



Annual Progress Report 2023 – Summary

 December 2023

The Strategic Dialogue for the Automotive Sector in Baden-Württemberg (SDA) – a format for systematic cooperation to shape the transformation of the automotive sector

With the launch of the Strategic Dialogue for the Automotive Sector in Baden-Württemberg (SDA) in 2017, the state government of Baden-Württemberg initiated a systematic, holistic and intersectoral approach for managing the transformation of the regional automotive sector. In this process, numerous stakeholders from politics, business, industry, science, academia, unions, associations and civil society are working together to address the diverse and complex challenges arising from climate goals, technological innovations, social changes and the ongoing transformation of the automotive industry including all related sectors of the economy.

The SDA is a framework for systematic networking and cooperation across different industries and sectors. All participants share the goal of ensuring a positive future for one of Baden-Württemberg's key industries, thereby safeguarding economic prosperity and employment for a significant number of people in the state. In addition to focusing on the development and introduction of new technologies, products and services, the SDA also strengthens the overall international competitiveness of this industrial location and the companies based there.

The legacy of the Covid-19 pandemic, the impact of the Russian invasion of Ukraine and intensifying international competition have all clearly demonstrated just how vulnerable export-driven industries are to international developments and crises. Having generated around three-quarters of its sales from foreign trade for many years, the automotive industry in Baden-Württemberg shares this vulnerability. Its existing value creation and supply chain systems must therefore be continuously adapted and made more resilient. Above all, they must be fundamentally rethought and reorganised in light of the fundamental changes brought about by the transformation.

Since its launch, the SDA has pursued the goal of developing projects, measures and concepts for successfully shaping the transformation process of the Baden-Württemberg automotive industry. It is the stated aim of all those involved that Baden-Württemberg should also play a leading role in new drive technologies and in the digitalisation of mobility, as this will ensure it remains a globally important automotive location. Baden-Württemberg additionally wants to develop into a model region for climate-friendly mobility. It is only by achieving both goals that Baden-Württemberg will be able to offer value creation and sustainable jobs in the automotive sector in the future.

With its activities, the SDA aims to

- identify fields of action that are of particular importance for the ongoing transformation process at state, national, and European level,
- identify instruments that are suitable for supporting the transformation of the automotive industry and the transition to climate-friendly, automated, connected and electric mobility in the future, and
- develop recommendations for policymakers, industry and other stakeholders.

In the revised structure, which was introduced following the top-level meeting in October 2021, the collaboration centers on the three focus topics of Vehicles, Data and Energy. The lean and efficient new structure addresses and supports the need for enhanced collaboration by placing emphasis on the focus topics and connecting them in a more flexible and agile approach.

