2024e	2024e	Change	2025e	2025e	Change
MEUR / EUR	Old	New	%	Old	New	%	Old	New	%
Revenue	0.5	0.5	-3%	3.0	3.0	0%	18.8	15.0	-20%
EBITDA	-11.1	-11.2	1%	-4.7	-4.6		-4.9	-5.3	
EBIT (exc. NRIs)	-13.0	-13.3	2%	-6.5	-6.6		-6.5	-7.1	
EBIT	-13.0	-13.3	2%	-6.5	-6.6		-6.5	-7.1	
PTP	-13.0	-13.2	2%	-6.7	-6.6		-7.5	-8.0	
EPS (excl. NRIs)	-0.66	-0.67	2%	-0.34	-0.34		-0.38	-0.41	
DPS	0.00	0.00		0.00	0.00		0.00	0.00	

Source: Inderes

Valuation and recommendation 1/4

Early stage company valuation has a high degree of uncertainty

In our forecasts, Betolar's medium-term investment story is built around the breakthrough of the Geoprime concept. We believe that the timing for the commercialization of Betolar's green solution is quite opportune in the big picture, as there is still no winning solution for the production of environmentally friendly concrete and the race with the technologies being developed simultaneously is ongoing. In the short term, however, we believe that the business environment for companies developing new green technologies has become more difficult, as the sharp rise in interest rates in developed economies since the IPO has tightened financial markets and reduced risk appetite. The war in Europe has also diverted attention from solving the environmental crisis. As a result of the changed circumstances and the slower than expected progress in commercializing Geoprime, our and the market's expectations have declined significantly, which has also been reflected in the company's valuation levels. Rising interest rates, slower than expected revenue growth and dwindling cash have, in our view, turned investors' attention more to the short-term development. As a result, we expect the share price to be driven more strongly by short-term developments and news flow, while a confirmation of the growth outlook and an improvement in the financial situation could shift the focus back to the longer term.

Our approach to Betolar's valuation has remained unchanged throughout the company's history on the stock exchange. In our opinion, it is essential in Betolar's valuation to assess 1) the value creation potential of its business, 2) its likelihood of achieving the potential, and 3) the investors' readiness to price this. As expected, Betolar's valuation, and in particular its accepted market price, has been sensitive to the market situation. We estimate that this will continue to be the case, as the readiness of investors to price companies, especially on the basis of their long-term potential, can vary significantly, depending on, e.g., interest rate levels and investors' general willingness to take risks.

Current valuation does not require conquering the whole world

If Betolar's Geoprime concept makes a successful breakthrough in Europe and in certain Asian countries, and the license-based business model works, the company's growth outlook would be both strengthened and confirmed. We estimate that this would multiply shareholder value over the next few years, reflecting the current enterprise value of around 15 MEUR, even if the earnings development and cash flows would not turn positive even in the medium term. Moreover, with the company's value low in absolute terms, a decent performance no longer requires conquering multiple continents. Taking the necessary steps to grow revenue with healthy margins even in a limited market area this decade would, in our view, be sufficient to generate returns at the high ROE level required. Similarly, in a negative scenario, where commercialization fails or is too slow, the risk of significant capital destruction is still real, as the company has no fixed assets (it is difficult to value the IPR portfolio with current data) or other hard support for valuation.

Valuation	2024e	2025e	2026e
Share price	1.20	1.20	1.20
Number of shares, millions	19.6	19.6	19.6
Market cap	23	23	23
EV	22	33	42
P/E (adj.)	neg.	neg.	neg.
P/E	neg.	neg.	neg.
P/B	3.3	neg.	neg.
P/S	7.8	1.6	1.0
EV/Sales	7.4	2.2	1.9
EV/EBITDA	neg.	neg.	neg.
EV/EBIT (adj.)	neg.	neg.	neg.
Payout ratio (%)	0.0 %	0.0 %	0.0 %
Dividend yield-%	0.0 %	0.0 %	0.0 %

Source: Inderes

Valuation and recommendation 2/4

In addition, the company will inevitably face the need for additional funding, which will keep the risk of dilution for existing shareholders high. Therefore, the range of scenarios is very large.

Expected return consists of value appreciation

Betolar will be a cash-consuming growth company for a long time, so the expected return on the share consists of changes in the value of the share in the foreseeable future and no dividends are expected. The loan terms of the Climate Fund also prohibit dividend payment before the loan is repaid. Thus Betolar is only suited for the portfolio of growth investors that tolerate high-risk and are patient.

