

FUTURE

BMW i is attracting a lot of attention from industry watchers and consumers alike.

WORDS RICHARD WEBB



According to the suits at BMW, by 2020 between five and fifteen percent of all new cars will plug in for some or all of their power. It's not surprising then that the company's vision for the future includes a new brand focussed on sustainable mobility. They want us to completely rethink our understanding of personal mobility.

One of the best Electric Vehicles (EVs) to date is Nissan's Leaf, which is not available locally. Whereas the Leaf is derived from a petrol car platform, the approach of BMW i, the sub-brand created to commercialize BMW's low emission vehicles, has been conceived from scratch as a battery car rather than a petrol car conversion.

Rich Steinberg, manager of BMW's electric car programs in the United States, says the company is focusing on cities that have planned for electric vehicle rollouts and have some public recharging infrastructure in place to ease

electric car buyers' "range anxiety". However, he sees the creation of public recharging points mainly as the elimination of a psychological barrier, because BMW's analysis shows most electric car drivers will charge up their vehicles at home.

BMW i is focused on efficiency and responsive driving. BMW seem to have a naturally more adventurous customer base and this has in part encouraged their engineers to press ahead with some very *avante garde* manufacturing and packaging ideas.

BMW think they can combine efficiency with increased driving pleasure, and their new brand intends to differentiate EVs and hybrids from conventional offerings. The car company claims to have made huge strides by shedding weight, improving aerodynamics and creating alternative drive train solutions.

There are currently two concept cars in the BMW i line-up.

The BMW i3 is the company's first series-produced all electric car, suited for urban

SHOCK



use and which should sell well in big cities around the world. But can an electric car be exhilarating to drive? BMW reckon their eDrive technology is. The drive train consists of a BMW designed and built electric motor and battery technology by Bosch and Samsung. It's 100 percent recyclable, including the batteries. BMW plan to market it's sustainability as a luxury feature when the car goes on sale.

The entire torque of the electric motor is available from standstill, and acceleration is sustained up to the car's maximum speed with no interruption. Apart from linear torque, a great advantage of eDrive is zero emissions because the electric engine uses electric current rather than fuel to create propulsion. All we need now is for the energy that drives the vehicle to come from a renewable source, like wind or hydroelectric power. Climate-neutral driving sounds like something that would appeal to environmentalists, but how much fun are they to drive? We will have to wait until 2014, as BMW have made no announcements

about a launch date locally.

The base model i3 is a purely electric. With a 150km range and a very lightweight construction of both aluminium and carbon fibre, it brings some obvious weight advantages. The i3 passenger cell weighs half as much as its steel counterparts and it offers greater strength.

What makes the concept more appealing is that the i3 should be available with an optional petrol-powered range extender – an internal combustion engine that runs a generator to provide additional range once the batteries are depleted. If BMW's weight-saving technology can bring down the size and cost of the batteries, that could strengthen the case for electric and plug-in hybrid cars.

BMW i's other concept cars is the i8 – a progressive four wheel drive sports car. Forward-looking and innovative, its eDrive plug-in hybrid combines a direct injection petrol engine and an electric drive system. The same engine is to be used by the next generation Mini range from 2012 and the new front wheel

Caption caption
caption caption



 CLIMATE



ABOVE The BMW i8 Concept also blends in its own interpretation of familiar BMW design features, cementing a clear link to the BMW parent brand.

drive BMW 1-series in 2014. If the official performance figures are a realistic, then we are in for a treat.

How about 3.2l/100km and 0 to 100km/h in 4.6 seconds? That's as quick as a Lotus Exige yet as economical as a Volkswagen Polo BlueMotion. With 164kW and 300Nm of torque, the new petrol unit operates in combination with a 96kW, 249Nm electric motor for an overall output of 260kW and 549Nm. Thanks to its hybrid drive, the i8 requires a smaller battery than the pure electric i3, so it can be recharged in just 105 minutes on a standard 220 volt mains socket.

Both cars have a purpose-built basic construction called LifeDrive. The 'Life' module houses the passenger compartment, while the 'Drive' module brings together all the operational driving functions. See it as a two-way split. The modules are partly covered by side panels, but are clearly distinguishable. BMW call this overlap and interlocking of

surfaces and lines 'layering'.

The under body of the vehicle is enclosed to reduce energy-sapping under-car drag, while AirCurtains ensure optimum air flow around the wheel arches alongside 'aeroflaps' in the door sill. Inside, 25 percent of the weight of the interior plastic is accounted for by recycled or renewable raw materials.

BMW are looking to partner with entrepreneurs and inventors to create promising services that fit to the BMW i brand. The idea is to improve personal mobility in urban areas and deliver extra comfort or smart advantages, like inter-modal travel, smart parking, communication and so on. They have even started a new venture capital business called





BMW iVentures to achieve these innovations. Launched in February with R775m of funding, the aim is to invest in driver aids like car sharing and navigation systems. Bernhard Blaettel, a vice president at BMW Group, said: "We see parking as a key asset for mobility services today and in the near future."

Both cars have a camera-based front protection system that provides active safety to prevent accidents or mitigate injuries. The system can detect a collision risk and warns the driver in good time to avoid an accident. At up to 60km/h the system detects pedestrians and performs automatic emergency braking.

The device also takes over the entire parking manoeuvre, performing acceleration and braking automatically. In traffic the vehicle 'goes with the flow' by maintaining a specified following distance from the vehicle ahead. In particularly heavy traffic it will control the speed of the vehicle right down to a standstill while providing active steering input. This enables the vehicle to help the driver stay on course up to a speed of 40km/h if he keeps at least one hand on the steering wheel.

Integration of application-based remote functions allows access to the car using a

smartphone. New features designed specifically for electric vehicles have been added, like remote-controlled charging allowing the user to start the charging process by setting the journey start time.

These technologies point the way for the future of the motorcar. But early adopters will find them expensive. If any brand can make quicker, sustainable and economical cars fuse, it should be BMW. But they won't have it all their own way. Porsche, Mercedes, Audi and Renault to name just a few brands also working hard to get their name on your next cheque. ■

TOP LEFT Around 400 million will have been invested in the production of the BMW i3 by 2013. For products still a year and a half from production, the cars you see here are remarkably close to what you will get in the showroom when they launch.