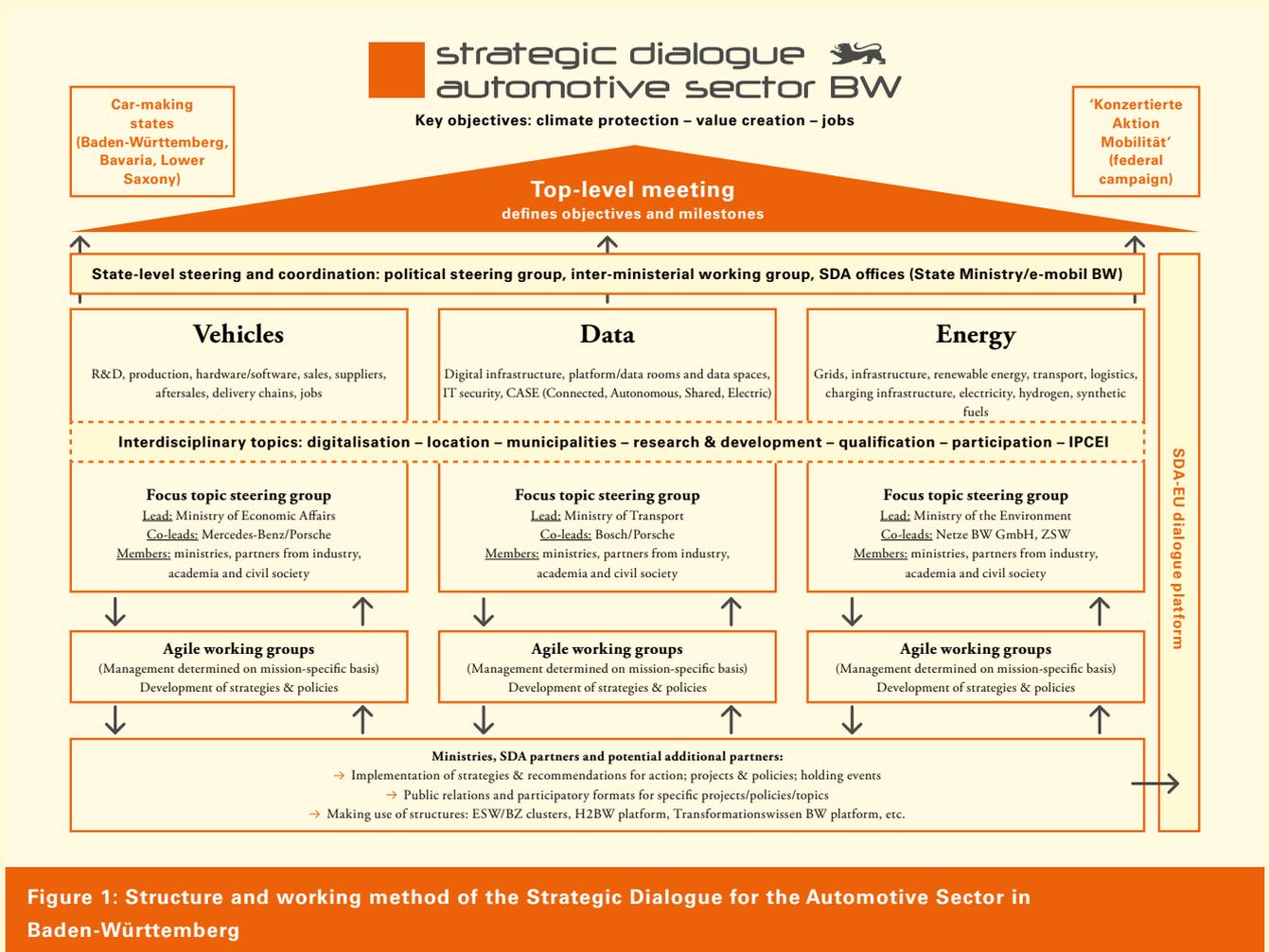


Figure 1: Structure and working method of the Strategic Dialogue for the Automotive Sector in Baden-Württemberg

Within each of the three focus topics, steering committees define objectives and missions that are handled in ad-hoc working groups over defined periods of time and with a focus on delivering results. This approach leads to concrete recommendations for actions, projects and measures. Important interdisciplinary topics such as digitalisation, qualification, research and development are taken into account for each focus topic and addressed within the framework of the individual missions. On top of this, all three focus topics aim to involve civil society in relation to particular issues.

Known as e-mobil BW, the innovation-focused State Agency for New Mobility Solutions and Automotive works with the State Ministry of Baden-Württemberg as office of the SDA, bundles the individual SDA-related activities and promotes a dialogue between all stakeholders involved in the SDA. Experts from around 300 companies, organisations and institutions in Baden-Württemberg collaborate within the SDA.

The second project phase of the SDA, which is currently underway, continues the activities that have already been initiated. It aims to make additional progress in electrification by means of scaling, further expand the focus on innovation in digitalisation, and support and accompany the transformation process of stakeholders in Baden-Württemberg.

Baden-Württemberg in Brussels: shaping the automotive industry in a European context

The transformation process of the Baden-Württemberg automotive industry is closely linked to the global market, international climate goals and European legislation, especially within the framework of the European Green Deal, and is supported by the Baden-Württemberg state government through various initiatives like the SDA. Particular attention is paid to the European level, where decisions are increasingly being made for all key areas of the automotive industry. Baden-Württemberg wants to lead the way and be an innovator and pioneer, showing that ecology and economy need not be a contradiction in terms.

