
Description: This report is intended for those seeking to invest, support, develop, make, sell or use vehicle fuel cell systems and their materials and associated services. It will also assist those participating in the value chain of alternatives, such as batteries and supercapacitors, to understand the considerable opportunities for both collaborative use of their components with fuel cells and scope for common technologies.

Interest is re-igniting in vehicle fuel cells after decades of minimal uptake primarily caused by high costs and lack of hydrogen infrastructure but also affected by several other challenges appraised in this report. It is easy to rehearse why fuel cells in vehicles are in the trough of disillusionment in 2015 but look closer and things are stirring as we progress to more sober forecasts and market positioning to get there.

Indeed now is the time to invest, when so many companies have left the business but the first sales in thousands of fuel cell vehicles - in the form of forklifts - are happening without subsidies and you can newly buy fuel cell cars from top names. From Taiwan and Japan, fuel cell scooters now look plausible, the USA uses fuel cells in military vehicles and now fuel cell buses and cars are even shown to double as the emergency electricity supplies sought in Japan.

Most western automotive manufacturers are preparing fuel cell vehicles for sale but nothing is guaranteed, because, as this report analyses, the other option for zero pollution at point of use, the pure electric battery or supercapacitor vehicle, is also improving rapidly and they will often go head to head in the marketplace. Which will have predominantly green “fuel” first - fuel cell or battery alone? Which will cost least up front and over life? What performance will really be achieved?

For example, refuelling time is not fast if you take ages to get to a refuelling station. Energy density of the fuel is irrelevant if the powertrain using it is larger and heavier. This report pricks the bubbles to reveal the genuinely good prospects and the PEM fuel cell, intelligently applied, is one of them.

These complex issues, vital to optimal targeting of investment by auto, chemical, financial, fleet management and other players are appraised in the report. Vitally, it is mainly based on 2015 interviews not out-of-date information. It presents latest conference slides from many key players and new data analysis and forecasts. That means numbers for 2015 - 2025 and timelines to 2030 including the latest, revised predictions from the leading players and from the authors of the report.

This is analysis not evangelism and all pros and cons are considered from a global viewpoint that takes into account the very different attitudes of governments and the very different resources of countries, carefully teasing out success criteria. The emphasis is today and in future not nostalgia from the past. There is a chapter on the background including legal, psychological, standards and other aspects, a chapter on the first commercial success - material handling vehicles, a very detailed chapter on fuel cell cars, a detailed one on buses, one on other fuel cell vehicles land, water and air and one on the fuel cell system manufacturers.

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