# Environmental Declaration 2024


**Audi sites**
**Ingolstadt,**
**Münchsmünster,**
**Neuburg,**
**Neustadt**




Environmental Declaration 2024

**This environmental declaration provides facts and figures regarding the continuous improvement of environmental management at the Audi site in Ingolstadt, Audi production in Münchsmünster, Audi Neuburg and Audi Neustadt in accordance with the environmental management system of the European Union on the basis of EMAS. In addition, the environmental declaration provides information on current developments.**

# Content







# Dear Readers,

We are on the cusp of a new era. The world is changing rapidly and we have a duty to actively shape this change in a responsible manner. AUDI AG is embracing this challenge and is in the midst of a transformation that affects many areas of our company. We want to build the mobility of the future by increasing sustainability and innovation. A mobility that reduces consumption of fossil fuels or even avoids it – along the entire value chain.

▸ **“We will all drive electric. That is the way. That is technologically clear.”**
**(Gernot Döllner, CEO of AUDI AG in an interview with Automobilwoche 3/24)**

In this Environmental Declaration 2024 for the Ingolstadt, Münchsmünster, Neuburg and Neustadt sites, we will demonstrate the steps we have taken to minimize the impact of our vehicles and production on the environment and to further reduce the consumption of resources.

Yet transformation means more than just technical changes. It is a comprehensive and continuous process that is deeply embedded in our corporate philosophy and shapes our daily actions.

In this Environmental Declaration, we are proud to be able to present the progress we have made and the measures we have taken in the areas of climate action, resource conservation and sustainable value chains as part of our Mission:Zero environmental program, which we initiated especially for this purpose. The fact that the path we are taking is a successful one is affirmed by the external certification of our net carbon-neutral production,* which was achieved for the Ingolstadt site in January 2024.

Our commitment to the environment is reflected not only in our products, but also in our production facilities, our supply chains and in the way in which we include and motivate our employees. Transformation requires courage and determination and the willingness to break new ground. At Audi, we are determined to embrace this challenge and take our responsibility for future generations seriously. We know at the same time that this path can only be successful if it is taken together with our employees, partners, customers and society.

We invite you to join us on this exciting path and look forward to engaging in dialogue with you. Together we can shape the future – sustainably, innovatively and responsibly.

**Best regards,**

**Dr. Siegfried Schmidtner**
**Plant Management Ingolstadt**
**Environmental Management Officer, Sites**

**Dr. Karl Durst**
**Environmental Management Officer, Product**

* see Glossary, p. 76

# Environmental and Energy Policy

**The Audi Group develops and produces vehicles and organizes the sale of vehicles and mobility services worldwide. We seek to become a leading provider for sustainable mobility and a role model in the handling of natural resources, with the aim of positioning our company in a way that is sustainable and future-proof.**

We are committed to the Paris climate goals and we are aware of our responsibility for our products and actions and of the effects of our business operations on the environment and society. We use our globally networked innovative strength to reduce our ecological footprint and counter the associated challenges over the entire life cycle of our vehicles. Our products and services are aimed at supporting our customers in reducing their own ecological footprint and make a significant contribution to maintaining our competitiveness and safeguarding jobs.

We are committed to the following core statements in order to substantiate the Volkswagen Group's overarching "Environmental Policy."

**1. Leadership behavior**
Our managers at all organizational levels and in all brands and companies of the Audi Group are aware of the environmental risks that arise from their business activities. Through words and actions, they confirm their commitment to and stance on acting in accordance with the law and the company and accepting their function as role models with regard to the environment. They are responsible for ensuring that the requirements described in this "Environmental and Energy Policy" document are implemented and complied with in their area of responsibility. Our managers ensure that all employees are informed, qualified and accountable for the tasks assigned to them. In their areas of responsibility, they create an appropriate framework in which employees and business partners can communicate sensitive environmental and energy issues openly and without fear of negative consequences. The members of the Board of Management and managing directors of the Audi Group ensure through corresponding internal regulations that the information required for environmental and energy management is available, and the necessary resources are provided for proper operation of the management systems. In corporate decisions, the environment and energy are considered on an equal footing with other company-relevant criteria.





**Gernot Döllner – Chairman of the Board of Management.**

**2. Compliance**
We comply with legal and regulatory requirements as well as voluntary commitments and comply with our own corporate standards and corporate goals. Our energy and environmental compliance management systems ensure that ecological aspects and obligations in our business activities are identified and appropriately considered. This includes the prevention of incidents and the limitation of their consequences as well as the aspects of plant safety and of energy consumption. Environment-related misconduct and intentional disregard or deception are treated as regulatory violations, in accordance with our organizational policies and operational regulations, and may result in consequences under labor law. The conformity of our actions with the requirements of this "Environmental and Energy Policy" document and other environmentally relevant company requirements is evaluated annually and reported to the Board of Management of AUDI AG, the respective Boards of Management of the brands and the managing directors of the companies.

**3. Protecting our environment**
We follow a life cycle–based approach of reducing environmental risks and seizing opportunities to protect our environment. These include the progressive integration of renewable energies, decarbonization, sustainable supply chains, resource efficiency (e.g., by applying principles of a circular economy) and improving energy efficiency. We seek to achieve a reduction in the ecological impact of our products while at the same time taking into account economically sustainable feasibility. Measures to reduce the ecological impact are to be given a higher priority than has previously been the case. Our understanding of sustainability means bringing our activities with regard to environmental, social and governance matters into harmony such that our actions also make us successful in economic terms. That is the only way we can continue to produce innovative technologies. To prove that we have achieved our goals, we disclose key environmental indicators (KPIs) annually and report transparently on the progress of our efforts.

**4. Working with stakeholders**
It is important to us to involve our employees, customers and suppliers, as well as legislators, authorities and other stakeholders. We want to improve our understanding of their environmental and energy expectations and requirements. Their suggestions are incorporated into our energy and environmental compliance management systems, are carefully evaluated and influence our processes, products and services. We provide comprehensible information in our reports and in our communications with stakeholders.

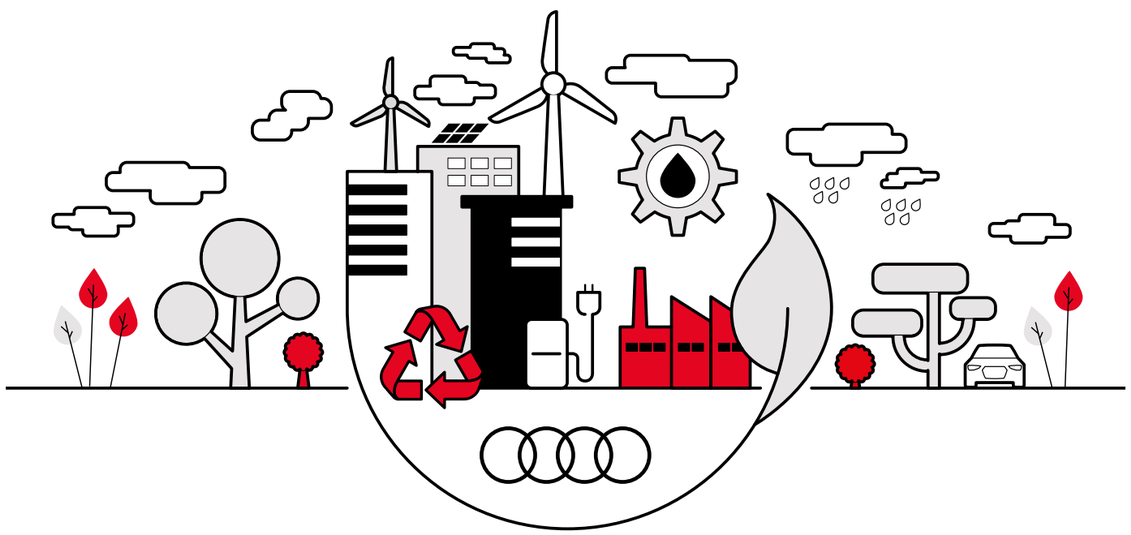
**5. Continuous improvement**
As part of our efforts to continuously improve the environmental impact of our products, services, processes and production facilities and to optimize them in terms of energy, our internationally recognized energy and environmental compliance management systems are validated by independent auditors. These management systems themselves are thus equally subjected to a continuous improvement process. This ensures that environmental and energy requirements are taken into account not only in our core businesses but also in our decision-making processes. We use our global network of experts from our site locations around the world to be able to identify and put in place best practices in environmental technologies and environmental management. We seek a leading role in up-and-coming environmental developments and regulations in science and technology.

**This Environmental and Energy Policy is binding for all employees, site locations, services and processes of the companies belonging to the Audi Group and, where necessary, site-specific action areas are added.**

**Ingolstadt, September 1, 2023**

**Gernot Döllner**
**Chairman of the Board of Management**

# Environmental management



**Organization of the environmental management system of AUDI AG**
The highest level of management of the company, the Chairman of the Board of Management, bears the overall responsibility for the environmental management system of AUDI AG. The responsibility for product-related environmental protection is delegated to the Board Member for Technical Development. Legal conformity of the products of AUDI AG is ensured in the course of the product development process and a final internal approval. External approval is granted as part of the homologation process. The responsibility for the issues regarding site-related environmental protection is delegated to the Board Member for Production and Logistics. They also bear the overall responsibility for the systems that are relevant under immission control law in addition and are appointed here in accordance with Section 52b of the Federal Immission Protection Act (BImSchG). Responsibility is passed on internally to the subordinate system operators.

The following sections describe further key roles and functions.

▶ **Dr. Siegfried Schmidtner is Plant Manager and Environmental Management Officer for the sites**

**Environmental protection officer and environmental management officer**
The Head of Environmental Protection takes on the role of environmental protection officer for the Ingolstadt, Münchsmünster, Neuburg and Neustadt sites. In this role, they are responsible for checking that compliance with all site and system requirements is ensured. In addition, the environmental protection officer performs the duties of the legally required officers for environmental protection (e.g., the waste officers, water conservation and immissions control officers). In this role, they report to the Plant Manager. As the environmental management officer, the Plant Manager is in charge of the organization and effectiveness of the site-related and production-related environmental management systems.

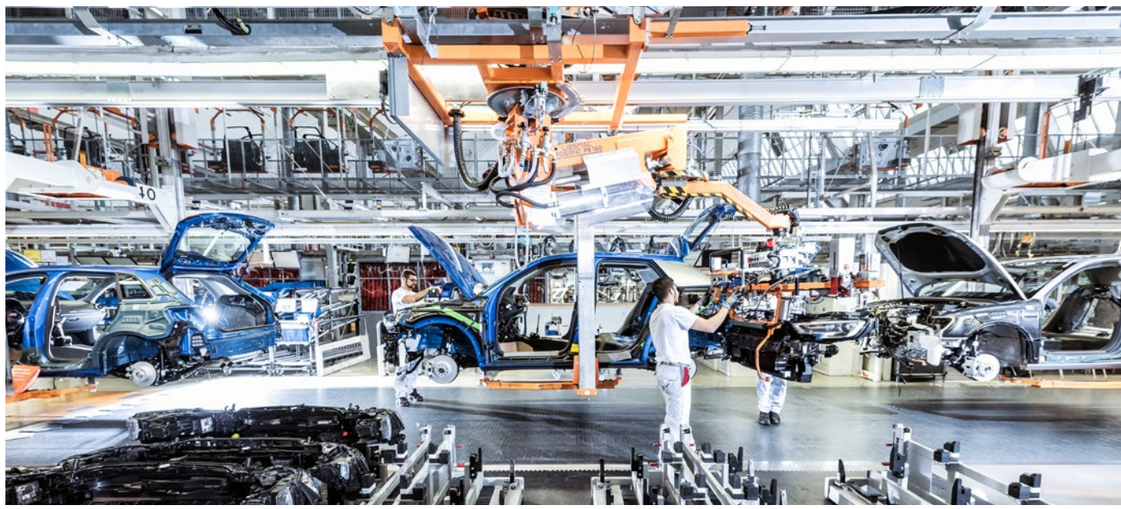
The responsibility for implementation for product-related environmental protection was centralized and assigned to an environmental management officer from Technical Development as of July 1, 2021. This task is performed by the Head of Strategy/Business Processes (I/EZ).

The AUDI AG Environmental and Energy Policy and the Corporate Policies on the Environmental Compliance Management System (U_029), which regulate the tasks, authorities and responsibilities in detail, form the basis of our actions.



Environmental Declaration 2024

**Audi already decided back in 1995 to introduce an environmental management system according to the EMAS regulation and thus committed itself to continuously improving its environmental footprint and bringing its employees on board.**



Audi has felt obliged to continuously improve its company environmental performance for a long time.

**Company environmental protection and Group environmental protection**
The Environmental Protection employees at the site (including the environmental protection officers) work on the individual specialist areas that arise from environmental law (immissions control, water conservation, soil protection, biodiversity and waste).

The tasks of the “Group Environmental Protection” department include ensuring the operation of the site-, system- and building-related elements of the environmental management system, and they are also responsible for Corporate Policy 029 in this regard. The further tasks of the department include performing internal environmental and energy audits.

**Environmental protection experts and specialist area coordinators for ECMS product**
The environmental protection experts and the specialist area coordinators for ECMS product are a key element of the environmental management system of AUDI AG. They are assigned environmentally relevant topics in their departments and areas and play an important role in communication due to their on-site presence. Their tasks include promoting environmentally friendly ways of thinking and acting, working toward the proper operation of systems (environmental protection experts), working toward implementing environmentally specific requirements in the context of product development (specialist area coordinators for ECMS product) and regular reporting on environmentally relevant topics within the environmental management system.

## The implementation

▶ **of internal environmental audits is another task of the “Group Environmental Protection” department.**

**Certification/validation**
The continuous improvement of the environmental performance of the tasks, products and services of AUDI AG and the effectiveness of the environmental management system is planned and checked regularly by means of internal and external audits. Proof of the introduction, effective maintenance and continuous improvement of the environmental management system (ECMS) at AUDI AG is based on validation according to EU Regulation (EC) No. 1221/2009, also referred to as EMAS.

The EMAS validation is performed by external, certified environmental auditors and is documented accordingly in the EMAS register.

# Methods and tools

## in environmental management

**A functioning environmental management system requires a precisely regulated operational structure, defined processes, trained employees and regular checks and audits. In addition to the feedback from auditors and employees, key figures are the most important element when it comes to monitoring environmental performance.**

### Environmental performance indicators

The measurement and evaluation of process data is the starting point for all measures for improvement. These include energy quantities, material flows and product figures. The material flows include process materials that are delivered to the plant as well as the water consumption at the site. The amounts of waste and wastewater as well as air emissions are also recorded. Production activities at the site comprise a total of roughly 90 individual parameters. The key figure system undergoes continuous further development, for example to provide the individual production areas with a tool for managing their environmentally relevant parameters.

### Core indicators

Audi publishes the core indicators set out in EMAS from the six keys areas of energy efficiency, material efficiency, water, waste, area consumption with regard to biodiversity and emissions to the air (see Section “Development of core indicators 2019–2023,” page 44ff). The progress of the core indicators provides an insight into the development of the key environmental aspects at the site in question.

**Core indicator A (input/output)**
**Energy efficiency:**
The entire direct energy consumption in MWh, which is made up of electrical energy, thermal energy and the fuel usage for production purposes, is calculated here. The percentage of renewable energy is shown as well.

**Material efficiency:**
In order to produce a car, thousands of parts and process materials must be delivered by suppliers to the production site. Recording these parts and materials would require an immense effort and involve inaccuracies that are difficult to estimate since the production figures and the models produced can vary strongly in the course of the reporting period. In order to enable an annual comparison nevertheless, Audi has decided to show the material usage as the sum of the overall production quantity and all resulting waste for the production sites. Since all materials coming into the plant also leave it again, this procedure provides a sufficient level of accuracy. The use of steel, aluminum and paints is shown for the production sites in addition.

**Water:**
The core indicator of water corresponds to the total fresh water consumption at the site in m³ and is composed of the consumption of purchased drinking water, well water (internal and external procurement) and, if available, treated rain water. The amount of wastewater in m³ is also shown.

**Waste:**
The quantities of non-hazardous and hazardous waste are added together here and shown in metric tons. Metal waste is shown separately. In addition to these two values, the partial quantities to be discarded and recycled are also listed.

**Area consumption with regard to biodiversity:**
The information on the overall area of the site and the sealed surfaces in m² (buildings, routes and storage space) is used as the benchmark here. In addition, the entire natural area at the site and away from it – if present – is shown for the first time for 2019.

**Emissions:**
In the area of emissions, the overall emissions of greenhouse gases are shown in metric tons of the $CO_2$ equivalent from each of the existing emission sources. These include the $CO_2$ emissions from stationary systems, direct $CO_2$ emissions from mobile systems and the quantities of halocarbon (HFC, HCFC) and sulfur hexafluoride ($SF_6$) that escaped from leaks in cooling systems and air conditioning units. In addition, the amounts of nitrogen oxides ($NO_x$), dust (PM) and sulfur dioxide ($SO_2$), as well as volatile organic compounds (VOC) from stationary systems are listed.

**Core indicator B (reference value)**
**Product output:**
Audi considers the product output (total output volume) for the production sites to be the total mass of all vehicles and automotive components produced at the site, including the parts delivered to other plants e.g., press shop parts) within one year (metric tons of products per year). Audi has specified the number of customers per year as the reference value for the





**Production at the Ingolstadt site.**

Neuburg site. For the Neustadt site, the number of users (test drives) per year was specified as the reference value. The produced vehicles (in units per year) and the pressed parts produced for external customers (in metric tons per year) are shown for the vehicle-producing plant in addition.

**Core indicator R:**
These indicators represent the ratio of core indicators A to B: R = A/B. The materials, material flows and energy quantities are therefore considered in relation to the product output (total output volume or number of customers).

### Impact points (IP)

The impact points method has been used since 2023 to show the environmental performance of the sites as a whole, with all the different environmental aspects. This environmental performance assessment was developed by Volkswagen, the different brands and external partners. Seven quantifiable environmental aspects (primary energy requirement, $CO_2$ equivalents, air pollutants, local water consumption, water pollutants, waste volume, power plant emissions) are considered to categorize and weight the environmental impacts and to assess them with what are known as eco-factors.

There is a separate eco-factor to be used for each environmental aspect. The eco-factors were formed according to the “method of ecological scarcity.” The level of an eco-factor describes both the relevance of an environmental aspect as compared to another aspect and the resilience of the ecosystem. The less resilient an ecosystem is, the higher the eco-factor. The limit is based on national legislation, international goals or scientific principles.

The environmental impact (impact points) of an environmental aspect (e.g. $CO_2$) is calculated by multiplying the corresponding environmental effect (e.g. $CO_2$ emissions in metric tons) with the corresponding eco-factor (e.g. IP/metric ton of $CO_2$ emissions). The greater the environmental impact of an environmental aspect, the higher the number of impact points. The aggregation of all the impact points from different environmental aspects thereby allows the environmental impact of a site to be expressed with a figure.

The advantage of the method of converting environmental impacts into impact points is that different environmental aspects can be compared and the environmental impact of the site can be shown as a single score, which allows the sites to compare themselves with themselves and among each other.

