



# The Road to the Mobility of the Future runs through Baden-Württemberg



Winfried Kretschmann,  
Prime Minister of the State of Baden-Württemberg

## The Re-Invention of Mobility

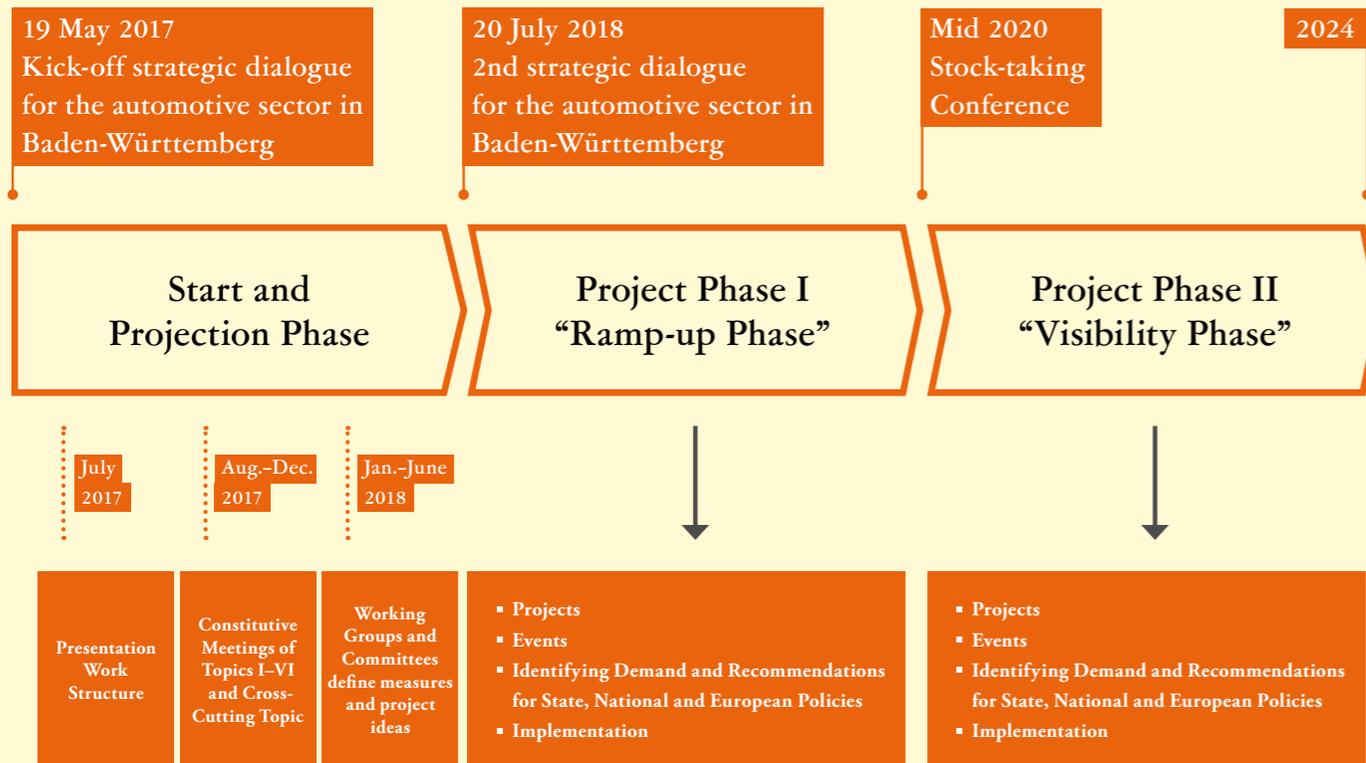
EVERYONE IS CHALLENGED ON THIS ISSUE

Baden-Württemberg's automotive industry offering jobs to more than 440,000 people is a mainstay for growth and wealth in our federal state. More than any other industry it stands for innovation, but also identification. Ever since the invention of the automobile more than 130 years ago, corporations and researchers in Baden-Württemberg have made a decisive contribution to the shaping of mobility.

We are now about to cross the threshold towards a major disruptive change: electrification, digitisation, autonomous driving and flexible user concepts offer new opportunities for the automotive industry, but, at the same time, major challenges. Everything is contested. You might as well say that mobility is currently being re-invented, and this at a never before experienced pace. There is a lot at stake for Baden-Württemberg: our technological leadership, our economic power, our jobs and the protection of our natural livelihood against the consequences of climate change. All stakeholders have to assume responsibility on this issue, the automotive industry, public transport, science, politics and the civil society. The State Government has therefore initiated the strategic dialogue for the automotive sector, including all these stakeholders. These challenges can only be faced if we stand together. Baden-Württemberg is the cradle of the automobile. Therefore, our objective must be a mobility of the future "made in Baden-Württemberg".

