

Roller Hearth Heat Treatment at the Cutting Edge of Technology



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The demands on heat treatment plants for tubes/bars with regard to green steel production with constant quality requirements are increasing. The heating system is becoming increasingly important. But also the role in setting the exact atmosphere control, which determines the material surface, is becoming more and more significant. This article gives an overview of the state of the art, especially of the different heating systems. In addition, the plants presented can also fully cover AMS2750/CQI-9 auditing with a specially developed all-in-one software solution.

As in all areas of life, the industrial sector is also very much influenced by the topic of environmental protection in the present day. In the context of the UN climate protection agreement of 2015, the so-called Paris Agreement, in which global warming was limited to well below 2°C, the keyword “decarbonization” is also being used more and more frequently worldwide.

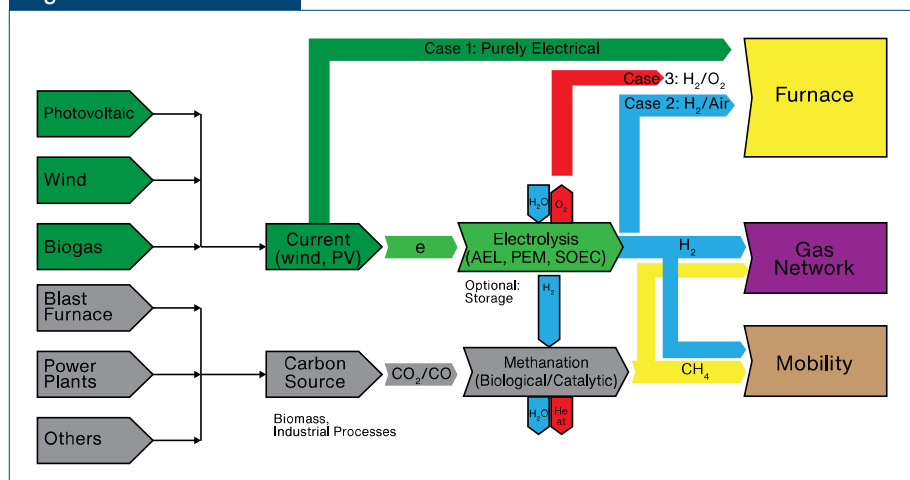
Therefore, for the steel industry and thereby also for the heat treatment of straight, long products, e.g., tubes and bars, the use of renewable energies is not only part of the latest technology, but also a decisive factor for successful decarbonization.

Discussion

Decarbonization – Indirect or direct electric heating of roller hearth furnaces has been standard practice for decades. However, other sources from renewable energies, such as hydrogen, or synthetically and CO₂-free produced hydrocarbons, such as synthesis or biogases, are now coming more and more into focus. In this context, it makes sense and is essential for an honest reduction of the carbon footprint for all the above-mentioned energy sources that the electricity used directly or indirectly in the heat treatment process comes from renewable sources!

Fig. 1 summarizes the use of renewable energy sources and so-called

Figure 1



Use of green power and carbon sources in thermoprocesses, energy supply and transport.¹