In addition to the assessment of quantitative environmental aspects using the impact points method, the plan is to assess further, more qualitative environmental aspects, such as biodiversity and mobility, on the basis of the fulfillment or non-fulfillment of certain criteria of a site checklist.

These assessment methods are replacing the system for recording and assessing environmental aspects (SEBU) that was used so far.

### Environmental goals/ environmental program

In order to make progress in the context of the commitment to the continuous improvement of the environmental performance, audits are carried out regularly, the employees are trained and key figures are recorded, tracked and evaluated. Environmental goals which are implemented in concrete projects are developed on the basis of these experiences and results as well as specifications from the Audi Environmental and Energy Policies, Group goals, statutory environmental requirements and the significant environmental impacts. The environmental program at the end of this environmental declaration contains a collection of the most important environmental goals within the EMAS auditing cycle.

Body shop

# Automotive production

**The following section briefly describes the key steps involved in producing a vehicle and discusses the environmentally relevant aspects.**

## 1_Logistics

The production of a complex product such as a modern vehicle requires thousands of parts and preassembled components which are transported to the automotive plant “just in time” via a network of numerous suppliers – by rail and truck. Steel and aluminum sheets are supplied as rolls, known as coils, or as pre-cut blanks for further processing. The same applies to the paints and operating fluids that are filled into the vehicle in the course of production (hydraulic oil, brake fluid, fuel, etc.). Logistics management is highly complex and therefore computer-assisted.

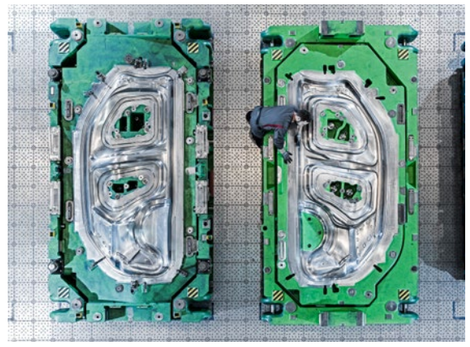
**Environmental aspects in Logistics**
Especially the traffic volume of trucks and emissions caused by the transport (carbon dioxide [$CO_2$], carbon monoxide [CO], nitrogen oxides [$NO_x$] and traffic noise). Emissions and noise are reduced by means of intelligent logistics management and transporting as many goods as possible by rail.

## 2_Press shop

The delivered steel and aluminum sheets (coils, blanks) are pressed into body parts in the press shop. Multiple consecutive processing steps are usually necessary to create side panels, doors, hoods, etc.







Press shop

Paint shop

**Environmental aspects in the press shop**
Noise and vibrations caused by the movement of the presses and tools that weigh several tons, hydraulic oil in the presses and what is known as the drawing oils that are sprayed on the sheets for more gentle processing. By enclosing the presses and decoupling the vibrations from the building, the noise and vibrations are contained within the building. The powertrains containing hydraulic oil are equipped with drip pans.

## 3_Body shop

In the body shop, the individual parts produced in the press shop are joined together by robots in an almost entirely automated process to form the body shell. Different joining methods such as bonding, welding, crimp sealing, riveting, etc. are used here. Each joining method has its specific advantages for enabling maximum strength with minimum body weight.

**Environmental aspects in the body shop**
Unhardened adhesives, emissions of dust and hazardous materials from the grinding and welding processes as well as noise from manufacturing equipment and ventilation systems. High economic efficiency and an increase in quality are achieved through the use of operating facilities driven by electric and servo motors. These are more efficient and allow more precise adjustment. As a result of the conversion to such energy-efficient operating facilities, it has been possible to reduce the energy requirement and therefore also $CO_2$ emissions.

## 4_Paint shop

In the paint shop, the bodies made of steel and aluminum receive their protective and colored surface. First of all, they are cleaned and degreased. In the next step, paint layers that provide protection against corrosion and rock chips are applied in immersion baths or sprayed on. Additional coats of paint then provide the color and sealing.

**Environmental aspects in the paint shop**
Process waters containing heavy metals, solvent emissions and paint sludge. First, the heavy metals are removed from the process wastewater in a preliminary process and then treated with membrane bioreactor in the plant’s own wastewater treatment facility so that the majority of the water can be reused in the plant as process water. Solvent elements in the exhaust air are removed in thermal post-combustion systems. The resulting waste heat is then used to dry the bodies after painting. Continuous further development of paint application techniques helps to reduce what is known as overspray, i.e. the amount of paint that does not stay on the body. This reduces the use of paint and the amount of paint sludge.

## Environmental relevance

**▸ is recorded and evaluated for all production processes: from Logistics and press shop to body shop and paint shop all the way to Assembly.**

## 5_Assembly

In assembly, all the parts, including the engine and transmission, suspension, wheels, windows, seats, cockpit, etc. are installed until the vehicle is complete. Quality and function checks complete the production process.

**Environmental aspects in assembly**
Packaging materials that arise in larger quantities here, as most parts are delivered by suppliers or other plants and are packaged in foil, cardboard, etc. for protection. In addition to the material and energy recycling of this waste, the attempt is made to transport as many parts as possible in reusable containers.

# Compliance with environmental law regulations

**Compliance with legal specifications is a matter of course for AUDI AG and all employees. All employees in Environmental Protection as well as the environmental protection experts participate in regular training courses on environmental law. A further exchange takes place via working groups of the Environmental Protection employees in the Volkswagen Group. All employees in Environmental Protection have access to a legal database.**

**The Audi Ideas Program: in over 20 years, employees have submitted more than 58,000 clever ideas.**

**Emergency provisions**
In order to keep the environmental risks caused by possible operational disruptions (e.g., fire, handling of chemicals, production) to a minimum, technical and organizational measures have been specified for the sites. The contingency plans are continuously updated. A well-trained plant fire department that is well equipped with emergency vehicles is always on call. Thousands of signaling devices (smoke, fire, leakage of liquids) are installed in the security and control centers so that measures can be taken immediately in the event of an alarm notification.

**Involvement of the employees/Audi Ideas Program**
The basics of production and important processes are described in the Audi Production System (APS), including all key aspects of environmental protection and possibilities for saving energy. The employees can use the APS to obtain information and also take part in various training courses suitable for their function, for example as employees in manufacturing planning, as apprentices or as group leaders in Production. In addition, all employees are encouraged to offer suggestions for protecting the environment and saving energy in the Audi Ideas Program.





# Milestone reached

## Production operations at Audi Ingolstadt are net carbon-neutral*

**Following on from other Audi production sites, production at the Audi plant in Ingolstadt has been net carbon-neutral* since January 1, 2024 – the basis for achieving this milestone is implementation of the Audi Mission:Zero environmental program, which contributes crucially to increasing sustainability in production and logistics. This program combines all activities and measures for reducing the environmental footprint at Audi sites worldwide. Four steps were defined for the plant in Ingolstadt to achieve certification of its net carbon neutrality.* Step 1 is to increase energy efficiency, step 2 to generate renewable energy in-house, step 3 to purchase renewable energy and step 4 to offset the currently unavoidable emissions through climate action projects. The details are explained in an interview with experts Christian Danhauser, Andrea Hofmann, Bernhard Kramel and Roland Schneider.**

**In simplified terms, energy efficiency means: energy that is not used neither has to be produced nor purchased. What is the situation regarding reducing the energy requirement at the Ingolstadt site?**

**Schneider:** Absolutely right. Energy management is therefore a central leverage point for achieving net carbon neutrality at the site. In 2023, we succeeded in saving just under 35,000 megawatt hours of energy at the plant compared to the previous year. That's equivalent to the average annual consumption of roughly 1,400 single-family homes. The main key factors in this success included collaboration within the team and the development and implementation of numerous measures by the energy officers.

**The Environmental Declaration 2023 already looked at the investigations carried out by your colleagues to identify unused energy consumption. How significant is in-house generation of renewable energy in comparison to that?**

Increasing renewable generation in-house at the site as a key measure – shown here are vertically installed photovoltaic panels on the facade of a parking garage.



* see Glossary, p. 76



Roland Schneider from Energy Management, Andrea Hofmann from Environmental Protection and plant designer Christian Danhauser (from left to right) on the roof of one of the parking garages fitted with large photovoltaic systems.

**Danhauser:** Without doubt very important. Since the beginning of 2012, we've been exclusively sourcing green electricity at the Ingolstadt plant and increasingly focusing on generating our own renewable energy in-house. Although not every roof surface is suitable for installing photovoltaic systems, the area used at the Ingolstadt plant to generate solar power already exceeds 23,000 square meters – that's a little more than three soccer fields. And expansion of the photovoltaic systems at the main plant continues to make progress, with some 41,000 square meters currently under construction or in planning.

**A production site as large as the Audi plant in Ingolstadt also has a high demand for heat as well as electricity. Which green sources do you use to cover this demand?**

**Kramel:** Aside from renewable generation of electricity, we focus on carbon-neutral in-house generation of thermal energy, which we also plan to increase successively. For example, through the use of heat pumps so that we can reuse waste heat from production processes. The heat supply at the Audi plant in Ingolstadt is typically 80 percent dependent on gas, which means that the purchase of gas as a fuel is also an important topic for us. To also achieve net carbon-neutral heat supply,* the entire natural gas requirement was converted to methane from biogas plants as of January 1, 2024. Particular attention is paid to ensuring that the biomethane is primarily obtained from waste and residual materials. The remaining approximately 20 percent of the heat required by the plant in Ingolstadt is provided by district heating. A neighboring refinery as well as the municipal waste recycling center supply the main Audi plant with waste heat.

**That leaves the fourth step on the path to net carbon-neutral* production at the site, in other words compensation for currently unavoidable $CO_2$ emissions. What exactly does that involve? How much more needs to be offset?**

**Hofmann:** Compensating for $CO_2$ emissions through climate action projects remains the last measure for achieving net carbon neutrality.* Only those $CO_2$ emissions that cannot be eliminated as yet due to technical, process-related or economic restrictions will be offset. Examples here include $CO_2$ emissions from test rigs for combustion engines and company vehicles with combustion engines as well as from cooling and air conditioning systems. Our goal is to offset no more than 10 percent of original $CO_2$ emissions at the site through climate action projects.

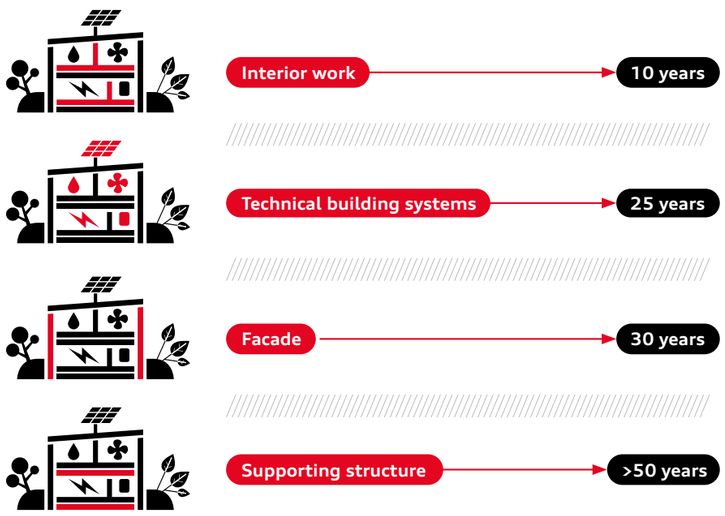
**How does Audi guarantee the effectiveness of the individual measures?**

**Hofmann:** The net carbon neutrality* of the site is verified by an external audit as part of a comprehensive certification process, which also confirms the effectiveness of the measures. Our certification is also not a one-off. We act from a sense of conviction and are committed to an annual audit in Ingolstadt from 2024.

# Adaptable

## More sustainable architecture improves the carbon footprint

**According to forecasts by the World Bank, four billion metric tons of waste will be generated by 2050 – almost 60 percent more than today. And no sector produces more waste than the construction industry. Gray energy stored in concrete, gypsum or gravel, which was produced with high $CO_2$ emissions, typically still ends up in a landfill at the end of its useful life. Carina Müller is responsible for the broad field of "Sustainable Building" at Audi in Ingolstadt. Reducing $CO_2$ emissions is a key objective of a review being conducted by the Audi Board of Management.**




**Useful life of buildings according to ISO 15686-1:2000**

**Interview with Carina Müller, Architect in the I/P2-42 Building Infrastructure department**

**Ms. Müller, how is this goal to be achieved?**

To put it simply, we are focusing on a longer-term, more sustainable use of building structures in order to avoid as much $CO_2$ as possible. This is done by planning and constructing the buildings from the outset so that they be adapted and therefore used flexibly for different purposes.

**But the carbon footprint of a building is based on the materials used, the construction, transport, etc.?**

Correct, but the carbon footprint of a building improves with each additional year of use. What I am talking about here is a linear depreciation logic for $CO_2$ emissions from buildings, which approaches zero over the standardized useful life.

**Does that mean there are standardized norms for the useful life of a building?**

Of course, there are hardly any other industries that have more DIN standards than the construction industry. The useful life differs depending on the building type and is laid down in DIN and ISO. The average useful life of an industrial building is 20 years, while for facades it's 30 years. Systems such as elevators or heating technology have to be renewed on average every 25 years. Basically, the statics of buildings and therefore the building structure are designed for a useful life of 50 years. To create an adaptable building structure, this means planning it intelligently and with foresight. We also follow the guidelines of the German Sustainable Building Council, especially as regards the topics of life cycle assessment and the useful life of a building.

**This life cycle assessment is also heavily dependent, however, on the use of certain materials. Are materials with a good carbon footprint, such as wood, suitable then for industrial construction?**

Due to the strict structural requirements for our buildings, we still rely on the use of concrete and steel at the moment, both of which are recyclable. Concrete demolition, for example, is used specifically for road and parking lot construction. Our primary objective, however, is to offer flexible usage options and to extend the useful life of our buildings.

With strategic and intelligent planning, we can preserve around 80 percent of the building structure over the building life cycle. The remaining roughly 20 percent of the building structure is structurally adapted as a result of changes of use. A further important aspect here are our regular building inspections and maintenance measures. All of these measures contribute in a positive way to extending the useful life of our buildings and, in turn, deliver significant improvements in terms of the carbon footprint.

In addition, there are many further measures. For example, we want to reduce the building footprint by using less space. A good example of this is the multistory body shop in Ingolstadt.

**Is it not more expensive to plan and construct production buildings that enable different uses and have a good carbon footprint?**

That depends on your point of view. The initial investment involved in constructing the building is certainly a few percentage points higher.

However, the renovation costs over the life cycle also have to be considered. They are significantly lower owing to the adaptable building structure and we also avoid a large amount of $CO_2$ emissions. And the $CO_2$ price per kilogram of $CO_2$ equivalent for constructing and operating a building will continue to rise.


**Committed to sustainable building for the future: Carina Müller and Armin Staib.**

Supply Chain project team (from left to right): Dominic Mosner, Ann-Kathrin Kienle, Klaus Duschinger, Peter Haselwanger and Martin Pinker.

# “On track”

## for greener transport logistics

**Audi is contributing positively to the environment with its concept of combined transport, by innovatively combining the sustainability of rail transport with the flexibility of road transport in a climate-friendly manner.**

The transport sector is responsible globally for one-fifth of all $CO_2$ emissions. Road freight contributes to this at a rate of just under 30 percent and air and sea traffic by 20 percent. Rail traffic, on the other hand, only accounts for 1 percent of global transport emissions. For this reason, Audi is increasingly focusing on rail transport as part of its Mission:Zero environmental program. In April of this year, a smart solution was implemented that was initiated by Audi together with the logistics company Duvenbeck and the start-up Helrom: the first Audi block train for combined transport connecting Regensburg in Germany with Lébény in Hungary. This concept combines the sustainability of rail transport with the flexibility of road transport. The majority of the route is operated by a “green train,” while trucks running on biogenic fuels handle pre-carriage and onward carriage. These trucks significantly reduce $CO_2$ emissions compared to conventionally powered diesel trucks. This combined transport concept delivers significant reductions in $CO_2$ emissions and supports achievement of the goals set out in the Supply Chain and 360factory strategies.





The smooth transition from road to rail is supported by the innovative trailer technology offered by the provider Helrom. At the press of a button, the trailer wagon opens up automatically at the side and the truck trailer is shifted onto the wagon in under two minutes. Thanks to the globally unique Helrom technology, truck semi-trailers can be loaded onto a train without the need for any special terminals or crane. This opens up new possibilities for optimizing transshipment points.

▶ **“We will consistently pursue this sustainable path together with our partners.”**
**(Dieter Braun)**

The Audi block train covers a distance of more than 1,000 kilometers in 24 hours on each round trip (Regensburg-Lébény-Regensburg). Loading and unloading take place in Regensburg and Lébény.

Each train consists of 18 railcars, which can transport 36 trailers. This means that 72 trucks are shifted from road to rail every day from Monday through Friday, leading to a weekly reduction in HGV transport capacity of roughly 185,000 kilometers.

“This project exemplifies how we can integrate innovative and more climate-friendly solutions from partners into our supply chain,” explains Dieter Braun, Head of Supply Chain at AUDI AG, “we plan to consistently pursue this more sustainable path to ensure optimal organization of logistics processes between our suppliers and our sites.”

The cooperation partners all agree that this is a win-win situation for the participating companies: “The project clearly shows that by taking an holistic view of material flows, technologies and infrastructure, it is possible to reconcile environmentally friendly solutions with economic interests and social concerns.”

That’s because aside from the important environmental contribution, the social aspect also cannot be forgotten. Whereas truck drivers on the route from Hungary to Germany previously had to spend long periods away from home, the time on the road is now limited to the first and last mile. “We can use this concept to make the trucker’s job much more attractive,” says Peter Haselwanger, Head of Transport Planning at Audi.

In addition, the use of biogenic fuels will be further extended for transport operations that cannot be transferred to rail in the short term. With more than 120 different truck transport contracts being switched over, these alternative drive concepts allow a significant total reduction in $CO_2$ emissions to be achieved in the inbound supply chain. These and other planned measures underscore the clear focus of the supply chain on making transport logistics at Audi sustainably greener.

The switch to rail delivers a weekly reduction in HGV transport capacity of approx. 185,000 kilometers.

# Oak forest

## Research project on the sustainable forest of the future

**The oak is not only extremely resilient, it can store large amounts of carbon and promotes a particularly high level of biodiversity in its environment. Good reasons therefore to focus on this tree species as part of a research project that looks at future requirements for silviculture and forestry management as a result of climate change.**

This now international project was launched in 2009 in Kösching Forest near Ingolstadt. It aims to demonstrate how trees should be planted so that they absorb as much carbon as possible and at the same time offer plenty of scope for biodiversity. Audi launched the Oak Forest research project in cooperation with the Bavarian State Forestry Department and the Chair of Forest Growth and Yield Science at the Technical University of Munich. Young English oaks were planted on approximately two hectares in a concentric experimental arrangement and in different densities (design according to Nelder). This means that a variety of possible growth conditions and patterns can be investigated in a small space, including the impact on the flora and fauna associated with the oak.