A handwritten signature in black ink that reads "Winfried Kretschmann". The signature is written in a cursive, slightly slanted style.

Winfried Kretschmann, Prime Minister of the State of Baden-Württemberg, MdL



## What do we want to achieve?

### VISIBLE START INTO A NEW ERA

🚗 The strategic dialogue for the automotive sector in Baden-Württemberg is a new format of institutionalised collaboration. It follows a comprehensive approach with the intention of opening innovation potential across industries. Over the next seven years, a close alliance of politics, industry, universities, employee associations, consumer organisations, environmental associations and society will come up with

- projects,
- policies and
- concepts

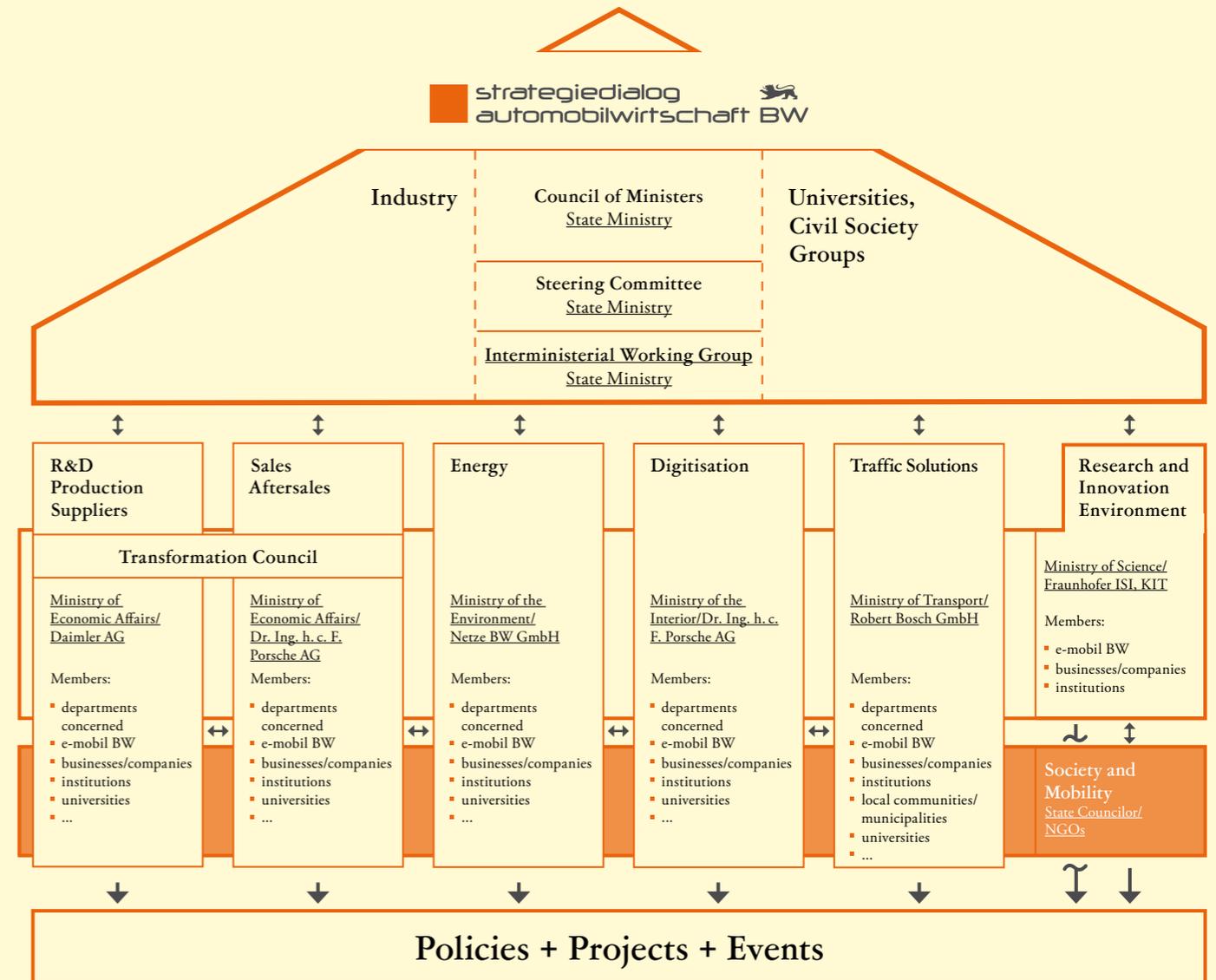
to successfully support and shape the transformation process in the automotive industry of Baden-Württemberg. The objective is a visible start into a climate-friendly new age of mobility.