Required return is high due to the risk level

Considering the high dispersion of Betolar's possible future scenarios, the company's risk profile is very high in the eyes of investors (cf. risk category 4/4). We believe that to offset the high risks (incl. the fairly positive scenario especially in the long term) the required return must be set high so that the return potential is sufficient to compensate for the risk. In addition to the DCF model, we apply the required return in Betolar's valuation when assessing the current value of the company's potential market cap in the next few years. The valuation of Betolar is also highly sensitive to changes in the required return and other underlying assumptions, as shown by the sensitivity analysis we present in the DCF model.

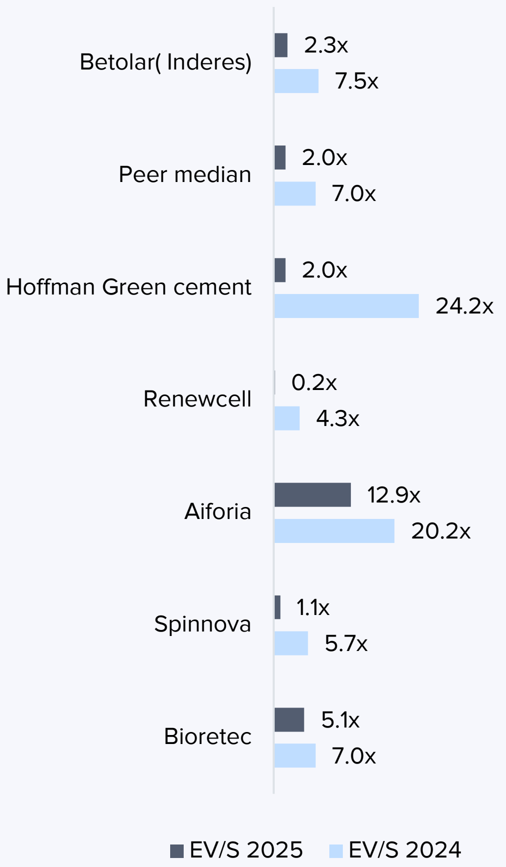
The required return is a subjective variable and it will change over time, driven by the company's development and external factors. In principle, we estimate that Betolar's risk level and corresponding downward pressure on the required return can be created by, e.g., growth, new commercial contracts, attractive cooperation projects, falling interest rates, investors' increased willingness to take risks, slower cash-flow reduction than expected, or the raising of affordable funding. Similarly, the risk level would be raised by opposite factors, e.g., slower growth than our expectations, burning cash faster than expected, approaching cash exhaustion, higher interest rates, and investors' declining willingness to take risks.

Considering Betolar's risk level, we have set the cost of equity at 19.7% and the weighted average cost of capital, which takes into account the slight long-term debt leverage, at 18.1%. We believe that these levels are in line with current market return requirements for high-risk investment targets. The levels are roughly double that of Inderes' overall coverage (i.e. most of Nasdaq Helsinki), reflecting the share's risk profile that is well above that of an average listed company.

Like its peers, the short-term revenue-based valuation is high

Due to Betolar's early stage of development, the revenue ratio for the current year is high in absolute terms at 7.5x. Based on our forecast of strong revenue growth, the goodwill-based EV/S ratio will fall to 2.3x in 2025, which we consider to be a moderate level once revenue growth takes off. In 2024-2025, revenue includes project-based service sales, which limits the acceptable revenue-based valuation. Therefore, we consider the overall near-term revenue-based valuation to be tight.

Peer group revenue-based valuation 2024e & 2025e



Valuation and recommendation 3/4

Betolar's revenue multiples for 2024 and 2025 are roughly in line with a peer group of early-stage Nordic companies. The peer group reflects the valuation of early-stage companies on the stock market and, due to sectoral deviations, the peer group is not a particularly relevant benchmark for Betolar. Therefore, we do not see the peer group as a significant driver of Betolar's valuation. Nevertheless, Betolar's share does not appear to be mispriced in relation to its peers.

Determining value through scenarios

We have examined the value development by the end of 2025 and 2026 using three scenarios. The neutral scenarios are in line with our estimates. In our scenarios, we apply 2x-4x EV/S multiples, which we estimate to take into account rapid revenue growth but still loss-making business.

The 2025 positive scenario exceeds our estimates by 50% and the negative scenario is 50% below our estimates. Hence, with our required return and our forecast scenario, we arrive at a value of around EUR 1.3 for Betolar's share, with a range of around EUR 0.1-4.1. Consequently, the valuation picture looks quite neutral also at the end of 2025.

In an examination based on 2026, the neutral scenario is in line with our estimates. The positive scenario reflects Betolar's target level, while the negative is 50% below our estimates. Thus, with our neutral scenario and our required return, we arrive at a value of around EUR 1.5 per share. The 2026 scenario therefore gives a slightly more positive picture of valuation, but the dispersion between the different scenarios is very large and the forecast risks increase further into the future.

