# Use of Hydrogen in the Steel Industry

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**Abstract :** The use of hydrogen as a clean and storable energy is involved in the substitution of coking coal from natural gas for the reduction of iron oxides by the reduction of iron oxides by the process of direct reduction .The resulting product called "pre reduces or synthetic scrap 'is the biggest load of arc furnaces in steel production. To meet the needs and steel products to prevent the importation of coal as expensive and polluting matter, we focused our studies and research work to the enhancement of our natural resources including the use of iron ore Gara Djebilet and Algerian natural gas. The main objective of this work is to produce rich reducing gas hydrogen from natural gas at a lower cost by the principle of steam reforming.CH4 (GN) + H2O (steam) = CO + 3H2 (1). The producing a reducing gas consists primarily of hydrogen (H2) and carbon monoxide (CO), from natural gas and water vapor in a re-driver is used as a reducing agent for iron ore(Pellets or calibrated) in a direct reduction pilot module [3] with a capacity of one ton.Fe2O3 + 3 H2 = 2 Fe + 3 H2O (2).

**Keywords :** Energy ; conversion, Hydrogen, gas reducing, sponge iron., steel, pollution.