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NEW GENERATION IN PRE-HEATING TECHNOLOGY FOR ELECTRIC STEEL MAKING HIGHER PRODUCTIVITY WITH REDUCED POWER

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Regulations at the world are accelerating the transition toward a low carbon economy, pushing the industrial sector to reduce the CO2 footprint. Especially EU has set ambitious targets to reduce greenhouse gas emissions by at least 55 % by 2030 and achieve carbon neutrality by 2050. However, despite renewable expansion and the increasing attention on the hydrogen economy, these targets are projected to be missed. New strategies are needed to achieve climate targets, and decarbonization of industrial heat consumption through innovative technologies will play a vital role. Decarbonisation of industrial heat consumption offers an opportunity for energy players and vendors to develop innovative solutions to reduce consumptions.

In this sense, GEMKOM MAKINA has developed a new scrap pre-heating technology in EAF steelmaking where scrap is pre-heated up to 600 °C so that electric consumption is reduced around 100 kWh/ton. This continuous and effective pre-heating technique, called °Furnace Energy Saving & Continuous Charging (FES-CON) System", is "environmentally friendly" and "high efficiency" scrap preheating system to be "superior" over the existed systems developed so far. The FESCON System combines the advantages of 100% scrap preheating and continuous scrap feeding through its chambers, without the need of EAF roof opening. FESCON prevents totally, any dust emission and heat loss during furnace charging stage, as it is the case normally for other operations. The FESCON-EAF is a new generation, economical and environmentally friendly Electric Arc Furnace. Considerable reduction in electric energy consumption, increased productivity, meeting strict environmental regulations, less dust load within the melt shop, flicker reduction& harmonic disturbance reduction are some of the key features of the new and superior FESCON system.

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