In this context, the 6th annual event of the Strategic Dialogue for the Automotive Sector in Baden-Württemberg took place in Brussels on 16 November 2022 – the second such event to take place in the Belgian capital. Minister-President Winfried Kretschmann and other state cabinet members presented EU Industry Commissioner Thierry Breton and German Federal Transport Minister Dr Volker Wissing with a discussion paper on the transformation of the automotive industry. On the basis of three main points, this discussion paper includes concrete suggestions for establishing suitable framework conditions at EU level to ensure the successful transformation of the automotive industry:

- Reinforce strengths and secure European competitiveness
- Rapidly expand European infrastructure for the ramp-up of climate-neutral drives
- Accelerate digitalisation and create European data sovereignty

The event series known as the Brussels Debates on the Strategic Dialogue for the Automotive Sector in Baden-Württemberg also addresses the needs of the automotive industry and of industry in general at EU level. These events serve as a platform for the exchange of ideas and solutions among decision-makers and experts: the issues addressed include the achievement of climate neutrality through hydrogen technologies and the transformation of the automotive industry with a focus on electromobility and infrastructure.

Vehicles focus topic: current status

The transformation of the automotive industry presents companies in Baden-Württemberg with enormous challenges. One key aspect is demographic change, which is having an increasing impact on the labour market. With 80 per cent of German companies now suffering from a shortage of labour, this affects all sectors – including the automotive industry.

Secondly, there is digitalisation, which not only changes individual processes but even restructures entire value chains in certain cases. And finally, there is the enormous challenge of ecological change. The goal in the focus topic of Vehicles is clear: to create the right framework conditions for maintaining a leading role in innovations that relate to new technologies, to strengthen Baden-Württemberg's role as a global leader in automotive and mobility technology, and to create additional value in the region while ensuring sustainability. In order to provide even better support to medium-sized businesses, the Transformation of the Automotive Industry consulting programme was further expanded at the beginning of this year and now offers three vouchers for strategic realignment, implementation support, and personnel and qualification planning. In a boost for the vehicle trade and aftermarket sector, the Future Workshop 4.0 was set up to provide specific support to the automotive industry and is currently being expanded and professionalised.

The ongoing transformation is bringing about severe changes for workers across the industry, necessitating greater efforts on the part of companies and in the field of politics. The dialogue platform Transfer Qualification and Willingness to Change has therefore been set up for the focus topic of Vehicles. This platform clearly identifies the challenges and provides best-practice examples to encourage change. A detailed study was published to assess the impact of the transformation and new business models on employment in dealerships and workshops. The results of the study will be integrated directly into the Future Workshop 4.0, for example in the form of a "Future Check". A further impact of the transformation is the expansion and relocation of companies in Baden-Württemberg. In order to be able to provide companies and municipalities with assistance by means of citizen participation, a corresponding programme has been established in cooperation with the Staff Office for Civil Society and Citizen Participation in the State Ministry.

With increasing digitalisation and connectivity, the issue of automotive cybersecurity is becoming more and more important. To this end, a mission was set up together with the Ministry of the Interior, Digitalisation and Local Government. In order for all players to benefit from the future potential of digitalisation, it is necessary to ensure that they have access to vehicle data. A joint mission was therefore launched for the focus topics of Data and Vehicles. The EU's Motor Vehicle Block Exemption Regulation represented a first step for the automotive industry. Furthermore, the interests of Baden-Württemberg in relation to the EU Data Act must now be streamlined and communicated to the EU and the German government.

In order to strengthen Baden-Württemberg's national and international competitiveness as a business location, the state government introduced the Active Settlement Strategy. By granting top priority to settlement projects, the state government is specifically strengthening the development and attractiveness of Baden-Württemberg as a place to do business.

On the one hand, the Active Settlement Strategy focuses on domestic and foreign companies with innovative business models and new technological developments. On the other hand, it also supports local companies in terms of maintaining and expanding locations.