Using DCF model to outline long-term value creation potential

At the current stage of the company's development, the DCF model's assumptions contain significant uncertainty and its positive cash flows are focused on a time a decade or so down the road. Thus, we feel it does not form a clear supporting point for short-term valuation and the short term is driven mostly by the ratio between the company’s growth rate and growth investments, as well as progress in commercializing the Geoprime solution.

Our DCF model is based on the company's current number of shares, although we expect that the company will need additional equity financing to carry out the growth investments required by our estimates (i.e., we expect the number of shares to increase). The increase in the number of shares would be significant if the financing needs for the next financing round were in the range of our estimate of just over 20 MEUR (the majority of which we estimate would be equity) and the price were around the current stock market price. However, we cannot estimate the price and form of funding needed, which is why we have used the company's current number of shares in the model for the time being.

We therefore believe that a certain discount must be applied to the DCF value until the visibility of the divisor improves. We have used a sensitivity analysis to outline the required capital and potential increase in the number of shares at different share prices.

Estimated future valuation ranges

2025e, MEUR	Low	Estimate	High
Revenue	7.5	15.0	30
EV/S, LTM	2	3	4
EV/S, NTM	1.3	2.0	2.7
EV	15	45	120
Net debt	9	9	9
Market cap	6	36	111
Per share	0.3	1.8	5.7
Discounted to present	**0.2**	**1.3**	**4.1**

2026e, MEUR	Low	Estimate	Target
Revenue	11	22	50-100
EV/S, LTM	2	3	4
EV/S, NTM	1.4	2.1	-
EV	22	67	200-400
Net debt	18	18	18
Market cap	4	49	182-382
Per share	0.2	2.5	9.1-19
Discounted to present	**0.1**	**1.5**	**5.6-11.8**

Increase in number of shares (%) in the event of a share issue

Capital raised (MEUR)	Share subscription price (EUR)					
	0.50	**1.00**	**1.50**	**2.00**	**2.50**	**3.00**
20	204%	102%	68%	51%	41%	34%
22	224%	112%	75%	56%	45%	37%
24	245%	122%	82%	61%	49%	41%
26	265%	133%	88%	66%	53%	44%
28	286%	143%	95%	71%	57%	48%
30	306%	153%	102%	77%	61%	51%

Valuation and recommendation 4/4

Options have also not been included in the number of shares in the DCF model, but we would consider exercising them likely in the neutral and positive scenarios. The exercise of options would increase the number of shares by approximately 10%.

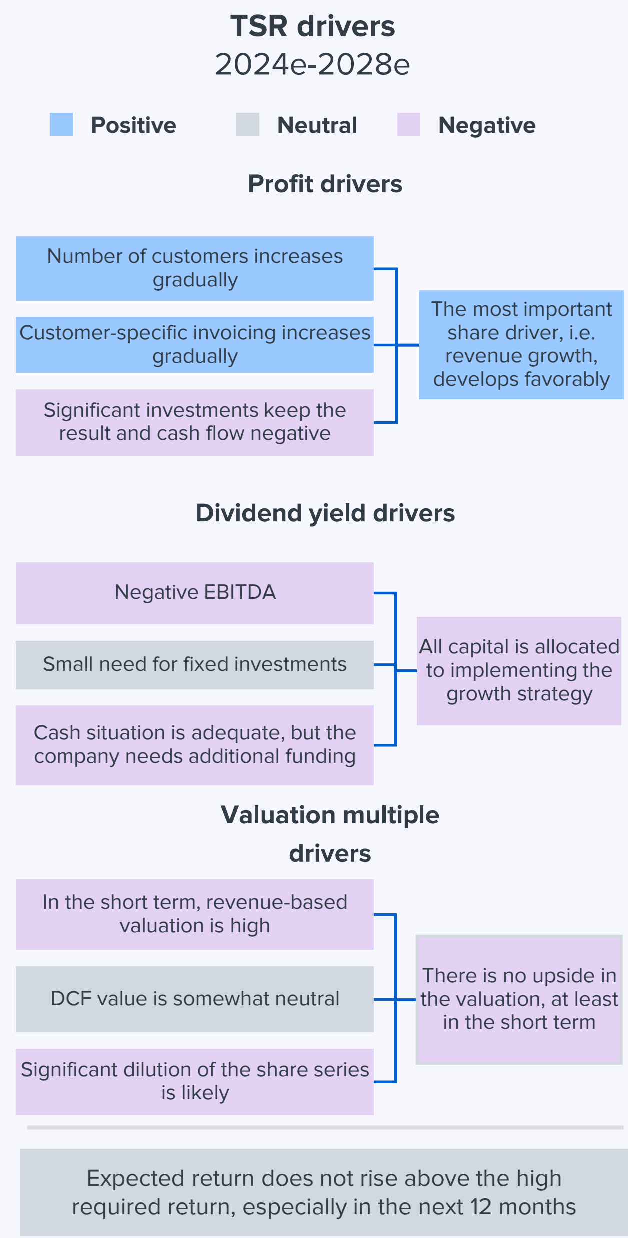
Our DCF model gives an equity value of 31 MEUR, or EUR 1.6 per share, which gives a slightly positive valuation signal. However, given the model's very wide tolerances and the practically inevitable increase in the number of shares (i.e. options at least), Betolar's stock is not yet overtly cheap (upside of about 33% of the share price).