After just 15 years, this research project is delivering valuable findings – especially in international comparison. Supported by the Audi Environmental Foundation, it has now also been successively expanded to other Audi brand group sites in Germany, Hungary, Italy, Belgium and Mexico. Project manager Michael Hügel sees this initiative by the Audi Environmental Foundation as a long-term commitment. “The Oak Forest project is a marathon, not a sprint.”

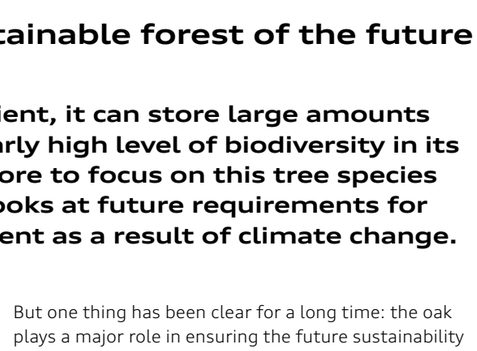
But one thing has been clear for a long time: the oak plays a major role in ensuring the future sustainability of our forests, thanks to the enormous amount of carbon it captures and the support it provides for woodland habitats. The oak is also particularly suitable for these experiments since it is extremely resilient to heat and drought.

▶ **The Oak Forest project provides the basis for sustainable silviculture.**

One hectare of oak woodland stores the equivalent of 50 to 80 metric tons of $CO_2$ in its biomass over a 20-year period. This rises to 300 to 350 metric tons of $CO_2$ over 60 years. The forest works best as a carbon sink and diverse habitat under ideal conditions for the ecosystem and in line with sustainable planning and management.

The project on oak forests aims to provide the basis for precisely this. And for the extraordinary indispensable biodiversity services of the oak, which acts as a habitat for thousands of species from root to crown. About 179 species of large butterflies alone are directly or indirectly dependent on the oak, in addition to some 28 species of birds, including the jay, numerous mammals, such as the pine marten, and hundreds of beetles and other insect species. Countless mosses and lichens and a variety of mushrooms coexist symbiotically with the oak.

**The oaks planted 15 years ago are measured regularly: the growth differences are enormous.**



**The team activities offered are very popular: employees regularly visit Kösching Forest to support the oak project.**





**Michael Hügel, project manager with the Audi Environmental Foundation (left), in conversation with Leonhard Steinacker from the TU Munich (right) and doctoral student Dominik Ambs.**

## Talking Trees

**The Talking Trees project is another innovative research project that is being incorporated into the oak forest long-term study. Selected oaks in Kösching Forest were equipped with intelligent measuring technology and corresponding sensors. They transmit information on current weather conditions as well as the growth and water consumption of the trees. The compiled data can be viewed online at https://talkingtrees.de/**

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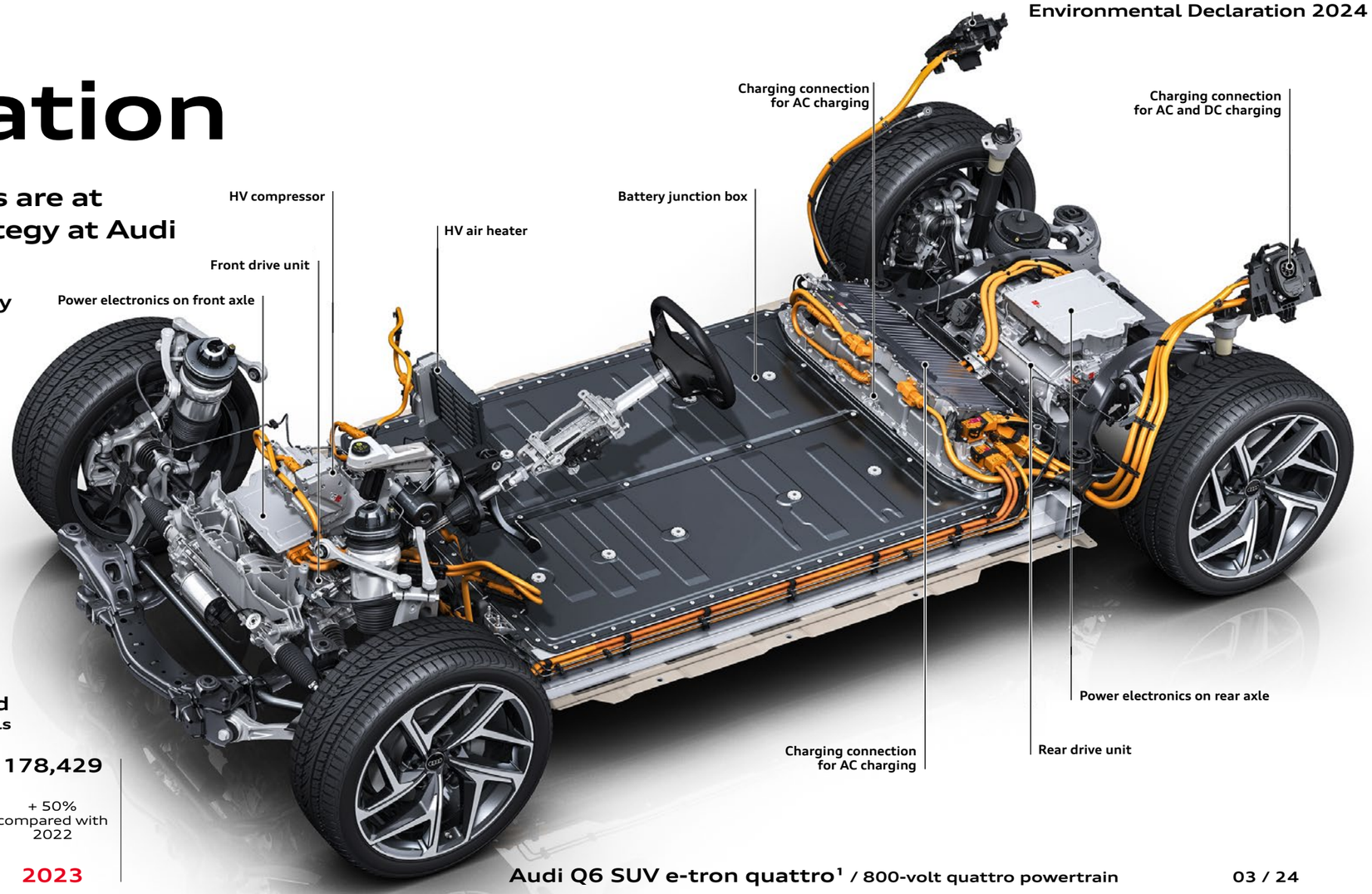
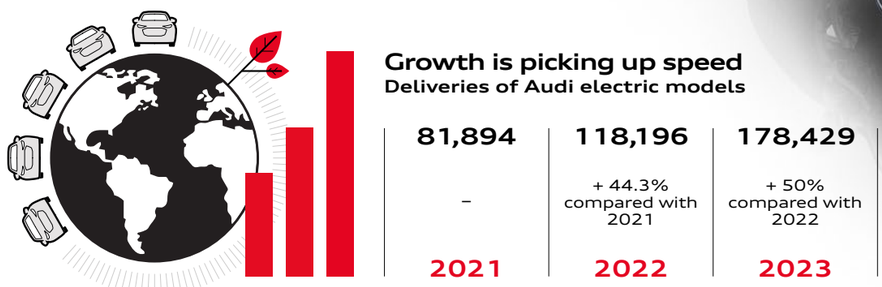
# Decarbonization

## Highly efficient electric drive concepts are at the heart of the decarbonization strategy at Audi

**Electric mobility is currently the most efficient way to decarbonize individual mobility. There is no other technology at present that can effectively reduce $CO_2$ emissions in the same way. This is because electric cars can be operated without causing any local $CO_2$ emissions. And if they are also consistently charged with renewable electricity, their potential to avoid $CO_2$ emissions increases significantly again.**




**Audi Q6 SUV e-tron quattro[1] / 800-volt quattro powertrain** 03 / 24




For this reason, Audi is clearly focusing on electric powertrains in its future model range. By 2027, Audi wants to offer a fully battery electric vehicle (BEV) in all core segments. In the same period, the efficiency of all-electric vehicles is expected to increase continuously.

This year (2024), Audi presented the Audi Q6 e-tron, which marks the beginning of a new generation of electrically powered vehicles from Audi: the Audi Q6 e-tron is the first series-production model based on the Premium Platform Electric (PPE) and therefore represents the next step in the company's transition to a provider of premium electric mobility. With the Q6 e-tron product line, electric mobility will soon be coming from Ingolstadt for the first time.

"Thanks to its product substance, the Audi Q6 e-tron is synonymous with "Vorsprung durch Technik." The model is not only characterized by its impressive performance and charging capacity, but also by its increased efficiency and long range: the Audi Q6 e-tron quattro[1] with 285 kW and the Audi SQ6 e-tron[2] with 380 kW. Superior performance aside, the range also impresses in other respects: with a range of up to 641 kilometers according to WLTP, the Audi Q6 e-tron[3] is one of the longest range models in its segment. Thanks to the 800-volt technology and a maximum DC charging power of up to 270 kW (combined value) as standard, short charging stops are possible with the Q6 e-tron family. For instance, additional charging for up to 255 kilometers more range can be achieved in a mere 10 minutes at a suitable charging terminal (High Power Charging, HPC). The state of charge (SOC) increases from 10 to 80 percent* in around 21 minutes.

The decarbonization strategy Audi is pursuing not only includes electrification of the model range, but also covers the entire value chain. From extraction of raw materials, vehicle production and the provision of fuel and electricity through to vehicle emissions and right up to recycling. The goal is to reduce the carbon footprint (in the life cycle) per vehicle model on a fleet basis by 40 percent by 2030 (compared with the baseline year 2018).

The decarbonization index (DCI)[4] developed in the Volkswagen Group acts as the strategic indicator. It is based on the life cycle assessments[5] created for all AUDI AG vehicles.

When an electric vehicle reaches its end of life, Audi follows a number of approaches to handling the individual components of the electric car battery, including reuse in another application for which the remaining capacity is still sufficient and remanufacturing of the battery for reuse in the vehicle. Audi also follows the second life approach, which provides for long-term use of the batteries outside the electric vehicle, for example in the fast-charging terminals at an Audi charging hub, or for storage of renewable energy such as in the Oak Forest research project being carried out by the Audi Environmental Foundation in Kösching Forest (see page 22/23). The goal is clear: premature disposal of high-voltage batteries following their use in an electric vehicle is to be avoided both ecologically and economically.

[1] Audi Q6 SUV e-tron quattro: electric power consumption (combined): 19.6–17.0 kWh/100 km; $CO_2$ emissions (combined): 0 g/km; $CO_2$ class: A.
[2] Audi SQ6 SUV e-tron: electric power consumption (combined): 18.4–17.5 kWh/100 km; $CO_2$ emissions (combined): 0 g/km; $CO_2$ class: A.
[3] Audi Q6 SUV e-tron: electric power consumption (combined): 18.6–16.0 kWh/100km; $CO_2$ emissions (combined): 0 g/km; $CO_2$ class: A.
[4] The decarbonization index (DCI) quantifies the average emissions of $CO_2$ and $CO_2$ equivalents over the entire life cycle of the Audi passenger car portfolio and is stated in metric tons of $CO_2$ per vehicle. It includes both direct and indirect $CO_2$ emissions at individual production sites (Scopes 1 and 2), as well as all other relevant direct and indirect $CO_2$ emissions in the phases of the life cycle of the vehicles (Scope 3).
[5] Audi prepares a life cycle assessment (LCA) when it commences production of a new vehicle model. This assessment is a standardized, systematic analysis of the environmental impact of a product over its entire life cycle in accordance with the international ISO 14040 ff. series of standards. The life cycle includes all conceivable impacts, from the required raw materials to logistics to production, from the first to the last kilometer on the road, from deregistration to recycling.

* see Glossary, p. 76

Environmental Declaration 2024

# Facts & figures

**This compilation documents the performance of Environmental Management at the Audi sites in Ingolstadt, Münchsmünster, Neuburg and Neustadt.**

# Audi site Ingolstadt

**The Audi site in Ingolstadt has existed since 1949. Auto Union GmbH, the precursor to AUDI AG, established its headquarters here. The Audi plant in Ingolstadt is today home to the largest production facility of the Audi Group as well as its headquarters.**

The headquarters of the Audi Group are also located at the Ingolstadt site.

**Development, Production and Logistics**
The manufacturing operations with the press shop, body shop, paint shop, Assembly and Toolmaking are on the plant site, with Technical Development in the north-west. The Audi museum mobile, the customer center and the “Market and Customer” building are situated around the Audi piazza.

**Economical use of resources**
Two heating stations, a combined cooling, heat and power plant and the connection to a district heating line cover heating requirements. The site has two large water treatment plants. Wastewater polluted due to industrial activity (mainly from the paint shop) is pretreated in a chemical/physical system in such a way that it can be further treated via a membrane bioreactor and a reverse osmosis system in partial current operation and the majority can be reused in the plant as process water. In the second plant, rainwater and slightly polluted wastewater from the cooling tower systems are treated chemically and physically so that the water can be reused in the plant.

The feasibility of further projects for saving energy is being studied. These include a study on the “use of pioneering renewable energies.” Other studies include one examining heat supply with renewable raw materials. In addition, Audi is also carrying out practical trials of innovative technologies. Audi has installed photovoltaic modules on an area spanning roughly 23,000 square meters on the Ingolstadt plant premises.

**Audi Forum Ingolstadt**
The Audi Forum Ingolstadt attracts people from all over the world. It offers new car pick-up, guided tours of production and the museum and attractions for kids and young people. A diverse cultural program with concerts, exhibitions and the Audi independent cinema completes the range of offerings.

**Ingolstadt Audi train stop**
With the “Ingolstadt Audi” train stop that opened in December 2019, there is now a third public train station in Ingolstadt that is located right by the plant premises. The joint project of the four partners (the state of Bavaria, the city of Ingolstadt, Deutsche Bahn and AUDI AG) is designed to improve mobility options in the long term.

**New habitat for flora and fauna**
Around 200 hectares of the company site in Ingolstadt is built up. The south and south-east of the site border on a general residential area, while an industrial park lies to the north and east. On the south-west boundary of the Audi plant there is an exclusively residential area. A stream – part of which runs overground – runs through the company site.

To compensate for the built-up surfaces, half a million trees and shrubs were planted all around the facilities on the premises. 16 hectares of natural open areas were designed on the basis of a biodiversity concept. Suitable areas of grass are being gradually transformed into flowering meadows to create a habitat for flora and fauna.



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## Key environmentally relevant facilities

As a facility for the construction and assembly of motor vehicles with an output of 100,000 units or more per year, the entire car plant with all ancillary facilities is subject to immission control approval.

› Automotive plant with a body shop, paint shop, assembly and ancillary facilities (e.g. large-scale firing plants, waste treatment facilities, storage tanks, wastewater treatment facilities and cooling towers)

**Further facilities subject to immission control approval:**
› Smoke house
› Scrap presses
› Emulsion evaporation plant
› Test stand groups (engine and transmission test stands, wind tunnel center, gas stations and further ancillary facilities)

## Changes in the reporting period

**Federal Immission Control Act (BlmSchG) – Approvals in the reporting period**
Under the leadership of Environmental Protection, multiple approval procedures under immission control law were carried out and/or completed in 2023:

› Installation and operation of a new top coat line 6a in building N56
› Restructuring of building A61

**Notifications in the reporting period**
The following notifications under immission control law were carried out in 2023:

› Dismantling of an old gelling oven, building N10
› Removal of ILTIS dryer, building N7
› Body shop VBT, building N10
› Elimination of desalting water, building N50
› Neutra 3 – new flocking agent, building N44
› Regulation of flue gas temperature, building N11 and A12
› Separation of DL4 and DL3 areas subject to the Federal Water Act (WHG), building N56
› Integration of AU 310-6 E3 CUV, building N60.3, N10 and N43
› Series application of wastewater partial flow treatment, building N51
› Integration of matt varnish, building N50
› Removal of high-pressure cleaner, building A61
› Restructuring of the former area N50.2, metal roofing N85, N86

## Environmental impacts

Emissions in the form of volatile organic compounds (VOC), $CO_2$, $SO_2$, CO, formaldehyde, dust, NOx, odor, noise and water-polluting substances, water consumption and waste.

# Audi site Münchsmünster

**The Audi site in Münchsmünster is a competence center for high-tech chassis parts, aluminum structural components and pressed parts for models of the Audi, VW, Porsche, Bentley and Lamborghini brands.**

17 hectares of natural open spaces were created on the Audi plant premises in Münchsmünster.

In 2023, roughly 700 employees produced more than 17 million parts on an area of around 540,000 square meters at the Münchsmünster site. Production includes the die-cast aluminum foundry, chassis module manufacturing and the press shop. Valuable energy and resources are recycled in all three sections of the site.

**Aluminum die-casting foundry**
At the furnaces of the die-cast aluminum foundry, Audi recycles heat directly into the process. This is used to heat the molten metal. In the foundry, a separate vacuum evaporator plant separates the oil from the wastewater. In addition, an ultra-modern, multistage circulation system cleans the air. The wastewater produced during the cleaning of the parts flows into a separate neutralization system.

**Chassis module manufacturing**
Aluminum wheel carriers and swivel bearings, for example, are produced in chassis module manufacturing. The disposal of waste (e.g. used oil, filter liners and cooling lubricant emulsions) is strictly monitored, and the resulting metal chips are collected as recyclables. In mechanical processing, Audi relies on minimum quantity lubrication or dry processing wherever possible.

**Press shop**
Complex cold-formed and hot-formed lightweight sheet metal parts which form and strengthen the structure of the Audi car body are manufactured in the press shop. The site has the latest cutting-edge thermoforming technology. The presses are decoupled from the building foundation by damping elements, which prevent heavy vibrations from being transferred to the surrounding soil.

**Aluminum recycling loop**
During the production of body parts, the waste from the sheet metal cuttings is already minimized in the product planning phase. The sheet scrap that cannot be avoided is recycled in a recycling loop. Sheet scrap is recycled via an underfloor conveyor system, which conveys the waste sheet to a central collection point. The residual metal is then collected by a specialist company and recycled.

**Effective noise protection using BLIS.**
Production in Münchsmünster uses the internal noise information system (BLIS): It allows accurate noise emission forecasts to be made for all measures carried out on the premises. The data is already taken into account in the planning phase of plants, construction projects and applications, and helps to avoid or minimize the noise emissions.

**Regenerative energy supply**
A high-efficiency combined heat and power plant uses resource-saving co-generation to generate both heat and electricity that can be used directly at the site. Demand peaks in the heating grid are covered by natural gas-fired boiler systems. Since January 2015, electrical energy has been purchased exclusively from regenerative sources.

**Natural design of areas**
Around 130,000 square meters of the Audi Münchsmünster manufacturing site is built up. To the north of the site are general residential and mixed areas, while the B16 state main road is located to the south. The site is bordered on the west by a stream and on the east by Münchsmünster Industrial Park. The plant site is lined in many areas by tree plantations. Free spaces have been designed in harmony with nature to increase biodiversity.