The Active Settlement Strategy includes the following focal points:

- Expansion of Baden-Württemberg International (BW_i) to make it a ‘one-stop agency’
- Prioritised and structured execution of settlement tasks within the state government
- Intensification of networking and cooperation with all stakeholders in Baden-Württemberg
- Transparent offer of available space
- Expansion of international location marketing

Data focus topic: current status

Data is key to the mobility of the future and offers enormous potential for improving transport as well as economic and social aspects. From monitoring traffic infrastructure conditions and traffic forecasting to the deployment of machine learning and digital twins in the development of prototypes and products, data-driven innovation and analysis can make more efficient use of resources and improve road safety. At the same time, data opens up new opportunities for value creation and monetisation. A new ecosystem for mobility data is set to emerge, enabling new mobility concepts and business models. Digitalisation and the necessary expansion of the corresponding infrastructure are therefore of great importance for the future of Baden-Württemberg as an industrial location with a strong mobility and automotive industry. It is important to establish the relevant framework conditions now in order to ensure innovative and responsible handling of data. The comprehensive and interactive cooperation format provided by the SDA enables the state of Baden-Württemberg to play a leading role in the digitalisation of mobility. Since January 2022, under the leadership of the Baden-Württemberg Ministry of Transport and its co-leads Bosch and Porsche, concrete measures and projects for researching, developing and scaling important future technologies with a focus on data have been jointly initiated and implemented. The focus is on:

- (1) The development and improvement of data platforms as well as the clarification of the roles of individual stakeholders in the area of mobility data
- (2) The integration of data into automated or self-driving vehicles and into connected transport systems to improve the safety and efficiency of road transport
- (3) The use of artificial intelligence (AI)
- (4) Digitalisation in road freight transport

To provide coordinated advice on the individual missions and projects to be implemented, steering committee meetings took place in Renningen on 19 October 2022 and in Stuttgart-Zuffenhausen on 22 May 2023. The Focus steering group agreed that the speed of development and implementation is of the utmost importance in international competition and must be increased to ensure that Baden-Württemberg does not lose out to other economic regions. The intensification of data activities in the mobility sector will be crucial to Europe adopting a more robust position in international competition. This is not only about protecting the data infrastructure or reducing dependencies in supply chains, but also about defining and implementing sustainable new value chains and climate-friendly improvements in transport. Digitalisation and data-based networking are key building blocks for making the mobility of the future climate-neutral, attractive and socially equitable, while at the same time ensuring competitiveness and economic growth in Baden-Württemberg. There is an urgent need for all stakeholders to cooperate and network in a targeted manner in order to make better use of the innovation potential of data for the economy, science and society.

Energy focus topic: current status

Based on the revised structure of the Strategic Dialogue for the Automotive Sector in Baden-Württemberg, the focus topic of Energy concentrated on the successful completion of the initiated launch missions:

- Mission I: Feasibility study on pilot charging and refuelling infrastructure for long-haul BEV and H2 trucks – VorPiLaTes
- Mission II: Industry discussions with Baden-Württemberg distribution network operators with the aim of developing and coordinating an industry agreement on the grid connection of charging infrastructure
- Mission III: Identifying obstacles to financing, building and operating charging infrastructure
- Mission IV: Preparation for the expansion of hydrogen infrastructure in Baden-Württemberg by 2030

In tandem with the processing of the initial missions, ideas for possible follow-up missions have also been collected in order to further develop specific questions drawn from the first missions and to shed light on relevant new topics. The results of the initial missions and corresponding follow-up missions were presented and discussed at the second steering group meeting in March 2023. The second meeting of the Energy steering group also featured intensive talks on the decarbonisation of road freight transport and the resulting requirements for the charging and refuelling infrastructure for battery-electric and hydrogen-powered commercial vehicles. Based on the discussions at the meeting, a mission regarding the network integration of charging infrastructure for heavy commercial vehicles and a further mission were launched in the field of hydrogen mobility. The goal in this context is to prepare the development of hydrogen refuelling infrastructure for commercial vehicles in Baden-Württemberg. An additional newly initiated mission focused on strengthening climate protection in the automotive industry, including the offering of support to companies as they navigate the transformation process towards climate neutrality. As of August 2023, the focus topic of Energy comprises the following ongoing missions:

- Mission V: Preparation of hydrogen refuelling infrastructure for commercial vehicles
- Mission VI: Development of measures to reduce obstacles to financing, building and operating charging infrastructure
- Mission VII: Grid integration of charging infrastructure for heavy commercial vehicles
- Mission VIII: Companies take climate action
- Mission IX: Call for funding – ‘Charging and hydrogen tank infrastructure for long-haul trucks (LWT)’
- Mission X: DAC in BW – industrialisation of systems for direct air capture (DAC)

Interdisciplinary topics in the SDA

In the Strategic Dialogue for the Automotive Sector in Baden-Württemberg (SDA), citizen participation, science, research and innovation, and digitalisation are integral parts of a holistic strategy. These cross-cutting issues play a crucial role in all three focus topics of the SDA – Vehicles, Data and Energy.