Valuation summary

Betolar's valuation must be built on exceptionally uncertain assumptions, even if we can determine the right level for the valuation with the help of peers and the DCF model. In our opinion, the fair value of Betolar's share is around EUR 0.5-2.5 based on current assumptions. At the lower end, we believe that the market would not have confidence in the long-term viability of the company's business model. However, even at the lower end, the share has no clear support levels, so there is a risk of a substantial loss of capital, even if we believe that the expected return close to the lower end of the range is already rather good compared to the risks in light of current information. On the other hand, at the top end of the range expectations are higher and we believe that the risk/reward ratio would be negative, at least in the short term.

Based on Betolar's current valuation, we believe that the market is very skeptical about the company's ability to achieve its updated financial targets. In our opinion, it is not unreasonable to require concrete proof from the company considering its current development stage and the scale of the objectives. At current valuations, the bar is significantly lower than the company's own targets, and achieving profitability even as a regional player would be sufficient in our view to deliver a satisfactory outcome for shareholders from current share levels. However, this still depends on the level of investment needed to get commercialization off the ground.

Betolar has invested and built up its capabilities during its two years on the stock market, but despite ambitious financial targets, there are no concrete indications of commercialization progress in terms of revenue. The outlook for the timing of the revenue increase is also still unclear. In terms of Betolar's investment story, we believe that 2024 will be a very critical year for the company, as raising additional funding would likely be costly for the current owners without concrete evidence of growth this year. Looking at the bigger picture, we believe that risks are currently driving Betolar's investment story, although the potential for investor returns would be huge if the business model succeeds in proving its competitiveness. Therefore, we reiterate our Reduce recommendation and EUR 1.10 target price for Betolar, and we will have to wait and see how the company manages and minimizes the dilution risk by accelerating growth.



Source: Inderes

Valuation table

Valuation	2021	2022	2023	2024e	2025e	2026e	2027e
Share price	6.30	3.05	1.20	**1.20**	**1.20**	**1.20**	**1.20**
Number of shares, millions	19.4	19.5	19.6	**19.6**	**19.6**	**19.6**	**20.1**
Market cap	122	60	23	**23**	**23**	**23**	**23**
EV	86	36	15	**22**	**33**	**42**	**45**
P/E (adj.)	neg.	neg.	neg.	**neg.**	**neg.**	**neg.**	**neg.**
P/E	neg.	neg.	neg.	**neg.**	**neg.**	**neg.**	**neg.**
P/B	3.2	2.2	1.7	**3.3**	**neg.**	**neg.**	**neg.**
P/S	>100	>100	45.5	**7.8**	**1.6**	**1.0**	**0.7**
EV/Sales	>100	>100	28.6	**7.4**	**2.2**	**1.9**	**1.4**
EV/EBITDA	neg.	neg.	neg.	**neg.**	**neg.**	**neg.**	**42.0**
EV/EBIT (adj.)	neg.	neg.	neg.	**neg.**	**neg.**	**neg.**	**neg.**
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 %**

Source: Inderes

Peer group valuation

Peer group valuation	Market cap	EV	LV:n kasvu		EV/S		P/B
Company	**MEUR**	**MEUR**	**2024e**	**2025e**	**2024e**	**2025e**	**2024e**
Bioretec	50	41		33%	7.0	5.1	2.2
Spinnova	122	63	191%		5.7	1.1	21.0
Aiforia	97	83	25%	20%	20.2	12.9	3.1
Renewcell	20	100	131%	1485%	4.3	0.2	4.1
Hoffman Green cement	144	145		150%	24.2	2.0	1.7
Betolar (Inderes)	**23**	**22**	**483%**	**400%**	**7.4**	**2.2**	**3.3**
Average			**116%**	**422%**	**12.3**	**4.3**	**6.4**
Median			**131%**	**92%**	**7.0**	**2.0**	**3.1**
Diff-% to median			***268%***	***337%***	***6%***	***10%***	***5%***

