Press Release

TÜV SÜD at the IAA Mobility 2021 6 September 2021

How TÜV SÜD supports the Green Deal – with two examples

Munich. Type approval, exhaust emissions testing, innovative drive technologies – where the aim is to boost sustainability in mobility, TÜV SÜD's independent and impartial experts have always driven progress in areas such as measurement of emission limits. But they are also in the forefront of transforming innovative drive technologies into practical reality. Two current projects serve as examples of how TÜV SÜD is implementing the European Union's Green Deal. One involves state-of-health tests for the evaluation and continued use of vehicle batteries, e.g. as buffer storage banks for solar power systems in buildings. The other concerns testing of hydrogen-powered trucks and buses. TÜV SÜD is already engaged in this field, with a pilot laboratory and a recently awarded participating role in a Germany-wide funding project, Wasserstoff-Technologie-Anwenderzentrum (Hydrogen Technology User Center/WTAZ) – the only independent testing and certification organisation to be chosen. But sustainability is only one of the topics addressed by TÜV SÜD at the IAA Mobility 2021. Others include new mobility, cyber security, PTI 4.0 and Digital Dealership. IAA Mobility 2021 will take place in Munich from 7 to 12 September. TÜV SÜD can be found at Stand C20 in Hall B3.

"The Green Deal is setting the pace. But electromobility – in the form of battery-powered electric vehicles (BEVs) and hydrogen drives – is our only passport to achieving our decarbonisation targets in the mobility sector. We are pouring our efforts into these areas to develop new tests and new services, such as state-of-health (SOH) tests for aspects including assessment and reuse of vehicle batteries, and planning and establishment of test facilities for hydrogen supply lines in trucks and buses. These are just two of the areas in which we are committed to reaching climate targets with all speed", explains Pascal Mast, Director New Technologies and Sustainable Services at TÜV SÜD.

Sustainability is one of the focal topics of TÜV SÜD's trade show presence at the IAA Mobility 2021. The company has declared its commitment to the UN climate goals and has published a sustainability status report detailing its activities in the years 2019 and 2020. Further examples of how TÜV SÜD works to deliver sustainability in its Mobility Division include the company's support of the Euro 7

exhaust emissions standard, consumption analyses for electric and hybrid vehicles, and “PTI 4.0“, the introduction of cutting-edge technological advances in periodic technical inspections (PTI) of vehicles. Pascal Mast explains, “Performing 9,000 PTIs daily, we can additionally guarantee that the vehicles comply with all limits required by exhaust emission inspections. In addition, more than 80 per cent of all TÜV SÜD service centres (TSC) now have a neutral carbon footprint”, points out Mast.

Retention of value improves carbon footprint

To date, the carbon footprint of battery electric vehicles (BEVs) throughout their life cycle has been inferior to that of fuel cell electric vehicles (FCEVs). This poor result can be laid at the door of battery production, which adds a heavy carbon burden to every battery vehicle. Mast points out, “Taking a close look at BEVs is well worthwhile. True, progress is being made in their production methods and energy mix, resulting in continuous improvements to the carbon footprint. But there are other actions we can take for rapid further improvement, such as reusing vehicle batteries after the vehicle is withdrawn from use.” To enable this ‘second life’ for rechargeable vehicle batteries, e.g. as buffer storage units for renewably generated energy, the battery capacity must be precisely determined to deliver a legally watertight calculation of its value. To achieve this, TÜV SÜD’s experts are working on a variety of battery assessment processes for ‘second life’ use, but also as a legally watertight basis for value appraisals when used BEVs are resold.

“The value of the vehicle, including the battery, and the remaining mileage in kilometres are essential details that must be determined for ex-lease cars just as for any other used vehicles. By introducing better retention of value in the remarketing process, we can extend the life of BEVs and improve their product carbon footprint”, predicts Pascal Mast. This also applies to reusing the battery of a vehicle that has been withdrawn from service. “Factors like crash safety, temperature fluctuations and moisture are all irrelevant when batteries are repurposed for use in the home. In other words, even if an elderly battery is no longer fit for powering a vehicle, it can still be used – for example, hooked up to a home solar panel system as a buffer storage unit. This is likewise an area where our battery assessment process provides safety and certainty”, affirms Mast.

Long-term goals are to develop a ‘battery passport’, containing details of the battery life cycle, and a TÜV SÜD warranty certificate. As Mast notes, “The battery passport could also contain notes about future safety assessments during periodic technical inspections of the vehicle, or results of expert reports on damage assessment after an accident. The overall aim of our measurement processes is to deliver safety and certainty concerning the condition of the battery, providing an impartial basis for continued use of the batteries as long as possible.”

Going further with hydrogen

Hydrogen-powered mobility likewise has a key role to play in achieving climate goals. It spans not only the fuel cell technology used in FCEVs, but also injection of hydrogen into the intake manifold of diesel vehicles for the purpose of reducing carbon emissions. This hydrogen technology is primarily used for long-distance heavy haulage traffic where BEVs are not yet feasible due to their insufficient range. Hydrogen thus serves as a range extender for trucks and buses. However, the range of rail vehicles on non-electrified routes can likewise be extended with the help of hydrogen. The current generation of FCEVs also deliver a more positive overall product carbon footprint than BEVs. Although BEVs have a better greenhouse gas emission record during operation, this is as yet still unable to compensate for the high levels of CO_2 accruing from battery production. As Pascal Mast says, “Hydrogen offers enormous benefits for heavy-haulage vehicles with high daily mileage. While a major area of use is new fuel-cell vehicles, hydrogen is also used in producing alternative fuels or directly as an admixture for diesel or petrol. Alternative fuels or hydrogen injection enable carbon emissions even of existing vehicles to be reduced, making a major contribution to the rapid reduction of global carbon levels”, explains Mast.

TÜV SÜD’s experts accompany the development of hydrogen technology for vehicles from the outset by providing impartial safety assessments, individual approvals for test vehicles and type approval. Shortly before the IAA, TÜV SÜD was selected for participation in a Germany-wide funding project, Wasserstoff-Technologie-Anwenderzentrum (Hydrogen Technology User Center/WTAZ) – the only independent impartial testing and certification organisation to be chosen. At the WTAZ, the TÜV SÜD experts will work with partners from the fields of science and industry and with official authorities to conduct research into the various forms of hydrogen technology and to develop and certify test methods and test equipment. On this basis, TÜV SÜD will also draw on its global network of experts to drive the establishment of internationally valid standards in the area of hydrogen. Pascal Mast affirms, “We are delighted to have been selected as part of WTAZ. Our participation demonstrates our clear commitment to hydrogen technology and turns the spotlight on our involvement in the field.”

Life-extending measures for batteries and research and development in hydrogen technology are just two strong examples of how TÜV SÜD is committed to achieving climate goals, and thus furthering sustainability in the field of mobility. Sustainability is one of the foremost topics addressed by TÜV SÜD at the IAA 2021. At the trade show, the company will present its extensive expertise in a wide variety of future-facing aspects of mobility.

For more information, visit www.tuvsud.com/iaa2021 (only available in German).

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