One of the guiding principles of the SDA from the outset has been citizen participation, since change can only be properly managed if there is open and transparent communication. Citizen participation ensures a democratic basis and creates acceptance for the ongoing change processes. It allows for the direct incorporation of people’s needs and concerns that must be taken into account when shaping the transformation. The Staff Office for Civil Society and Citizen Participation in the State Ministry of Baden-Württemberg has therefore been very active in the SDA right from the start, designing projects and missions. Dialogue formats on the topics of settlement, transfer qualification and willingness to change are currently in progress.

In addition to scaling up established technologies, the promotion of research and innovation is crucial for the future viability and competitiveness of the region. Close integration of science and research enables the development of sustainable and future-oriented solutions that are being used far beyond the automotive industry. Scientific expertise is required in each of the three focus topics. This expertise is therefore implemented in various missions and projects with the aim of contributing to and developing innovative solutions. Given the central role that science and research play in the national innovation strategy, it is clearly vital to support young professionals in the STEM subjects and get more young people interested in these subjects. The aim is to show them that their skills and talents are crucial in shaping a climate-neutral future. The mission of the Ministry of Science, Research and the Arts within the SDA is complete and the results are now being implemented.

Digitalisation is a true game-changer and, as a global megatrend, it affects almost all areas of social and economic life. Digitalisation is a key driver of change, transforming the car from a mechatronic hardware product into a data-driven and therefore software-centric service product. This means that chips, semiconductors, data, data spaces, operating systems and software architectures are becoming key issues in the automotive industry. Digitalisation not only fundamentally changes the vehicle as a product, it also changes its development and production as well as its use in the context of a connected and increasingly automated mobility system. Data is already a critical success factor for future competitiveness of automotive clusters. The evolving data infrastruc-

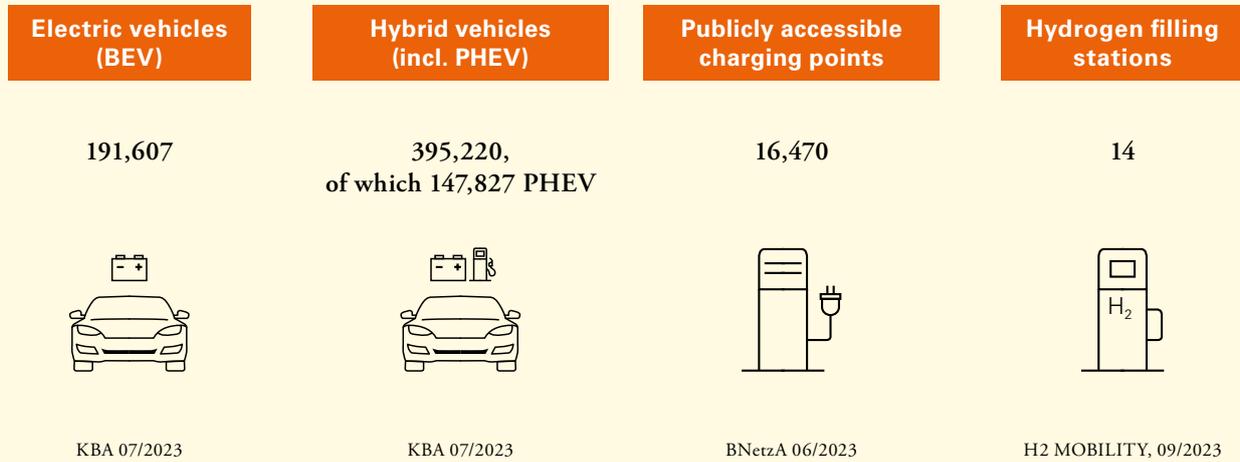
ture must be consistently developed into a future-proof sophisticated data architecture in which issues such as cybersecurity, data protection and data sovereignty must be aligned with the potential of open data. This requires appropriate legal frameworks at national and EU level. Digitalisation is therefore being considered as an important cross-cutting issue by the Ministry of the Interior, Digitalisation and Local Government within the focus topics of Vehicles, Data and Energy. It is also being implemented in various missions such as 'Automotive Cybersecurity' and the 'EU Data Act'.