Source: Refinitiv / Inderes

Income statement

Income statement	2021	2022	H1'23	H2'23	2023	H1'24e	H2'24e	2024e	2025e	2026e	2027e
Revenue	**0.0**	**0.3**	**0.1**	**0.4**	**0.5**	**1.0**	**2.0**	**3.0**	**15.0**	**22.4**	**31.5**
EBITDA	**-4.8**	**-10.0**	**-6.2**	**-5.0**	**-11.2**	**-2.5**	**-2.1**	**-4.6**	**-5.3**	**-4.0**	**1.1**
Depreciation	-0.7	-1.5	-0.9	-1.2	-2.1	-1.0	-1.0	-2.0	-1.8	-2.1	-2.7
EBIT	**-5.5**	**-11.5**	**-7.1**	**-6.2**	**-13.3**	**-3.5**	**-3.1**	**-6.6**	**-7.1**	**-6.2**	**-1.6**
Net financial items	-0.1	-0.4	0.0	0.1	0.1	0.0	0.0	0.0	-0.9	-0.6	-0.9
PTP	**-5.6**	**-11.9**	**-7.1**	**-6.1**	**-13.2**	**-3.5**	**-3.1**	**-6.6**	**-8.0**	**-6.8**	**-2.5**
Taxes	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net earnings	**-4.1**	**-11.8**	**-7.0**	**-6.2**	**-13.2**	**-3.5**	**-3.1**	**-6.6**	**-8.0**	**-6.8**	**-2.5**
EPS (adj.)	**-0.21**	**-0.61**	**-0.36**	**-0.31**	**-0.67**	**-0.18**	**-0.16**	**-0.34**	**-0.41**	**-0.35**	**-0.12**
EPS (rep.)	**-0.21**	**-0.61**	**-0.36**	**-0.31**	**-0.67**	**-0.18**	**-0.16**	**-0.34**	**-0.41**	**-0.35**	**-0.12**

Source: Inderes

Balance sheet

Assets	2022	2023	2024e	2025e	2026e
Non-current assets	**4.7**	**6.0**	**6.5**	**7.8**	**9.6**
Goodwill	0.0	0.0	0.0	0.0	0.0
Intangible assets	3.7	4.3	4.3	5.0	6.5
Tangible assets	0.8	1.5	2.0	2.5	2.9
Associated companies	0.2	0.2	0.2	0.2	0.2
Other investments	0.0	0.0	0.0	0.0	0.0
Other non-current assets	0.0	0.1	0.1	0.1	0.1
Deferred tax assets	0.0	0.0	0.0	0.0	0.0
Current assets	**27.3**	**15.2**	**9.7**	**4.9**	**7.0**
Inventories	0.0	0.0	0.1	0.8	1.0
Other current assets	0.5	0.7	0.7	0.7	0.7
Receivables	0.1	0.2	0.2	1.2	2.0
Cash and equivalents	26.6	14.3	8.7	2.3	3.4
Balance sheet total	**31.9**	**21.2**	**16.2**	**12.7**	**16.7**

Source: Inderes

Liabilities & equity	2022	2023	2024e	2025e	2026e
Equity	**26.6**	**13.8**	**7.1**	**-0.9**	**-7.7**
Share capital	0.1	0.1	0.1	0.1	0.1
Retained earnings	-18.6	-31.5	-38.1	-46.1	-52.9
Hybrid bonds	0.0	0.0	0.0	0.0	0.0
Revaluation reserve	0.0	0.0	0.0	0.0	0.0
Other equity	45.1	45.2	45.2	45.2	45.2
Minorities	0.0	0.0	0.0	0.0	0.0
Non-current liabilities	**2.8**	**5.4**	**4.0**	**6.9**	**14.2**
Deferred tax liabilities	0.0	0.0	0.0	0.0	0.0
Provisions	0.0	0.0	0.0	0.0	0.0
Interest bearing debt	2.8	5.4	4.0	6.9	14.2
Convertibles	0.0	0.0	0.0	0.0	0.0
Other long term liabilities	0.0	0.0	0.0	0.0	0.0
Current liabilities	**2.6**	**2.0**	**4.8**	**6.7**	**10.2**
Interest bearing debt	0.2	0.2	3.5	4.7	7.8
Payables	0.9	0.4	0.2	0.8	1.1
Other current liabilities	1.5	1.4	1.2	1.2	1.2
Balance sheet total	**31.9**	**21.2**	**15.9**	**12.7**	**16.7**

