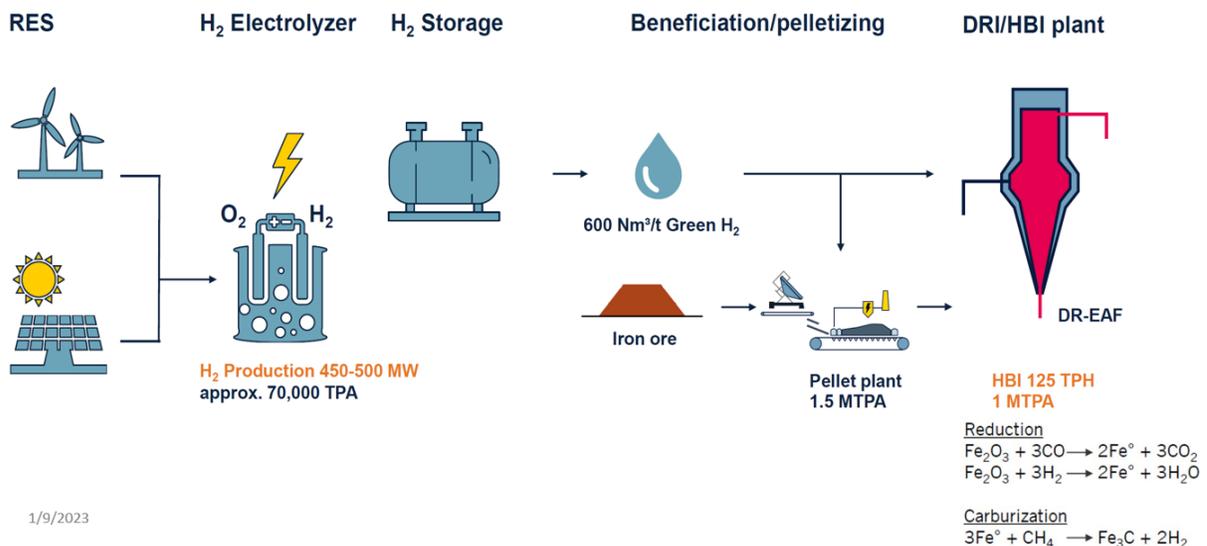


# Design of clean steel with Hydrogen

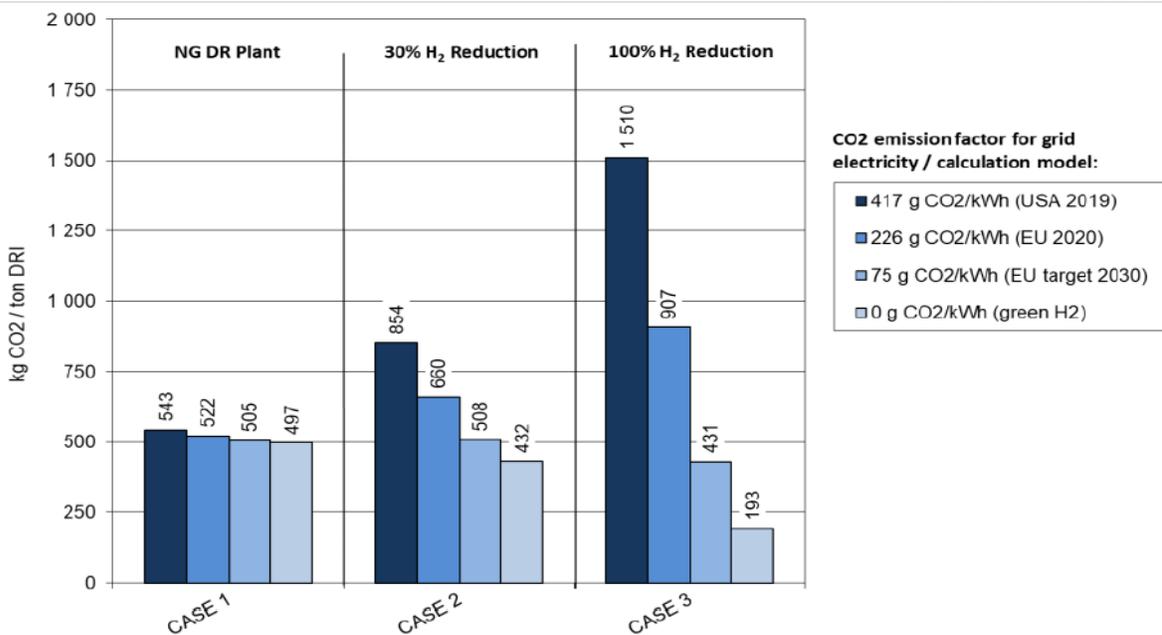
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The iron and steel industry is responsible for a portion of 7-9 % of the global CO<sub>2</sub> emissions, it has to reduce its CO<sub>2</sub> emissions drastically during the next 30 years. Greater CO<sub>2</sub> reductions in steel industry can only be achieved by switching to different iron & steel production processes. This can be either the scrap-EAF route for certain quality grade steels or the utilization of H<sub>2</sub> in Iron direct reduction route. The use of hydrogen sources in the existing BF-BOF route can only contribute to a small reduction of CO<sub>2</sub> emissions, which it will not be sufficient to achieve the CO<sub>2</sub> reduction targets. In order to achieve the future targets, the direct reduction plant (DRI/EAF route) using H<sub>2</sub> is one of the alternatives for CO<sub>2</sub> reduction strategy. This study analyses the environmental benefits of the hydrogen based direct reduction process and its impact on operational cost based on average unit cost for a DRI.

## Hydrogen path in steel Direct Reduction Iron DRI



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