▶ Flora and fauna can find new habitats in Münchsmünster. These also include endangered domestic animal and plant species. An expert's opinion confirms the success of the measures.

## Key environmentally relevant facilities

The following facilities at the Audi Münchsmünster manufacturing site are subject to immission control approval:

› Facility for the production of aluminum die-cast parts (buildings K10, K11)
› Energy and Media Center (building K60)

## Changes in the reporting period

**Federal Immission Control Act (BlmSchG) – Approvals in the reporting period**
No approval procedures under immission control law were carried out in 2023.

**Notifications in the reporting period**
The following notifications under immission control law were carried out in 2023:

› Structural component manufacturing plant K10 K11: Notification in accordance with section 15(1) of BlmSchG – modification of the mechanical finishing systems

## Environmental impacts

Emissions in the form of volatile organic compounds (VOC), $CO_2$, $SO_2$, CO, formaldehyde, dust, NOx, odor, noise and water-polluting substances, water consumption and waste.

# Audi site Neuburg

**The Audi site in Neuburg is home to the Audi driving experience, Audi Sport, Audi Formula Racing GmbH and Ducati Motor Deutschland GmbH. Technical Development also tests driver assist and safety systems here.**

Audi Neuburg offers a variety of possibilities, from motorsports to conferences and workshops.

The 47-hectare high-tech Audi site is located in Neuburg an der Donau, roughly 20 kilometers west of Ingolstadt. The site has over 500 workplaces in total.

**Audi driving experience center**
Audi customers and guests can experience the entire model range up close in Neuburg, for example in basic and compact training courses or as part of executive driver training on a variety of courses. A “prototype driving license,” important for suppliers and developers, is also offered.

**Audi Sport**
Audi Sport develops high-performance technologies for racing cars at the Neuburg site and organizes and coordinates the works activities for worldwide racing events from Neuburg. Racing events, whether public or private, are not held in Neuburg.

**Audi Formula Racing GmbH**
At the Neuburg site, Audi Formula Racing GmbH develops the entire power unit for the Formula One project. The hybrid drive unit, which will be used in a race for the first time in 2026, is manufactured and tested in the workshops and test rigs.

**Ducati Motor Deutschland GmbH**
Ducati Motor Deutschland GmbH is the German subsidiary of Italian motorcycle manufacturer Ducati Motor Holding spa. As a German sales company, Ducati Motor Germany is responsible for sales, service and marketing within Germany.

**Technical Development**
Technical Development carries out development drives at the site using vehicles equipped with components under development and tests next-generation driver assistance and camera systems, among others.

**Consistent environmental protection**
The supply of heat and electricity at Audi Neuburg is carbon-neutral: Audi procures the energy for its site from renewable sources. The site is supplied with district heating from waste industrial heat and with ecological electricity from hydroelectric power plants. Waste heat from the motorsport test benches is also utilized.

Audi has received the Platinum Certificate of the German Sustainable Building Council (DGNB) for the sustainable construction of its customer building. Although 80 percent surface sealing of the test site would be permitted, only just under 40 percent of the surface area has been built up or asphalted.

Audi Neuburg has also implemented numerous noise insulation measures. For example, the handling track and the straight track were surfaced with noise-reducing asphalt. A three-meter-high noise-protection wall surrounds almost the entire site. Noise emissions are measured regularly and evaluated with regard to vehicle type, usage type and intensity. In addition, habitats for numerous species of animals and plants have been created on the site.






## Key environmentally relevant facilities

The following facilities at Audi Neuburg require immission control approval:

› Overall site including driving tracks
› Motorsport Competence Center (KCM)
› Engine test beds

## Changes in the reporting period

**Federal Immission Control Act (BlmSchG) – Approvals in the reporting period**
› Construction of a new test rig building for engine test beds F10

**Notifications in the reporting period**
The following notifications under immission control law were carried out in 2023:

› Conversion of test rigs and workshops, building F7
› Notice of vacation of space for DAKAR vehicle
› Conversion of the workshops on the first floor and hall level, building F5
› Exception request for the family festival

## Environmental impacts

Emissions in the form of volatile organic compounds (VOC), $CO_2$, $SO_2$, CO, dust, NOx, odor, noise and water-polluting substances, water consumption and waste.

# Audi Neustadt test site

**Bee pastures, orchard meadows and biotopes: Away from the test tracks, the Neustadt site offers plenty of nature – a number of biodiversity projects have been implemented there on a space of more than 200 hectares.**

The creation of biotopes provides a habitat for animal and plant species.

**Audi test site Neustadt**
The site in Neustadt is roughly 25 kilometers to the east of Ingolstadt and spans a total of 260 hectares. It has been in operation since 1994 and enables testing during development under prototype-safe conditions. All the development departments of Audi and other brands belonging to the Volkswagen Group use the various different types of tracks available here, measuring a total of 43 kilometers in length, as well as the test facilities in order to ensure sustainable product development. The focus here is on vehicle and parts development, but also on the performance of homologation-relevant type approvals and Conformity of Production (CoP) tests and verifications.

Audi has been promoting a variety of nature conservation projects across the entire site for years: Deciduous and mixed forest is growing on 125 hectares of the overall site, and green areas and deadwood biotopes have been created on a further 100 hectares.

Sustainable energy supply: In addition to measures for promoting biodiversity, the Neustadt site is also supplied with electricity from a carbon-neutral source. Audi procures renewable electricity from hydroelectric power plants there. In addition, the site has been equipped with new refrigerating machines for more environmentally friendly operation of the climatic chambers. Since 2016, the site's energy management has been certified in accordance with DIN ISO 50001.

**Intact ecosystems for the future**
Over the course of the last years, new habitats have evolved in Neustadt that are continuously checked, maintained and further developed. This has allowed domestic plant species such as blackthorn, yarrow and meadow sage to become reestablished, and various animal species have found a new home in insect hotels or bird nesting boxes.





## Key environmentally relevant facilities

The following facilities at Audi Neustadt require immission control approval:

› Overall site including driving tracks
› Energy Center

## Changes in the reporting period

**Federal Immission Control Act (BlmSchG) – Approvals in the reporting period**
No approval procedures under immission control law were carried out in 2023.

**Notifications in the reporting period**
The following notifications under immission control law were carried out in 2023:

› Replacement of the refrigerating machines at the corrosion center P19
› Construction of P36 (boot camp)

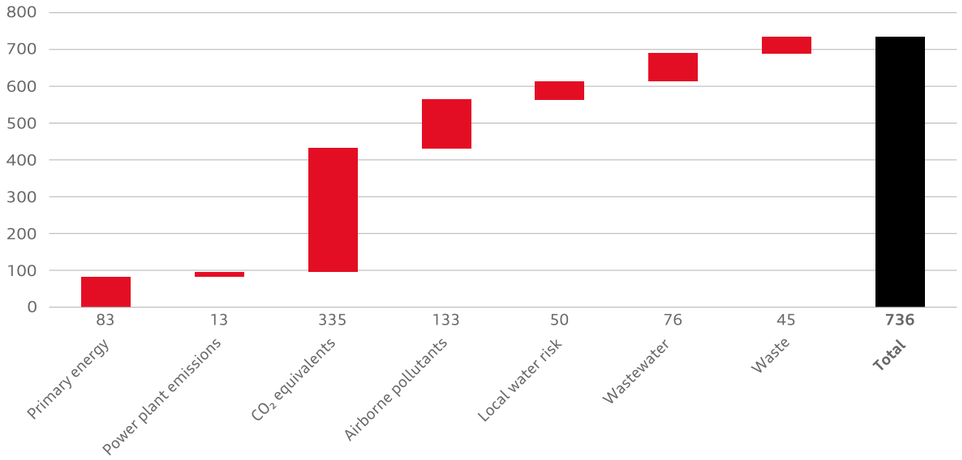
## Environmental impacts

Emissions in the form of volatile organic compounds (VOC), $CO_2$, $SO_2$, CO, dust, NOx, odor, noise and water-polluting substances, water consumption and waste.

# Environmental impacts of the sites

**The environmental impacts of the production processes at the Ingolstadt site have already been assessed with the "impact points" method described in the section "Methods and tools in environmental management."**

## Environmental impacts of the site in billions of impact points




The environmental impact or impact points at the Ingolstadt site decreased considerably between their introduction in 2018 and 2023. The decrease is mainly due to fewer impact points in connection with $CO_2$ equivalents, waste and primary energy. In addition to the implementation of environmentally friendly measures, the decrease in production (especially in 2022) also results in a lower environmental impact.

| Environmental aspect | Unit in billions | 2018 | 2022 | 2023 |
|---|---|---|---|---|
| Primary energy | Impact points | 106 | 71 | 83 |
| Power plant emissions | Impact points | 29 | 21 | 13 |
| $CO_2$ equivalents | Impact points | 443 | 283 | 335 |
| Airborne pollutants | Impact points | 133 | 114 | 133 |
| Local water risk | Impact points | 95 | 54 | 50 |
| Wastewater | Impact points | 45 | 52 | 76 |
| Waste | Impact points | 112 | 42 | 45 |
| **Total** | **Impact points** | **963** | **637** | **736** |

| | | |
|---|---|---|
| **Target for 2030** | **Impact points** | **610** |
| **Target for 2050** | **Impact points** | **0** |



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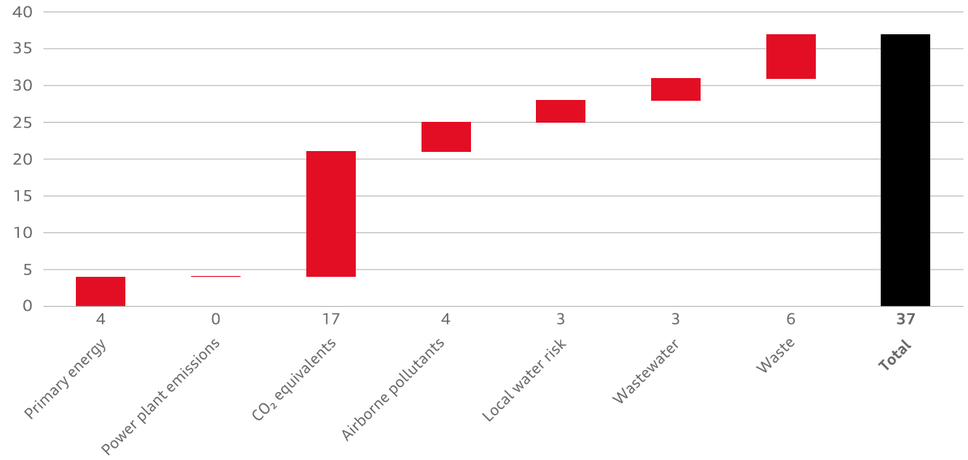
**The environmental impacts of the production processes at the Münchsmünster site have already been assessed with the "impact points" method described in the section "Methods and tools in environmental management."**

## Environmental impacts of the site in billions of impact points



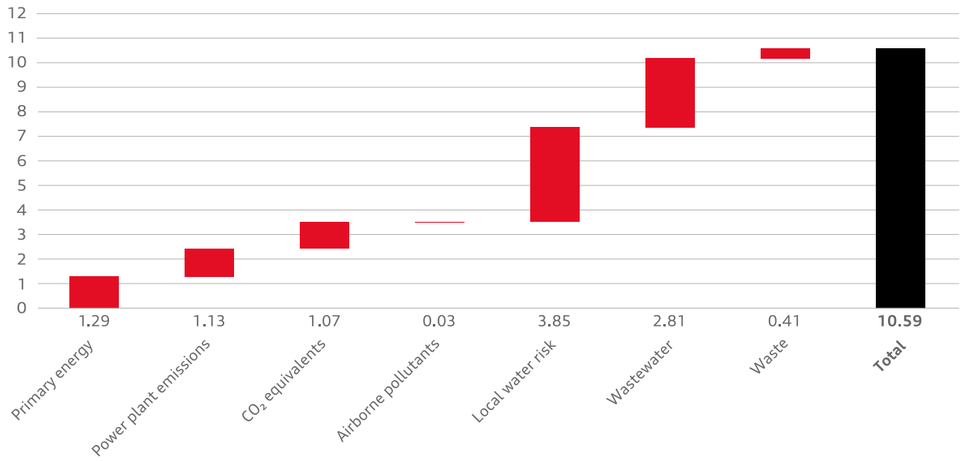

The environmental impact or impact points at the Münchsmünster site decreased considerably between their introduction in 2018 and 2023. The decrease is mainly due to fewer impact points in connection with waste, $CO_2$ equivalents and the local water risk. In addition to the implementation of environmentally friendly measures, the decrease in production also results in a lower environmental impact.

| Environmental aspect | Unit in billions | 2018 | 2022 | 2023 |
|---|---|---|---|---|
| Primary energy | Impact points | 6 | 5 | 4 |
| Power plant emissions | Impact points | 0 | 0 | 0 |
| $CO_2$ equivalents | Impact points | 24 | 18 | 17 |
| Airborne pollutants | Impact points | 7 | 4 | 4 |
| Local water risk | Impact points | 5 | 3 | 3 |
| Wastewater | Impact points | 2 | 3 | 3 |
| Waste | Impact points | 13 | 5 | 6 |
| **Total** | **Impact points** | **58** | **38** | **37** |

| | | |
|---|---|---|
| **Target for 2030** | **Impact points** | **51** |
| **Target for 2050** | **Impact points** | **0** |

**The environmental impacts of the processes at the Neuburg site have already been assessed with the "impact points" method described in the section "Methods and tools in environmental management."**

## Environmental impacts of the site in billions of impact points




The environmental impact or impact points at the Neuburg site decreased considerably between their introduction in 2018 and 2023. The change is mainly due to fewer impact points in connection with $CO_2$ equivalents and wastewater.

| Environmental aspect | Unit in billions | 2018 | 2022 | 2023 |
|---|---|---|---|---|
| Primary energy | Impact points | 1.37 | 1.04 | 1.29 |
| Power plant emissions | Impact points | 1.06 | 0.88 | 1.13 |
| $CO_2$ equivalents | Impact points | 3.85 | 1.10 | 1.07 |
| Airborne pollutants | Impact points | 0.16 | 0.06 | 0.03 |
| Local water risk | Impact points | 3.20 | 2.22 | 3.85 |
| Wastewater | Impact points | 4.06 | 2.33 | 2.81 |
| Waste | Impact points | 0.34 | 0.53 | 0.41 |
| **Total** | **Impact points** | **14.04** | **8.16** | **10.59** |

The impact points method is still in the implementation phase. Since the Neuburg site was newly included in this implementation, the calculation for 2018 is based in part on assumptions. There is also no specified target value for 2030 yet.

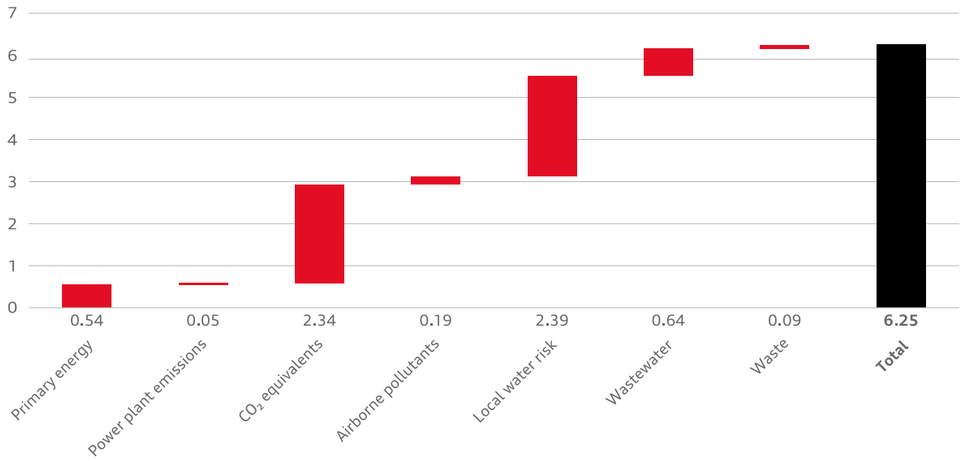
| Target for 2050 | Impact points | 0 |
|---|---|---|





**The environmental effects of the processes at the Neustadt site have already been assessed with the "impact points" method described in the section "Methods and tools in environmental management."**

## Environmental impacts of the site in billions of impact points




The environmental impact or impact points at the Neustadt site decreased considerably between their introduction in 2018 and 2023. The change is mainly due to fewer impact points in connection with wastewater, the local water risk and $CO_2$ equivalents.

| Environmental aspect | Unit in billions | 2018 | 2022 | 2023 |
|---|---|---|---|---|
| Primary energy | Impact points | 0.75 | 0.52 | 0.54 |
| Power plant emissions | Impact points | 0.07 | 0.05 | 0.05 |
| $CO_2$ equivalents | Impact points | 3.71 | 2.24 | 2.34 |
| Airborne pollutants | Impact points | 0.34 | 0.24 | 0.19 |
| Local water risk | Impact points | 3.47 | 2.27 | 2.39 |
| Wastewater | Impact points | 3.41 | 1.13 | 0.64 |
| Waste | Impact points | 0.06 | 0.06 | 0.09 |
| **Total** | **Impact points** | **11.83** | **6.51** | **6.25** |

The impact points method is still in the implementation phase. Since the Neustadt site was newly included in this implementation, the calculation for 2018 is based in part on assumptions. There is also no specified target value for 2030 yet.

| Target for 2050 | Impact points | 0 |
|---|---|---|

# Noise

**What is known as the internal noise information system (BLIS) forms the basis for all noise control measures at Audi in Ingolstadt, Münchsmünster and Neuburg. With the aid of these acoustic engineering models, accurate noise exposure forecasts can be produced for all activities carried out at the sites. The data can be taken into account as early as the planning phase of plant, construction projects and applications, and help to avoid or minimize the effects of noise.**

**Audi Ingolstadt**
In the reporting period, Audi created noise contingents[1] for new buildings and facilities at the Ingolstadt site. This was possible only due to the consistent evaluation of each new source of noise to be built and the identification of existing noise sources. A large number of individual measures made it possible to keep the immissions at relevant locations largely constant. Metrological verification of compliance with the immission guide values at the respective immission points[2] is not possible due to the high external noise content. The representations of the assessment level proportions[3] during the day and at night are therefore mathematical. The data were determined from the current BLIS.

**Audi Münchsmünster**
A noise control concept was developed for the production facility at the Audi Münchsmünster site right from the start of the planning phase. A total of 650 noise sources were evaluated and transferred into a BLIS. To keep the noise emissions at the site as low as possible, a plant layout was developed in which the press shop was acoustically sealed off from the other halls. In many areas, the buildings are extensively insulated and exhaust air systems are equipped with high-quality sound absorbers. With the help of the BLIS, it is ensured that the permissible immission levels at the immission points are maintained both during the day and at night. The BLIS is continuously updated and makes it possible to assess the current site planning as well as future changes or expansions of operation.

**Neuburg site track**

**Audi Neuburg**
Audi has also introduced a BLIS for the Neuburg site. Audi uses what is known as an acoustic matrix to ensure that the immission guide values are not exceeded even when the track is being used for vehicle dynamics testing. This acoustic matrix contains all the noise components generated by the various activities on the tracks, also taking into account the constant operation of the other systems. This track operation is mapped using predefined usage packages. For each day, the acoustic matrix is entered based on the intended operation. This gives Audi a daily preview of the noise situation.

