

## Electric car sales ready to move out of the slow lane

### Cheaper, longer-lasting batteries will banish ‘range anxiety’, says industry

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Fear of running out of battery has not held back the smartphone market. But it has crippled electric cars.

Now however, some carmakers are increasingly confident that their electric vehicles are close to overcoming the dreaded “range anxiety”.

“Batteries are moving forward very, very quickly,” says Vincent Carré, electric car sales and marketing director for Renault, whose electric models include the Zoe compact vehicle, which has a range of about 120 miles.

“All of what you call range anxiety...is already behind us because we know that within a few years we will double the range of the cars, and after [that] we will again add 30 or 40 percent [more range] before 2020.”

This implies an average Renault range of more than 200 miles, the point at which it is generally accepted that electric vehicles become a viable mass market proposition.

Analysts say talk of range anxiety being overcome is premature, and highlight how the high cost of batteries is keeping electric cars as niche products.

But some carmakers are optimistic. “Behind the scenes, a fair amount of progress is getting made on these technologies,” says Dan Ammann, president of General Motors, which is working on a 200-mile, electric car called the Bolt that will cost \$30,000 after incentives such as discounts or tax breaks. It is due to launch in 2017.

“More than 200-mile range, \$30,000 is [a] really easy thing to explain to people,” he says. “This whole range anxiety . . . all of a sudden now it’s, well, ‘this is accessible and does exactly what I need it to do’.”

In Europe at least, sales of electric cars are starting to make progress, albeit alongside alternative technologies also billed as environmentally friendly. Electric, hybrid and hydrogen fuel-cell vehicles are expected to show a 30 per cent rise in European sales in 2015 to 360,000 units, according to LMC Automotive, a forecaster.

In truth, this demand is coming off a low base — 360,000 equates to 2.5 percent of all European car sales. And some will be due to the growing popularity of plug-in hybrids, which have electric motors supported by petrol engines to alleviate range anxiety.

The Europe-wide figures also mask wild variations. In Norway, for instance, electric vehicles and plug-in hybrids accounted for a third of all car sales in the first quarter of 2015, according to IHS Automotive. That is because of high import tariffs on petrol vehicles.

In Germany, by contrast, just 25,000 electric vehicles have hit the autobahn so far, despite the government's target of 1m plug-in sales by 2020. As much as consumers have been reluctant to adopt electric vehicles, which are still well below 1 per cent of overall sales in most developed economies, some carmakers are equally shy.

Toyota and Hyundai are focused on hydrogen fuel-cell technology, while others, including Ford, are trying to improve petrol and diesel engines.

Electric and hybrid cars help manufacturers offset the impact of heavy sport utility vehicles, as they seek to meet strict fuel economy targets from regulators that are based on their overall automobile ranges.

But high battery costs mean few companies make money from electric cars. "Honestly, we are struggling a little bit with the business model," says Olivier François, head of the Fiat brand, which has an electric version of its 500 compact car that is sold only in California.

Sergio Marchionne, chief executive of Fiat Chrysler Automobiles, even urged customers not to buy the 500e because the group lost \$14,000 on each sale.

Manufacturers closely guard the exact pricing of their batteries. To reduce costs, Tesla, the Californian electric carmaker, is building a battery factory in Nevada as part of plans to build a mass market vehicle called the Model 3.

Once at capacity in 2020, it will churn out more lithium-ion batteries than the combined global production today.

Cosmin Laslau, analyst at Lux Research, says many carmakers' battery purchases have been made at prices well above the level he thinks is necessary for mass market adoption of electric cars.

In 2012, he estimates Ford was paying as much as \$650 per kilowatt hour of capacity for its batteries. The bigger the capacity, the better the potential range of the car.

BYD, a Chinese carmaker, is aiming to reach a battery cost of \$211/kWh, but only in 2025, says Mr. Laslau. Tesla, by then, should be at \$172/kWh, far ahead of any mass market rival.

"By crossing firmly below \$200/kWh at the [battery] pack level, plug-in vehicles will become a mainstream subset of the overall automotive market," says Mr. Laslau.