

## Audi in Neckarsulm

### Facts & Figures (as of December 31, 2023)

- Founded: 1873 in Riedlingen (headquartered in Neckarsulm since 1880)
- Production (2023): 162,734 cars
- Plant manager: Fred Schulze
- Employees: 15,464
- Site footprint: 1,300,000 square meters
- Good to know: 2024 marks the start of the greatest ramp-up in the plant's history. With the production of the next generation of the A4/A5 and (subsequently) the A6/A7 family, the location is taking an important step toward the future.

### The current model series at the location

Audi A4, Audi A5 Cabriolet, Audi A6, Audi A7, Audi A8, Audi e-tron GT quattro,  
Audi RS e-tron GT\*

### Profile of location

The Audi Neckarsulm site has been manufacturing cars for over 100 years. Driven by innovative ideas, passion, and the pursuit of perfection, the location has developed from its beginnings as a knitting machine workshop to a modern car manufacturing site. Last year, Neckarsulm celebrated a special anniversary under the motto "150 years as the engine of change: Audi Neckarsulm – a strong history, a strong future".

AUDI AG is one of the largest employers in the Heilbronn-Franken economic region. 15,464 people work here for the Mobility of the Future. On an area of approximately one million square meters, the company produces cars in the Audi A4, Audi A5 Cabriolet, Audi A6, Audi A7, and Audi A8 series lines. At the Böllinger Höfe industrial park near Heilbronn six kilometers away, AUDI AG adds approximately 300,000 more square meters to its Neckarsulm footprint. This is where Audi Sport GmbH has its headquarters, and is also the birthplace of the fully electric Audi e-tron GT quattro\*. The last Audi R8 will roll off the line at the end of the first quarter of 2024, marking the end of production for a sports car icon at Böllinger Höfe.

*The equipment, data and prices specified in this document refer to the model range offered in Germany. Subject to change without notice; errors and omissions excepted.*

*\*The collective fuel/electric power consumption and emissions values of all models named and available on the German market can be found in the list provided at the end of this text.*

With its expertise in small-series and volume production, the Neckarsulm plant is one of Europe's most complex and boasts some of the greatest product variety of VW Group locations. In 2024, production of the next generation of the A4/A5 family marks the start of the greatest ramp-up in the plant's history.

**Audi Forum Neckarsulm** is making a mark in the region and far beyond it. Since its opening in May 2005, more than three million people have visited this brand experience center. Over more than 10,000 square meters, customers, visitors, and fans can discover the magic of the Audi brand, the company, and the Neckarsulm site.

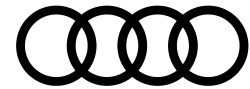
- This is where new car owners come to pick up their Audi. Exhibits offer insight into the company's history and its current product range and production. The Audi Exclusive Studio offers comprehensive services that go far beyond the design options of the standard series.
- The conference center provides business customers a space for meetings and creative workshops.
- The in-house restaurant Nuvolari offers high-end dining.
- Guided tours of the plant start from here. Tour guides give guests a glimpse of automobile production, and acquaint them with the ins and outs of the site.
- The building also doubles as a venue for a variety of cultural events, from book readings to concerts and technology workshops.

### Technical Development

A total of 1,714 people work in Technical Development at Neckarsulm (as of December 31, 2023). The development of a complete **high-voltage battery portfolio for fully electric vehicles** will take place predominantly at this location. This means Technical Development will continue to grow and strengthen in the future.

- **New high-end building for Technical Development:** The new Technical Development building will serve as a pilot space and think tank for new, efficient ways of working. Here, Technical Development experts will collaborate under one roof in modern office spaces, workshops, and test stands. In planning the more than 600 workspaces, the focus was on ease of information transfer and communication, as well as on optimal organization of the various divisions within Technical Development. As a result, the office floors offer different zones that provide the perfect environment for productivity, for creative workshops, and even for technical exchanges in a more relaxed atmosphere.
- **Competence Center for high-voltage batteries:** High-voltage batteries for plug-in hybrids (PHEVs) are already being produced in Neckarsulm. Now Audi is expanding its high-voltage battery development. In the future, personnel in high-voltage battery development – in close collaboration with colleagues at the Ingolstadt site – will be located primarily in Neckarsulm. Over the coming years, a growing number of employees will join these efforts – including some who are switching from combustion engine facilities, receiving additional training to do so.

