

Betolar Plc Business Review 2022

1 January–30 September 2022



BETOLAR

Asian Market Opening for Betolar, First European Customers Launching Production with Geoprime

January–September 2022 in brief

- Net sales were EUR 65 (0) thousand
- EBITDA¹ amounted to EUR -7,231 (-1,837) thousand
- The number of new pilot customers¹ was 19 (5)
- The number of employees increased significantly and averaged 42 (21) during the period
- Cash and cash equivalents at the end of the period amounted to EUR 30,328 (2,892) thousand

Main events during the period

- Betolar is entering the commercial phase after concluding the first Geoprime agreements with a total of eight customers, four of which are in Europe and four in Asia.
- The company carried out piloting with a total of 19 new customers in accordance with the targets.
- In addition to commercial agreements, Betolar signed two strategic development agreements with Critical Metals and the precast concrete element manufacturer Consolis Parma.
- The development of Betolar's capabilities continued with new recruitments. The implemented recruitments were especially focused on research and product development, the construction of supply chains and the strengthening of commercial competence.
- The research and development activities were carried out as planned during the period. The activities were targeted at carrying out material research, development of the AI platform, refining the digitalisation strategy, development of Geoprime Academy and expanding the patent portfolio.
- On 12 May 2022, Betolar's Board of Directors appointed Riku Kytömäki as the new CEO of the company, and he will assume his duties on 1 November 2022. The current CEO Matti Löppönen will continue in his position until Kytömäki starts.
- The company's Management Team was complemented by three new members. Ilkka Iittiläinen started as Head of Operations on 29 March 2022, Jarno Poskela as Chief Technology Officer on 1 September 2022 and Ville Voipio as Chief Commercial Officer on 1 October 2022. Pekka Hintikka, the company's current Chief Technology Officer, will no longer participate in the Management Team; he will continue to support R&D activities in an advisory role before his retirement.
- In September, Betolar appointed Abhishek Bhattacharya (MBA and M.Sc. in Civil Engineering) as the Country Manager of Betolar India Plc.

More information about this business review

This is not an interim report under IAS 34. The company complies with the six-monthly reporting requirements of the Securities Markets Act and publishes business reviews for the first three and nine months of the year, which present key information and key figures on the company's strategy and business development. The figures presented in this business review are unaudited. The figures in brackets refer to the corresponding period in the previous year, unless otherwise stated.

CEO Matti Löppönen

Betolar's business is based on enabling and accelerating the green transformation of the concrete industry through science and technology. We have managed to commercialise our innovations internationally.

The commercialisation of Betolar's low-carbon Geoprime solution to replace concrete and the increase in production volumes together with customers proceeded according to our expectations in July–September. Our customers have launched the production of concrete products based on the Geoprime solution at the same time as new pilot customers are starting to test our solutions in their production.

During the third quarter, we signed commercial agreements with three Indian manufacturers of infrastructure and environmental construction concrete products. The agreements aim to achieve a total annual volume of 250,000 tonnes of concrete produced with Geoprime by the end of 2023. By the end of September, we had signed commercial Geoprime agreements with a total of eight manufacturers in Europe and Asia.

Due to the early start-up phase of our customers' own production, our net sales for July–September were still at a relatively modest level. The key message from our customers is that the deployment of our solution and the start of production has been successful and there are no obstacles to increasing production as demand increases.

By the end of September, three of our European customers have started industrial production. After the end of the review period, India also entered the production phase in October, with the first commercial Geoprime paving stones and tiles and concrete blocks launched at the World of Concrete event in Mumbai.

The growth in the number of pilot customers that began in the early part of the year also continued in July–September. New pilot projects were launched in Poland, Saudi Arabia, Italy and India during the third quarter. At the end of September, the number of new pilot customers was 19. The growing number of pilot projects, environmental strategies of several Asian countries and market feedback confirm our view that the construction sector is adopting new environmentally friendly solutions quickly and comprehensively.