**Audi Neustadt**
The development of the Neustadt test site was already acoustically monitored during the planning phase, and an internal noise information system was introduced in 2009. The BLIS displays a typical test operation on the test tracks of the test site. It contains all the noise components generated by the various activities on the tracks, also taking into account the constant operation of the other systems. With the help of the BLIS, it is ensured that the permissible immission levels at the immission points are maintained both during the day and at night. The BLIS is continuously updated and makes it possible to assess the current site planning as well as future changes or expansions of operation.

[1] Percentage of the noise impact associated with a specific operation or system/area.
[2] The place within the system's area of influence where the immission guide values are most likely to be exceeded (see "TA Lärm" – Technical Instructions on Noise Abatement).
[3] The assessment level is the value formed on the basis of the average sound level of the noise to be assessed and possibly additional charges for information content, impulsiveness and for times of day with increased sensitivity for the purpose of identifying the average noise impact during each assessment time (see "TA Lärm" – Technical Instructions on Noise Abatement).





## Noise immission values / Audi Ingolstadt site

Benchmark ratios and assessment levels* in dB(A)

| Immission points | Classification | Benchmark ratio, night** | Benchmark ratio, day | Assessment level, night | Assessment level, day |
|---|---|---|---|---|---|
| Ingolstadt, Ettinger Str. | General residential area | 45 | 55 | 39.9 | 47.8 |
| Ingolstadt, Senefelder Str. | Industrial park | 50 | 65 | 45.6 | 46.7 |
| Ingolstadt, Ringlerstr. | Industrial park | 50 | 65 | 41.4 | 49.2 |
| Oberhaunstadt, Alleeweg | Exclusively residential area | 40 | 50 | 34.3 | 38.6 |
| Ingolstadt, Rohrmühle | Mixed area | 45 | 60 | 39.9 | 41.2 |
| Etting, Florian-Geyer-Str. | Exclusively residential area | 40 | 50 | 32.7 | 36.8 |

* Calculated assessment level (current status), noise immissions from the Logistics Center (GVZ) are not taken into consideration here.
** Immission benchmark ratios (IRWA) at the immission points in Ingolstadt, Ettinger Str., Oberhaunstadt, Alleeweg, and Etting, Florian-Geyer-Str. for the night time period, based on the presence of a mixed use area as defined in the TA Lärm, increased by 5 db (letter VIII/68.2 Fö – Si of the city of Ingolstadt dated October 8, 2015)

## Noise immission values / Audi Münchsmünster site

Benchmark ratios and assessment levels* in dB(A)

| Immission points | Classification | Benchmark ratio, night | Benchmark ratio, day | Assessment level, night | Assessment level, day |
|---|---|---|---|---|---|
| Schwaig, Am Schaffer 2 | General residential area | 27.9 | 42.9 | 24.3 | 29.3 |
| Schwaig, Hauptstr. 2a | Mixed area | 32.0 | 47.0 | 28.0 | 31.8 |
| Münchsmünster, Schwaiger Str. 38 | Mixed area | 37.5 | 52.5 | 33.2 | 36.7 |
| Münchsmünster, Lindenstr. 53 | General residential area | 31.1 | 46.1 | 31.0 | 34.0 |

* Calculated assessment level (current status)

## Noise immission values / Audi Neuburg site

Benchmark ratios and assessment levels* in dB(A)

| Immission points | Classification | Benchmark ratio, night | Benchmark ratio, day | Assessment level, night | Assessment level, day |
|---|---|---|---|---|---|
| Heinrichsheim, Zeilerweg 54 | General residential area | 40 | 55 | 36.2 | 49.9 |
| Bruck, Schachenstr. 27 | Mixed area | 40 | 55 | 38.4 | 54.5 |
| Neuburg, Grünauer Str. | Mixed area | 44 | 59 | 37.2 | 51.6 |

* Calculated assessment level (current status scenario, maximum operation Audi Sport)

## Noise immission values / Audi Neustadt site

Benchmark ratios and assessment levels* in dB(A)

| Immission points | Classification | Benchmark ratio, night | Benchmark ratio, day | Assessment level, night | Assessment level, day |
|---|---|---|---|---|---|
| Am Schaffer | General residential area | 28 | 46 | 27.1 | 40.5 |
| Development area north | General residential area | 30 | 46 | 27.6 | 41.0 |
| Development area south | General residential area | 30 | 46 | 29.2 | 43.0 |

* Calculated assessment level (current status)

Audi site Ingolstadt

Environmental Declaration 2024

Audi site Münchsmünster

# Site contamination

**Whenever alterations to old facilities are planned or new buildings are constructed, a careful check for possible site contamination is performed. The primary goal is to prevent surfaces or groundwater from being affected.**

**Audi Ingolstadt**
The issue of site contamination is a major consideration in all construction projects at the Ingolstadt site. The Environmental Protection specialist department already assesses in the planning phase whether contaminated areas are to be expected and commissions corresponding preliminary investigations. When alterations are made to old facilities and buildings, the focus is on testing the fabric of the building for asbestos, PCB or materials that contain tar. In this way, selective removal and professional disposal of environmentally hazardous building materials can be ensured. Water protection has top priority in the planning of new buildings. In particular, areas that were already used as industrial sites before their acquisition by Audi are closely examined for substances hazardous to groundwater. All results of these preliminary soundings are made available to the planning departments and incorporated into the tender documents. In this way, any soil contamination that may be present at the site can be removed before construction starts. Moreover, investigations of the construction site water and groundwater continue to be carried out alongside all construction measures. This prevents surfaces and groundwater from being endangered.

The Environmental Protection department also becomes involved in the area of environmentally relevant production facilities if there is any suspicion of pollution. Experts and investigating bodies examine soil and groundwater for pollutants in accordance with Section 18 of the Federal Soil Protection Act (BBodSchG). If pollutants are found, the further procedure is determined together with the environmental office and the water management office, and the implementation of further work is supervised by the expert. Regular groundwater investigations downstream from the plant site and monitoring of the groundwater in areas at risk from contaminated sites (track areas, tank fields) guarantee that remediation thresholds are complied with and that remediation or safety measures are initiated.

**Audi Münchsmünster**
The Audi Münchsmünster manufacturing site was built in sections on land previously covered with production halls. The previous user operated an acrylonitrile plant there, and from 1999 a hydrocyanic acid plant. The plant and halls were dismantled by the former operator prior to the sale of the areas. That operator also cleaned up the molybdenum soil and groundwater damage.

At the request of the authorities, investigations and soundings have been carried out since 2016 to assess PFAS contamination at the site. These perfluorinated chemicals (PFAS) are components of extinguishing agents and were introduced into soil and groundwater during fire-extinguishing exercises.

# Development of core indicators 2019–2023

**The following section lists the core indicators as required by EMAS III for each site. A brief description of the core indicators can be found in the section “Methods and tools in environmental management” from page 10.**

## Core indicators A / Ingolstadt site*

| | Unit | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Energy** | | | | | | |
| Total direct energy consumption | MWh | 1,046,107 | 919,890 | 920,896 | 868,946 | 875,234 |
| of which total consumption of renewable energy | MWh | 538,284 | 458,037 | 448,574 | 495,269 | 481,058 |
| Electrical energy (incl. in-house generation) | MWh | 582,367 | 505,568 | 488,381 | 494,462 | 510,696 |
| Thermal energy, of which<br>› In-house generation<br>› District heating sourcing | MWh | 362,591<br>285,058<br>77,533 | 335,262<br>263,824<br>71,438 | 359,003<br>278,891<br>80,112 | 297,999<br>209,459<br>88,539 | 278,606<br>232,480<br>46,126 |
| District cooling | MWh | 318 | 273 | 222 | 262 | 141 |
| Natural gas for production processes | MWh | 100,832 | 78,786 | 73,290 | 76,223 | 85,790 |
| **Material usage** (excl. water and energy sources) | | | | | | |
| Mass throughput of raw material | t | 910,410 | 718,102 | 616,206 | 691,552 | 809,147 |
| Steel | t | 225,044 | 151,760 | 178,167 | 191,013 | 212,557 |
| Aluminum | t | 8,460 | 6,811 | 6,415 | 7,510 | 7,428 |
| Paints | t | 6,946 | 5,122 | 4,616 | 5,192 | 5,862 |
| **Water** | | | | | | |
| Water consumption | m³ | 1,031,974 | 987,888 | 817,148 | 803,560 | 745,091 |
| Wastewater quantity | m³ | 641,701 | 661,726 | 543,700 | 518,040 | 444,610 |
| **Waste** | | | | | | |
| Volume of waste (excluding metallic waste), of which | t | 32,852 | 36,756 | 26,242 | 24,839 | 31,575 |
| Hazardous waste | t | 14,065 | 20,972 | 11,750 | 10,361 | 14,713 |
| › Hazardous waste disposed of | t | 1,911 | 1,662 | 817 | 726 | 3,390 |
| › Hazardous waste recycled | t | 12,154 | 19,310 | 10,933 | 9,635 | 11,322 |
| Non-hazardous waste | t | 18,787 | 15,783 | 14,491 | 14,478 | 16,862 |
| › Non-hazardous waste disposed of | t | 119 | 69 | 162 | 31 | 82 |
| › Non-hazardous waste recycled | t | 18,667 | 15,714 | 14,330 | 14,447 | 16.780 |
| Metallic waste | t | 133,076 | 118,362 | 106,893 | 114,941 | 123,764 |





| | Unit | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Biodiversity** [1] | | | | | | |
| Total site area | m² | 2,856,516 | 2,861,692 | 2,860,616 | 2,859,764 | 2,859,618 |
| Total plant area | m² | 1,864,979 | 1,868,412 | 1,869,413 | 1,853,896 | 1,868,465 |
| Land consumption (sealed surface area) [2] | m² | 1,113,763 | 1,108,716 | 1,102,277 | 1,702,310 | 1,716,879 |
| Total natural area at the site | m² | - | 4,000 | 11,000 | 12,000 | 12,000 |
| Total natural area away from the site | m² | 122,900 | 122,900 | 122,900 | 128,300 | 128,300 |
| **Emissions** | | | | | | |
| **Total greenhouse gas emissions** | | | | | | |
| Total greenhouse gas emissions [3] | t $CO_2$ equivalent | 155,812 | 134,922 | 121,585 | 101,286 | 120.282 |
| Total emitted $CO_2$ from stationary systems [4] | t $CO_2$ | 123,770 | 114,583 | 102,127 | 80,032 | 96,813 |
| Directly emitted $CO_2$ from mobile systems [5] | t $CO_2$ | 30,002 | 19,595 | 17,235 | 20,032 | 20,491 |
| $CO_2$ equivalents from HFC and HCFC emissions [6] | t $CO_2$ equivalent | 2,040 | 744 | 2,223 | 1,221 | 2,979 |
| **Total emissions into the air** [7] | | | | | | |
| $NO_x$ (nitrogen oxides) | t | 80.45 | 73.80 | 67.53 | 69.40 | 81.95 |
| PM (dust) | t | 9.30 | 7.45 | 6.39 | 8.61 | 9.02 |
| $SO_2$ (sulfur dioxide) | t | 0.06 | 0.05 | 0.04 | 0.09 | 0.13 |
| VOC (volatile organic compounds) | t | 456 | 439 | 393 | 442 | 495 |

[1] Some values not available for preceding years; total natural area at the site was first recorded for 2020; corrected value for 2022 for total site area (database transfer).
[2] Sealed surface for the entire plant area; up to and including 2021, this refers only to the built-up surfaces; from 2022, the built-up surfaces including parking lot areas, roads and footpaths were recorded in detail.
[3] Sum of total $CO_2$ emitted from stationary systems, directly emitted $CO_2$ from mobile systems and $CO_2$ equivalents from HFC and HCFC emissions.
[4] Sum of direct $CO_2$ emissions from fuel use (natural gas, heating oil, fuel consumption of engine test beds, diesel emergency generator, sprinkler pumps (from 2023)) in stationary systems at the site and the indirect $CO_2$ emissions from energy procurement (electrical energy, district heating, district cooling).
[5] $CO_2$ emissions from the energy requirement of mobile systems at the site (company and pool vehicles, trucks, trains, buses); sum of fuel consumption of the internal gas stations; fuel consumption of the plant railway and the fuel, natural gas and/or electricity for the company and pool vehicles that was filled up externally.
[6] $CO_2$ equivalents from HFC/HCFC emissions of stationary cooling and air conditioning systems at the site; source of conversion factors: IPPC report “Climate Change,” 2007.
[7] Emissions of the stationary systems at the site; $SO_2$ emissions shown only for the combustion of heating oil or fuel consumption of engine test beds.

## Core indicators B / Ingolstadt site

| | Unit | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Product output** | | | | | | |
| Total output volume of all products (total output) | t | 744,482 | 562,984 | 483,072 | 551,772 | 653,808 |
| of which pressed parts for external use | t | 66,116 | 40,803 | 32,176 | 31,151 | 33,058 |
| Vehicles produced | Unit | 441,608 | 337,834 | 285,958 | 332,981 | 403,874 |

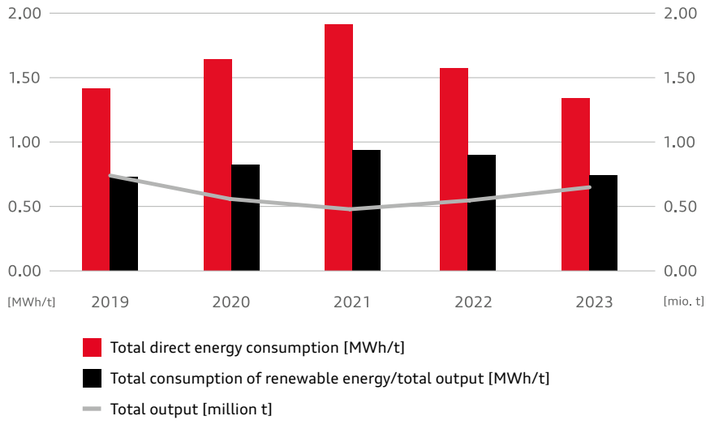
* The core indicators for energy, waste and total greenhouse gas emissions shown comprise the plant and larger external locations near the plant.

▶ **Due to optimizations of the method of determination (e.g., total output for Münchsmünster) and the increased scope of determination in some cases (e.g., total greenhouse gas emissions), some data from the previous years deviate from those in previous environmental declarations.**

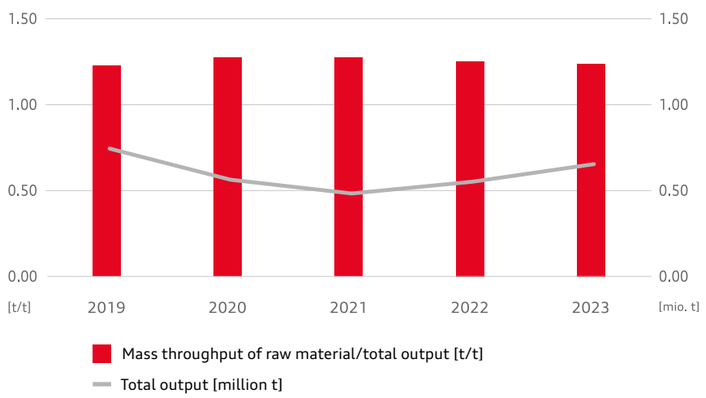
# Core indicators R / Ingolstadt site

**From 2019 up to and including 2021, the development of the core indicators at the Ingolstadt site has been strongly characterized by declining vehicle unit figures and a decrease in the total output. The positive effects of the measures for improvement implemented to reduce the environmental impacts were reduced or offset in some cases in this period due to increasing base loads. The production-independent activities at the site, e.g. development activities, also carry more weight. This effect was intensified considerably in 2020 and 2021 due to the coronavirus pandemic. Since 2022, there are signs of a recovery and an increase in vehicle unit figures and total output.**

**Energy**
In addition to the production quantity, other values such as the number of vehicle variants, the number of employees and the gross building volume affect the energy consumption. These parameters explain the continuous increase in total direct energy consumption/total output in the years 2019 to 2021 despite the decreasing total output. Due to several energy efficiency measures implemented in the context of the gas shortage, the energy consumption/total output decreased in 2022. Energy consumption/total output was reduced again in 2023.



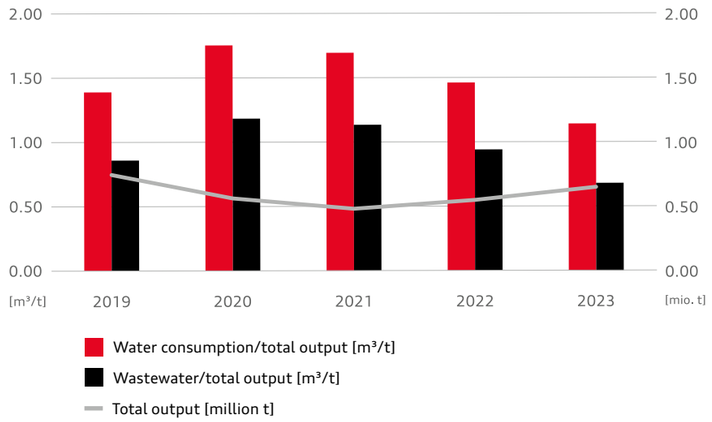

**Material usage**
The mass throughput of raw material/total output has remained relatively steady over the years.



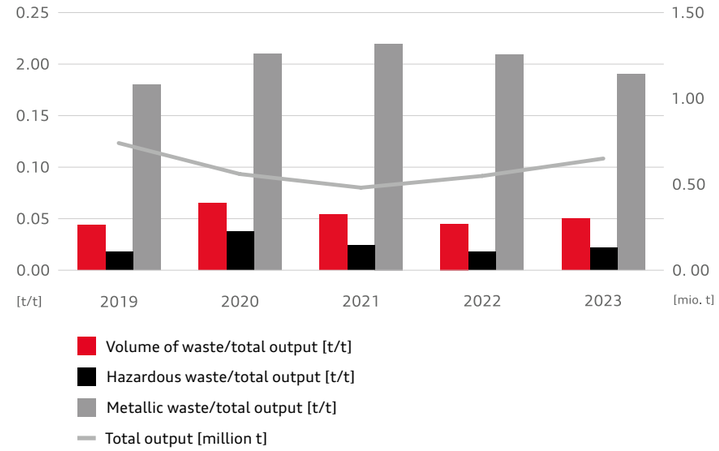




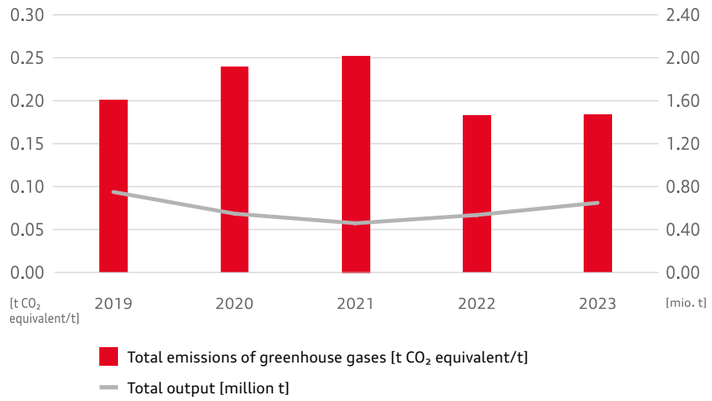

**Water**
Thanks to the introduction of the membrane bioreactor, water consumption and wastewater were reduced significantly in 2019. The special situation in 2020 due to the coronavirus pandemic resulted in lower water reuse and thus an increase in the amount of wastewater and water consumption. Since 2021, water reuse has been significantly improved again.