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Also, a battery testing center will be opened, where new high-voltage storage modules for various electric vehicles will undergo testing and analysis.

Primarily locating high-voltage battery competency in Neckarsulm additionally creates synergies with the light-construction center at that site.

- **The right material in the right place in the right amount:** The engineers in Audi's light-construction center develop not only for the Audi brand, but for the entire Group. This requires finding solutions to the requirements of models with alternative drive systems, such as the battery housing for electric models. The goal is to design a car body that is as light and stable as possible while remaining cost-efficient. The body of the future will therefore consist of an intelligent mix of materials. The development of parts now employs simulation models depicting a digital twin of the real cars. This allows us to bring new technologies to mass production using a minimum number of test vehicles.
- **Group Competence Center for Fuel Cell Technology:** In the Fuel Cell Technology Center, Audi develops, manufactures, and checks fuel cells to continuously optimize properties relevant to their application, such as efficiency, service life, and profitability.

### Production and logistics

The great diversity of models produced at the site makes Neckarsulm **one of the most complex plants in the Volkswagen Group**. The Audi Supply Chain communicates our customers' needs to the plants, co-ordinates with approximately 1,000 suppliers, and finally delivers the cars to the customers. In this way, it ensures that vehicle production and market supply are punctual, flexible, and efficient. What it takes is speed, transparency, reliability, and digital factory transformation.

Audi employees at the Neckarsulm site work continuously to optimize processes and develop innovative IT solutions that advance digitalization in production and logistics. Böllinger Höfe also plays a special role here: this small-series production facility is involved in innovative pilot projects. Intelligent solutions for the fully connected and smart factory are tested, refined, and ultimately adapted there for large-volume production in the Neckarsulm plant.

- A comprehensive **overhaul of the paint shop** at the Neckarsulm site is expected to complete in 2025. The renovation entails two major projects: restructuring the top coat facility in building A17 and building a new base coat facility in building A22. This will optimize processes and make them more environmentally friendly in the future, including as it relates to electric models. From 2025, the paint shop in Neckarsulm will be one of the most modern facilities in the automotive industry.
- **Pearl chain principle:** An algorithm calculates the **best sequence** for the assembly line from nearly two trillion possibilities six days in advance, following the pearl chain principle. The algorithm uses information on ordered cars while taking into account the associated workload for the employees in all work areas so they can be utilized most effectively.

