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Niche AM

NEWSLETTER



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SECTOR MOST RELEVANT NEWS



THRILLING OUTLOOK

According to a new and disrupting report from research group **Frost&Sullivan**, the world’s automotive leading manufacturers will invest 105 bln usd to build and roll out 75 new battery-electric and plug-in hybrid models by the end of 2022. “With over ten automakers announcing plans for future EV launches and over 165 models currently available, EV sales growth potential could reach 25 million units by 2025 and account for 22.4% of total passenger vehicle sales,” said Prajyot Sathe, Industry Manager Mobility, Frost & Sullivan. “By 2020, EVs will no longer require government support, and they will cost

the same as conventional cars.”

Even if a share of 22.4% of the market in 2025 is below what Niche Am expects (above 50%), this is a figure substantially above the market consensus, following a revision trend that has continued to tilt upward since 2016.

“By 2020, EVs will no longer require government support, and they will cost the same as conventional cars”.

ROAD TO ZERO

Uk government has published the long-awaited policy road map, “Road to Zero” where it pledges to keep a minimum target of 50% for the electric and hybrid cars sold from 2030, confirming the target of 100% from 2040. The same of France and China, while India, Netherland, Germany and Ireland will anticipate it to 2030.



OIL COMPANIES INVEST IN EV RECHARGING

BP is making another bet on electric cars with the £130m acquisition of UK charging network operator Chargemaster. It operates more than 6,500 charging points across the country, in what is the UK’s largest charging network. BP said the deal was part of a pledge to plough \$500m a year into low-carbon investments and presents an important step in scaling up and deploying an ultra-fast charging network on BP’s 1,200 UK service stations.

BP last month made a \$20m investment in StoreDot, the Israeli developer of ultra-



fast-charging batteries. It has also agreed a deal with Chinese private equity group NIO Capital to finance “advanced mobility” technology. In January, it made a \$5m investment in



FreeWire, a US company developing rapid-charging infrastructure for EVs.

BP’s move follows those by Royal Dutch Shell which last year agreed to buy NewMotion, a Netherlands-based provider of 80,000 electric charging points for EVs. The energy company has also joined a consortium of car companies, such as BMW, VW and Mercedes, to roll out fast-charging across Europe. Separately, France’s Total owns Dutch company PitPoint which is operating EV charging points in Europe.



COMPANIES NEWS

JAGUAR, the iconic brand now owned by India's Tata Motors Ltd, will start selling IPACE, its first all-electric model, in August, wading into Tesla X segment of the electric luxury cross-over vehicles.

The range will be about 300 miles and will reach 100 km/h in 4,5 sec. IPACE's 90kWh battery is made up of high energy density lithium-ion pouch cells. With a 50kW DC rapid charger – the kind found at most public charging stations – IPACE

can achieve up to 168 miles of range per hour. Prices start at 70,000 euros.



PORSCHE is putting the final touches to an electric car factory to build its fully electric sports car, the Taycan, to be launched in 2020.

The vehicle is expected to have a range of over 250 miles. The company has previously been talking about a 0 to 60 mph acceleration in 3.5 seconds earlier this year.

A 800-volt system that should allow a charge rate of up to 350 kW, which could charge the car up to 80% in only 15 minutes.

Unconfirmed reports suggest that the Porsche Taycan price will start from 75000 US\$ with 3 different performance trims, making the vehicle competitive with the Tesla Model S' current pricing structure. The debut is expected in less than 18 months.



TESLA announced that it will increase its Model 3 output to 6000 vehicles a week by late August, suggesting it expects no letup after recently reaching its goal of making 5000 of the sedans in a seven-day stretch, goal set originally for the end of 2017.



MERCEDES issued a press release saying it would officially launch its new all-electric brand, EQ, on September 4. Its first vehicle will be the EQC, a SUV to rival Audi e-tron quattro. The launch is expected in the second half of 2019. Range from 250 to 300 miles. 0-100km/h below 5 sec. Price from 65,000 euros.

