

TOYOTA MIRAI

By Jim Mc Cauley



It's the age old question of the chicken and the egg, but someone has got to move first. There will be little point in persuading a government and fuel suppliers to establish a network of special filling

stations, if the cars requiring that fuel are not there in volume to support the investment. The fabric of the car is changing, and in various phases we have added electronic support to the mechanical aspects, and now with the arrival of fuel cell cars on UK roads we have a major chemical expansion.

Fuel cell cars have been around for several years with Toyota, Honda and Hyundai well established in other parts of the world, but Toyota is the first manufacturer to launch onto UK roads. Yes, it is a tentative first step, but it is a significant one, not only in terms of being here, but in the development of a compact solution and clever packaging that can be discreetly housed in a mid-range 5-seater family saloon with good luggage space and sharp performance.

The fuel in this case is compressed hydrogen which when combined with the oxygen from the air causes a reaction which produces electricity. This electricity is then used to power the car's electric motor which in the Mirai drives the front wheels.





New technology? No, but a new application as fuel cell knowledge has been around since the end of the 19th Century and widespread applications can be found on vehicles used indoors such as forklift trucks and in space exploration vehicles. But back to earth and the vehicles in question are destined for London Transport use, with the test vehicle one the first to be delivered to the UK.

The Mira looks good – tending towards assertive looks rather than passive and can stand its own ground in appearance. Being electric powered, the motor cuts in quietly and

progresses seamlessly with instant throttle response and a 0-62mph time of 9.6 seconds with top speed crossing comfortably into three figures. Power output is rated at 152bhp with maximum torque availability throughout of 335Nm. This provides a very responsive car and the slightest touch on the throttle brings an instantaneous yet smooth response.

The car handles in a more agile manner than its substantial two tonne weight would suggest with suspension responding well to what could best be described as average road conditions on the test drive, and steering and brakes both providing excellent response.

With the electric motor, noise is less than from an internal combustion engine while insulating glass and additional sound proofing to dull accessory pumps associated with the fuel cell stack all make for a very quiet vehicle.

Inside, and the cabin provides a welcoming environment for five occupants with instrumentation presented between sweeping curves to remind us of the organic source of the main power feed.

While other fuel cell manufacturers have concentrated on leasing their vehicles, Toyota has gone a step further and is offering the car for sale as an alternative to leasing and is listing it in the UK at £66,000 (less £5,000 government grant) which interestingly compares to the car's US price of \$58,000.

To get where they are today, Toyota has spent over 20 years developing the fuel cell vehicle and while the initial packaging was incompatible for a standard passenger car, the progress to get to this stage has really been in the last eight years where they have been able to half the size of the fuel stack while doubling its power.



The environmental credentials of the car are without question and the only by-product is the water produced as a result of the chemical reaction. This is automatically drained at journey's end or with the manual override option.

It will be some time before the fuel cell option arrives in Northern Ireland, as the initial parc is specifically tied to the refuelling facilities in London. Toyota has put its product on the market and it is up to government and the fuel companies to support the confidence of Toyota's development and marketing to see that a hydrogen fuel infrastructure, like that in Iceland, will encourage the proliferation of this alternative propulsion method. But the development balance must also be right to reduce both vehicle and fuel costs with 5Kg weight of compressed hydrogen currently costing around £50 which gives the car a range of around 300 miles.