In a conference suite overlooking the baroque edifice of London's St Paul's Cathedral, Newton analyst Mathieu Poitrat Rachmaninoff is discussing a future where combustion engines are relegated to history. “Eventually Electric Vehicles (EVs) are inevitable,” he says. “It’s not a question of if, but when, EVs overtake their fossil fuel counterparts.”

Rachmaninoff, an analyst with Newton with over 12 years' experience, should know what he's talking about. He spent 8 years working at French/Japanese automaker Renault-Nissan, designing engine control units together with Bosch, before becoming a project manager responsible for the development of cable harnesses on Renault-Nissan's mass market CMF1 seat frame. In his current role, he advises fund managers at Newton about the latest developments in the auto sector, researching companies and pitching investment opportunities.

But while he believes the coming EV revolution may be inevitable, Rachmaninoff also maps out potential roadblocks that could dictate the pace of change. The most significant of these, he says, is the need for EVs to gain traction by offering clear and obvious advantages over established gasoline or diesel vehicles.

In the abstract, the case for EVs seems clear-cut, he says. First, fewer moving parts make them far more reliable than cars with combustion engines with lower maintenance fees. Second, they are potentially safer. Third, they offer a fun driving experience. On this last point, Rachmaninoff observes: “Anyone who has ever test-driven a Tesla can testify to this. Essentially you have 100% of the torque available at 0 rpm. But it’s not just Tesla—as the EV market expands and democratizes, people will begin to experience sports car performance at affordable prices.”
EVs are also greener than the current mass-market vehicle options. As countries continue to implement their Paris climate accord commitments, the question of CO₂ emissions will become ever more important, says Rachmaninoff. Similarly, an increased regulatory focus on nitrous oxide emissions and fine particulate matter is unlikely to abate in the wake of the Volkswagen scandal.

Indeed, the European Commission (EC) has laid out plans not only to tighten emissions testing for automakers but also to leverage far higher penalties on companies that fail to make the grade. As of 2019, this levy will take the form of a €95 fine per CO₂ g/km above the limit for each vehicle produced if the average fleet emission breaches targets. For a company like Volkswagen with 3.65 million units sold in Europe in 2016, even just being three grams above the EC’s emissions target would translate into a €1bn fine.

Meanwhile, the “noise” around vehicle bans in big cities continues to mount and is already affecting the market share of diesel cars in Europe (see Figure 1). Says Rachmaninoff: “The problem for OEMs is that diesel cars are emitting less CO₂ than their gasoline counterparts. Hence, if the market share of diesel continues to shrink as it has done, the 2021 and 2025 CO₂ targets will be impossible to reach without EVs.

“As VW brand’s CEO, Dr. Herbert Diess, has said: ‘There are tremendous costs related to CO₂ regulations looming.’ But OEMs have limited options. They can try to lobby the Commission to ease targets (unlikely in my view), they can pay hefty fines (not sustainable) or they can invest in Plug-in Hybrids and Pure Battery Electric Vehicles. At least, one thing is for sure, the diesel combustion engine in its current form has reached the end of the road. It’s therefore not surprising to hear of Volvo’s decision to stop producing such engines by 2022.”
CHANGING LANES: THE OEM RESPONSE

At German automaker Daimler’s annual general meeting (AGM) on March 29, 2017, company CEO Dieter Zetsche made a similar point. He noted how average fuel emissions for Mercedes-Benz cars remained at 123 grams in 2016, and that this was the same level as in 2015. He added: “It’s the first time since 2007 [the company] has failed to cut average pollution levels despite the introduction of more fuel-efficient engines throughout its range. The emission-free automobile is the future.”

If that is the case, then it’s little wonder that other major automakers have finally begun to fully embrace the electric revolution.

Volkswagen is a case in point. In response to its 2015 diesel emissions scandal, it enacted a huge volte-face, disowning its market lead in diesel and instead committing €10bn to developing a future built around EV. It now aims to have 30 new pure electric vehicles by 2025, accounting for some 20%-25% of sales. In 2016, CEO Matthias Mueller was quoted as saying: “We have to ask ourselves whether we want to spend more money on the further development of diesel. It’s clear even today that treating exhaust gas fumes will become very costly and elaborate. At the same time, electric powered transport will become cheaper.”

