

NH3 Fuel Cells

The world needs to move to a carbon-free economy through the generation of electrical power from renewable energy. The main issue with renewable power generation is that the supply very rarely matches electrical demand and this power needs to be stored until it is needed. Since passenger vehicles spend most of the time parked, the batteries in electric vehicles can be used to balance electrical energy in the grid. However, there will NOT be enough of these batteries to effectively balance the grid. Furthermore, there are vast renewable energy resources in places (like Canada's North) that are very remote from where there is a high demand for electricity (like large cities in the USA).

Hydrofuel Inc believes in that green ammonia is the ideal energy currency because it can be efficiently manufactured from green electricity, easily transported to where it is needed, and then converted back into electricity. We define "green" to mean originating from renewable energy as opposed to "brown" to mean originating from fossil fuels.

In collaboration with UOIT, Hydrofuel Inc is developing a process to efficiently convert anhydrous ammonia back to electricity using solid oxide fuel cells (SOFC). That is, using central or distributed generation, our fuel cells generate green electricity stored chemically from the surplus power generated by large solar, wind, and hydroelectric utilities. This green ammonia will be transported to fuel cell locations via pipeline, train, or ship as most economically appropriate.

At this time, our Haber-Bosch ammonia manufacturing technology is farther along than our fuel cell technology.