**Waste**
While total output decreased from 2019 up to and including 2021, the specific waste volumes for each total output did not follow this trend until 2020. This is due, for example, to the operation and mode of operation of the paint shop N50 (rock flour and flushing medium) and a new method for recording the waste fraction of end-of-life vehicles. The waste volume/total output was reduced again in 2022 and 2023 compared to the previous years.




**Emissions**
The majority of total greenhouse gas emissions are $CO_2$ emissions from stationary systems. Natural gas and heating oil are used for in-house heat generation in these systems. In the pandemic years of 2020 and 2021, the total greenhouse gas emissions/total output value fell because production declined while the base load remained unchanged. Production has recovered since 2022. In addition, the energy efficiency measures introduced in the context of the gas shortage, such as reducing the temperature in the halls and offices, are having an impact.




**Biodiversity**
The core indicator of land consumption (sealed surface area)/total output increased continuously from 2019 up to and including 2022. Until 2021, this could be attributed mainly to a decrease in the total output. A new detailed recording of the sealed surface areas was made for the entire plant area, including parking lot areas, roads and footpaths, in 2022. Up to and including 2021, only data on the surface areas sealed by buildings was available. Land consumption (sealed surface area)/total output reduced in 2023 as total output increased. The values of total natural area at the site and total natural area away from the site were recorded for the first time in 2019.

# Core indicators R / Ingolstadt site

| | Unit | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Energy** | | | | | | |
| Total direct energy consumption/ total output | MWh/t | 1.405 | 1.634 | 1.906 | 1.575 | 1.339 |
| of which total consumption of renewable energy/total output | MWh/t | 0.723 | 0.814 | 0.929 | 0.898 | 0.736 |
| **Material usage** (excl. water and energy sources) | | | | | | |
| Mass throughput of raw material/ total output | t/t | 1.223 | 1.276 | 1.276 | 1.253 | 1.238 |
| **Water** | | | | | | |
| Water consumption/total output | m³/t | 1.386 | 1.755 | 1.692 | 1.456 | 1.140 |
| Wastewater/total output | m³/t | 0.862 | 1.175 | 1.126 | 0.939 | 0.680 |
| **Waste** | | | | | | |
| Volume of waste [1]/total output | t/t | 0.044 | 0.065 | 0.054 | 0.045 | 0.048 |
| of which hazardous waste/total output | t/t | 0.019 | 0.037 | 0.024 | 0.019 | 0.023 |
| Metallic waste/total output | t/t | 0.179 | 0.210 | 0.221 | 0.208 | 0.189 |
| **Biodiversity** | | | | | | |
| Land consumption (sealed surface area)/total output | m²/t | 1.50 | 1.97 | 2.28 | 3.09 | 2.63 |
| Total natural area at the site/total output | m²/t | - | 0.01 | 0.02 | 0.02 | 0.02 |
| Total natural area away from the site/total output | m²/t | 0.17 | 0.22 | 0.25 | 0.23 | 0.20 |
| **Emissions** | | | | | | |
| Total greenhouse gas emissions/ total output | t $CO_2$ equivalent/t | 0.21 | 0.24 | 0.25 | 0.18 | 0.18 |
| $NO_X$ (nitrogen oxides)/total output | kg/t | 0.108 | 0.131 | 0.140 | 0.126 | 0.125 |
| PM (dust)/total output | kg/t | 0.012 | 0.013 | 0.013 | 0.016 | 0.014 |
| $SO_2$ (sulfur dioxide)/total output | kg/t | 0.00008 | 0.00009 | 0.00009 | 0.00017 | 0.00020 |
| VOC (volatile organic compounds)/ total output | kg/t | 0.613 | 0.780 | 0.814 | 0.802 | 0.757 |

[1] excluding metallic waste





# Core indicators A / Münchsmünster site

| | Unit | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Energy** | | | | | | |
| Total direct energy consumption | MWh | 80,116 | 69,309 | 71,980 | 67,211 | 64,236 |
| of which total consumption of renewable energy | MWh | 37,632 | 33,220 | 34,614 | 36,367 | 35,016 |
| Electrical energy (incl. in-house generation) | MWh | 43,491 | 38,344 | 38,715 | 36,670 | 36,091 |
| Thermal energy, of which<br>› In-house generation<br>› District heating sourcing | MWh | 10,351<br>10,351<br>- | 9,882<br>9,882<br>- | 11,639<br>11,639<br>- | 8,419<br>8,419<br>- | 6,084<br>6,084<br>- |
| District cooling | MWh | - | - | - | - | - |
| Natural gas for production processes | MWh | 26,274 | 21,083 | 21,626 | 22,123 | 22,061 |
| **Material usage** (excl. water and energy sources) | | | | | | |
| Mass throughput of raw material | t | 129,960 | 103,697 | 112,504 | 101,564 | 108,034 |
| Steel | t | 50,263 | 41,995 | 53,864 | 48,313 | 47,526 |
| Aluminum | t | 4,518 | 4,046 | 4,598 | 3,496 | 5,016 |
| Paints | t | 60 | 38 | 43 | 38 | 44 |
| **Water** | | | | | | |
| Water consumption | m³ | 87,815 | 56,829 | 43,390 | 43,385 | 43,000 |
| Wastewater quantity | m³ | 67,977 | 45,457 | 33,133 | 32,404 | 33,257 |
| **Waste** | | | | | | |
| Volume of waste (excluding metallic waste), of which | t | 1,141 | 835 | 803 | 817 | 1,600 |
| Hazardous waste | t | 475 | 415 | 369 | 363 | 459 |
| › Hazardous waste disposed of | t | 66 | 69 | 44 | 22 | 36 |
| › Hazardous waste recycled | t | 408 | 346 | 325 | 341 | 423 |
| Non-hazardous waste | t | 666 | 420 | 434 | 455 | 1,141 |
| › Non-hazardous waste disposed of | t | 34 | 6 | 1 | 1 | 3 |
| › Non-hazardous waste recycled | t | 632 | 414 | 432 | 454 | 1,138 |
| Metallic waste | t | 35,790 | 28,737 | 30,259 | 29,317 | 29,960 |
| **Biodiversity** [1] | | | | | | |
| Total site area | m² | 539,158 | 540,594 | 540,594 | 540,594 | 540,594 |
| Land consumption (sealed surface area) | m² | 158,653 | 157,270 | 157,270 | 157,270 | 159,197 |
| Total natural area at the site | m² | 151,900 | 141,679 | 141,679 | 141,679 | 139,752 |
| Total natural area away from the site | m² | 0 | 0 | 0 | 0 | 0 |

[1] Values for land consumption and total natural area were first recorded for 2019

▶ **Due to optimizations of the method of determination (e.g. total output for Münchsmünster) and the increased scope of determination in some cases (e.g. total greenhouse gas emissions), some data from the previous years deviate from those in previous environmental declarations.**





| | Unit | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Emissions** | | | | | | |
| **Total greenhouse gas emissions** | | | | | | |
| Total greenhouse gas emissions [2] | t $CO_2$ equivalent | 9,093 | 7,600 | 7,909 | 6,389 | 6,106 |
| Total $CO_2$ emitted from stationary systems [3] | t $CO_2$ | 8,996 | 7,579 | 7,896 | 6,370 | 6,089 |
| Directly emitted $CO_2$ from mobile systems [4] | t $CO_2$ | 28 | 19 | 12 | 17 | 17 |
| $CO_2$ equivalents from HFC and HCFC emissions [5] | t $CO_2$ equivalent | 69 | 2 | 0 | 2 | 0 |
| **Total emissions into the air** [6] | | | | | | |
| $NO_x$ (nitrogen oxides) | t | 4.851 | 4.086 | 4.258 | 3.273 | 3.126 |
| PM (dust) | t | 0.076 | 0.069 | 0.423 | 0.460 | 0.464 |
| $SO_2$ (sulfur dioxide) | t | - | - | - | - | - |
| VOC (volatile organic compounds) | t | 1.680 | 1.148 | 1.290 | 1.148 | 1.305 |

[2] Sum of total $CO_2$ emitted from stationary systems, directly emitted $CO_2$ from mobile systems and $CO_2$ equivalents from HFC and HCFC emissions.
[3] Sum of direct $CO_2$ emissions from fuel use (natural gas, diesel emergency generator, sprinkler pumps) in stationary systems at the site and the indirect $CO_2$ emissions from energy procurement (electrical energy).
[4] $CO_2$ emissions from the energy requirement of mobile systems at the site (company and pool vehicles); sum of fuel, natural gas and/or electricity for the company and pool vehicles that was filled up externally.
[5] $CO_2$ equivalents from HFC/HCFC emissions of stationary cooling and air conditioning systems at the site; source of conversion factors: IPPC report “Climate Change,” 2007.
[6] Emissions of the stationary systems at the site; $SO_2$ emissions shown only for the combustion of heating oil or fuel consumption of engine test beds.

# Core indicator B / Münchsmünster site

| | Unit | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Product output** | | | | | | |
| Total output volume (total output) of all products | t | 93,028 | 74,125 | 81,442 | 71,430 | 76,473 |

**Aluminum coils in Production.**

**The disposal of used oil is strictly monitored.**

# Core indicators R / Münchsmünster site

**The development of the core indicators at the Münchsmünster site is characterized by a fluctuating total output. While the total output declined in 2020 due to the coronavirus pandemic, a significant increase was recorded in 2021. This is due mainly to the increased production of pre-cut plates and the associated significant increase in the total output of the press shop. The total output of the press shop fell in 2022 and 2023. The increase in total output in 2023 is due to increased production volumes in structural component and chassis module manufacturing.**

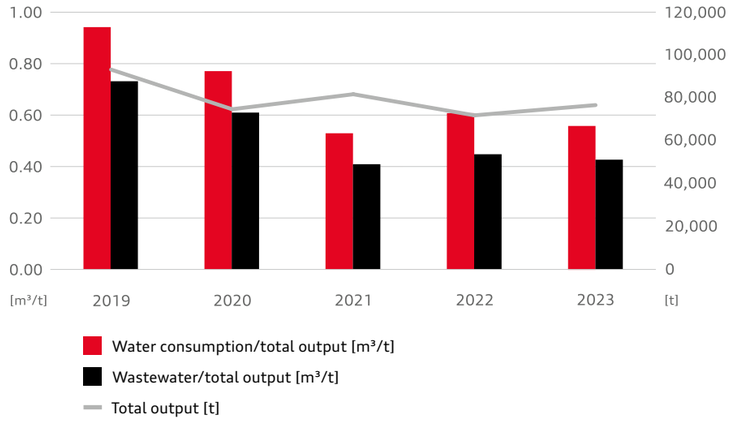
**Energy**
The strong influence of total output is reflected in the core indicator for energy consumption/ total output. Due to the increase in total output, the energy base load of production is distributed across a greater output, which results in lower energy consumption/ total output. The opposite effect can be seen between 2021 and 2022. During these years, the total output decreased while the energy consumption/total output increased again. The total consumption of renewable energy/total output reached a peak in 2022. This is due to the fact that operation of the internal combined heat and power plant was limited due to the gas shortage and green electricity was procured externally for this purpose.


**Material usage**
The mass throughput of raw material/total output has remained relatively steady over the years.

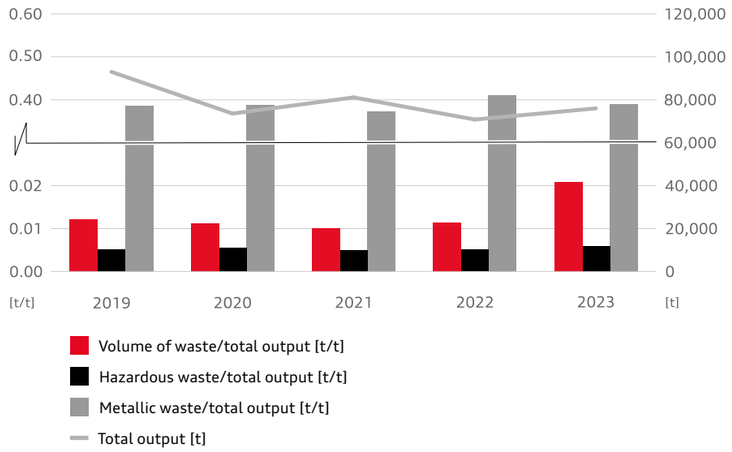




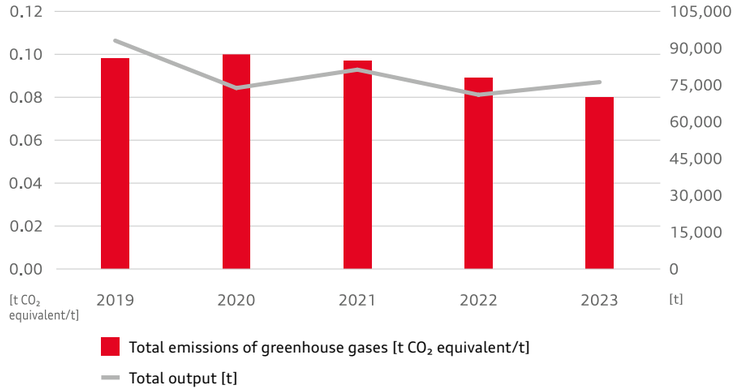
**Water**
The water consumption/ total output was reduced over the years thanks to optimizations in the production processes. Following an increase in water consumption in 2019, the output-specific water consumption and the output-specific wastewater quantity decreased again in 2020 and 2021. Following a slight increase in 2022, water consumption/ total output and wastewater quantity/total output were reduced again in 2023.




**Waste**
The volume of waste is subject to some fluctuations and not immediately dependent on the total output. Thanks to optimizations in the production processes and the commissioning of an emulsion evaporation plant, the volume of waste/total output has been reduced over the years since the site was opened. The increase in 2023 is primarily due to an increase in the waste fraction of process water K10/K11.




**Emissions**
The majority of total greenhouse gas emissions are $CO_2$ emissions from the Energy and Media Center. Natural gas is used for in-house heat and electricity generation in this system. In 2022, limited operation of the internal combined heat and power plant led to a reduction in total greenhouse gas emissions/total output. Despite increased production volumes, total greenhouse gas emissions in 2023 were once again reduced.




**Biodiversity**
Changes to the areas in m²/total output up to and including 2022 result exclusively from the developments of the total output. In 2023, land consumption (sealed surface area) increased slightly due to the establishment of a new logistics area, while the natural area at the site decreased correspondingly. The values of land consumption, total natural area at the site and total natural area away from the site were recorded for the first time in 2019.

# Core indicators R / Münchsmünster site

| | Unit | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Energy** | | | | | | |
| Total direct energy consumption/ total output | MWh/t | 0.861 | 0.935 | 0.884 | 0.941 | 0.840 |
| of which total consumption of renewable energy/total output | MWh/t | 0.405 | 0.448 | 0.425 | 0.509 | 0.458 |
| **Material usage** | | | | | | |
| Mass throughput of raw material/ total output | t/t | 1.397 | 1.399 | 1.381 | 1.422 | 1.413 |
| **Water** | | | | | | |
| Water consumption/total output | m³/t | 0.944 | 0.767 | 0.533 | 0.607 | 0.562 |
| Wastewater/total output | m³/t | 0.731 | 0.613 | 0.407 | 0.454 | 0.435 |
| **Waste** | | | | | | |
| Volume of waste [1]/total output | t/t | 0.012 | 0.011 | 0.010 | 0.011 | 0.021 |
| of which hazardous waste/total output | t/t | 0.005 | 0.006 | 0.005 | 0.005 | 0.006 |
| Metallic waste/total output | t/t | 0.385 | 0.388 | 0.372 | 0.410 | 0.392 |
| **Biodiversity** | | | | | | |
| Land consumption (sealed surface area)/total output | m²/t | 1.71 | 2.122 | 1.93 | 2.202 | 2.082 |
| Total natural area at the site/total output | m²/t | 1.63 | 1.911 | 1.74 | 1.983 | 1.827 |
| Total natural area away from the site/total output | m²/t | 0.00 | 0.000 | 0.00 | 0.000 | 0.000 |
| **Emissions** | | | | | | |
| Total greenhouse gas emissions/ total output | t $CO_2$ equivalent/t | 0.098 | 0.103 | 0.097 | 0.089 | 0.080 |
| $NO_X$ (nitrogen oxides)/total output | kg/t | 0.052 | 0.055 | 0.052 | 0.046 | 0.041 |
| PM (dust)/total output | kg/t | 0.001 | 0.001 | 0.005 | 0.006 | 0.006 |
| $SO_2$ (sulfur dioxide)/total output | kg/t | - | - | - | - | - |
| VOC (volatile organic compounds)/ total output | kg/t | 0.018 | 0.015 | 0.016 | 0.016 | 0.017 |

[1] excluding metallic waste





Press shop – unfolded tool for side frame.