- **Using data to optimize processes:** An interdisciplinary project team within **Audi Supply Chain** at the Neckarsulm site is exploring how to use data to further optimize the management of a plant. To do this, Audi Supply Chain uses the largest possible database, including data from suppliers and forwarding agents as well as congestion information. Data like this from the entire production value chain promotes the transparency of supply chains and the accuracy of predictions.
- **Smart logistics:** Audi has been using automated guided vehicles (AGVs) for the automated transport of parts and vehicles in its production buildings since 2017. The goal is a fully automated supply chain.
- **On the road to the fully connected factory:** In early 2021, Neckarsulm became the first automobile plant in the Volkswagen Group to use RFID technology (RFID = radio frequency identification) to identify vehicles throughout the entire production process. The site thus laid another cornerstone for fully connected production.
- **Step by step to the smart factory:** The real lab in Böllinger Höfe and the digital ecosystem in Heilbronn provide Audi with ideal on-site conditions for advancing the transformation to a digital factory. Together with partners from science and IT, Audi is testing digital solutions for the production of premium vehicles in a real manufacturing environment in Neckarsulm.
- **The Automotive Initiative 2025:** At the educational campus in Heilbronn, Audi is working to advance the digital factory transformation in close partnership with the Technical University of Munich and the Fraunhofer Institute for Industrial Engineering and Organization (IAO). Neckarsulm Plant Manager Fred Schulze is positive about the work so far: “We are making great strides. We’ve launched several projects related to digitalization in the plant. What’s more, the AI25 is now involved in a wide range of existing projects. The important thing now is to keep developing the solutions we and our partners in the Heilbronn ecosystem have come up with.”
- **Edge Cloud 4 Production:** With the local server solution Edge Cloud 4 Production, Audi is initiating a paradigm shift in automation technology. After successful testing in the Audi Production Lab (P-Lab), three local servers will take over worker support in the Böllinger Höfe. If the server infrastructure continues to operate reliably, Audi wants to roll out this automation technology – the only one of its kind in the world – for serial production throughout the Group.
- **Smart maintenance:** The “Predictive Maintenance” project at the Neckarsulm site makes upkeep on production facilities more efficient and reduces downtime in production. Maintenance experts collect and interpret associated data and can predict and even partially prevent wear on production equipment.
- One pilot project is using **artificial intelligence (AI)** to control the quality of spot welds in high-volume production. The long-term vision is that in the future, the quality of welding processes can be controlled automatically and continuously optimized. Up until now, production staff have used ultrasound to manually monitor the quality of resistance spot welding (abbreviated WPS in German) processes on the basis of random analyses.

As part of the “WPS Analytics” pilot project, a team of experts is using AI to detect quality anomalies automatically and in real time.

## Audi as an attractive employer

Audi offers its employees a modern work environment, space for innovation, and diverse possibilities for individual development with attractive salaries and a high level of job security. Audi employees are actively helping shape future topics such as electric mobility and digitalization. The corporate values of appreciation, openness, trust, and integrity are a mainstay of the company’s culture. Through qualification and advanced training, Audi empowers its employees to shape the mobility of tomorrow.

- With its **qualification program “Digital Shift – in Production and Logistics”**, Audi is expanding IT expertise among employees at its Neckarsulm site. IT-minded employees and interested staff can use their potential and develop in strategic future jobs. The program also serves as a blueprint for additional transformation projects.
- Employees can get trained for the **development of high-voltage batteries**. Participants have access to tailored education programs at a range of universities. They also take various learning modules at the Audi Academy and can put the knowledge they gain directly into practice.
- In partnership with various advanced training service providers, a qualification program was established to train employees in the **development of electric drive systems**. The program supports the transformation of the workforce in engine development.
- In **advanced training to become an electrical specialist** in battery and vehicle technology, employees learn about the potential hazards of handling batteries, and everything else they need to know for their daily work.
- In the Böllinger Höfe industrial park, Audi has set up an **advanced training center for electromobility, car IT, and automotive engineering**. In the direct vicinity of the Audi e-tron GT quattro\* production site, employees can use digital learning methods to develop their professional skills.
- Curiosity and openness are the personal drivers of Vorsprung durch Technik. For the transformation to be successful, the company must rethink its training activities. Audi’s goal is to make learning a normal and ongoing part of everyday life for everyone. For this reason, Audi launched the **“Audi as a learning system”** program in 2023 to develop the learning system of the future through a wide range of initiatives.
- The **educational campus in Heilbronn** affords employees at the Audi site in Neckarsulm numerous prospects to help advance the digital factory transformation and the transition to electric mobility.

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## Careers

- AUDI AG is one of the largest employers in the region: 15,464 employees work at the Neckarsulm site (as of: December 31, 2023).
- As a future-oriented company, AUDI AG offers many trainee positions in the region: In September 2023, 219 young people began their vocational training at Audi. Compared to the previous year, the number of dual students nearly doubled.
- In early October 2023, 35 new recruits who will work at Audi during their practicum phase began a program at the Baden-Wuerttemberg Cooperative State University.
- On December 31, 2023, a total of 751 trainees and 74 dual students were employed at the Neckarsulm site.
- Hybrid working gives employees maximum freedom of choice without set in-office days.

