



Seeking collaboration opportunities – Hydrogen and CO₂ technologies

The global waste output will increase from 2 billion tons today to over 3 billion tons by 2050 (World Bank) and energy consumption by 50% from 2018 to 2050 (EIA). As the world needs a sustainable approach to tackle these challenges, Ways2H has developed its patent-pending process: the RefHynergy.

The RefHynergy, a thermochemical waste-to-hydrogen conversion technology based on a sequential three-step solid-to-gas Vapolyisis[®] and reforming process, has the added advantage of being a true carbon sink, channeling all the incoming carbon to a 90%+ single stream of CO₂ for sequestration. This represents a significant improvement over "green" electrolytic hydrogen, which can only be carbon-neutral at best.

The process is self-sustained, operating, with negligible atmospheric emissions, fueled by a fraction of the output hydrogen, which is used as the energy source for the conversion reactions. Apart from fuel-cell grade hydrogen and CO₂, byproducts are ash, nitrogen exhausted to atmosphere and a minimal stream of wastewater, treated to comply with industrial wastewater standards.

A standard RefHynergy produces approximately 2.5 tons of H₂ per day from 24 tons of dry municipal solid waste and about 40 tons CO₂.

In addition to presenting the technical characteristics of the process, Ways2H will provide several examples of commercial applications being currently under way in North America, Europe and Asia.

Finally, we are seeking partnerships for various R&D and technology bricks development, in the field of, but not limited to:

- Gas (H₂, CO₂, contaminants such as S, Cl, etc..) separation solutions
- Hydrogen / CO₂ storage
- CO₂ sequestration pathways
- Other technology bricks in the field of thermochemical process

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