# How do we collaborate?

The technological transformation leading to electrified, highly energy-efficient and smart mobility solutions as well as the potential for digitisation will not only dramatically change the car. Many other areas, such as commerce and the energy industry, will be affected. In order to take into account all aspects of the transformation process, the strategic dialogue for the automotive sector has been divided into six topics covering the whole value chain.

- Topic I – Research and Development, Production and Suppliers
- Topic II – Sales and Aftersales
- Topic III – Energy
- Topic IV – Digitisation
- Topic V – Traffic Solutions
- Topic VI – Research and Innovation Environment

The additional cross-cutting topic Society and Mobility will act like a bracket for all topics. The goal is to get citizens involved in the process not only as clients or users, but to encourage the inclusion of socially relevant subjects like health and environmental protection issues. The State Agency for New Mobility Solutions and Automotive Baden-Württemberg e-mobil BW GmbH in its capacity as innovation agency of the state will support the individual activities throughout the process and serve as an independent competence centre.

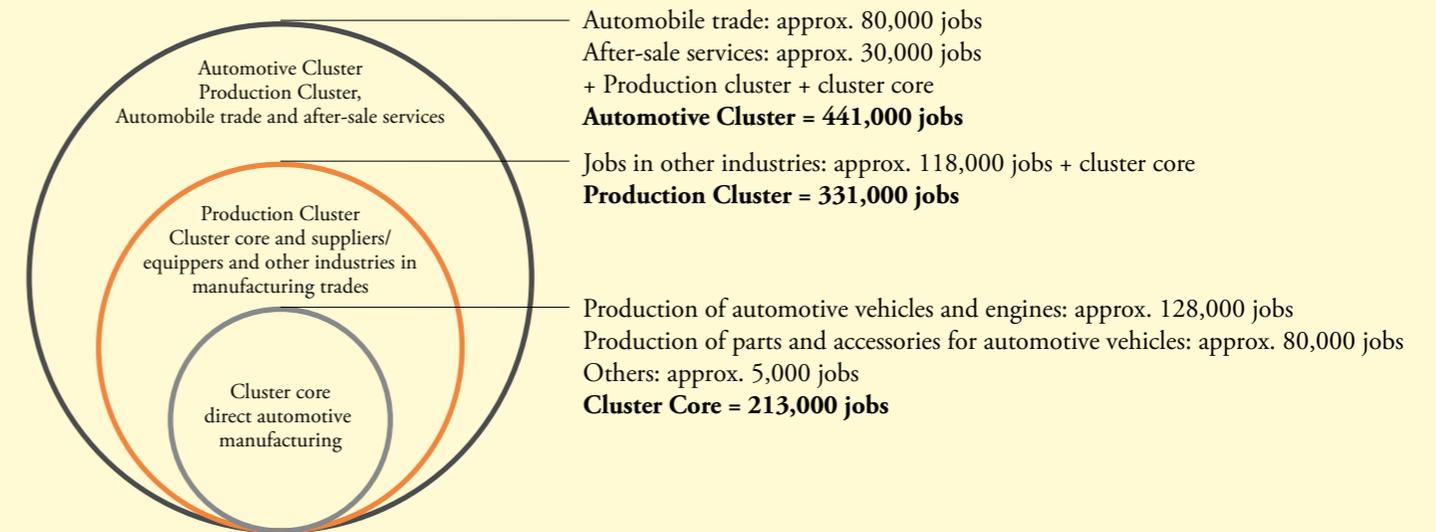
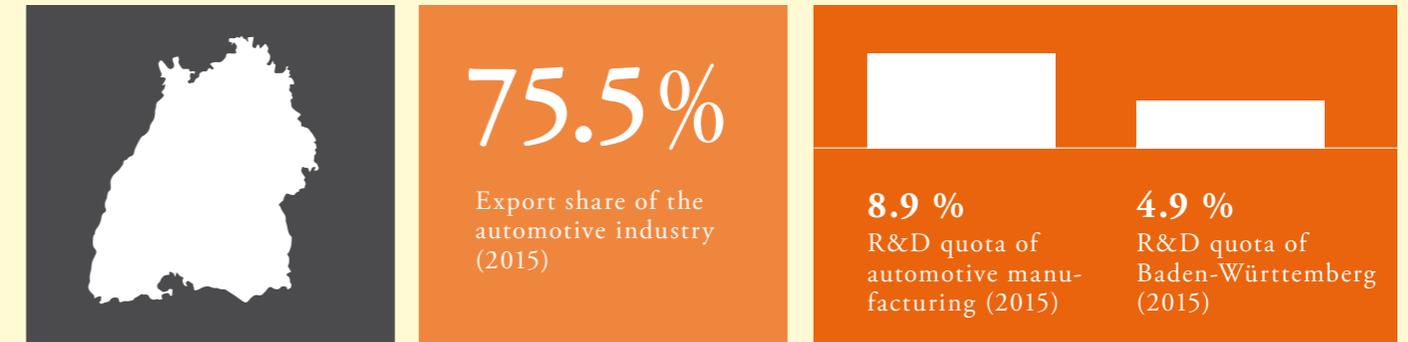