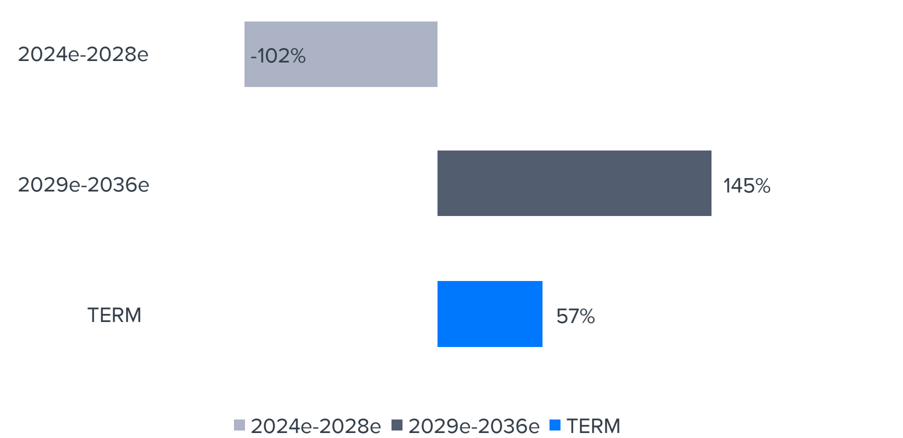
DCF calculation

DCF model	2023	2024e	2025e	2026e	2027e	2028e	2029e	2030e	2031e	2032e	2033e	TERM
Revenue growth-%	79 %	483 %	400 %	49 %	41 %	78 %	79 %	50 %	22 %	32 %	3 %	
EBIT- %	-2575 %	-221 %	-47 %	-27 %	-5 %	8 %	17 %	15 %	18 %	20 %	25 %	
EBIT (operating profit)	**-13.3**	**-6.6**	**-7.1**	**-6.2**	**-1.6**	**4.5**	**17.4**	**22.7**	**32.5**	**47.0**	**61.8**	
+ Depreciation	2.1	2.0	1.8	2.1	2.7	3.3	4.6	6.2	7.6	9.1	11.1	
- Paid taxes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-2.2	-6.4	-9.4	-12.4	
- Tax, financial expenses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.1	-0.1	
+ Tax, financial income	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	
- Change in working capital	-0.8	-0.4	-1.1	-0.7	-0.9	-1.9	-3.7	-3.9	-2.3	-4.5	-0.6	
Operating cash flow	**-11.9**	**-5.0**	**-6.4**	**-4.7**	**0.1**	**5.9**	**18.3**	**22.7**	**31.2**	**42.3**	**60.0**	
+ Change in other long-term liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
- Gross CAPEX	-3.4	-2.5	-3.0	-4.0	-5.0	-8.0	-10.0	-11.0	-13.0	-16.0	-16.0	
Free operating cash flow	**-15.4**	**-7.5**	**-9.4**	**-8.7**	**-4.9**	**-2.1**	**8.3**	**11.7**	**18.2**	**26.3**	**44.0**	
+/- Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
FCFF	-15.4	-7.5	-9.4	-8.7	-4.9	-2.1	8.3	11.7	18.2	26.3	44.0	
Discounted FCFF		**-6.5**	**-6.9**	**-5.4**	**-2.6**	**-0.9**	**3.1**	**3.7**	**4.9**	**6.0**	**8.5**	**12.3**
Sum of FCFF present value		21.8	28.3	35.2	40.5	43.1	44.0	40.9	37.2	32.3	26.3	12.3
Enterprise value DCF		**21.8**										
- Interest bearing debt		-5.6										
+ Cash and cash equivalents		14.3										
-Minorities		0.0										
-Dividend/capital return		0.0										
Equity value DCF		**30.5**										
Equity value DCF per share		**1.6**										

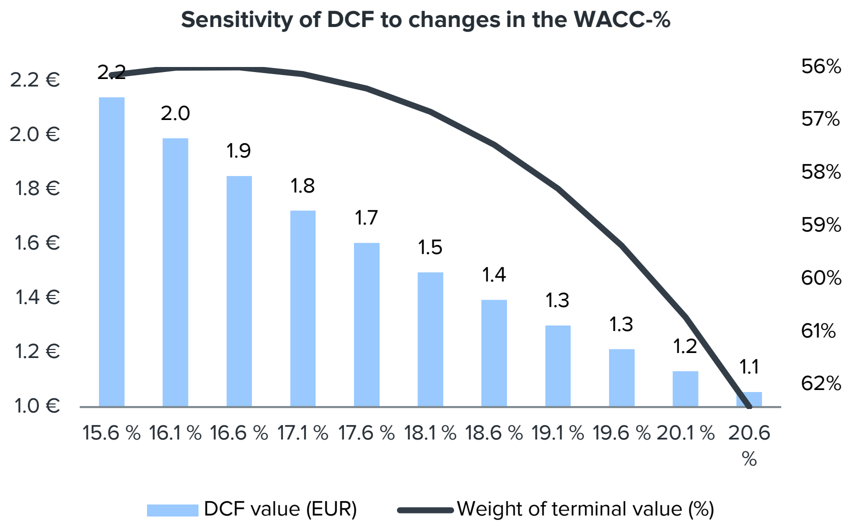
WACC	
Tax-% (WACC)	20.0 %
Target debt ratio (D/(D+E)	10.0 %
Cost of debt	5.0 %
Equity Beta	3.20
Market risk premium	4.75 %
Liquidity premium	2.00 %
Risk free interest rate	2.5 %
Cost of equity	**19.7 %**
Weighted average cost of capital (WACC)	**18.1 %**

