

Thinking out side of the box

Michael Martin is an automotive entrepreneur criticizing the single sided view of e-mobility, consequently investing himself in leading edge e-mobility concepts.



Michael Martin is a German expert in the European automotive scene. In 28 years he founded 8 companies with automotive focus. As head of his mainly service oriented companies he has been a development partner of about all European car manufacturers.

This covers light weight design, simulation of car performance and fuel consumption as well as tests of car software.

Now, Mr. Martin says that politics are forcing the car industry to build cars with low performance batteries just as a cover-up to reduce CO2 emissions. As a practical person, he terminated the cooperation with the car industry. Since then he sold his company Vdynamics GmbH with 100 employees to a Tier 1 and refocused himself to the topic of urban air mobility.

It is not about good or bad

Michael Martin is not concerned about good or bad or any ideological debate. He says “the point is how to use renewable energies, such as sun, wind, water and bio-mass, in the power train”. His analysis is supported by scientists like Prof. Dr.-Ing. Ralph Pütz from the Institute for applied car research and exhaust analysis in Landshut. According to Prof. Pütz the power train could well be highly efficient internal combustion engine, which is in contrast to EU strategy. This could work with e-fuels, ethanol and bio-diesel as both Pütz and Martin emphasize.

The background of the different views is that the German automotive industry is somehow in a catch-22: All reasonable approaches to alternative power trains based on internal combustion are cut off by politics. “The technically required emissions are regulated by EU decree 443/2009 and they are limited to 95 g CO2/km. This restrictive limitation is forcing car manufacturers to get electric cars in the market” says Martin. The reason is that only electric cars can reach the targets due to the simple so-called tank-to-wheel approach.

Electric cars do not create CO₂ while driving, but they may cause well CO₂ emissions while the electricity is produced by burning coal or gas, not mentioning nuclear power.

In fact there is a lack of highly efficient and fast charging batteries. "Although this is known, the only technology supported by governments is a technology that is still in its infancy. It is pushed in the market and instead of transporting the message to politicians, the industry is acting according to 'The Emperor's New Clothes'. We are technically naked and nobody dares to say so in public."

Bridging technologies

There are, as Martin says, high tech engines of the next generation, that "could act a bridging technology into the area of electrified power trains, as for now using gas, diesel and, of course, new fuels to achieve optimum efficiency and cleanliness. Alas, today these technologies are ignored by politics as the mainstream statement is that electricity has no emissions and is rated as zero-emissions in the fleet emission calculation". According to Martin, a selection of different power trains matching individual applications would be the right solution until a real jump in technological development will be made. A selection of alternatives and not a single focus on e-mobility. "E-mobility is going to be a real meaningful approach as soon as we get solid state batteries with no liquids inside and non-flammable from first principles. A battery that can be charged to 70% in a few minutes with 2 to 3 times the performance as today's batteries and half of the weight. In parallel, we need more R&D in hydrogen technology, in particular for heavy load trucks."

The window-dressing is being continued since the new target of the EU is minus 30% of CO₂ emissions until 2030 which is doubtful to be a realistic target if you consider trucks and the lack of Europe-wide infrastructure for electric vehicles. The commission has given minimum time to allow preparation and high penalties when targets are not met. The European tax payer's association is fighting for years for more transparency in subsidies and in this context, they and Michael Martin continue to fight also for more transparency in support given to e-mobility.

Urban Air Mobility as a driver for mobility

In spite of his criticism on the mentioned aspects in mobility, Michael Martin continues to believe in the subject as such. He is investing in a segment that may be taken from science fiction novels rather than from real life: flying taxis or urban air mobility (UAM). Having said that, Martin is pretty sure that UAM will be a major driver of mobility in third dimension in the future. Such drones are expected to transport passengers over distances between a few kilometers and 50 or maybe 100 kilometers. Such vehicle can bring passengers fully electric and fully autonomous to the destination. Several companies worldwide follow this concept. Amongst them the two German start-ups Volocopter and Lilium as well as the US companies Bell and Uber and the Korean Hyundai group.

Since a few weeks Michael Martin is engaged at a new player in the UAM business. He acts as co-founder of Valcon Labs and he is Valcon Labs president in Europe. "Until 2050 there will be 2/3 of the world population in mega-cities. Urban infra structure will have problems to get adopted. We will waste time in traffic congestions". Being a Ferrari Aficionado, this may sound as a big thread to Martin. He says that Valcon Labs is targeting a unique, safe and sustainable autonomous air vehicle that can overcome the issue. The main difference

between Valcon Labs and others is the battery system which is a kind of a back bone to Valcon Labs. Valcon Labs is developing its own cell technology with multiple capacity and its own battery architecture. The targeted battery will not be affected by so-called thermal runaway and is therefore non-flammable which gives highest safety standards to the Valcon Labs UAM vehicle.

Michael Martin is pretty sure that world market for batteries used in any kind of mobility application is reaching 100 bn USD in 2030 and it will then keep on going. For actors in mobility such as Toyota also UAM gets more and more attractive. Toyota recently invested 394 M USD in US-based Joby Aviation which is developing electric flying vehicles and related services. Also recently, Hyundai has announced a personal air vehicle that can give up to 4 passengers a ride in urban areas. Hyundai, together with the US-based Uber want to establish an urban transportation system that covers both air taxis and autonomous cars. In Germany Daimler invests in Volocopter and Porsche is cooperating with Boeing.

Huge market growth

A study of Porsche Management Consulting predicts a global market size for UAM of 32 bn USD for 2035. They claim that this is not optimistic rather than realistic and it is composed of 21 bn USD for intra-city transportation and 11 bn USD for inter-city transportation. Until then, we will see some 23,000 drones in the sky to transport passengers fast and safe and with low costs.

Whilst there are some promising start-ups in Germany in UAM area, Martin feels more comfortable in the team of the US start-up: “To launch new technology into the market you need to meet the right timing and you have to have the right technology as we know. In the US, time and money and more than that a lot of passion is invested in a visionary future. Valcon Labs is combining the Silicon Valley competence in software with the German thoroughness and German engineering. Nothing is as powerful as vision which time has come”.