Projects, missions and activities at a glance

The state of Baden-Württemberg has supported the Strategic Dialogue for the Automotive Sector in Baden-Württemberg with funds totalling more than €400 million between 2018 and 2023. In addition, it has invested many times that amount in measures that contribute to the goals of the SDA. Profiles of completed and ongoing projects can be found on the e-mobil BW website ([e-mobil BW](#)).

The projects cover the whole spectrum of transformation, focusing on new drivetrain and vehicle technologies, batteries, fuel cells, synthetic fuels, automated driving, digitalisation of mobility, mobility data, charging infrastructure and network integration. They also address measures and activities in the fields of research and innovation, qualification, education and training, as well as further measures intended to accompany and support the transformation. As the result of interdepartmental and cross-sectoral discussions, the projects demonstrate how the participating project partners from business, science, the municipal sector and civil society are driving the process forward and investing significant amounts of their own funds and human resources. Above all, they are investing much more in their own transformation beyond the scope of the projects by researching and developing new technologies, recruiting and training the necessary talents, and investing in the appropriate facilities for producing new technologies and products.

Current figures for Baden-Württemberg

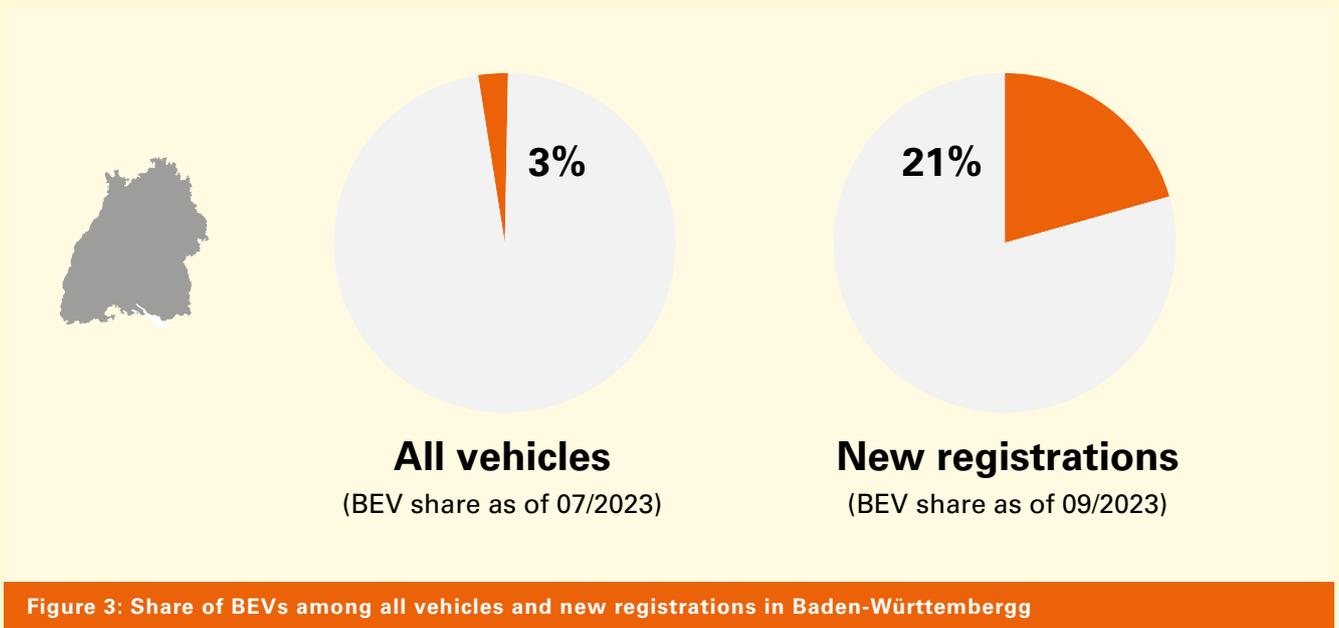


© own diagram

Figure 2: Number of vehicles with alternative drives on the road and infrastructure in Baden-Württemberg