# Data, Facts and Figures on the strategic dialogue for the automotive sector in Baden-Württemberg

240,000 people in Baden-Württemberg are directly employed in automotive construction. Considering other related industries which directly depend on the automotive industry or are working in the supply chain, it can be safely said that the cluster automotive industry in Baden-Württemberg provides jobs for more than 440,000 people.

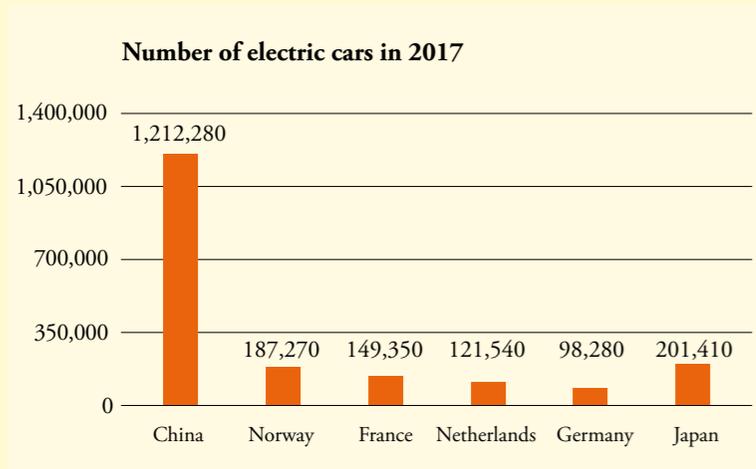
The immense economic importance of the automotive industry is based on its outstanding performance.<sup>1</sup>

- it makes an above proportion contribution to the wage bill and thus to the wealth of the state. Automotive manufacturing employs about 6 per cent of the active population in Baden-Württemberg, however, its contribution to the wage bill is more than 13 per cent.<sup>2</sup>
- it is extremely export oriented: automotive vehicles and automotive parts represent the biggest product group in the export statistics of Baden-Württemberg. Vehicles and vehicle parts exported in 2017 amounted to 45.7 billion Euros, thus accounting for one fifth of total exports.<sup>3</sup>
- the automotive industry is one of the biggest innovators in the state. The R&D quota of automotive manufacturing amounts to 8.9 percent of sales and is thus an essential contributor to the fact that Baden-Württemberg is internationally leading in R&D with a 4.9 percent quota.



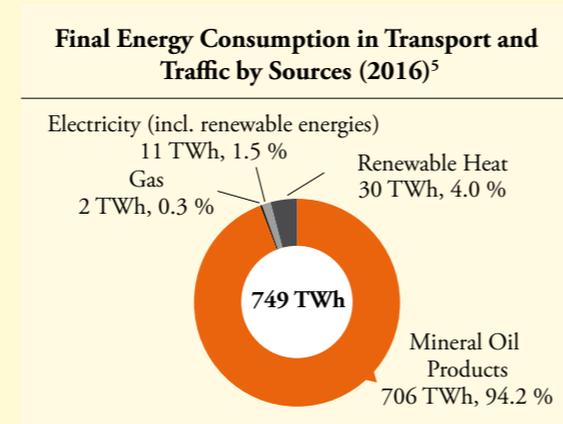
<sup>1</sup> [https://wm.baden-wuerttemberg.de/fileadmin/redaktion/m-wm/intern/Dateien\\_Downloads/Wirtschaftsstandort/Abschlussbericht\\_Strukturanalyse\\_final.pdf](https://wm.baden-wuerttemberg.de/fileadmin/redaktion/m-wm/intern/Dateien_Downloads/Wirtschaftsstandort/Abschlussbericht_Strukturanalyse_final.pdf), page 128.  
<sup>2</sup> [http://www.iaw.edu/tl\\_files/dokumente/Strukturanalyse%20und%20Perspektiven%20des%20Wirtschaftsstandortes%20Baden-Wuerttemberg%20-%20Anhang.pdf](http://www.iaw.edu/tl_files/dokumente/Strukturanalyse%20und%20Perspektiven%20des%20Wirtschaftsstandortes%20Baden-Wuerttemberg%20-%20Anhang.pdf), page 51.  
<sup>3</sup> <https://www.statistik-bw.de/Presse/Pressemitteilungen/2018036>

