Hitachi Zosen INOVA

Media release, 26 July 2024

Hitachi Zosen Inova wins contract to supply two new lines at Schwandorf waste-to-energy plant

As part of the Triphönix ("Tri-Phoenix") project, three historic Steinmüller boiler units in the southern German district of Schwandorf are being replaced by two high-performance modern lines. The special-purpose association responsible for waste management in Schwandorf is entrusting the work to a longstanding partner.

Zurich, Switzerland Hitachi Zosen Inova (HZI) is supplying two new lines for the Schwandorf waste-to-energy plant. The contract has just been signed by Hitachi Zosen Inova Steinmüller (HZI-STM), Gummersbach with Zweckverband Müllverwertung Schwandorf (ZMS), the local special-purpose association responsible for waste management. As part of the contract, three of the four existing lines of the waste-to-energy plant will be dismantled by ZMS and replaced by HZI with two larger, state-of-the-art lines. The contract for the EPC turnkey project covers the combustion system and boiler, the flue gas treatment unit, the technical building equipment, EMCR and associated technology, structural engineering and the necessary connections to the existing installations, relocation and temporary arrangements for each line.

The special purpose association relied on the expertise of the waste-to-energy specialist back in 1982 when the first three lines were built by what was then Steinmüller. After commissioning, the plant became one of the most important, system-relevant waste disposal companies in the region, disposing of waste from 17 towns and cities, districts and special-purpose waste associations belonging to ZMS, with a total of 1.91 million inhabitants, as well as producing a major amount of energy to cover basic supply. In 2010 another line was added to the plant. The waste-to-energy plant's four incineration lines currently thermally treat around 450,000 tonnes of waste every year, converting it into electricity and heat. Supplying neighbouring industry with low-cost energy, the Schwandorf plant represents a key locational advantage for these companies. The waste-to-energy plant also feeds heat into Schwandorf's district heating network and electricity into the public grid.

As part of the Triphönix modernisation project, the three old Steinmüller boiler systems are now being dismantled after more than 40 years of service. HZI will install two larger, high-performance lines on the site. In the design phase, HZI came up with a well-though-out installation plan in a constricted construction area allowing significantly more than the required throughput of 18 tonnes per hour; each line will thermally treat 22 t/h, which corresponds to a total throughput capacity of around 350,000 tonnes of waste per year for both. Each boiler unit will have a thermal output of 67.2 MW_{th}. Another special feature of the modernisation concept is that parts of the old system will continue to be used, for example the SCR (selective catalytic reduction) denitrification units deployed in the flue gas treatment system and the chimney system belonging to the plant. Among other things, this means that the two new lines must be installed precisely on the old site, even though the basic layout requires the steel structure and boiler house to be rebuilt.

The Triphönix project is one of the largest investments in the history of ZMS and will further boost the plant's importance in the region. The project will run for a total of 87 months and will be completed in 2031. To enable waste disposal to be maintained, the old lines will be dismantled and the new lines built step by step while the remaining lines continue to operate. This places special demands in terms of construction site safety, schedules and logistics during the construction of the new lines.

The two new lines offer a number of special technical features. HZI has developed a boiler set-up concept tailored to the space requirements, which enables highly efficient energy utilisation in the very limited space available. This has been made possible, among other things, by intelligently arranging the superheater surfaces with an appropriately adapted boiler cleaning system that works on the basis of modern shock-pulse cleaning in addition to the usual knocker cleaning. Shock-pulse cleaning involves the use of targeted explosions to free the superheater packs

from caking. The system thus permanently ensures efficient heat transfer, also reducing maintenance costs.

The steam parameters, 410°C and 73 bar(a), have been tailored to the client's needs. The flue gas treatment system is designed for maximum separation using HZI's proprietary SemiDry process, fulfilling the requirements of the new 17th BImSchV ordinance and even falling significantly below its thresholds.

HZI can look back on extensive experience with such complex modernisation projects. For example, it is currently working with GML – Gemeinschafts-Müllheizkraftwerk Ludwigshafen GmbH to deliver the similarly structured IGNIS project, where several lines are being dismantled and replaced with new ones over a total period of eight years while the plant continues to operate. "We are honoured that our customers have entrusted us to deliver these very extensive projects for them over such a long period of time," says Thomas Feilenreiter, Vice President Systems & Service at HZI. District Administrator Thomas Ebeling, the chairman of the Schwandorf waste utilisation association, adds: "The Schwandorf waste-to-energy plant is systemically relevant for the region in terms of both waste disposal and energy supply. It was therefore important for us to find a partner that has experience in highly complex conversions and can draw on a broad range of expertise. This partner is HZI"

(5337 Zeichen inkl. Leerzeichen)

About Zweckverband Müllverwertung Schwandorf (ZMS)
Zweckverband Müllverwertung Schwandorf is a public corporation founded in 1979, currently comprising 17 members: the independent towns and cities of Amberg, Bayreuth, Landshut, Regensburg and Weiden i. d. Opf, the districts of Amberg-Sulzbach, Bayreuth, Cham, Kulmbach, Landshut, Neumarkt i. d. Opf., Neustadt a. d. Waldnaab, Regensburg, Schwandorf, Tirschenreuth and the waste management associations AZV Stadt und Landkreis Hof and ZAW Straubing Stadt und Land. ZMS's remit is thermal treatment non-recyclable residual waste and energy recovery. Its disposal area covers 15,000 square kilometres with around 1.91 million inhabitants. Domestic, bulky and commercial waste is disposed of in this area via the Schwandorf waste-to-energy plant.

About Hitachi Zosen Inova
Zurich-based greentech company Hitachi Zosen Inova (HZI) is a subsidiary of the Hitachi Zosen Corporation and one of the world's leading providers of integrated energy transition and circular economy solutions, with a focus on Waste-to-Energy (WtE) and Renewable Gas (RG). HZI serves as a project developer, technology supplier and engineering, procurement and construction (EPC) contractor delivering turnkey plants and system solutions for thermal and biological Waste to Energy recovery, gas upgrading and Power to Gas. Its solutions are based on efficient and environmentally sound technology, are thoroughly tested, and can be flexibly adapted to customer requirements. HZI's Service Group combines its own research and development with comprehensive manufacturing and erection capabilities to support customer projects throughout the entire life cycle. HZI works for customers ranging from experienced waste management companies to up-and-coming partners in new markets. Its innovative and reliable solutions have been part of more than 1,600 reference projects worldwide. Hitachi Zosen Inova Steinmüller GmbH, based in Gummersbach, Germany, is a subsidiary of Hitachi Zosen Inova synonymous with state-of-the-art thermal waste treatment and flue gas treatment technology.

To find out more about HZI, please visit www.hz-inova.com

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