Click [here](#) for the video



QUANTUM COMPUTER TO DEVELOP EV

Quantum computers could analyse and help build highly specialized electric vehicle batteries in the future, Volkswagen announced this week. Using the highly complex computing tech, researchers simulated industrially relevant molecules in EV batteries that could help shape the next generation of compounds to be used in green cars. Volkswagen presented the findings from their initial research at the CEBIT Expo in Hanover, Germany.

Last year, VW announced a partnership with Google to use the computers to develop specialized batteries, study traffic flow, and create deeper artificial intelligence systems for their cars.

Now, those investments are starting to bear fruit, although any material benefit may be many years away. Identifying the chemistries is only the first step.



ELECTRIC SIN

ENERGICA reported better than expected results. The maker of Eva and Ego has sold in the semester 5 times more motor-bikes that it sold in 2016. The stock surged by more than 30% following the news.

Click [here](#) to read the press release.



US EV SALES JUMP IN JUNE

US sales grew 48% YoY to 25,179 EVs in June, and surged 40% YoY to 124,687 EVs over January-June.

BYD: AGGRESSIVE PLAN

BYD will spend about \$3 bln to build the world largest battery factory, able to raise its batteries production capacity to 60 gigawatt-hours by 2020 from 16 gigawatt-hours, able to produce 2mln of 30 KWh batteries per year.

AUDI is running videos with Daniel Bruhl, a well-known actor in Germany, and plans a splashy launch of its **e-tron quattro** at the end of the year. It will be the brand first series-produced electric car. There won't be a version of the e-tron quattro powered by an internal combustion engine. It is built around a 95 kWh lithium-ion battery pack mounted directly under the passenger compartment. The range will be about 250 miles. That figure, though significant, places it behind the Tesla X and the Jaguar I-Pace, the two closest rivals. E-tron quattro will become the first volume-produced electric car compatible with 150-kilowatt charging, which can fill the battery with 80 percent charge (roughly

200 miles) in 30 minutes. To put that figure into perspective, Tesla's Super-charger stations top out at 120 kilowatts. Starting price at 80,000 euros.



TIMES ARE CHANGING ...

Soon a sentence like "how many km to the liiter?" will sound as odd as "prepare horse and carriage"...

It will be all about KWh. Each battery has a battery capacity measured in KWh and so it will be about km per KWh or Kwh per 100 km. Better getting used to it!

	Km/KWh	KWh per
BMW I3	5.6	18.0
CHEVROLET BOLT	6.4	15.7
TESLA 3 LR	6.7	15.0
TESLA S 100D	5.4	18.6
RENAULT ZOE	7.3	13.7
LEAF	6.1	16.5
VOLKSWAGEN e-Up!	8.4	11.9
VOLKSWAGEN e-Golf	5.3	18.8



FOCUS: EV LISTINGS

CATL IPO (Contemporary Amperex Technology Ltd)

The world's biggest maker of electric-vehicles batteries reined in its initial public offering, pricing the sale to raise less than half of what it originally planned. Contemporary Amperex Technology Ltd sold a 10 percent stake at 25.14 yuan a share. That valued it at about \$8.5 billion, down from a goal of about \$20 billion the company had late last year. The reduced target was the result of a cap imposed by Chinese authorities on price-earnings ratios in IPOs. The IPO proceeds, cut by more than \$850 million, left the company seeking other sources to fund its expansion. However the real problem is its declining profit margin. China's reduced subsidies for the electric-vehicle industry are weighing on profitability, leaving investors awaiting a recovery in the company's margins when EV demand accelerates down the road.

CATL, here below the founder Zeng Yuqun, which counts carmakers as Geely, Volkswagen, Daimler, Hyundai and BMW as customers, last year overtook Panasonic Corp. as the world's largest supplier of EV



batteries by sales, thanks to increasing domestic sales. Its market share doubled in two years to 18%, ahead of Panasonic, and its capacity is expected to move from 20GWh to 40GWh (enough for 1.4 mln 30 KWh powered EVs) by 2020. Regulated production targets in China essentially guarantee revenue

growth. CATL revenue is expected to grow by 40% each year to 2020.