But other brands seem just as keen to take a similar road. Audi says it aims to launch one new EV every year starting in 2018, while Mercedes says it expects 25% of its annual sales to be battery electric within the next 10 years.
Rachmaninoff highlights U.S. carmaker General Motors (GM) as a company whose electric vehicle effort has got off to a rolling start. Its GM Bolt has a range of 238 miles for a single charge and has been described as the first real game changer in mass-market EVs. Speaking at Davos in 2016, Mary Barra, the company’s CEO, said she expected to see more changes within the next 5 years than in the past 50. Underlining the Bolt’s range, she added: “Being able to go over 200 miles on a charge and getting that vehicle at an affordable price, that is changing the industry.” Ford, one of GM’s competitors, has earmarked US$4.5bn to develop 13 new xEV models by 2020. The company has said it wants between 10% and 25% of its model mix in China to be electrified by 2020.8

SOLUTIONS TO ‘RANGE ANXIETY’

Infrastructure is another area where automakers and regulators are preparing the ground for an EV future. For instance, Tesla operated 151 “Supercharger” stations in North America in January 2015. Just 12 months later, this number had almost doubled to 285. The U.S. Department of Energy, meanwhile, has offered up to US$5.5bn of loan guarantees to support the commercial-scale deployment of EV charging facilities. In Europe, a consortium of German carmakers, including Volkswagen, Porsche, Audi, Daimler and BMW have agreed to build a network of fast charging stations along the country’s highways. Oil group Shell has also confirmed it is planning to add electric charging points as soon as 2017 at forecourts in the UK and the Netherlands.

Crucially, companies across the globe have also cooperated on the standardization of charging system plugs, meaning a one-size-fits-all approach for motorists needing to charge their cars. This kind of cooperation is key, says Rachmaninoff. “If electric vehicle disruption is going to happen, it needs a lot more charging stations and standardized access points. They’re the key components in addressing the ‘range anxiety’ experienced by drivers of EV cars with any kinds of limits on their battery life. Without these measures in place, the wider rollout would take longer.”
All of this activity is beginning to translate into sales. In 2015, sales of EVs worldwide amounted to 538,200 (+68% year over year), taking the total volume up to 1.2 million vehicles on roads. In 2016, that figure had reached 777,500 (+45% year over year). The result is some 2 million electric vehicles on our roads and highways.

Despite this momentum towards an EV future, Rachmaninoff still sounds a note of caution. Even in spite of the current speed of travel, he says, government subsidies are still necessary. But here too, there are signs of progress. Germany, for example, has established €1.2bn of EV incentives which include a 10-year exemption from vehicle tax, as well as tax breaks to employers for setting up battery chargers for employees at the workplace. China’s 13th Five-Year Plan has a target of 5 million EVs on the road by 2020. Norway has committed to a target of zero new fossil-fuel cars sold from 2025.

THE INVESTMENT CASE

With rising sales, new models and supercharged investment, the broader case for EVs seems clear—but how should investors respond? For Rachmaninoff, while the rationale for investing in the sector is obvious, he believes investors should still exercise caution: “A company such as Tesla might be magnificent for generating headlines,” he says. “But headlines do not necessarily create investment returns. Similarly, Volkswagen might be a market leader but, as the diesel emissions controversy demonstrates, it only takes a few questionable decisions by middle management to wipe billions off the value of a brand. It will also be tough for OEMs to differentiate themselves in the EV world. It is therefore difficult to bet on one particular name, as the space will be overcrowded and the market shares very volatile.”

Far better, he says, to invest upstream and midstream in the basic materials and technology providers the OEMs will need to create the EV revolution. At present, this translates into three holdings on the recommended list for Newton managers: one is a semiconductor manufacturer, one is a battery manufacturer and one is a chemical company producing the lithium needed for EV batteries. Each of these holdings has provided solid returns over the past couple of years and is well-placed for future positive performance as EV sales track higher, according to Rachmaninoff.

He concludes: “Finally, now that German OEMs are absolutely convinced that electric vehicles are here to stay, there is nothing to prevent the EC from believing EVs are the solution. Indeed, many European commissioners are considering imposing a minimum sales mandate for 2025. If true, that would be the final game changer for EVs.”

RISKS

All investments involve risks, including loss of principal. Certain investments involve greater or unique risks that should be considered along with the objectives, fees, and expenses before investing.

Definitions

Revolutions per minute (RPM) is a measure of the frequency of rotation, specifically the number of rotations around a fixed axis in one minute. It is used as a measure of rotational speed of a mechanical component.

The European Commission is an institution of the European Union (EU), responsible for proposing legislation, implementing decisions, upholding the EU treaties and managing the day-to-day business of the EU.

An Original Equipment Manufacturer (OEM) is a company that makes a part or subsystem that is used in another company's end product.

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