# Data, Facts and Figures on the strategic dialogue for the automotive sector in Baden-Württemberg

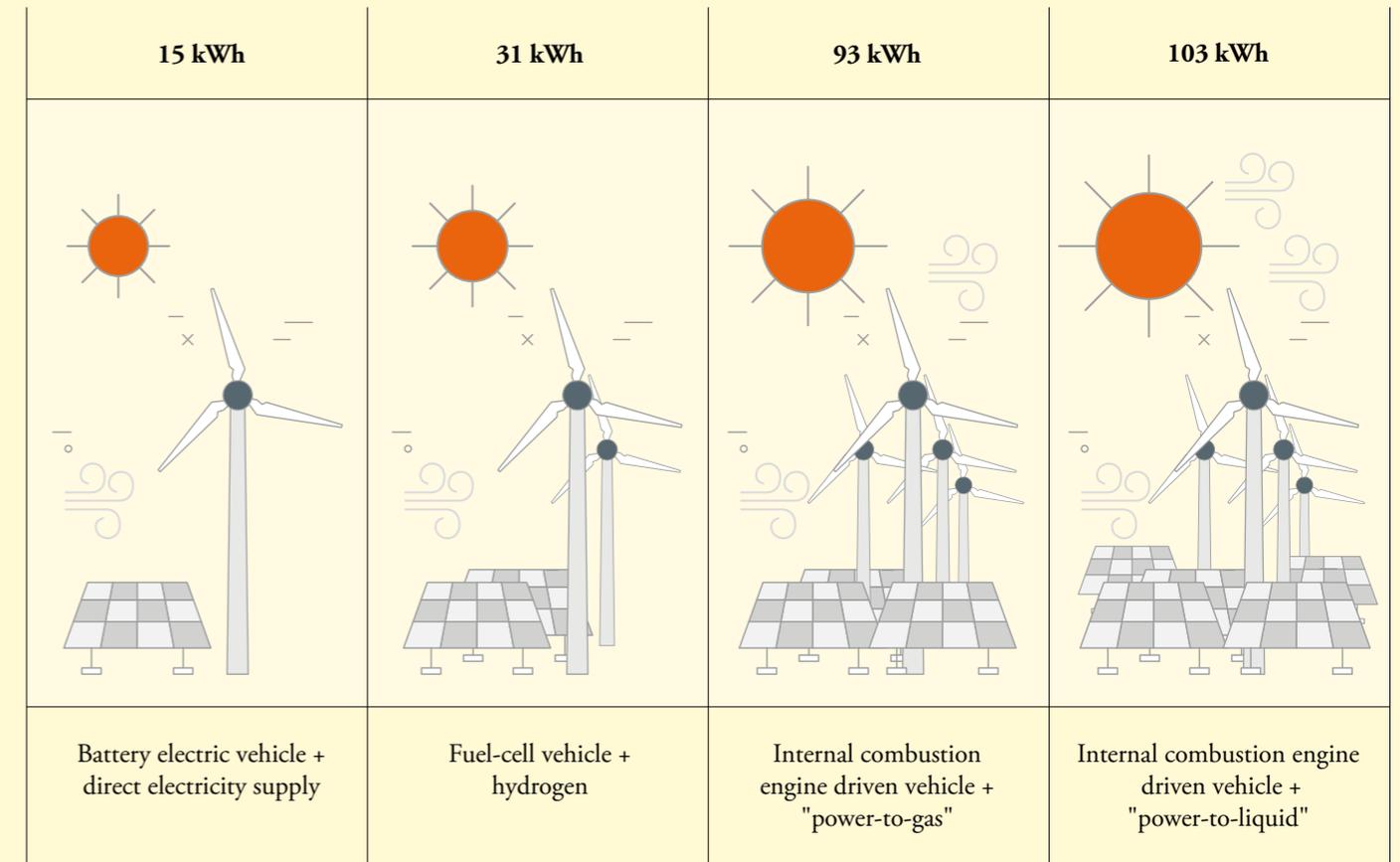


→ Worldwide, powertrains are more and more electrified: in 2017, more than 3.2 million electric vehicles were registered worldwide.<sup>4</sup>

→ The expansion of charging infrastructure is progressing. Baden-Württemberg is holding a leading position in a national comparison of federal states with almost 1,800 publically accessible charging points. One out of six of the nationally publically accessible 10,878 charging points is located in the Southwest (as of June 2017). The expansion of the charging infrastructure is actively promoted within the scope of State Initiative III "Market Growth Electric Mobility BW", planning to provide a charging station anywhere in Baden-Württemberg at about 10 km distance.