## Work and life balance

Audi has various programs to help its employees to better balance work and family life.

- Audi offers its employees hybrid work, extended parental leave up to seven years, and sabbaticals.
- The company works with “FRÖBEL – Kinder in Bewegung”, an association that offers all-day care in daycare centers in Neckarsulm and the vicinity. The association provided 73 childcare places for Audi employees in the town of Bad Friedrichshall in 2023. There is also a flexible childcare program.
- For the school-age children of employees, Audi works with various cooperation partners to provide extensive vacation childcare during the summer holidays and shorter breaks during the school year.

## Work and care

Audi care time: Care-giving employees can take a leave of partial or complete absence for up to three years – with a guarantee of reinstatement for four more years.

- Audi offers events for employees with family members who need care, covering a range of topics including prevention, dementia, and self-care.
- In collaboration with Audi BKK and famPLUS GmbH, there are free programs for Audi employees: assistance by telephone, care dialog, and care lectures.
- Audi is a dementia partner: The company works with the German Alzheimer Association and Alzheimergesellschaft Ingolstadt e.V. (Alzheimer Society of Ingolstadt) to raise awareness of the topic and offer online training for employees.

## Environmental and social engagement

### Audi's Mission:Zero environmental program

Mission:Zero is the Audi environmental program for consistently sustainable production. All activities and measures for reducing our ecological footprint at Audi sites worldwide in administration, production, and logistics are bundled here. The focus is on Audi's key fields of activity in **decarbonization, water use, resource efficiency, and biodiversity**. One key objective is to achieve **net carbon-neutral production locations** by 2025.

### Mission:Zero at the Neckarsulm site

- **On the road to the carbon-neutral factory:** Since 2020, the entire Neckarsulm site has used green power exclusively. By 2025, Audi will transform Neckarsulm to a completely net carbon-neutral site.
- **Net carbon-neutral production of the Audi e-tron GT quattro\* at Böllinger Höfe:** Production of the e-tron GT quattro\* at Böllinger Höfe is already net carbon-neutral today. To achieve this, Audi uses green electricity and heat from renewable sources – an important milestone both for Audi and the Neckarsulm site. Even delivery of the Audi e-tron GT quattro\* to customers in Europe and the USA is net carbon-neutral. CO<sub>2</sub> emissions that Audi cannot yet avoid by means of renewable energy sources are offset using carbon credits from certified environmental projects.
- **Recycling:** Audi introduced the **Aluminum Closed Loop** at the Neckarsulm site in 2017. Aluminum sheet offcuts from the press shop are sent directly back to the supplier companies, who process and recycle them. Audi then reuses these reprocessed aluminum sheets in its production process. Additionally, polymer waste from A6 and A7 assembly is sorted, chopped up, and processed into special fibers. These filaments are used by the 3D printing team to produce assembly tools for production.
- **Sustainable water use:** Audi plans to significantly reduce water consumption at the Neckarsulm site by 2025 by setting up a water cycle with the sewage treatment plant operated by Unteres Sulmtal next to the plant. This will reduce consumption of fresh water by up to 70 percent. Audi will further treat the water for production using filter systems and membranes. Afterwards, the processed water flows back into the treatment plant. **The aim is to cut consumption of water in half by 2035.**
- **Climate protection in Audi Logistics:** All of the rail traffic at the Neckarsulm site with DB Cargo is climate-neutral. A train with an electric drive is used for shunting between the trailer yard and the plant grounds. A key carrier for the site also uses trucks powered with biomethane for road transport.
- **Conserving resources and avoiding waste:** Together with suppliers, the Audi Supply Chain is optimizing packaging at all locations to avoid waste and improve recycling. At the Neckarsulm site, for example, a trash bag producer uses a portion of the unavoidable polymer waste to produce bags that are then reused at the site itself.

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- **Biodiversity:** In 2015, Audi joined the nationwide initiative in Germany “Biodiversity in Good Company” as part of its commitment to protecting biological diversity. Measures undertaken at the site include flower meadows, greening building facades and roofs, nesting boxes for birds and bats, beehives, an insect hotel, and green areas with domestic plants, trees, and shrubs.

