

MANGANESE RECYCLING: SMARTER, GREENER, SAFER



BILFINGER

Mangan Chvaletice, the Czech subsidiary of Euro Manganese Inc. (EMN), a public Canadian mineral resource company, has asked Bilfinger Tebodin to provide support to its Chvaletice Manganese project in the

Czech Republic – Western Europe's largest manganese deposit, contained in waste from historical mining operations. Waste recycling, leading technology and exceptionally green credentials stand to make the company a strategic

European supplier of Ultra-High-Purity Manganese products by 2022. These products are principally destined for the lithium-ion battery industry, and by specialty steel and aluminum alloys producers.

Since 2015, Euro Manganese has completed extensive resource evaluation, metallurgical testwork and process design studies. In 2018, it completed pilot plant runs, capital and operating cost estimations, as well as preliminary engineering and environmental planning. A feasibility study, environmental impact assessment application and commissioning of a demonstration plant are planned for 2019. The project stands to become Europe's only primary producer of battery-grade manganese products, with a world-leading environmental footprint and site reclamation plan.

FROM SITE SEARCH TO PROJECT EXECUTION

The process plant is being designed to have a 25-year project life at a nominal production rate of 48,000 tons per annum of HPEMM (high-purity electrolytic manganese metal), one third of which would be converted to HPMSM (high-purity manganese sulphate monohydrate). Bilfinger Tebodin has provided a wide range of consultancy and engineering services to ensure the quality and efficiency of this new plant.

Jan Bobek, Business Development director at Bilfinger Tebodin: 'Our cooperation with EMN

started in 2016 with a consultancy mandate. Involving consultancy experts on the early stage of the project is always the most efficient approach to its execution, especially when we deal with specialized industries and exceptionally green project credentials. We started working on the Chvaletice Manganese project from the site selection process.'

PRAGMATIC AND COST-EFFECTIVE APPROACH

EMN is focused on producing exceptional purity manganese products and the minimization of its environmental footprint by using the cleanest technologies available: 'What makes this project even more significant for an automotive industry focused on making our world greener, and for other consumers striving to secure high-quality and sustainably produced raw materials, is that these products would be produced by recycling waste', comments Marco Romero, President and CEO of EMN.

To ensure the stringent Czech Republic and European Union health, safety and environmental standards, Bilfinger Tebodin provided input on local regulatory

requirements for the permitting process and environmental regulations, standards and practices, including waste water, waste and tailings storage, air, noise etc. The consultants have also provided a time schedule and execution plan for the environmental impact assessment, environmental permits and building permits. The design work included preliminary process circuit and process equipment optimization.

Bilfinger Tebodin was involved in the Chvaletice Manganese project starting from the site selection process to the identification of local requirements and list of permits required for project execution. The consultants and engineers conducted a wide range of site-selection studies and prepared local operating and construction costs estimates (reagent and logistic costs, operation consumables, duties and taxes, bulk construction material rates, labor surveys, engineering and construction services and energy supply and costs).

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