**Electricity Demand from Renewable Energies for Various Powertrain and Fuel Combinations (per 100 km)**



<sup>4</sup> <https://www.zsw-bw.de/mediathek/datenservice.html#c6700>

<sup>5</sup> Source: <https://www.umweltbundesamt.de/daten/energie/energieverbrauch-nach-energietraegern-sektoren>

Source: Agora Verkehrswende (2017): Securing Tomorrow's Mobility through Traffic Transformation. 12 theses on traffic transformation, page 52

# Topic I – Research and Development, Production and Suppliers

Energy efficient and connected data-sharing vehicles will determine the product portfolios of the future. Production, development and sales processes will become shorter, more direct and connected.

This leads to the urgent question: how can industry and research in Baden-Württemberg optimally adjust to these trends in order to benefit. What are the strategic value and job potentials to be developed against the background of car and ride sharing and Big Data? Participants from industry, science and politics in various working groups subsumed in Topic I analyse the central issue how to enhance system competence and innovative strength in the automotive industry. Subjects like skilled labour and qualification are important focuses for this topic as well. The target is to establish public and corporate policies to prepare today's and future employees in the best possible way for the upcoming changes.

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## Topic II – Sales and Aftersales

✎ Not only the vehicle as such will be profoundly altered through new technologies and digital possibilities, but sales processes and aftersales business will have to be modified accordingly.

For example, 30 per cent of used cars in 2016 were sold on online platforms and not any more from established dealers. Even before approaching the sales people for the first time, buyers of new cars have gathered information from the manufacturer's website. This is just one of the many developments being discussed in the working group Dealers and Workshops under Topic II with relevant representatives of the industry. Furthermore, the focus is not only on changes in sales but also in aftersales services with alternative vehicle concepts for workshops and the digitisation of more processes and new technologies in the parts processing, such as additive manufacturing. The target is ultimately to keep the strategically important interface to the end-user intact, even with the new business models.

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## Topic III – Energy

✚ Mobility of the future demands new energy supply sources for the traffic and transport sector which differ dramatically from the service station world as we know it today.

Open for all potential technologies, the Topic Energy analyses how energy for future mobility solutions can be made available in the required volumes and at the right place in the right time. Based on such systemic analyses and tested in pilot projects, solutions and concrete action recommendations are developed which demonstrate how energy and traffic transformation can work successfully by complementing each other. Aside from electric battery driven vehicles and their impact on the distribution grid, the role of hydrogen and fuel-cell technology as well as synthetic fuels will be taken into account. A reliable, environmental-friendly and economic energy supply based on renewable energies is the prerequisite for climate-compatible mobility and for exploring the huge potential of integrated energy. At present, the traffic and transport sector still depends on an energy supply consisting to more than 94 per cent of fossil fuels.

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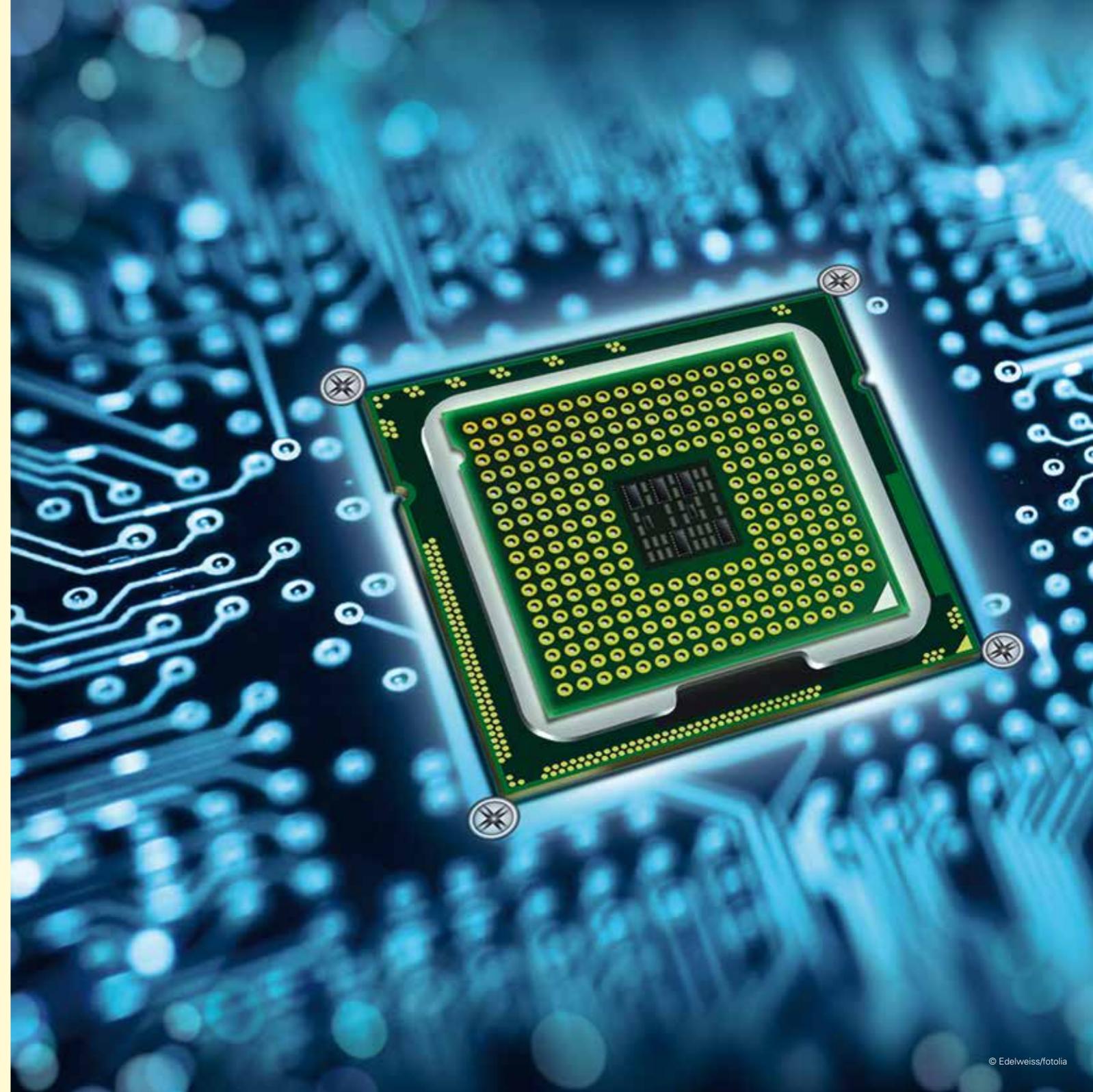
## Topic IV – Digitisation