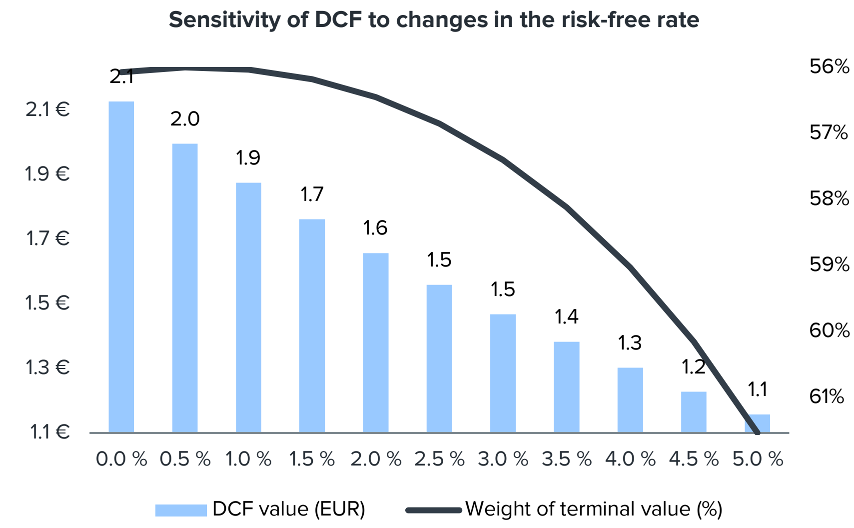
Source: Inderes

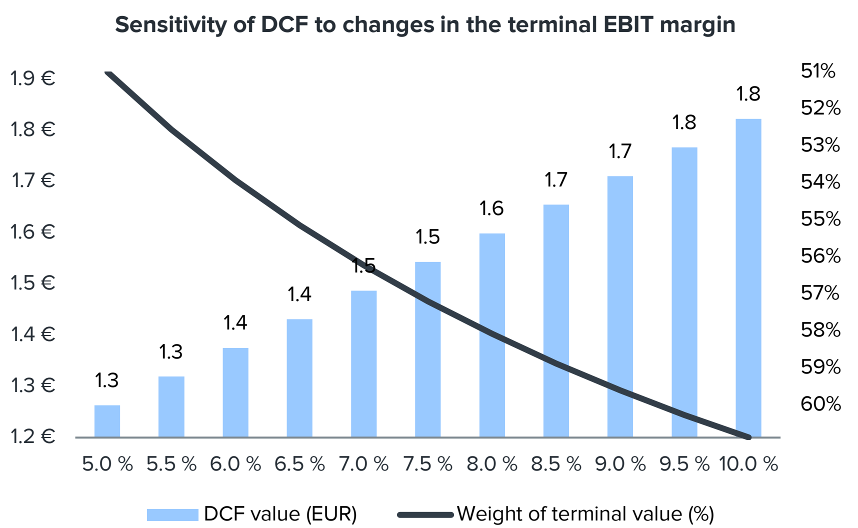
Cash flow distribution

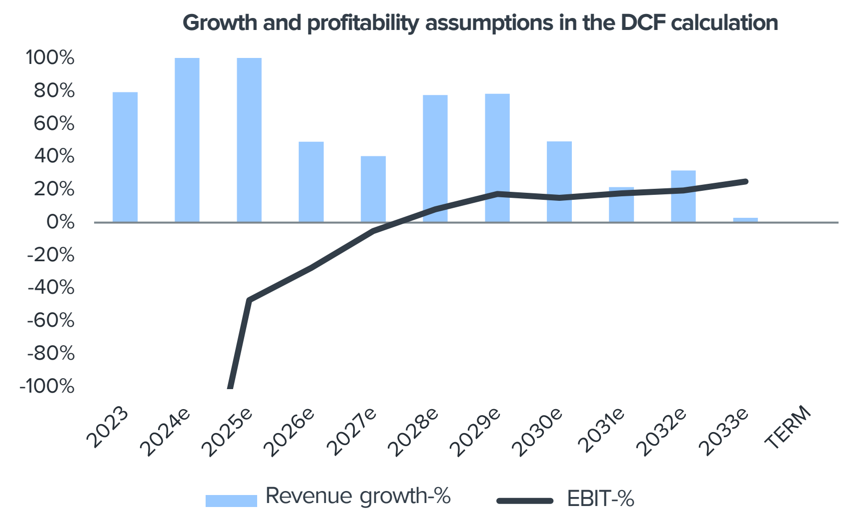


DCF sensitivity calculations and key assumptions in graphs









Source: Inderes Note that the weight of the terminal value (%) is shown on an inverse scale for clarity.