Our team strengthened during the period, and we are moving forward in developing our technological and commercial capabilities as intended. To accelerate growth in Europe and in the world's largest concrete product markets in Asia, we have strengthened our local organisation in India. In September, we appointed Abhishek Bhattacharya (MBA and Construction Engineering) as the Managing Director of our Indian businesses in the concrete product industry.

The number of personnel has more than doubled since last autumn being more than 60. As our operations and the number of employees grow, we are paying particular attention to maintaining our corporate culture while shaping our processes and operating models to support business growth, efficiency and risk management.

As previously announced, the baton of Betolar's CEO will be passed on at the beginning of November. At the end of my term as CEO, I would like to thank every employee, customer, partner, financier, shareholder and the Board of Directors for their cooperation, commitment and responsibility. In particular, I would like to thank the founder of Betolar, Juha Leppänen, for his innovation and seamless cooperation. I am grateful that I have had the honour of being part of Betolar's excellent team in building a sustainable solution for the construction industry. I wish Betolar and the new CEO Riku Kytömäki success, enthusiasm and courage in realising the company's mission.

Business review key figures

(EUR thousand, unless otherwise specified)	1–9 2022	1–9 2021	1–12 2021
Financial indicators			
Net sales	65	0	10
EBITDA ¹	-7,231	-1,837	-3,171
Cash and cash equivalents (at the end of the period)	30,328	2,892	37,355
Operational indicators			
Personnel (average number during the financial period)	42	21	20
Number of new pilot customers ¹	19	5	12

1) Betolar uses certain alternative performance measures (gross margin, EBITDA, earnings per share and number of pilot customers) as indicators of operational profitability and performance. The definitions and calculation formulas of these measures are attached to the report.

Business Review 1–9/2022

The first commercial agreements concerning the Geoprime concept were signed during the first half of the year. During January–September, Betolar signed commercial agreements with a total of eight customers, four of which were in Europe and four in Asia. We have proceeded to production with our customers according to expectations.

First European customers starting production

In Finland, Betolar and JA-KO Betoni Ltd signed a commercial agreement early in the year. The term of the agreement is 10 years, and it includes the right to use the Geoprime concept in JA-KO Betoni's production. In the summer, JA-KO Betoni gradually launched Geoprime production in pre-cast concrete products, such as infrastructure products.

Betolar and Denmark's biggest manufacturer of concrete products, IBF, signed a commercial agreement pursuant to the Geoprime concept until the end of 2026. The agreement covers both the parent company and subsidiaries of IBF. IBF's annual concrete production volume is approximately two million tonnes, and it manufactures a wide variety of concrete products. IBF gradually started the production of concrete products according to the Geoprime concept under the agreement. The first product category will be sewerage pipes, but the applications will be expanded into other product categories as made possible by the availability of slag used as raw material, product testing and approvals. In the summer, IBF started production and delivered the first Geoprime sewerage pipes to the Danish utility company Aarhus Vand A/S, which supplies drinking water and handles sewage for 350,000 private and business customers in the Aarhus area. In total, more than 600 metres of Geoprime sewerage pipes produced by IBF were laid in the ground. IBF has also produced approximately 16,000m² of paving stones for commercial purposes.

In Belgium, Betolar and Tubobel entered into a commercial agreement on the use of the Geoprime concept in February, and the agreement is valid until 2030. Tubobel is the market leader in the manufacture of sewerage pipes in Belgium. The first product group is sewerage pipes. In the first few years, Tubobel will acquire the exclusive right to use the Geoprime concept for manufacturing sewerage pipes on the Belgian market. Production will gradually be expanded to include other product groups, such as paving stones and infrastructure products. Tubobel had not yet started production under the Geoprime concept by the end of the reporting period. The parties have jointly decided to apply for local approval to ensure market entry.