🦋 In an increasingly digitised world, the speed in which innovation and development processes unfold has accelerated dramatically.

Fast implementation of new solutions is thus an important competitive factor for Baden-Württemberg's industry and the success of its companies, which we must put to use. Therefore, Topic Digitisation is focusing on the implementation in local communities and municipalities, since they play a central role as the operators of digital infrastructures, connected mobility services and traffic systems. Also, IT issues regarding security are of importance and have to be cleared in order to promote the transformation. And last but not least, the ground has to be prepared for new and attractive forms of collaboration, allowing for the recruiting and training of talents and qualified personnel. In parallel, enhanced support and cooperation with start-ups is called for.

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# Topic V – Traffic Solutions

With a share of almost 32 per cent, the traffic sector is the biggest CO<sub>2</sub> emitter in Baden-Württemberg. We have committed ourselves in the Paris Climate Convention to create new and climate-friendly mobility solutions.

Under Topic Traffic Solutions we try to identify what constitutes the sustainable mobility of the future in practice. On the one hand, we are looking into effective measures and instruments at all levels of action which guarantee climate protection without regard of the technology. On the other hand, a discussion is held on how mobility may be meaningfully organised in the future for the benefit of all groups in the population and which vehicles and mobility services will be required to this end. Furthermore, pilot projects will be tested and implemented large scale throughout the state to give a hands-on experience of sustainable traffic solutions. This includes, e.g. ride sharing services as new mainstay for public urban transport as well as automated bus lines.