Summary

Income statement	2021	2022	2023	2024e	2025e
Revenue	0.0	0.3	0.5	**3.0**	**15.0**
EBITDA	-4.8	-10.0	-11.2	**-4.6**	**-5.3**
EBIT	-5.5	-11.5	-13.3	**-6.6**	**-7.1**
PTP	-5.6	-11.9	-13.2	**-6.6**	**-8.0**
Net Income	-4.1	-11.8	-13.2	**-6.6**	**-8.0**
Extraordinary items	0.0	0.0	0.0	**0.0**	**0.0**

Balance sheet	2021	2022	2023	2024e	2025e
Balance sheet total	42.0	31.9	21.2	**15.9**	**12.7**
Equity capital	38.4	26.6	13.8	**7.1**	**-0.9**
Goodwill	0.0	0.0	0.0	**0.0**	**0.0**
Net debt	-37.0	-23.6	-8.7	**-1.2**	**9.4**

Cash flow	2021	2022	2023	2024e	2025e
EBITDA	-4.8	-10.0	-11.2	**-4.6**	**-5.3**
Change in working capital	0.6	1.0	-0.8	**-0.4**	**-1.1**
Operating cash flow	-4.7	-7.1	-11.9	**-5.0**	**-6.4**
CAPEX	-1.9	-3.9	-3.4	**-2.5**	**-3.0**
Free cash flow	-6.6	-11.0	-15.4	**-7.5**	**-9.4**

Valuation multiples	2021	2022	2023	2024e	2025e
EV/S	>100	>100	28.6	**7.5**	**2.2**
EV/EBITDA (adj.)	neg.	neg.	neg.	**neg.**	**neg.**
EV/EBIT (adj.)	neg.	neg.	neg.	**neg.**	**neg.**
P/E (adj.)	neg.	neg.	neg.	**neg.**	**neg.**
P/B	3.2	2.2	1.7	**3.3**	**neg.**
Dividend-%	0.0 %	0.0 %	0.0 %	**0.0 %**	**0.0 %**

Source: Inderes

Per share data	2021	2022	2023	2024e	2025e
EPS (reported)	-0.21	-0.61	-0.67	**-0.34**	**-0.41**
EPS (adj.)	-0.21	-0.61	-0.67	**-0.34**	**-0.41**
OCF / share	-0.24	-0.36	-0.61	**-0.27**	**-0.32**
FCF / share	-0.34	-0.56	-0.78	**-0.40**	**-0.48**
Book value / share	1.98	1.36	0.70	**0.36**	**-0.04**
Dividend / share	0.00	0.00	0.00	**0.00**	**0.00**

Growth and profitability	2021	2022	2023	2024e	2025e
Revenue growth-%	67%	2770%	79%	**483%**	**400%**
EBITDA growth-%	354%	109%	12%	**-58%**	**14%**
EBIT (adj.) growth-%	302%	109%	15%	**-50%**	**7%**
EPS (adj.) growth-%	198%	186%	11%	**-50%**	**21%**
EBITDA-%					**-35.3 %**
EBIT (adj.)-%					**-47.2 %**
EBIT-%					**-47.2 %**
ROE-%	-20.7 %	-36.4 %	-65.4 %	**-63.5 %**	**-256.5 %**
ROI-%	-27.4 %	-33.7 %	-53.7 %	**-38.0 %**	**-55.2 %**
Equity ratio	91.4 %	83.2 %	64.9 %	**44.7 %**	**-7.0 %**
Gearing	-96.3 %	-88.8 %	-63.2 %	**-12.8 %**	**-1063.0 %**

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Recommendation history (>12 mo)

Date	Recommendation	Target	Share price
11/3/2022	Reduce	3.00 €	2.86 €
1/16/2023	Reduce	3.00 €	3.07 €
2/15/2023	Reduce	3.00 €	2.98 €
8/25/2023	Reduce	2.20 €	2.31 €
9/27/2023	Reduce	1.20 €	1.28 €
11/6/2023	Reduce	1.10 €	0.97 €
2/16/2024	Reduce	1.10 €	1.20 €

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