In Germany, Betolar and the local concrete manufacturer FC Nüdling Group (FCN) entered into a five-year commercial agreement on the use of the Geoprime solution in April. FCN is the leading

manufacturer in its market areas in Thuringia and Hesse in Central Germany. Its total annual volume of concrete products is 500,000 tonnes. FCN will have the exclusive right to use the Geoprime concept for the manufacture of its concrete products for a period of five years in its market area. The first product group is paving stones, but the use of Geoprime will gradually be extended to other product groups. FCN introduced the first low-carbon Geoprime paving stones to the German market at the Galabau event in Nuremberg in September. The company is set to start commercial production.

First market entries and start of production in Asia about to begin

In June, Betolar entered into a commercial agreement in Vietnam, the first agreement in the Vietnamese market. Betolar signed an agreement on the use of the Geoprime solution with Trung Hieu Investment and Development Corporation. Trung Hieu is a manufacturer of construction blocks and paving stones in Ho Chi Minh City with a production capacity of 100 million blocks per year, corresponding to 120,000 tonnes of concrete.

In July, Betolar signed its first commercial agreements with three Indian concrete product manufacturers. The contracting parties are Sneh Precast, Shiv Tiles and Balaji Cement Products. The companies' product range focuses on various concrete products for infrastructure and landscaping, such as sewerage pipes and paving stones. The three commercial agreements currently in force aim to achieve a total annual volume of 250,000 tonnes of concrete produced with Geoprime by the end of 2023. In addition, a letter of intent with one of India's largest conglomerates, Godrej & Boyce, was announced in July. Godrej is a major producer of concrete products in India and it has been opening up the market for concrete products based on the circular economy.

Abhishek Bhattacharya, who has extensive experience in the cement and concrete industry and in building new businesses in the building materials industry, started as the Country Manager of Betolar India Plc. The Indian company has a five-person team that will place the Geoprime solution on the market in selected geographical areas. In October, Betolar presented the products of its first customers at the World of Concrete event, where Betolar clearly attracted interest in the industry.

Pilots with new customers

In addition to the commercial agreements, the company carried out piloting with new customers in accordance with the plans. Sales and marketing activities were targeted at key markets in Finland, the Nordic countries, Central Europe and Asia. During January–September, pilots were carried out with a total of 19 new customers. With regard to the EMEA market, pilots with new customers were carried out in Sweden, Belgium, Poland, Italy and Saudi Arabia. In Asia, pilots were conducted in India, Vietnam and Indonesia. The pilot customers include several industry-leading manufacturers. Based on previous piloting experiences, Betolar estimates that these pilot customer relationships will lead to commercial agreements.

Construction of supply chains started with key recruitments

The building of the supply chains for industrial side streams and activator chemicals used in the Geoprime solution entered a new phase as a result of the growth of the business. Supply chain expertise was strengthened with key recruitments. The evaluation and selection of chemical manufacturers and logistics partners as well as the development of a global supply chain strategy began in the period. In addition, Betolar strives to support the customers in different ways in terms of optimal availability, high quality and the pricing of side streams.

Strategic partnerships moving towards industrial-scale testing

In March, Betolar began research collaboration with Critical Metals' two vanadium recovery subsidiaries, RISAB and Vanadium Recovery Project Oy (VRP). The aim of the cooperation is to develop a method where vanadium-purified slag could be used to replace cement in concrete. This SSM slag would be produced at the planned Pori vanadium recovery plant.

In August, Betolar and the pre-cast concrete manufacturer Consolis Parma signed a development cooperation agreement. The purpose of the cooperation is to test Betolar's low-carbon solution in the industrial production of hollow-core slabs. During the autumn, promising laboratory results were obtained. It is estimated that testing will move to the plant-scale stage during the fourth quarter.

Financial Development 1–9/2022

Betolar's net sales for January–September amounted to EUR 65 (0) thousand, comprising of sales pursuant to the Geoprime concept. The past year has been Betolar's start-up phase, where the first commercial licensing and material agreements will gradually start to generate net sales as production volumes increase.

EBITDA was EUR -7,231 (-1,837) thousand.

