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"Automotive Disruption Radar": New technologies in the global automotive industry take off despite the pandemic

- **Electric vehicle penetration rises dramatically**
- **Increase in patents indicates steady progress towards autonomous driving**
- **New website www.automotive-disruption-radar.com provides extensive data on the trends in the automotive industry**

Munich, May 2021: Even the Covid-19 pandemic cannot halt the disruptive developments in technology and customer attitude trends within the automotive sector. This is among the findings of the latest Automotive Disruption Radar (ADR) from Roland Berger, a twice-yearly report that tracks 26 automotive indicators across 18 countries. The ninth edition of the ADR recorded the highest average country score to date, underlining the positive sentiment around innovation, advancing digitalization and electrification in the automotive industry. The ADR is published regularly on the website www.automotive-disruption-radar.com, which Roland Berger hosts in cooperation with Automotive World, Charging Radar, CoMotion, fka GmbH and Springer Fachmedien. The content on the platform provides decision-making support for executives in the mobility sector and highlights the trends in all areas of the automotive industry.

"Even though the economic environment remains tense in the pandemic, it is evident that the automotive industry continues to focus on innovation," says Wolfgang Bernhart, Partner at Roland Berger. "The four big trends – new mobility, autonomous driving, digitalization and electrification – continue to shape the market." The latest edition of the study demonstrates that people are increasingly starting to favor electric cars and many countries are regulating to allow extensive testing of autonomous vehicles. "Our new

website consolidates the historical data gathered since the start of 2017, which enables us to anticipate upcoming developments," says Bernhart. "With the additional input from our partners, we have created a comprehensive source of data for anyone who is professionally involved with the future of the automotive industry."

The transition to electromobility is only just beginning

The new study reveals that sales of electric vehicles have increased in most countries, with fully electric vehicles (EVs), plug-in hybrids (PHEVs) and fuel cell electric vehicles (FCEVs) accounting for an average of 4.7% of all vehicle sales in 2020. This is a rise of almost 2% on the previous year (2019: 2.9%). Back in 2017 when the first ADR study was published, electric cars accounted for just 1.5% of sales. Sweden leads on the corresponding indicator: The Scandinavian country saw electric car sales triple year on year to around 30% in 2020. Sweden is thus some distance ahead on EV sales, followed by the Netherlands and Germany.

Numerous cities in ADR countries are restricting vehicles with internal combustion engines from taking to the roads in a move that is supporting the popularity of electric mobility. Almost half of the cities surveyed (44%) have imposed at least minor restrictions, a ban on vehicles that do not meet the latest emissions standards (e.g. green badge) or targeted actions, such as car-free days.

Regulation fosters developments towards autonomous driving

The number of patents related to autonomous driving has been rising continually: Back in 2015, autonomous vehicle/function patents amounted to just 1.3% of all driving technology patents, but by last year the figure had risen to 4.7%. "The amount of technological progress we have seen in autonomous driving is remarkable, as the steady rise in patents indicates. The notion of autonomous vehicles filling our roads is slowly but surely beginning to take shape," says Stefan Riederle, automotive expert at Roland Berger and a co-initiator of the ADR Platform.

This is helped by the fact that the legal frameworks now allow more scope for autonomous driving. The picture has changed greatly since 2017, when just three countries (the USA, Singapore and the Netherlands) were working on regulations permitting type approval. In 2020, eight countries now permit type approval for autonomous vehicles – the UK, France, Germany, Japan and Russia having joined the existing three. And there has been significant

progress on the number of roads open to testing: In 2017, only the USA and South Korea had more than ten public roads open for AV testing, whereas today ten countries offer more than ten test zones. Furthermore, subject to the right permits, the entire road network in the USA and South Korea is open for testing.

The automotive-disruption-radar.com online platform offers analyses and data on trends of the automotive industry

The online platform – automotive-disruption-radar.com – features each biannual edition of the ADR alongside a continuously expanding range of new material on disruptive trends in automotive, with all of the platform's co-initiators regularly publishing studies, analyses and curated thought-leadership articles. Registered participants get free access to the latest statistics as well as historical data, which they can tailor to their own situation and download.

"The latest study provides a snapshot of the automotive industry today. But in combination with the historical data on our ADR website, it offers answers to the following key questions: What are the factors driving the transformation within automotive ecosystems? How are these factors changing over time? What can decision makers do to optimally manage the disruptions and include them in their strategic decisions?", says Riederle.

Companies behind the ADR Platform:

Automotive World is a leading B2B publication for the mobility sector. It draws on a global network of expert contributors to produce insightful articles, reports, data sets, forecasts, webinars and conferences. Right now, Automotive World is focusing on connected and autonomous vehicle technology, urban and shared mobility, advanced propulsion and the future of trucking.

CHARGING RADAR is the leading data analytics platform for public EV charging infrastructure. It is built to bring transparency to this complex market and provides access to unique insights such as market development of CPO and EMP networks and identifying typical charging behavior patterns. CHARGING RADAR supports industry leaders and new market entrants in their strategic planning and day-to-day operations and enables them to make fact-based decisions.

CHARGING RADAR is a service by THEON Data Solutions GmbH powered by CIRRANTiC GmbH.

CoMotion is a global platform where leaders of the most innovative transportation and technology companies around the world meet with urban policymakers to share ideas, do business and plan the new mobility future. CoMotion organizes exclusive world-class events such as CoMotion LIVE, CoMotion LA and CoMotion MIAMI, and is the new mobility industry's premiere source for news, insights and analysis.

As a partner to the automotive industry, **fka GmbH Aachen** offers innovative vehicle technology solutions and strategic consulting. Starting from the complete vehicle, fka develops concepts and strategies on the key topics of sustainability, safety and mobility experience.

Roland Berger is the only management consultancy of European heritage with a strong international footprint. As an independent firm, solely owned by our Partners, we operate 50 offices in all major markets. Our 2400 employees offer a unique combination of an analytical approach and an empathic attitude. Driven by our values of entrepreneurship, excellence and empathy, we at Roland Berger are convinced that the world needs a new sustainable paradigm that takes the entire value cycle into account. Working in cross-competence teams across all relevant industries and business functions, we provide the best expertise to meet the profound challenges of today and tomorrow.

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Contacts



Maximilian Mittereder

Press Contact

PRESS CONTACT GLOBAL PR

maximilian.mittereder@rolandberger.com

+49 89 9230-8180



Silvia Constanze Zösch

Press Contact

PRESS CONTACT GLOBAL PR

silvia.zoesch@rolandberger.com

+49 89 9230 8750