The transformation of mobility also requires new infrastructure and comprehensive measures for strengthening and expanding networks. The market launch of electrically powered vehicles requires a corresponding network of charging infrastructure, together with appropriate refuelling infrastructure for hydrogen – and for synthetic fuels in the future. In its coalition agreement, the state government of Baden-Württemberg has set itself the goal of massively expanding the charging infrastructure and networks. Many measures have already been initiated to achieve this goal, with the new state initiative ‘Electromobility IV’ providing the framework for the next steps. Baden-Württemberg currently has a total of 16,470 charging points, comprising 13,892 regular charging points and 2,578 fast charging points. This is third highest among German states, with Baden-Württemberg ranking first in the number of charging points per inhabitant. It also has 14 hydrogen refuelling stations.

The market ramp-up of electric vehicles in Baden-Württemberg has gained momentum in recent years: 3 per cent of the vehicle fleet is now battery-electric and the share of new registrations is as high as 21 per cent.



Another important element in shaping the transformation is the InnovationCampus Mobility of the Future (ICM), which leverages the capabilities of the Karlsruhe Institute of Technology (KIT) and the University of Stuttgart. In cooperation with other research partners from Baden-Württemberg, research activities in the areas of mobility and production form part of interdisciplinary collaboration aimed at developing new mobility products as well as production technologies and systems for the sustainable and digital mobility of tomorrow.

Comprehensive knowledge transfer between research and industry, between small, medium-sized and large companies, and between and within the sectors concerned is particularly important. The aim of the SDA is to support small and medium-sized enterprises in Baden-Württemberg through targeted knowledge transfer, to understand the various aspects of technological change and to develop appropriate strategies for positive change. The Information Centre for the Transformation of the Automotive Sector in Baden-Württemberg focuses on two key target groups, namely SMEs in the supply industry and the automotive sector in Baden-Württemberg. This Information Centre was set up as a project by e-mobil BW and has now been consolidated. Its task is to make it easier for companies affected by the transformation to access existing target group-specific support services. The Information Centre is currently working with over 40 partners: their programmes in the areas of qualification, networking and knowledge transfer can be viewed on the online platform www.transformationswissen-bw.de. In personal pilot discussions, the Information Centre team addresses the individual situation of the company in question and explains the relevant developments and trends as well as suitable funding opportunities. The thematic events with regional partners that form part of the Automotive in Motion event series and the publication of various topic-specific short studies in the Knowledge Compact publication series also contribute to the development and transfer of knowledge in the industry. As part of the Transformation of the Automotive Industry consulting voucher from the Baden-Württemberg Ministry of Economic Affairs, Labour and Tourism, companies in the manufacturing sector (56%) and the automotive industry (21%) have received support for individual advice since January 2021.

A defining feature of the current phase of the SDA is the transition to an agile, mission-oriented format. Profiles of the completed and ongoing missions can be found on the e-mobil BW SDA website ([e-mobil BW](#)).

Conclusion

The automotive industry in Baden-Württemberg is at a crucial turning point. As one of the world's most important automotive locations, Baden-Württemberg is particularly affected by the profound changes driven by electrification, digitalisation and automation. In addition, stricter safety, environmental and sustainability regulations are increasing the pressure on companies to act and transform. It is crucial for Baden-Württemberg to understand and adapt to these changes in the interest of remaining competitive in the future. Ongoing cooperation in the SDA is therefore necessary in order to successfully master these complex changes and to create framework conditions that ensure the future viability of Baden-Württemberg as an industrial and automotive location.



Structural Study BW 2023 Transformation of the Automotive and Commercial Vehicle Industry in Baden-Württemberg through Electrification, Digitalisation and Automation. Key Findings and Recommended Action. To read the detailed study, please use the QR code.

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