Still, CATL's gross margin shrank 9.5 percentage points last year to 35 percent. The company lowered battery prices to gain market share after the government reduced electric-vehicle subsidies, weighing on profitability. The gross margin will probably continue to decline in the next few years, largely more than offset by volume growth.

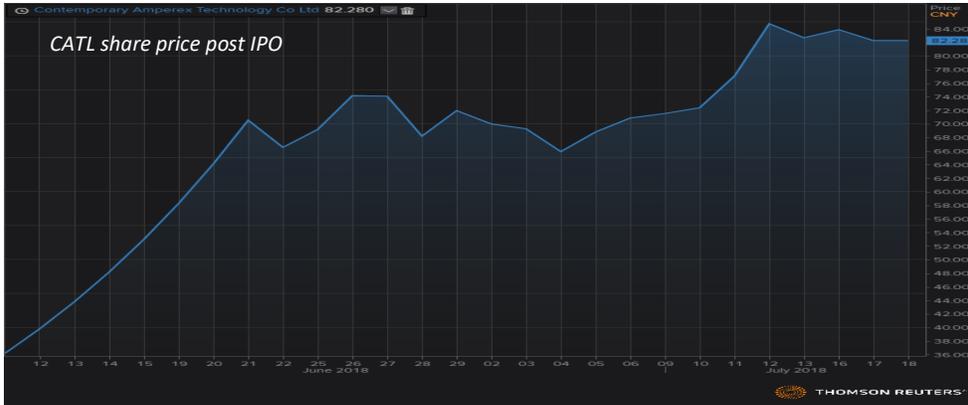
China wants to secure a dominant place in the global car supply chain mainly with this company. CATL and the Chinese batteries industrial policy represents, in few observers opinion, the main risk to the otherwise amazing batteries market. China is subsidizing its batteries market, excluding the foreign competitors, and its domestic players, one for all CATL, could become strong enough to chase market share elsewhere through dumping and unfair competition. This is what happened in many industries in the past (steel, telecom equipment and solar panels the most famous casualties). This is an issue that should be handed by the world community before it could harm the development of a vital sector. Koreans and Japanese, the world leaders in the sector, are few years ahead in terms of technology and the chemistry is fast moving forward. The technology dynamic is amazing and it represents a rock-solid defense against the risk of Chinese deflation. The sector sales will reach those of semis in 7 to 10 years time, moving from few billions usd to over 300 billions.

CATL share price moved in few days from 25 rmb to over 80, reflecting the speculative hype of the Chinese market as well as the leading position of the company.



CATL is investing strongly in the NCM technology (Nickel Manganese Cobalt), a technology mastered by the Koreans. This technology offers less energy

utilized only by the Chinese batteries makers. This technology is the least efficient and is going to die. China is helping its producers to move to the NCM



technology and CATL is now the most advanced Chinese company using this technology. Here below the technology shift underway in NCM, with the next revolutionary leap represented

by the solid state, Li-Air batteries where the fight will concentrate. However, chemistry is unpredictable and a new disruptive technologies could emerge anytime, upending the competitive landscape.

density than the NCA (Nickel Cobalt Aluminum) batteries, however excels in term of safety and flexibility. Panasonic leads the pack in the NCA technology and Tesla is the only automaker able to produce a software that can stabilize these cells. The third main technology is the LiFePO (Lithium Iron Phosphorus),



