

| <u>NAME</u> | <u>Description</u> | <u>Sector</u> | <u>Activity</u> |
|-------------------------------|--|----------------------|------------------------|
| Abb | Electrification systems and engineering for green H2. | HS | SWITZERLAND |
| Alfa Laval | Heat exchangers for green H2 production, electrolyzers. | HS | SWEDEN |
| Arcadis NV | H2 network, Netherlands, Europe, in planning. | HI | NETHERLANDS |
| Ballard Power Systems Inc | Fuel cells, H2 in buses, trucks, trains, backup power etc. | HT | CANADA |
| Belden | DC power from fuel cells, or intermittent wind & solar. | FC | USA |
| Bloom Energy Corp | Fuel cells, SOFC high temps can use variety of fuel sources. | FC | USA |
| Brookfield Renewable Energy | Teaming to produce green hydrogen from hydroelectricity. | HI | USA |
| Ceres Power Holdings PLC | Fuel cells, high SOFC temperature allows variety of fuels. | FC | UK |
| Chart Industries | Liquid hydrogen, storage and transport expertise. | HS | USA |
| China Datang Renewables | Wind & hydro in China, that's developing H2 projects. | HG | CHINA |
| Chung-Hsin Electric | Fuel cells. Hydrogen, methanol reformers. | HG | TAIWAN |
| Compagnie Plastic Omnium | H2 storage, high pressure tanks, vehicles, fuel cells. | HT | FRANCE |
| Corp. Acciona Energias Renov. | Green H2, new GreenH2Chain to ensure green H2 origins. | HI | SPAIN |
| Doosan Fuel Cell | Fuel cells, high temperature for a variety of fuels. | FC | S. KOREA |
| Fluence Energy | Energy storage software, hardware for green H2 on grid. | HI | USA |
| Fuelcell Energy Inc | Fuel cells, high temperature so over range of fuel sources. | FC | USA |
| Gevo Inc | Biofuels, energy dense net-zero carbon liquid fuels. | HG | USA |
| Greenvolt Energias | Biomass to hydrogen without need for combustion. | HG | PORTUGAL |
| Hyosung Advanced Materials | Advanced composite materials for hydrogen tanks. | HS | S. KOREA |
| Iljin Hysolus | Compressed hydrogen tanks for fuel storage. | HS | S. KOREA |
| Infineon Technologies | Power electronics, in green hydrogen, wind, solar. | GH | GERMANY |
| ITM Power PLC | Fuel cells, PEM; also electrolyzer manufacturing green H2. | GH | UK |
| Johnson Matthey | Catalyst-coated membranes, in fuel cells, electrolyzers. | FC | UK |
| Linde PLC | Industrial gases production, including hydrogen. | HG | UK |
| Littelfuse | Hydrogen & fuel cell sensors, temperature probes. | HS | USA |
| Lotte Fine Chemical | Green hydrogen, production launch, ammonia. | GH | S. KOREA |
| Mcphy Energy SA | Hydrogen production, use, and storage; H2 in industry. | HI | FRANCE |
| Nel ASA | Electrolysis for H2 from water, using alkaline and PEM. | GH | NORWAY |
| Neoen SA | Water Electrolysis and renewable energy for green H2. | HG | FRANCE |
| Neste Oyj | Renewable hydrogen and diesel, SAF, but some fossils. | HG | FINLAND |
| Nexans SA | Cables, can carry both H2 + electricity, H2 pipelines. | HT | FRANCE |
| NFI Group | Hydrogen fuel cell electric power in buses, | HT | CANADA |

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| OCI N.V. | Green Ammonia, building up from biogas, hydrogen. | HG | NETHERLANDS |
| Orsted A/S | Green hydrogen directly from wind power, early stage. | GH | DENMARK |
| OX2 AB | Green H2 infrastructure, pipelines, generation in review. | HS | SWEDEN |
| Plug Power Inc | Green hydrogen, and fuel cell systems in development. | HI | USA |
| PNE AG | Power-to-X, wind power directly to make green H2. | GH | GERMANY |
| Powercell Sweden AB | Fuel cell systems, both clean H2 and fossils for fuels. | FC | SWEDEN |
| Proterra | Heavy Bus electrification systems, early H2. | HI | USA |
| Scatec ASA | Green Hydrogen produced by solar power. | GH | NORWAY |
| Schneider Electric SE | Gas analysis, automation for advanced H2 storage. | HS | FRANCE |
| SGL Carbon SE | Polymer electrolyte membrane in PEM fuel cells. | FC | GERMANY |
| SKF AB | Advanced bearings, for H2 by compressed transmission. | HS | SWEDEN |
| SMA Solar Technology | Electrolyzer converters, green H2 from renewables. | GH | GERMANY |
| Spie SA | Hydrogen in mobility, H2 production, distribution. | HT | FRANCE |
| Takaoka Toko | Stabilizing the power grid, use of green H2 on grid. | HS | JAPAN |
| TE Connectivity | Hydrogen pressure sensors, fuel cell connectors. | FC | SWITZERLAND |
| Tianneng Power | Hydrogen, fuel cells, Li-ion and other batteries. | FC | CHINA |
| Toray Industries | Membranes for H2 purification, generation, fuel cells. | HI | JAPAN |
| Varta AG | Hydrogen gas generating cells, ultrapure. | HG | GERMANY |
| Verbio Vereinigte Bioenergie | H2 from biomethane, biofuels, agriculture. | HG | GERMANY |
| Wacker Chemie AG | Green H2 from water using renewables, into methanol. | GH | GERMANY |
| Weichai Power | Hydrogen uses in forklifts, fuel cell buses, Asia. | GT | CHINA |
| Wolfspeed | High power fuel cell systems, SiC, GaN. | HT | USA |
| Workhorse Group | H2 fuel cells work on electric trucks. | HT | USA |
| Yara International | Green hydrogen catapult, aims for H2 <\$2/kg. | GH | NORWAY |

56 components all Equal weighted = 100/56 components = each 1.785714%

Additions to H2X for Latter Q1 2023: Alfa, Arcadis, Belden, Chart, Fluence, Infineon, Johnson, Littelfuse, Neste, Nexans, OX2, Takoaka, TE, Tianneng

Deletions from H2X Latter Q1 2023: 5E, ABalance, Aker, Bumhan, Cropenergies, Dae, Montauk, Navitas, SFC, SK IE, Vinatech.

Hydrogen Index H2X Sector
FUEL CELLS (FC)

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| | 56 |