

Intelligent drive solutions and control technology for more sustainable metal recycling

6th February 2024

Energy-intensive industries are facing major challenges: energy costs, carbon taxes and a shortage of skilled workers, to name but a few. The metal recycling sector – with its substantial electrical requirements – is particularly affected by this. However, with the help of modern drive technology from Mitsubishi Electric, an impressive return on investment (ROI) can be achieved through cost savings and increased productivity.

In order to remain competitive in the global market, the European metal recycling sector must rise to current challenges. Shredders, conveyor belts and exhaust air treatment systems are very power hungry. However, existing systems can easily be retrofitted with three-phase induction motors featuring low-maintenance variable frequency inverters. These can help optimise operations by reducing energy usage as well as wear and maintenance costs. As a result, process availability can be improved, leading to increased productivity as well as enhanced OEE (overall equipment effectiveness).

"As far as potential savings on energy costs, I would easily estimate 7–10% for the main shredder", states Thomas Droth, Business Development Manager at Mitsubishi Electric. "With additional upgrades that include modern control and energy recovery technologies, productivity can be increased by up to 30% and energy consumption reduced even further by around 20%. Depending on the condition of the plant and specific costs involved, the investment could pay for itself in less than a year."

Supporting effective load management, modern medium- and low-voltage variable frequency inverters from Mitsubishi Electric can reduce peak loads and energy consumption. This also helps energy suppliers ensure grid stability. The flexible control provided by the TMdrive or the FR-A800 and FR-F800 series enables the motor load to be increased without overloading the plant, so that the facility can operate within its optimum range. The service life of the asset's components can also be extended as an additional benefit.

In addition to this, Mitsubishi Electric offers solutions for recording and analysing operational data through its "Asset Portal". This information can be used to optimise processes, enable remote maintenance and carry out predictive maintenance in order to prevent unexpected downtime. "As a result, Mitsubishi Electric is also helping its customers with their digitalisation efforts," Droth continues.

A number of projects have already been completed successfully in the metal recycling sector, with plant operators benefiting from improved profitability. "A leading manufacturer of metal shredders is already benefiting from our drives. The partnership is a great boost for the sector," reports Droth.

The metal recycling market is huge: even back in 2021, 48% of the 40 million tons of crude steel produced in Germany were produced using recycled steel.¹

The cost surge is not only a burden for companies, but also a challenge for the profitability of the sector as a whole. With intelligent products and solutions for saving energy and costs, Mitsubishi Electric is helping to

¹ Source: <https://www.bvse.de/fachbereiche-schrott-e-schrott-kfz/metallschrott/marktbericht-stahlmetall.html>

secure the future of efficient metal recycling which, in turn, is a cornerstone of the sustainable circular economy.

Further information on the topic:

<https://de.mitsubishielectric.com/fa/lp/loesungen-fuer-die-recyclingindustrie>

Mitsubishi Electric Asset Portal (Iconics)

[Mitsubishi Electric Asset Portal](#)

To the editors:

If you are interested in a detailed application report, please contact

silvia.von.dahlen@meg.mee.com.

Image caption:



Image 1: Existing metal recycling systems can easily be retrofitted with low-maintenance variable frequency inverters with three-phase induction motors, resulting in savings on energy, wear and maintenance costs.

[Source: Mitsubishi Electric Europe B.V.]



Image 2: The flexible control provided by the TMdrive or the FR-A800 and FR-F800 series enables the motor load to be increased without overloading the plant.

[Source: Mitsubishi Electric Europe B.V.]



Image 3: With the help of modern drive technology from Mitsubishi Electric, an impressive return on investment (ROI) can be achieved through cost savings and increased productivity.

[Source: Mitsubishi Electric Europe B.V.]

About Mitsubishi Electric Corporation

Mitsubishi Electric Corporation (TOKYO: 6503) has more than 100 years of experience in producing reliable, high-quality products and is the recognised global market leader in the manufacture, marketing and selling of electrical and electronic devices which are used in fields such as information processing and communications, space development and satellite communications, entertainment electronics, industrial technology, energy, transport and building equipment. Mitsubishi Electric enriches society with technology in line with its motto "Changes for the Better". The company recorded sales of 5,003.6 billion yen (37 billion US dollars*) in the fiscal year ending 31 March 2023.

For further information, go to www.MitsubishiElectric.com.

*Amounts in US dollars have been converted from yen at the rate of ¥134 = US\$1, the approximate rate on the Tokyo foreign exchange market on 31 March 2023.

About the Mitsubishi Electric Factory Automation Business Group

Mitsubishi Electric offers a wide range of automation and processing technologies, including controllers, drive products, power distribution and control products, electrical discharge machines, electron beam machines, laser processing machines, computerised numerical controllers and industrial robots, thus helping to increase productivity – and quality – in operations. In addition, its extensive service networks around the globe offer direct communication and comprehensive support for customers. The global slogan "Automating the World" expresses the company's aim to use automation to enhance society by using advanced technologies, sharing know-how and supporting customers as a trusted partner.

For further information on the story of "Automating the World", go to:

www.MitsubishiElectric.com/fa/about-us/automating-the-world

Factory Automation EMEA

Mitsubishi Electric Europe B.V., Factory Automation EMEA, has its European headquarters in Ratingen near Düsseldorf. It is part of Mitsubishi Electric Europe B.V. which has been represented in Germany since 1978, a 100% subsidiary of Mitsubishi Electric Corporation, Japan. The task of Factory Automation EMEA is to control sales, service and support via the network of local branch offices and distributors across the whole EMEA region.

For further information, go to emea.mitsubishielectric.com/fa

About e-F@ctory

e-F@ctory is the integrated concept of Mitsubishi Electric for building reliable and flexible production systems to enable users to achieve many of their goals in information-led high-speed manufacturing. Through its partner solutions, the e-F@ctory Alliance and collaboration with open network associations such as the CC-Link Partners Association (CLPA), users can build comprehensive solutions based on a wide-reaching "best-in-class" principle.

To sum up, e-F@ctory and the e-F@ctory Alliance enable customers to achieve integrated production while still being able to choose the optimum suppliers and solutions.

*e-F@ctory and iQ Platform are trademarks of Mitsubishi Electric Corporation in Japan and other countries.

*Other names and trademarks may be claimed as the property of other parties.

*All other trademarks are recognised.

Further information:

de.mitsubishielectric.com

Follow us:



youtube.com/Benutzer/MitsubishiFAEU



twitter.com/MitsubishiFAEU



www.linkedin.com/Mitsubishi_Electric_-_Factory_Automation_EMEA

Press contact:

Mitsubishi Electric Europe B.V.

Industrial Automation

Silvia von Dahlen

Marketing Communications Consultant

Mitsubishi-Electric-Platz 1

40882 Ratingen, Germany

Tel.: +49 (0)2102 486-5160

Fax: +49 (0)2102 486-7170

silvia.von.dahlen@meg.mee.com

de.linkedin.com/in/silvia-von-dahlen

PR agency:

DMA Europa Ltd.

Kiki Anderson

Progress House, Great Western

Avenue, Worcester, UK, WR5 1AQ

Tel.: +44 (0)1905 917477

kiki.anderson@dmaeuropa.com

www.dmaeuropa.com