Betolar is a growth company whose operating income does not yet cover operating expenses. The costs incurred during the period reflect the company's planned growth phase, in which the company's key objectives are the scaling of the Geoprime concept, the growth of capabilities and strong product development. In line with its financial targets, the company expects to achieve a positive operating cash flow by 2026.

Betolar's financial position to implement the growth strategy is strong. Cash and cash equivalents, including liquid fund investments, amounted to EUR 30,328 (2,892) thousand at the end of the period.

The Group's subsidiaries Betolar Element Ltd, Betolar Geotechnical Solutions Ltd, Betolar Green Building Technologies Ltd, Betolar Mining Solutions Ltd and Solidwatt Ltd were merged into the parent company Betolar Plc on 31 August 2022 to clarify the group structure.

Research and Development 1–9/2022

The research and development activities were carried out as planned during the period, both through Betolar's own operations and in cooperation with the development partners. The activities were targeted at strengthening capabilities, carrying out material research, AI platform research and development (R&D), refining the digitalisation strategy, developing the Geoprime Academy environment and expanding the patent portfolio. The development priorities support the achievement of the company's business goals.

Betolar's capabilities continued to grow strongly. Betolar's research and development (R&D) and digitalisation teams were strengthened during the period in accordance with the technology strategy. The financing from the Finnish Climate Fund played an important role in strengthening the capabilities.

Betolar's product development organisation is carrying out a systematic side stream research programme. With regard to side streams, the development of material research focused on slags from the steel industry in particular. In addition to traditional steel industry blast furnace slag (GGBFS), extensive laboratory studies on the usability of SSM slag were started. The research is related to the strategic cooperation launched with Critical Metals. Promising results have been obtained on SSM slag in the laboratory scale. In addition to slags, material research has focused on the use of various types of ash as part of the Geoprime binder solution. With regard to ash, there has been a shift from laboratory-scale to plant-scale piloting in Asia and Europe.

The development of the data and analytics platform (Betolar Platform Program), which utilises artificial intelligence, proceeded to the specification of the digital strategy and architecture and to the recruitment of new key specialists. Betolar and Silo AI, a major European AI laboratory, launched closer collaboration to collect research data and create AI models.

The long-term objective of the development of the platform is to develop a predictive model that takes into account all of the key parameters related to the product, such as the properties of side streams and aggregates, the requirements set for the product and application areas. The accumulated data is used to produce a Geoprime formula optimised in terms of carbon dioxide emissions, price and technical characteristics, among other things. In the short to medium term, the development objectives of the platform include, among other things, building a scalable data infrastructure, connecting data sources that are important for formula development to the platform, collecting data from the research process in the laboratory and making more efficient use of the data as part of Geoprime's formula development.

The Geoprime Academy is being built as a virtual learning environment that will enable the employees of concrete manufacturers and other stakeholders to be trained in the introduction of the Geoprime solution. The content production of the learning environment started during the review period. The Jyväskylä University of Applied Sciences JAMK and the Jyväskylä Educational Consortium Gradia are participating in the project. The learning environment is being implemented by XoomPoint, a Turku-based e-learning specialist, which also produces course content in a format that supports digital learning.

Early in the year, Betolar was granted a patent concerning the method and arrangements related to the processing and conversion of certain mining waste material into a hardening binder. In the future, the binder may be used commercially. This method can create value for waste material, which at present involves costs for mining operators. According to Betolar's IPR strategy, the primary purpose of patents is to secure the materials technology solutions-based business of Betolar and its customers. The patent portfolio is also expected to form a significant component for the long-term valuation of the company.

Personnel and Management

At the end of September 2022, the Group had 61 (2021: 27) employees. The number of employees increased by 34 persons, which represents a year-on-year increase of 126%. There were 54 persons working in Finland and 7 persons working outside Finland. In Finland, the company has offices in Espoo, Jyväskylä and Tampere and a laboratory in Kannonkoski. In addition to the Indian subsidiary, the company has operations in Vietnam and Indonesia.