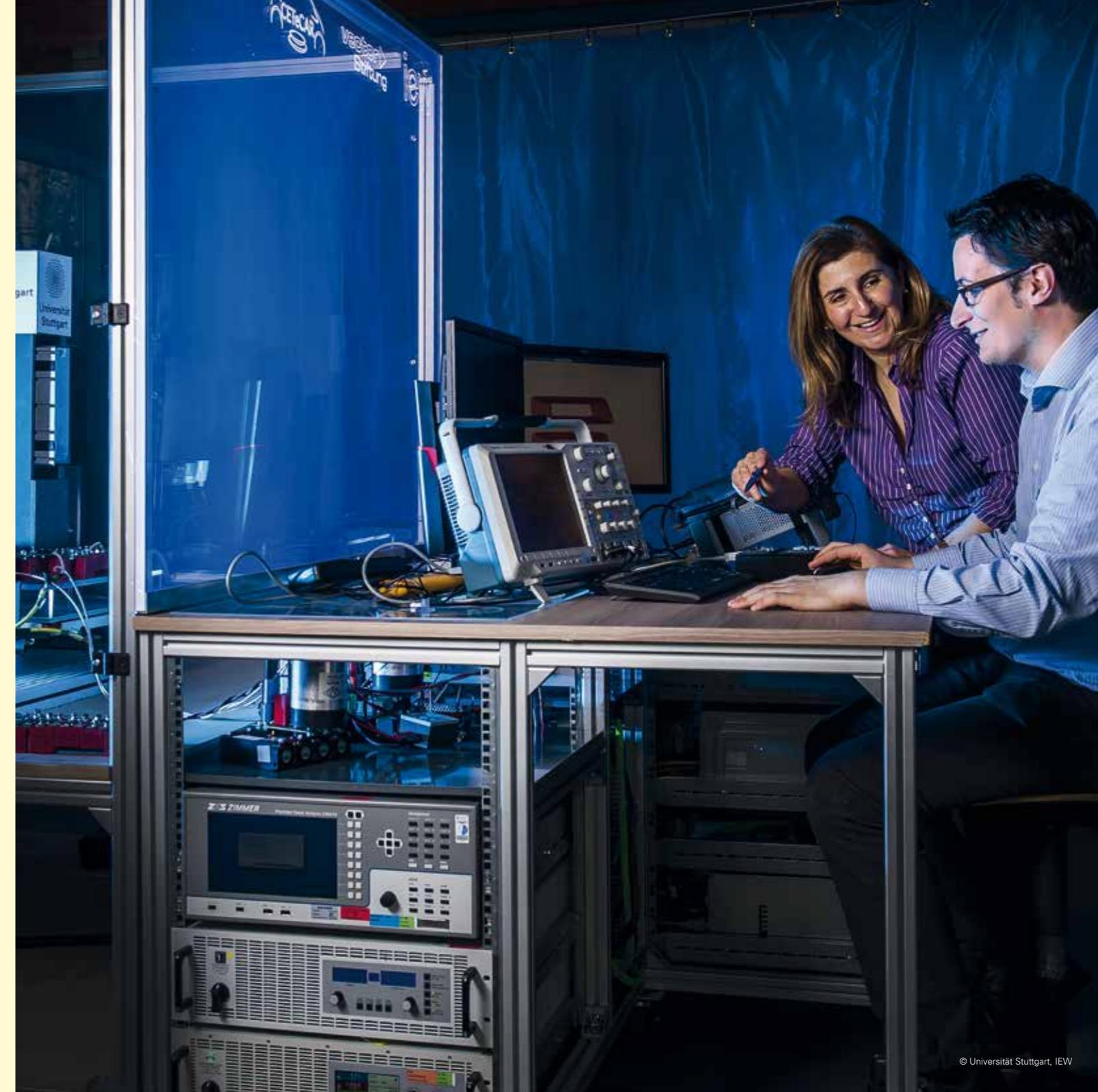
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## Topic VI – Research and Innovation Environment

Science and research are essential breeding grounds for transformative processes. In a scientific approach, they generate an understanding of the problem, develop strategies for solution and prepare future qualified personnel for the structural and technological transformation in mobility systems. The Topic Research and Innovation Environment is dedicated to the innovation economical perspective by investigating in what way Baden-Württemberg may benefit from the opportunities of transformation by being adaptive and agile. The basis for competitiveness in the change process is talent, research performance and suitable innovation processes. Baden-Württemberg boasts leading universities, practice-oriented academies of applied science and internationally renowned research institutions covering a broad research and innovation landscape. It is the declared objective to make optimal use of this strong foundation in the strategic dialogue for the automotive sector in Baden-Württemberg and to make it fit for the upcoming challenges. Lighthouse projects of a closer cooperation between universities and industry are, for example, ARENA 2036 and Cyber Valley. Furthermore, the campus areas as such are highly suited for the testing of new mobility concepts. Therefore, in the competition of ideas “Mobility Concepts for a Zero-Emission Campus”, the best concepts are chosen and supported in their implementation.

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## Cross-Cutting Topic – Society and Mobility

✚ For all citizens, mobility is so much more than just a technological solution to get from A to B.

Mobility is an essential need, inseparably connected for many people with values like freedom, independence and wealth. At the same time, increasing mobility is the root cause in our society for environmental and health problems. We therefore believe that it is of great importance to integrate individuals and citizens organised in civil action groups in the strategic dialogue for the automotive sector in Baden-Württemberg in this highly sensitive area covered by the Cross-Cutting Topic Society and Mobility. We thus offer a forum where opinions, values and needs from the general public find a voice and can make a contribution to the changed, sustainable and public traffic and mobility behaviour. The important facts and information gathered can then be reflected in the work of the six topics. The objective is to cast a new light on the interactions between technological innovations and social mobility change in rural and urban areas as well as considering and balancing the consequences of the same for other economic and private spheres.

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Co-Chair:  
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