### **Involvement in the region**

- As a **good corporate citizen**, Audi is part of society: As one of the largest employers in the Neckarsulm region, Audi strives to enhance the quality of life here and therefore regularly collaborates with the municipalities, local companies, associations, and educational and social institutions.
- Audi supports various social institutions in the region, for example with donations.
- As part of an **inclusion program** sponsored by Audi Neckarsulm and the Astrid Lindgren School in Neckarsulm, young people with mental and physical disabilities are given insights into professional life. The school students work at learning stations at the Audi plant in addition to their classroom work.
- Other collaborations and partnerships in science and education include the experimental science center in Heilbronn, the “Kreative Köpfe” (creative minds) competition for creative and inventive school students, the University of Heilbronn, the Campus Founders entrepreneurship and innovation center in Heilbronn, the 42Heilbronn programming school, and the Innovation Park Artificial Intelligence (IPAI).
- Audi works with partners in government, public transportation, and other companies to improve the transportation situation in the region as part of the **Heilbronn-Neckarsulm Mobility Agreement**.
- Audi has been operating a **charging network** for electric vehicles at its locations in Germany since 2018 and is expanding it further. On the factory grounds in Neckarsulm and at the boundaries of the Neckarsulm and Heilbronn sites, there are now around 600 charging points; around 20 are quick-charging points. Three buffer storage units supply the charging points with power. Each comprises 198 battery modules with 12 cells each, which come from dismantled Audi test vehicles.

Audi Neckarsulm supports **sports clubs and events** in the region. In 2023, the site extended its partnership with TSG Hoffenheim to 2027. Cooperations with Sport-Union Neckarsulm, the Trollinger Marathon in Heilbronn, and the Triathlon Heilbronn will also be continued. The Friedrichshall sports club is another long-standing sponsoring partner.



## History

|         |  |
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| 1873    | Christian Schmidt and Heinrich Stoll establish a workshop for the production of knitting machines in Riedlingen on the Danube.                   |
| 1880    | The company relocates to Neckarsulm  |
| 1886    | Bicycle production begins  |
| 1900    | Motorcycle production begins   |
| 1906    | Production of automobiles begins (“Original Neckarsulmer Motorwagen”)  |
| 1928    | Automobile production ends and the factory in Heilbronn is sold  |
| 1933    | Ferdinand Porsche commissioned to build the NSU/Porsche Type 32, the VW Beetle’s predecessor   |
| 1945    | Part of the plant is destroyed in World War II; production gradually resumes beginning in mid-1945   |
| 1955    | NSU Werke AG is the world’s largest motorcycle plant   |
| 1958    | Automobile production resumes with the NSU Prinz I to III  |
| 1964    | Production of the NSU/Wankel Spider, the world’s first production car with a rotary piston engine, begins  |
| 1967    | Series production of the NSU Ro 80 begins; due to its futuristic design and rotary piston engine, it is voted “1968 Car of the Year”             |
| 1969    | Merger with Auto Union GmbH Ingolstadt to become Audi NSU Auto Union AG; the majority shareholder is Volkswagen AG                               |
| 1974/75 | The site is threatened with closure during the oil crisis. In the legendary “March on Heilbronn,” employees fight successfully to save the plant |
| 1975    | To better utilize production capacity, contract manufacturing of the Porsche 924 begins; the Porsche 944 follows shortly thereafter              |
| 1982    | The Audi 100 achieves a world-record coefficient of drag (Cd) value of 0.30  |