# Core indicators A / Neuburg site

| | Unit | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Energy** | | | | | | |
| Total direct energy consumption | MWh | 9,078 | 8,501 | 8,716 | 7,396 | 9,373 |
| of which total consumption of renewable energy | MWh | 5,438 | 4,769 | 4,651 | 4,309 | 5,420 |
| Electrical energy (incl. in-house generation) | MWh | 5,438 | 4,769 | 4,651 | 4,309 | 5,420 |
| Thermal energy, of which<br>› In-house generation<br>› District heating sourcing | MWh | 3,640<br>-<br>3,640 | 3,732<br>-<br>3,732 | 4,065<br>-<br>4,065 | 3,087<br>-<br>3,087 | 3,954<br>-<br>3,954 |
| District cooling | MWh | - | - | - | - | - |
| Natural gas for production processes | MWh | - | - | - | - | - |
| **Material usage** (excl. water and energy sources) | | | | | | |
| Fuels | l | 257,964 | 132,009 | 79,979 | 100,904 | 116,360 |
| **Water** | | | | | | |
| Water consumption | m³ | 44,299 | 39,205 | 42,330 | 37,172 | 61,060 |
| Wastewater quantity | m³ | 8,728 | 7,854 | 7,864 | 7,925 | 19,604 |
| **Waste** | | | | | | |
| Volume of waste (excluding metallic waste), of which | t | 302 | 221 | 199 | 185 | 210 |
| Hazardous waste | t | 203 | 126 | 105 | 94 | 54 |
| › Hazardous waste disposed of | t | 190 | 116 | 96 | 89 | 45 |
| › Hazardous waste recycled | t | 14 | 10 | 9 | 5 | 8 |
| Non-hazardous waste | t | 98 | 95 | 94 | 91 | 157 |
| › Non-hazardous waste disposed of | t | 0 | 0 | 0 | 0 | 0 |
| › Non-hazardous waste recycled | t | 98 | 95 | 94 | 91 | 157 |
| Metallic waste | t | - | - | - | - | - |
| **Biodiversity** [1] | | | | | | |
| Total site area | m² | 470,000 | 470,000 | 470,000 | 465,690 | 465,690 |
| Land consumption (sealed surface area) | m² | 172,000 | 172,000 | 172,000 | 167,850 | 167,850 |
| Total natural area at the site | m² | 298,000 | 298,000 | 298,000 | 297,840 | 297,840 |
| Total natural area away from the site | m² | 0 | 0 | 0 | 0 | 0 |

[1] Values for land consumption and total natural area were first recorded for 2019

▶ **Due to optimizations of the method of determination (e.g. total output for Münchsmünster) and the increased scope of determination in some cases (e.g., total greenhouse gas emissions), some data from the previous years deviate from those in previous environmental declarations.**





| | Unit | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Emissions** | | | | | | |
| **Total greenhouse gas emissions** | | | | | | |
| Total greenhouse gas emissions [2] | t $CO_2$ equivalent | 1,200 | 670 | 380 | 398 | 388 |
| Total $CO_2$ emitted from stationary systems [3] | t $CO_2$ | 432 | 228 | 23 | 32 | 19 |
| Directly emitted $CO_2$ from mobile systems [4] | t $CO_2$ | 768 | 442 | 357 | 365 | 368 |
| $CO_2$ equivalents from HFC and HCFC emissions [5] | t $CO_2$ equivalent | 0 | 0 | 0 | 0 | 0 |
| **Total emissions into the air** [6] | | | | | | |
| $NO_x$ (nitrogen oxides) | t | 0.03 | 0.01 | 0.01 | 0.01 | 0.01 |
| PM (dust) | t | 0.00110 | 0.00047 | 0.00033 | 0.00048 | 0.00024 |
| $SO_2$ (sulfur dioxide) | t | 0.00052 | 0.00022 | 0.00015 | 0.00021 | 0.00011 |
| VOC (volatile organic compounds) | t | 1.75 | 0.75 | 0.53 | 0.72 | 0.39 |

[2] Sum of total $CO_2$ emitted from stationary systems, directly emitted $CO_2$ from mobile systems and $CO_2$ equivalents from HFC and HCFC emissions.
[3] Sum of direct $CO_2$ emissions from fuel use (fuel consumption of engine test beds, diesel sprinkler pumps (from 2023)) in stationary systems at the site and the indirect $CO_2$ emissions from energy procurement (electrical energy, district heating).
[4] $CO_2$ emissions from the energy requirement of mobile systems at the site (company and pool vehicles, Audi driving experience vehicles); sum of fuel consumption of the internal gas station and the fuel, natural gas and/or electricity for the company and pool vehicles that was filled up externally.
[5] $CO_2$ equivalents from HFC/HCFC emissions of stationary cooling and air conditioning systems at the site; source of conversion factors: IPPC report "Climate Change," 2007.
[6] Emissions of the stationary systems at the site; $SO_2$ emissions shown only for the combustion of heating oil or fuels.

# Core indicator B / Neuburg site

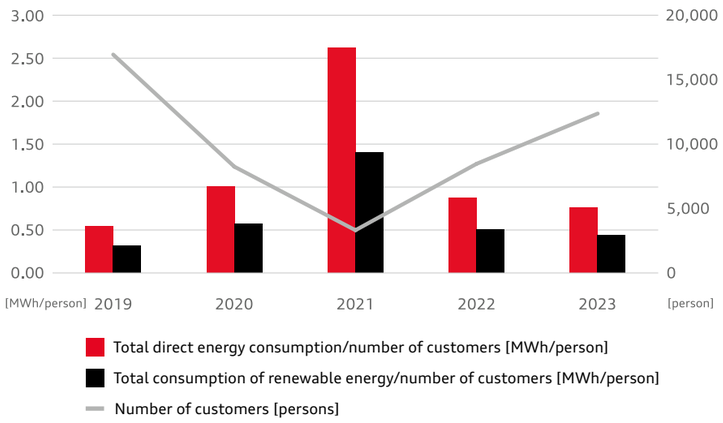
| | Unit | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Product output** | | | | | | |
| Number of customers | Person | 16,965 | 8,263 | 3,330 | 8,484 | 12,385 |
| Number of driving events | Unit | 417 | 170 | 217 | 274 | 315 |

**The high-tech Audi Neuburg site is home to the Audi driving experience, Audi Sport and Audi Formula Racing.**

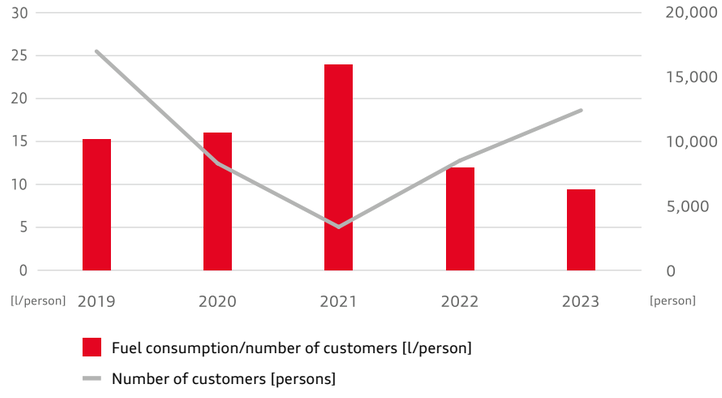
# Core indicators R / Neuburg site

**The driving and experience center in Neuburg has a special status. The focus is on the driving experience. This is why the number of customers is defined as a reference value. In addition, the core indicators are influenced heavily by the further activities at the site. The gradual electrification and conversion of the engine test beds for Formula One in 2023, which commenced in 2018, is clearly visible in the core indicators. In 2020 and 2021, a considerable decline in customer numbers as a result of the coronavirus pandemic (sum of active and inactive customers and visitors) led to a significant increase in the core indicators. Since May 2022, near normal driving experience operations have been possible again.**

**Energy**
An increase in the energy consumption per customer can be seen from 2019 up to and including 2021. The increase in 2019 is essentially due to the increased electricity consumption resulting from the ongoing electrification of the vehicles. In 2020 and 2021, the increase can also be attributed to the drop in customer numbers. In 2022, energy efficiency measures in the context of the gas shortage and the increase in the number of customers caused the energy consumption per customer to decrease. Energy consumption per customer was reduced again in 2023.



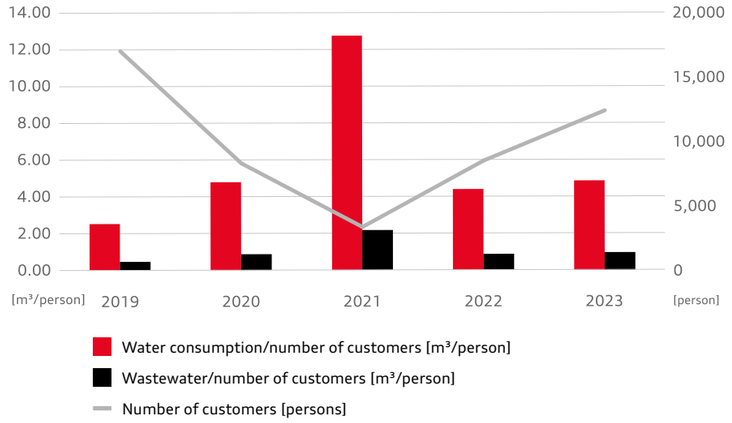

**Material usage**
The material usage or mass throughput of raw material at the Neuburg site comes from the fuel consumption. In addition to a decrease in the fuel consumption of the engine test beds, a decrease in the fuels filled was also recorded from 2019 up to and including 2021. The fact that the fuel consumption per customer increased nevertheless until 2021 is due to the considerably smaller number of customers as compared to the previous years. Fuel consumption per customer decreased once more in 2022 and 2023 due to the gradual return to normal driving experience operations. Furthermore, there was a significant decrease in the fuel consumption of engine test beds due to refurbishment works in 2023.



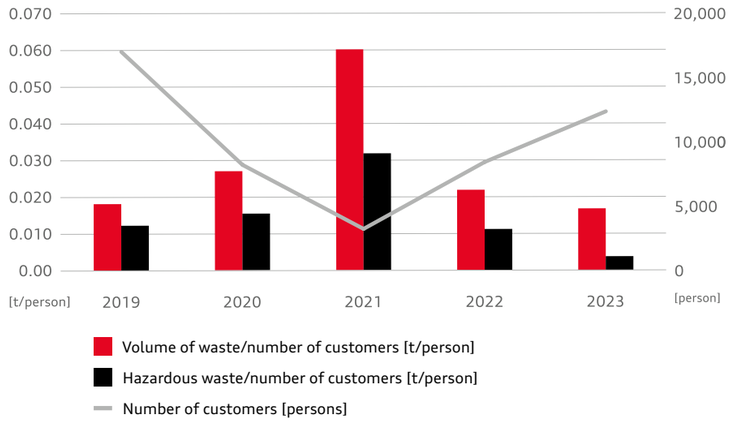




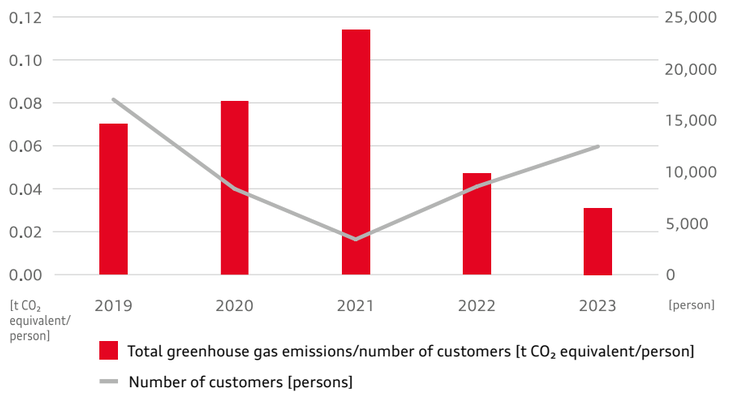

**Water**
The water requirement depends essentially on the need for cooling water and the weather. Around 70 percent of the water is needed for watering the dynamic handling area. The wastewater quantity fluctuates and depends essentially on the need for cooling water and the resulting process wastewater. The sharp rise in water consumption and the wastewater quantity in 2023 can be attributed to damage to the drinking water pipeline.




**Waste**
The visible significant increase in the volume of waste per customer up to and including 2021 can be attributed largely to the reclassification of the mixed waste from washing systems as hazardous waste in 2019. In addition, the drop in customer numbers in 2020 and 2021 carries significant weight.




**Emissions**
The total greenhouse gas emissions at the Neuburg site depend directly on the fuel consumption. Following an increase that lasted up to and including 2021, the total greenhouse gas emissions per customer have been declining again since 2022.




**Biodiversity**
Changes to the areas in m² per customer until 2021 result exclusively from the development of the customer number. The absolute core indicators of land consumption, total natural area at the site and total natural area away from the site were recorded for the first time in 2019. These values remained unchanged up to and including 2021. A further, more detailed evaluation of the individual areas was performed in 2022.

# Core indicators R / Neuburg site

| | Unit | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Energy** | | | | | | |
| Total direct energy consumption/ number of customers | MWh/ person | 0.54 | 1.03 | 2.62 | 0.87 | 0.76 |
| of which total consumption of renewable energy/number of customers | MWh/ person | 0.32 | 0.58 | 1.40 | 0.51 | 0.44 |
| **Material usage** | | | | | | |
| Fuel consumption/number of customers | l/person | 15.21 | 15.98 | 24.02 | 11.89 | 9.40 |
| **Water** | | | | | | |
| Water consumption/number of customers | m³/person | 2.61 | 4.74 | 12.71 | 4.38 | 4.93 |
| Wastewater/number of customers | m³/person | 0.51 | 0.95 | 2.36 | 0.93 | 1.58 |
| **Waste** | | | | | | |
| Volume of waste/number of customers | kg/person | 17.78 | 26.71 | 59.74 | 21.82 | 16.99 |
| of which hazardous waste/ number of customers | kg/person | 11.98 | 15.24 | 31.63 | 11.08 | 4.32 |
| **Biodiversity** | | | | | | |
| Land consumption (sealed surface area)/ number of customers | m²/person | 10.14 | 20.82 | 51.65 | 19.78 | 13.55 |
| Total natural area at the site/ number of customers | m²/person | 17.57 | 36.06 | 89.49 | 35.11 | 24.05 |
| Total natural area away from the site/ number of customers | m²/person | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Emissions** | | | | | | |
| Total greenhouse gas emissions/ number of customers | t $CO_2$ equivalent/ person | 0.07 | 0.08 | 0.11 | 0.05 | 0.03 |
| $NO_x$ (nitrogen oxides)/ number of customers | kg/person | 0.002 | 0.001 | 0.003 | 0.001 | 0.001 |
| PM (dust)/number of customers | kg/person | 0.00006 | 0.00006 | 0.00010 | 0.00006 | 0.00002 |
| $SO_2$ (sulfur dioxide)/ number of customers | kg/person | 0.00003 | 0.00003 | 0.00005 | 0.00003 | 0.00001 |
| VOC (volatile organic compounds)/ number of customers | kg/person | 0.103 | 0.091 | 0.158 | 0.085 | 0.031 |





Neuburg: high-quality biotope along the offroad course.

# Core indicators A / Neustadt site

| | Unit | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Energy** | | | | | | |
| Total direct energy consumption | MWh | - | - | - | 4,812 | 5,112 |
| of which total consumption of renewable energy | MWh | - | - | - | 2,963 | 3,614 |
| Electrical energy (incl. in-house generation) | MWh | - | - | - | 2,963 | 3,614 |
| Thermal energy, of which<br>› In-house generation<br>› District heating sourcing | MWh | -<br>-<br>- | -<br>-<br>- | -<br>-<br>- | 1,849<br>1,849<br>- | 1,498<br>1,498<br>- |
| District cooling | MWh | - | - | - | - | - |
| Natural gas for production processes | MWh | - | - | - | - | - |
| **Material usage** (excl. water and energy sources) | | | | | | |
| Fuels | l | - | - | - | 209,818 | 263,421 |
| **Water** | | | | | | |
| Water consumption | m³ | - | - | - | 31,278 | 32,990 |
| Wastewater quantity | m³ | - | - | - | 3,857 | 4,013 |
| **Waste** | | | | | | |
| Volume of waste (excluding metallic waste), of which | t | - | - | - | 21 | 36 |
| Hazardous waste | t | - | - | - | 7 | 19 |
| › Hazardous waste disposed of | t | - | - | - | 7 | 11 |
| › Hazardous waste recycled | t | - | - | - | 0.1 | 9 |
| Non-hazardous waste | t | - | - | - | 14 | 16 |
| › Non-hazardous waste disposed of | t | - | - | - | 0 | 0.1 |
| › Non-hazardous waste recycled | t | - | - | - | 14 | 16 |
| Metallic waste | t | - | - | - | - | - |
| **Biodiversity** | | | | | | |
| Total site area | m² | - | - | - | 2,596,237 | 2,596,237 |
| Land consumption (sealed surface area) | m² | - | - | - | 406,700 | 409,004 |
| Total natural area at the site | m² | - | - | - | 2,189,537 | 2,187,233 |
| Total natural area away from the site | m² | - | - | - | 235,336 | 235,336 |





| | Unit | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Emissions** | | | | | | |
| **Total greenhouse gas emissions** | | | | | | |
| Total greenhouse gas emissions [1] | t $CO_2$ equivalent | - | - | - | 810 | 847 |
| Total $CO_2$ emitted from stationary systems [2] | t $CO_2$ | - | - | - | 373 | 302 |
| Directly emitted $CO_2$ from mobile systems [3] | t $CO_2$ | - | - | - | 437 | 530 |
| $CO_2$ equivalents from HFC and HCFC emissions [4] | t $CO_2$ equivalent | - | - | - | 0 | 14 |
| **Total emissions into the air [5]** | | | | | | |
| $NO_x$ (nitrogen oxides) | t | - | - | - | 0.19 | 0.16 |
| PM (dust) | t | - | - | - | - | - |
| $SO_2$ (sulfur dioxide) | t | - | - | - | - | - |
| VOC (volatile organic compounds) | t | - | - | - | 0.05 | 0.06 |

[1] Sum of total $CO_2$ emitted from stationary systems, directly emitted $CO_2$ from mobile systems and $CO_2$ equivalents from HFC and HCFC emissions.
[2] Sum of direct $CO_2$ emissions from fuel use (natural gas) in stationary systems at the site and the indirect $CO_2$ emissions from energy procurement (electrical energy).
[3] $CO_2$ emissions from the energy requirement of mobile systems at the site (company and pool vehicles, test vehicles); sum of fuel consumption of the internal gas station and the fuel, natural gas and/or electricity for the company and pool vehicles that was filled up externally.
[4] $CO_2$ equivalents from HFC/HCFC emissions of stationary cooling and air conditioning systems at the site; source of conversion factors: IPPC report “Climate Change,” 2007.
[5] Emissions of the stationary systems at the site; $SO_2$ emissions shown only for the combustion of heating oil or fuels.

# Core indicator B / Neustadt site

| | Unit | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Product output** | | | | | | |
| Number of users (test drives) | Test drive | - | - | - | 17,956 | 22,853 |

**Prototype-safe development and testing in Neustadt.**

**Testing a prototype.**

# Core indicators R / Neustadt site

**Similar to the driving and experience center in Neuburg, the test site in Neustadt also has a special status. The site is a high-security area of Technical Development Ingolstadt and is used to test various vehicle models of Audi and other brands in the Volkswagen Group. The Neustadt site was included in the environmental declaration for the first time last year. The core indicators were therefore also recorded for the first time for 2022. The development of the core indicators in 2023 is characterized mainly by the increase in the specified reference value for the number of users (test drives).**

| | Unit | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| **Energy** | | | | | | |
| Total direct energy consumption/ number of users | MWh/test drive | - | - | - | 0.27 | 0.22 |
| of which total consumption of renewable energy/number of users | MWh/test drive | - | - | - | 0.16 | 0.16 |
| **Material usage** | | | | | | |
| Fuel consumption/number of users | l/test drive | - | - | - | 11.69 | 11.53 |
| **Water** | | | | | | |
| Water consumption/number of users | m³/test drive | - | - | - | 1.74 | 1.44 |
| Wastewater/number of users | m³/test drive | - | - | - | 0.21 | 0.18 |
| **Waste** | | | | | | |
| Volume of waste/number of users | kg/test drive | - | - | - | 1.18 | 1.56 |
| of which hazardous waste/ number of users | kg/test drive | - | - | - | 0.38 | 0.84 |
| **Biodiversity** | | | | | | |
| Land consumption (sealed surface area)/ number of users | m²/test drive | - | - | - | 22.65 | 17.90 |
| Total natural area at the site/ number of users | m²/test drive | - | - | - | 121.94 | 95.71 |
| Total natural area away from the site/ number of users | m²/test drive | - | - | - | 13.11 | 10.30 |
| **Emissions** | | | | | | |
| Total greenhouse gas emissions/ number of users | t $CO_2$ equivalent/test drive | - | - | - | 0.045 | 0.037 |
| $NO_x$ (nitrogen oxides)/number of users | kg/test drive | - | - | - | 0.011 | 0.007 |
| VOC (volatile organic compounds)/ number of users | kg/test drive | - | - | - | 0.003 | 0.003 |





There are more than 200 hectares of deciduous and mixed forest as well as green areas and deadwood biotopes in Neustadt.

