



FuelPositive
Fuel For A Mindful World



Fact Sheet - Fuel Cells

- FuelPositive carbon-free NH₃ can be used cost-efficiently for use in fuel cell technologies that have historically been hindered by storage and infrastructure issues.
- FuelPositive carbon-free NH₃ allows for increases in power and energy densities, charging speed, longevity, useful life and a lower cost per unit of energy stored.
- Current technologies commercialized as alternatives to fossil fuel transportation are battery electric and hydrogen fuel cell vehicles.
 - The creation of lithium-ion batteries causes serious emissions and pollution and the batteries have limited use-life and are not often properly recycled.
 - Hydrogen fuel cells have a number of problems:
 - The process used to make pure hydrogen is energy intensive.
 - Storing hydrogen is difficult.
 - As a liquid it boils off at standard temperatures (e.g., a tank filled on Friday would be empty by Monday without being driven, just because of room-temperature boil-off).
 - As a gas, it requires extreme pressure to store.
 - Transporting hydrogen is difficult and a safety concern/very dangerous (risk of explosion).
 - Being the smallest element on the periodic table, hydrogen leaks into the crystalline structure of metals, making the metals brittle and susceptible to cracking and failure.
 - In contrast, because FuelPositive carbon-free NH₃ contains a much more stable form of hydrogen, it provides the benefits of pure hydrogen but does not have the problems associated with pure hydrogen.
 - Carbon-free NH₃ is not as energy intensive to produce, using FuelPositive's production system.
 - Carbon-free NH₃ stores safely in tanks at normal temperatures with no boil-off problems and does not require extreme pressurization.
 - Carbon-free NH₃ does not have the metal embrittlement problems of pure hydrogen.