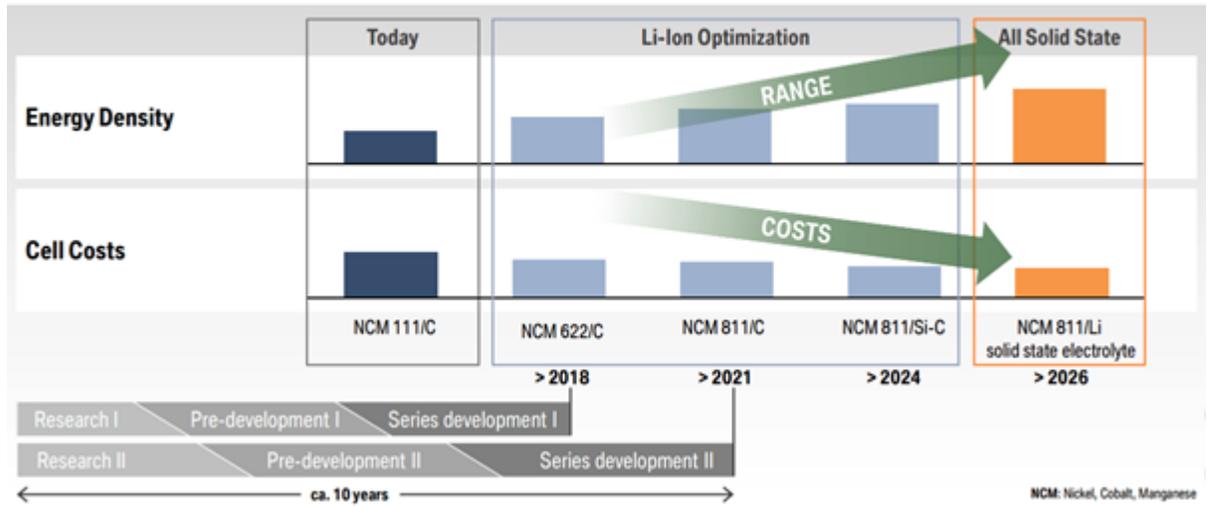
Samsung SDI

The NCM 811 (8 parts of nickel, 1 of cobalt and 1 of manganese) will mark the catch up in term of energy density of the NCM technology with the NCA. It is likely that the Tesla Roadster will be the last Tesla using the NCA technology. Meanwhile the inroads of new ventures in the all solide state could further accelerate the progress (Fisker is said to be ready with a solid state NCM battery by 2021). Even leav-

ing solid state and Li-Air technologies apart, the increased resources for R&D available will make very likely that through the NCM811 development an energy density of 300 Wh/kg and a cost below 100\$/KW will be reached within 2 years. This will set the end of the ICE technology and the dawn of a new era. (sources NAM, CATL, Bloomberg, FT, WSJ, CNBC, Statista, Samsung sdi, Panasonic, BYD)



MATERIAL DEVELOPMENT AND CELL ROADMAP.



Samsung SDI



HOW E-BIKES AND SCOOTER ARE WEAVING THEIR WAY INTO THE TRANSPORT SYSTEM

Here below excerpts from a recent article of *The Economist* on the subject:

In Netherlands nearly one in three newly bought bikes last year was electric, up from one in 20 a decade earlier. Commuters, from the sweat-averse to the environmentally conscious, are keen. Some 40% of Dutch e-cyclists use them to replace car journeys. Riding for fun is on the rise, too: a best-selling model in Europe last year was the e-mountain-bike.

In Germany, 15% of new bikes sold in 2016 were electric, with sales up by 13% and exports by 66% compared with 2015. Belgium and France are big markets too. Whereas exports of regular bikes from China, Taiwan and Vietnam to the European Union fell by 15% between 2014 and 2016, e-bike exports more than doubled. Businesses are also joining the ride.

For consumers the vehicles do not come cheap. They typically cost a couple of thousand euros. Hence new businesses are popping up to rent or lease them out. Bike-sharing services are rushing to include them. Nearly a third of Paris's Vélib fleet, for example, is electric.

For riders in American cities, however, e-scooters may steal the show. Their characteristics fit even more neatly into rental models than e-bikes do.

ASKOLL EVA IPO

Askoll Eva ipo successfully took place, gaining over 30% on the first day of trading. Askoll Eva is a subsidiary of Askoll, a company founded in the 90s by Ing. Marioni (here his photo) and leader in the electric engines for domestic appliances. Askoll Eva focuses on e-bikes and e-scooters, worldwide booming sectors. The company utilizes its experience to provide best in class homemade powertrains. It buys the cells from Japanese and Korean producers and put them together with a proprietary pack.



