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GEOLOGICAL HYDROGEN GREENER AND CHEAPER THAN THE MANUFACTURED SO-CALLED GREEN HYDROGEN

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The hydrogen market is growing, entering the energy grid and changing targets from agriculture to the transport industry. While the so-called green hydrogen (obtained by electrolysis with a tolerance of 10% of carbon emission) is claimed to be an economic and ecological cheap alternative, it cannot be cheaper than the natural gas as it needs to be synthesized from the energy grid, transported and stored.

The geological hydrogen (also called white, native, primitive, gold) is a source of energy in opposition with manufactured hydrogen being an energy vector, obtained mainly via routes emitting CO_2. (e.g. 95% of manufactured hydrogen in Brazil comes from Petrobrás). Today, it is becoming accepted that natural hydrogen exists, can be explored and produced with a cost of less than 1$ per kg. However, a very small number of countries is including hydrogen licenses from petroleum and/or mining permits. Governmental actions invest billions of dollars to support green hydrogen industries, neglecting the potential of natural hydrogen. If France is worldly leading the scientific research on geological hydrogen, recent discoveries in Brazil are encouraging with hydrogen levels measured higher than 2% at less than 1m of depth joining academic and consulting expertise (UFSCar and GEO4U) [1]. To plan a green business based on exploration and commercialization, new laws and regulations need to be implemented nationally and locally. Negotiations are under discussion in Brasilia and in Macaé (Brazil) for that purpose [2]. Hydrogen is becoming not only a solution to develop public and private transports without carbon emission, using newly patented combustion motors and fuel cell motors but also can support the local agriculture industry as a raw material for ammonia production and helium exploration is a side benefit.

[1] Interview radio UFSCar (in Portuguese) http://radio.ufscar.br/playerPodcast/1124

[2] https://www.macae.rj.gov.br/noticias/leitura/noticia/ensino-superior-e-politicas-energeticas-recebem-cientista-francesa-para-discutir-o-hidrogenio-natural

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