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|------|---|
| 1985 | Introduction of the fully galvanized car body in the Audi 100 and Audi 200; company renamed AUDI AG and headquarters moved to Ingolstadt    |
| 1988 | AUDI AG enters the full-size car class with the Audi V8   |
| 1989 | Introduction of turbocharged diesel engine with direct fuel injection in a passenger vehicle  |
| 1990 | First DTM victory for Audi with an Audi V8 quattro driven by Hans-Joachim Stuck   |
| 1994 | Start of production of the Audi A8, the first series-produced vehicle in the world with a completely aluminum body (ASF – Audi Space Frame) |
| 2000 | Production of the Audi A2, the first aluminum, large-volume production car, begins  |
| 2001 | Victory in Le Mans with the newly developed FSI direct fuel injection   |
| 2005 | Audi Forum Neckarsulm opens   |
| 2006 | German premiere of the Audi R8 sports car; first victory in the 24 Hours of Le Mans with a diesel engine developed in Neckarsulm            |
| 2007 | Establishment of the production turntable between the Ingolstadt and Neckarsulm plants with the start of production of the Audi A4 Sedan    |
| 2008 | Inauguration of the new Audi toolmaking shop  |
| 2011 | Audi acquires a 23-hectare plot in the Böllinger Höfe industrial park in Heilbronn (further plots acquired in 2014 and 2018)                |
| 2012 | Inauguration of the Technical Center for Fiber-Reinforced Polymers and the new Engine Test Center   |
| 2013 | Audi Neckarsulm receives the J.D. Power Award as “Best Production Plant in Europe”  |
| 2014 | Inauguration of Audi Böllinger Höfe (Logistics Center and R8 production)  |
| 2015 | Audi Forum Neckarsulm celebrates its tenth anniversary  |
| 2016 | New Audi A8 production buildings open   |
| 2017 | Opening of the Fuel Cell Competence Center  |

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| 2018 | Inauguration of the Technical Center for the Testing of Aluminum Materials   |
| 2019 | Establishment of an MEA Technical Center (functional layer systems) for fuel cell development; start of the cross-site Mission:Zero environmental program with measures for decarbonization, sustainable water use, resource efficiency, and biodiversity  |
| 2020 | Start of production of the all-electric Audi e-tron GT quattro*  |
| 2021 | Automotive Initiative 2025 (AI25): Establishment of a network of expertise for the digital transformation of vehicle production and logistics; establishment of a Competence Center for high-voltage batteries   |
| 2022 | Optimizing production for electromobility: Modernization of existing buildings, groundbreaking ceremony for new paint shop   |
| 2023 | Inauguration of C20, the new five-story Technical Development building. Anniversary: For Audi in Neckarsulm, the year 2023 centered on the 150th anniversary of the NSU brand: “150 years as the engine of change: Audi Neckarsulm – a strong history, a strong future”. Related events included a Family Day in July, a day for NSU fans in September, and the special exhibition “Innovation. Daring. Transformation. 150 Years of NSU”. |

### Communication Production Sites

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The Audi Group is one of the most successful manufacturers of automobiles and motorcycles in the premium and luxury segment. The brands Audi, Bentley, Lamborghini, and Ducati produce at 21 locations in 12 countries. Audi and its partners are present in more than 100 markets worldwide.

In 2023, the Audi Group delivered 1.9 million Audi vehicles, 13,560 Bentley vehicles, 10,112 Lamborghini vehicles, and 58,224 Ducati motorcycles to customers. In the 2023 fiscal year, Audi Group achieved a total revenue of €69.9 billion and an operating profit of €6.3 billion. Worldwide, an annual average of more than 87,000 people worked for the Audi Group in 2023, more than 53,000 of them at AUDI AG in Germany. With its attractive brands and numerous new models, the group is systematically pursuing its path toward becoming a provider of sustainable, fully networked premium mobility.

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**Fuel/electric power consumption and emissions values of the models named above:**

**Audi e-tron GT quattro**

Electricity consumption combined in kWh/100 km (62.1 mi): 21.6 –19.6;  
CO<sub>2</sub> emissions combined in g/km: 0; CO<sub>2</sub> class: A

**Audi RS e-tron GT**

Electricity consumption combined in kWh/100 km (62.1 mi): 21.1–19.8;  
CO<sub>2</sub> emissions combined in g/km: 0; CO<sub>2</sub> class: A