We met the management in a one2one meeting. We already knew Mr Beaupain, Askoll Ceo, while we met for the first time Mr Oranges, Askoll Eva Ceo. The team is highly skilled and professional with a clear and effective strategy. Actually the company, apart from being one of the leading players in the

e-bikes and e-scooters field, has a number of optionalities that are not priced in at this point. The reference market for batteries is huge and there could be many opportunities to be involved in ventures in emerging countries. On top of this the company has a plan for e-bikes sharing using a portable light battery. This will enable to spread the enormous success of bikes sharing to e-bikes, saving the cost and the time of installing electrified rackings and keeping the client tied for long.

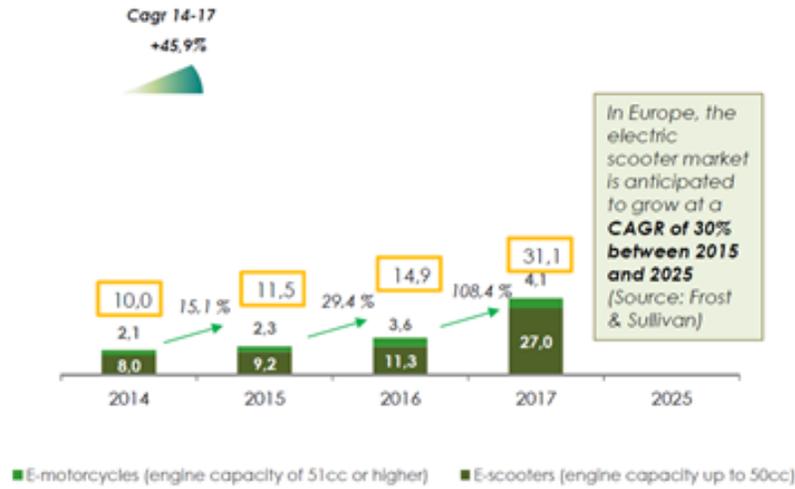


Business Lines	Product Categories	Key Product Categories	Channels	Geography
Electric 2 wheels vehicles 94.4%	e-bicycles 22.4%	e-bike for Private users e-bike for Professional Users	CLIENTI PRIVATI Mono-brand Dealers Multi-brand Dealers	Key current geographies European Countries
	e-scooters 72.0%	e-scooter for Private users e-scooter for Professional users e-scooter for Sharing programs	PROFESSIONAL CUSTOMER Direct Askoll Sales Long term rental companies	
KITs & Parts for OEM applications (ebikes – escooter – GoKarts – eBoats – Lawn mowers – Power storage units – Other B2B applications) 5.6%	KITs & Parts for OEM applications 5.6%	KITs Electric motors Batteries Electronics: BMS – Battery Management Systems, Motor Control Units – Inverters, ECU, Battery chargers	PROFESSIONAL CUSTOMER FOR KITs Direct Askoll Sales	New target geographies • USA • Canada • Iran • Brazil • India

5% % of sales 2017



European registrations of electric scooters and motorcycles 2014-2025
 (2014-2025, k units)



Source: Acem, Frost & Sullivan

West European electric bicycles market 2016-2021
 (2016-2021, units mln)



Source: Technavio

Powered not just by electricity, but by volleys of venture money, e-scooters are the latest craze coming out of California. Revenue for some of the firms renting them is increasing so fast as to surprise even seasoned Silicon Valley venture capitalists. Bird Rides, a pioneer of the business, and not yet a year old, has become a “unicorn” faster than any other American startup before it. Its valuation has now reportedly reached \$2bn.

Click [here](#) to read the full article by The Economist



Niche AM is the innovative investment boutique meant to enrich, and bring new ideas to, the asset management industry.

Newly set up, Niche AM provides investors with a different and unique service based on niche investing. The aim is to spot and anticipate trends, inversions, technology disruptions and, in general, significant changes that the market does not see (yet), and the industry does not adequately cover (yet), giving the clients more opportunities to invest.

Niche AM's aim is to apply its approach to the traditional business as well as to create an innovative and imaginative one: Niche Jungle.

The company is based in London, registered in England and Wales (10805355) and authorised by the FCA (Rn 783048).

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