The new recruitments have had a significant impact on the development of Betolar's capabilities during the year. The implemented recruitments have especially focused on strengthening competences in digital solutions, research and product development and commercial skills. The organisation has especially improved the capabilities of new supervisors, strengthened occupational safety practices and developed the prerequisites for a healthy and competent workplace culture. Particular attention has been paid to the orientation of new persons, where the importance of more experienced members of the work community is emphasised.

On 12 May 2022, Betolar's Board of Directors appointed Riku Kytömäki as the new CEO of the company, and he will assume his duties on 1 November 2022. The current CEO Matti Löppönen will continue in his position until Kytömäki starts.

Betolar's Management Team was strengthened through key recruitments during the first half of the year. Ilkka Iittiläinen (M.Sc. (Tech), LL.M., MBA), who held demanding management positions in international procurement and logistics, was appointed as Head of Operations and a member of the Management Team in March. Ville Voipio (M.Sc., Econ.) was appointed as Chief Commercial Officer and Jarno Poskela (D.Sc., Tech.) as Chief Technology Officer during the fourth quarter. Pekka Hintikka, the company's current Chief Technology Officer, left the Management Team after Poskela's appointment. He announced that he will retire in 2023 and will continue to support Betolar's R&D activities as an advisor until then.

In addition to the new Management Team appointments, Lasse Happonen who was responsible for ready-mixed concrete and pre-cast elements announced in March that he would retire and continue as Betolar's advisor.

In September, Betolar appointed Abhishek Bhattacharya as the first Managing Director of Betolar India Plc. Mr Abhishek Bhattacharya (MBA and M.Sc. in Civil Engineering) has twenty years of experience in business development, commercialisation and production ramp-up in the concrete industry in India.

Financial reporting

Betolar Plc will publish its financial statements, half-year report and business reviews in 2023 as follows:

- Financial Statements Release 2022 on Tuesday 14 February 2023
- Business review 1–3/2023 on Thursday 27 April 2023
- Half-year report 1–6/2023 on Friday 25 August 2023
- Business review 1–9/2023 on Friday 3 November 2023

The Annual Report 2022 will be published during week 10, which starts on 6 March 2023. The Annual General Meeting is planned to be held on 31 March 2023.

Betolar's financial reports are available on the company's website at www.betolar.com/investors.

Betolar Plc

More information

Riikka Ylikoski, CFO, Betolar Plc, +358 40 828 2632

Certified Adviser: Aktia Alexander Corporate Finance Oy, +358 50 520 4098

About Betolar

Betolar Plc is a Finnish materials technology company that offers the production of sustainable and low-carbon concrete with the Geoprime® solution. The solution converts several previously unused, massive industrial by-products into a cement substitute.

Betolar's innovation can significantly reduce CO2 emissions compared to traditional cement-based concrete production by optimizing existing manufacturing processes. Betolar's mission is to reduce CO2 emissions and the use of virgin natural resources in construction.

Betolar was founded in 2016 and is headquartered in Kannonkoski, Finland. For more information, visit www.betolar.com/

APPENDIX

Calculation formulas for certain alternative measures and other indicators:

Measure	Definition	Purpose of use
Gross margin	Net sales + other operating income – materials and services	Gross margin is a measure of the Group's profitability. Gross margin measures profitability after reducing the costs of materials and services.
EBITDA	Operating profit (loss) before depreciation, amortisation and impairment	EBITDA is a measure of the Group's performance.
Earnings per share, basic, EUR	Profit for the financial period/weighted average number of outstanding shares during the financial period	The measure reflects the distribution of the Company's earnings for each individual share.
Earnings per share, adjusted for dilution, EUR	Profit for the financial period/weighted average number of outstanding shares during the financial period + diluting potential shares	The measure reflects the distribution of the Company's earnings for each individual share, taking dilution into consideration.
Number of new pilot customers	Number of new customers in the plant pilot phase during the financial year.	The measure illustrates new customers in the plant pilot phase of the Company's sales process during the financial year.