# Environmental programs

**As part of our cross-area EMAS environmental program, we record and track site-related environmental goals and measures. Many of the goals are designed to continuously improve the environmental performance of the Audi sites in the medium and long term.**

Our Mission:Zero environmental program, which is effective in the production and logistics areas, is making an important contribution to this aim across the sites. An interdisciplinary team is working on creating an ecologically sustainable future in the relevant areas. The fields of action here are decarbonization, water usage, resource efficiency and biodiversity.

As soon as the measures from the Mission:Zero program have reached a suitable maturity level, they will be included in the site-related EMAS environmental program.

## Environmental program, Ingolstadt 2024

| Environmental aspect | Environmental protection target | Individual measure | Target deadline | Status |
|---|---|---|---|---|
| Water Wastewater | Black parts paint shop: saving roughly 40,000 m³ of drinking water per year | Reverse osmosis system in black parts paint shop – changeover from drinking water to process water | n/a | ⊗ 1 |
| | Reverse osmosis systems N51/N56: saving roughly 100,000 m³ of fresh water per year | Changeover of the N51/N56 reverse osmosis systems from fresh water (Kösching water) to process water | 2027 | ○ |
| | Connection of the lifting system N62 to the MBR, saving roughly 5,000 m³ of fresh water per year | Redirection of sanitary wastewater to the MBR for reprocessing | 2024 | ◑ 2 |
| | Reduction of water consumption and volume of wastewater | Changeover from wet to dry paint separation as part of the implementation of the restructuring project of the N56 top coat line (new top coat line 6) | 2026 | ◑ |
| | Reduction in water-polluting substances (hydraulic oil) Modernization of drive system elevator 92 from hydraulic to rope. | Reduction of 1200 liters of hydraulic oil | 2024 | ● |
| Waste Resources | Reduction of clean oil consumption for hydraulic oil | Changeover from hydraulic oil to rerefined oil in the sheet metal part disposal systems | 2026 | ◑ |
| | Reduction of coil base oiling of steel coils | Gradual changeover of coil base oiling from prelube I to prelube II | Q4/2025 | ◑ |
| | Reduction of resource consumption in Logistics in the area of packaging materials | Reduction of single-use plastic packaging in PPE41 for top parts | 2026 | ◑ |





| Environmental aspect | Environmental protection target | Individual measure | Target deadline | Status |
|---|---|---|---|---|
| Emissions | Reduction of $CO_2$ emissions in the transport chain from the supplier to the plant (material transport) | Reduction of $CO_2$ emissions in transport through implementation of decarbonization roadmap for transport logistics | 2025 | ◑ 3 |
| | Reduction of the GWP value of refrigerant R507A from a GWP of 3,985 to <500 of the refrigerants in the wind tunnel center | Conversion of the refrigeration system | 2025 | ◑ |
| | Reduction of the $CO_2$ emissions of Audi company vehicles | Reduction of the $CO_2$ emissions by introducing R33 Blue Gasoline (approx. 20% less $CO_2$ emissions) at the service stations at the Ingolstadt plant | Q4/2023 | ● |
| | $CO_2$ reduction through conversion of new wheel center from gas/oil to district heating | Construction of a new wheel center Use of district heat | 2029 | ○ |
| | Reduction of VOC solvent emissions | Cleaning of the exhaust air from the paint booth as part of the implementation of the restructuring project of the N56 top coat line (new top coat line 6) | 2026 | ◑ |
| Energy | Reduction of energy consumption by means of more efficient cold generation in the wind tunnel center | Conversion of the refrigeration system: Increase of the efficiency in the wind tunnel center by means of an optimized operating strategy | 2025 | ◑ |
| | Supply of the Ingolstadt site with up to 4,000 MWh/a of electricity from regenerative in-house production | PV systems for Ingolstadt | 2024 | ◑ |
| | Smoothing of electricity consumption | Set-up of a battery storage device for smoothing the peak load | n/a | ⊗ 4 |
| | Waste heat use | Use of waste heat from cooling water (reservoir, heat pumps) | 2029 | ○ 5 |
| | Reduction of electricity consumption by replacing lamps | Ongoing replacement of T8 and T5 illumination as part of shop renovations and the lamp replacement project | 2028 | ◑ |
| | Reduction of $CO_2$ emissions through efficient energy management | Recording of SEU in the area of building technology and fitting of energy meters to allow for more effective energy management | 2026 | ◑ |
| | Reduction of energy consumption | Use of energy-efficient systems and processes in the area of the paint shop by implementing the restructuring project for top coat line N56 (new top coat line 6) | 2026 | ◑ |
| Biodiversity | Awareness-raising and communication | Key visuals: container design competition | 2023 | ● |
| | Promotion of biodiversity at the site | Implementation of the biodiversity concept | ongoing | ◑ |
| | Promotion of biodiversity at the site | Finalization of the area-specific maintenance plan | 2024 | ◑ 6 |
| | Awareness-raising and communication | Implementation of at least 3 awareness-raising measures per year | 2024 | ◑ |
| | Improved integration of vocational training | Training courses, implementation of biodiversity measures | 2024 | ◑ |

○ Planned ◑ In process/implementation ● Implemented/completed ⊗ Not technically feasible

| Environmental aspect | Environmental protection target | Individual measure | Target deadline | Status |
|---|---|---|---|---|
| Organization | Training/awareness-raising of the apprentices at the Ingolstadt site regarding the topic of environmental protection | Annual environment day in the 1st apprenticeship year | 2024 | ◑ |
| | Training/awareness-raising of the apprentices at the Ingolstadt site as part of environmental and sustainability projects | Environmental/sustainability projects as part of the apprentices' challenge | 2024 | ◑ |
| | Check of the potential of explosion protection measures for CNG and $H_2$ vehicles on the vehicle test rigs | Test facility for vehicles with alternative drive systems | 2024 | ◑ |
| | Improvement of environmental organization with regard to monitoring operator obligations | Use of a software solution in selected areas (subsequent rollout for the entire site) | 2023 | ● |
| Information | Reduction of the "$CO_2$ foot(d)print" of Audi gastronomy | 1. Determination of the $CO_2$ equivalents of the food products used and the meals served<br>2. Raising awareness among employees regarding the connection between environmental protection and eating habits<br>3. Gradual (adjustment of the menus for the) reduction of the $CO_2$ foot(d) print of Audi gastronomy | 2025 | ◑ |
| | Reduction of $CO_2$ by expanding healthy and environmentally friendly (especially vegetarian and vegan) meal options in Audi gastronomy | 1. Implementation of a vegan campaign month (always January);<br>2. Every other meal offered in the main menu lines (Classic and Green Line) is vegetarian or vegan | Q4/2023 | ● |
| Transport | Expansion of the charging infrastructure in parking lots for employees and visitors | Continuous and utilization-based electrification of parking lots for employees and visitors in the form of charging points for electric vehicles | Q4/2023 | ● |
| | $CO_2$ reduction by avoiding vehicle transport | Flexible use of the employee parking garages (N69) for vehicles to be delivered to customers etc. | 2024 | ● [7] |

[1] Not economically viable due to insufficient remaining term.
[2] The target deadline was adjusted due to technical feasibility.
[3] The individual measure was adjusted because specific $CO_2$ reduction values cannot be broken down at site level.
[4] The measure does not improve the environmental performance.
[5] The individual measure was adjusted due to technical and economic feasibility.
[6] The target deadline was adjusted due to the preparation of technical requirements.
[7] Adjustment of target deadline: supplier-related delay in delivery of technical equipment.





# Environmental program, Product 2024

| Environmental aspect | Environmental protection target | Individual measure | Target deadline | Status |
|---|---|---|---|---|
| **Emissions** | DCI: reduction of the carbon footprint (life cycle) of each vehicle model on a fleet basis by 30% by 2025 as compared to the baseline year of 2015 and by 40% by 2030 as compared to the baseline year of 2018 | Preparation of DCI roadmaps, derivation and implementation of decarbonization measures throughout the entire life cycle, description of the Audi contribution to achieving the Group DCI target | Q4/2025<br>Q4/2030 | ◑ |
| | Expansion of the range of electrified drive concepts | Audi has set itself an environmental target of expanding its range of electric drive concepts (PHEV/BEV) globally by the end of 2025 to 40% of its fleet of new passenger cars | Q4/2025 | ◑ [1] |
| **Energy** | Validation of the technological compatibility of Audi products for the use of synthetic and regenerative fuels as a contribution to the defossilization of the existing fleet | Assessment and implementation of the necessary technical requirements for the use of synthetic and regenerative fuels for vehicles with a production year back to 2015 retroactively | Q4/2024 | ● |

[1] The wording of individual measures was adjusted due to changing market conditions.

# Environmental program, Münchsmünster 2024

| Environmental aspect | Environmental protection target | Individual measure | Target deadline | Status |
|---|---|---|---|---|
| **Biodiversity** | Increase of the biodiversity index from 0.2 to 0.3 | – Expansion of the biodiversity concept for Münchsmünster<br>– Handling of invasive plant species at the site (transfer of knowledge to apprentices)<br>– Care for and expansion of the wild bee wall<br>– Care for the biotope in Schrannenbach<br>– Working with plants together with the educational field<br>– Guided tours for Audi employees (transfer of knowledge)<br>– Guided tours & projects with school classes from the region<br>– Planning a habitat for amphibians<br>– Additional second life wood & rhizome<br>– Stand-up display with information on biodiversity | Q2/2025 | ◑ |
| **Waste** | Reduction of coil base oiling for steel coils | Gradual changeover of coil base oiling from prelube I to prelube II | Q4/2025 | ◑ |
| **Energy** | Installation of PV systems | Installation of a PV system on Hall K30 | Q2/2025 | ◑ |
| **Organization** | Identification of environmental goals taking account of the “Impact Points” and “Site Checklist” methods having regard to the entire site context | Organization of a workshop under the guidance of external environmental auditors | Q3/2025 | ○ |





# Environmental program, Neuburg 2024

| Environmental aspect | Environmental protection target | Individual measure | Target deadline | Status |
|---|---|---|---|---|
| **Energy** | Supply of the Neuburg site with up to 1,400 MWh/a of electricity from regenerative in-house production | Construction of a photovoltaic system with an electricity storage facility at the site | 2025 | ◑ [1] |
| **Neighborhood** | Avoidance of noise complaints | Performance of an annual dialogue with local residents and optimization of operating times | annually | ongoing |
| **Organization** | Reduction of noise and exhaust emissions (generated by conventional drives) by expanding the course offering | Inclusion of electric vehicles in the course offering | 2023 | ● |
| **Biodiversity** | Establishment of further species of wild bees | Continuous improvement of the biotope areas | 2025 | ◑ |

[1] The target deadline was adjusted due to supply chain issues.

# Environmental program, Neustadt 2024

| Environmental aspect | Environmental protection target | Individual measure | Target deadline | Status |
|---|---|---|---|---|
| **Neighborhood** | Stakeholder management together with the Münchsmünster plant | Performance of an annual dialogue with local residents > stakeholder dialogue | every two years | ongoing [1] |
| **Transport** | Reduction of $CO_2$ emissions by the track management fleet | Change of the track management vehicles to electrified vehicles | Q4/2023 | ● |
| **Biodiversity** | Expansion of the biodiversity area and diversity | Expansion of the meadow orchard | Q4/2025 | ◑ [2] |

[1] Consolidation of the dialogue with local residents with the Münchsmünster site.
[2] Doubling of the target value (m²).

**There are 56 different bee species on the 47-hectare Audi Neuburg site.**

# Validation

Dr. Bernd Scholz
Dipl.-Chemiker
Umweltgutachter

Vom 14.10.2024 bis 18.10.2024 (gesamt 15 Tage) plus 13.11.2024 (gesamt 2 Std.) wurde im Auftrag der AUDI AG für die Standorte 1) 85045 Ingolstadt, Auto-Union-Str.1, 2) 86633 Neuburg a. d. Donau, Heinrichsheimstraße 200, 3) 93333 Neustadt a. d. Donau, Umbertshausener Weg 9, 4) 85126 Münchsmünster, Berghausener Weg 40 die Erfüllung der Forderungen der (EG) Nr. 1221/2009, (EU) 2017/1505 und (EU) 2018/2026 geprüft.

## Erklärung des Umweltgutachters zu den Begutachtungs- und Validierungstätigkeiten

Der Unterzeichnende, Dr. Bernd Scholz, EMAS-Umweltgutachter mit der Registrierungsnummer DE-V-0037, akkreditiert oder zugelassen für den Bereich 29.1 (NACE-Code), bestätigt, begutachtet zu haben, dass die AUDI AG an den Standorten 1) 85045 Ingolstadt, Auto-Union-Str.1, 2) 86633 Neuburg a. d. Donau, Heinrichsheimstraße 200, 3) 93333 Neustadt a. d. Donau, Umbertshausener Weg 9, 4) 85126 Münchsmünster, Berghausener Weg 40, wie in der Umwelterklärung 2024 (1. Aktualisierung) beschrieben, alle Anforderungen der Verordnungen (EG) Nr. 1221/2009, (EU) 2017/1505 und (EU) 2018/2026 des Europäischen Parlaments und des Rates vom 25. 11. 2009, 28.08.2017 und 19.12.2018 über die freiwillige Teilnahme von Organisationen an einem Gemeinschaftssystem für Umweltmanagement und Umweltbetriebsprüfung (EMAS) erfüllen.

Mit der Unterzeichnung dieser Erklärung wird bestätigt, dass

- die Begutachtung und Validierung in voller Übereinstimmung mit den Anforderungen der Verordnungen (EG) Nr. 1221/2009, (EU) 2017/1505 und (EU) 2018/2026 durchgeführt wurden,
- das Ergebnis der Begutachtung und Validierung bestätigt, dass keine Belege für die Nichteinhaltung der geltenden Umweltvorschriften vorliegen,
- die Daten und Angaben der Umwelterklärung 2024 der Organisation AUDI AG an den genannten Standorten ein verlässliches, glaubhaftes und wahrheitsgetreues Bild sämtlicher Tätigkeiten der Organisation innerhalb des in der Umwelterklärung jeweils angegebenen Bereichs geben.

Diese Erklärung kann nicht mit einer EMAS-Registrierung gleichgesetzt werden. Die EMAS-Registrierung kann nur durch eine zuständige Stelle gemäß der Verordnung (EG) Nr. 1221/2009 erfolgen. Diese Erklärung darf nicht als eigenständige Grundlage für die Unterrichtung der Öffentlichkeit verwendet werden.

Diez, den 15.11.2024

*Dr. Bernd Scholz*
*Umweltgutachter, DE-V-0037*

Dr. B. Scholz, 65582 Diez, Am Katzenstein 4





# Registration data with the Chamber of Commerce

## URKUNDE

EMAS
GEPRÜFTES UMWELTMANAGEMENT

**AUDI AG**

**Standorte**

AUDI AG Ingolstadt, Auto-Union-Straße 1,
85045 Ingolstadt
Audi Münchsmünster, Berghauser Weg 3,
85126 Münchsmünster
Audi Neuburg mit der Audi Sport GmbH und der Audi Formula Racing GmbH, Heinrichsheimstraße 200,
86633 Neuburg a. d. Donau
Audi Prüfgelände Neustadt (PGN), Umbertshausener Weg 9, 93333 Neustadt a. d. Donau

Register-Nr.: DE-155-00040

Ersteintragung am
19. Januar 2021

Diese Urkunde ist gültig bis
4. Dezember 2026

Diese Organisation wendet zur kontinuierlichen Verbesserung der Umweltleistung ein Umweltmanagementsystem nach der EG-Verordnung Nr. 1221/2009 und EN ISO 14001:2015 (Abschnitt 4 bis 10) an, veröffentlicht regelmäßig eine Umwelterklärung, lässt das Umweltmanagementsystem und die Umwelterklärung von einem zugelassenen, unabhängigen Umweltgutachter begutachten, ist eingetragen im EMAS-Register (www.emas-register.de) und deshalb berechtigt, das EMAS-Logo zu verwenden.

IHK München und Oberbayern

München, den 12. Dezember 2023

Dr. Manfred Gößl
Hauptgeschäftsführer

# Certification

## ZERTIFIKAT

Hiermit wird bescheinigt, dass

AUDI AG

85045 Ingolstadt
Deutschland

mit den im Anhang gelisteten Standorten

ein Umweltmanagementsystem eingeführt hat und anwendet.

Geltungsbereich:
Herstellung von Kraftwagen und Kraftwagenmotoren

Durch ein Audit, dokumentiert in einem Bericht, wurde der Nachweis erbracht,
dass das Managementsystem die Forderungen des folgenden Regelwerks erfüllt:

ISO 14001 : 2015

| | |
|---|---|
| Zertifikat-Registrier-Nr. | 547237 UM15 |
| Gültig ab | 2023-12-13 |
| Gültig bis | 2026-12-03 |
| Zertifizierungsdatum | 2023-12-13 |

DAkkS Deutsche Akkreditierungsstelle D-ZM-16074-01-00

DQS GmbH

Christian Gerling
Geschäftsführer

DQS IS A MEMBER OF IQNET

Akkreditierte Stelle: DQS GmbH, August-Schanz-Straße 21, 60433 Frankfurt am Main
Die Gültigkeit dieses Zertifikates kann nur durch den QR-Code verifiziert werden.



Environmental Declaration 2024

# Certification

## ZERTIFIKAT

Hiermit wird bescheinigt, dass

AUDI AG

85045 Ingolstadt
Deutschland

mit den im Anhang gelisteten Standorten

ein Energiemanagementsystem eingeführt hat und anwendet.

Geltungsbereich:
Herstellung von Kraftwagen und Kraftwagenmotoren

Durch ein Audit, dokumentiert in einem Bericht, wurde der Nachweis erbracht,
dass das Managementsystem die Forderungen des folgenden Regelwerks erfüllt:

ISO 50001 : 2018

| | |
|---|---|
| Zertifikat-Registrier-Nr. | 547237 EMSt21 |
| Gültig ab | 2023-12-13 |
| Gültig bis | 2026-12-03 |
| Zertifizierungsdatum | 2023-12-13 |

DAkkS Deutsche Akkreditierungsstelle D-ZM-16074-01-05

DQS GmbH

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Geschäftsführer

DQS IS A MEMBER OF IQNET

Akkreditierte Stelle: DQS GmbH, August-Schanz-Straße 21, 60433 Frankfurt am Main
Die Gültigkeit dieses Zertifikates kann nur durch den QR-Code verifiziert werden.

## Glossary

**Audi regards net carbon neutrality** as a state in which, following the exhaustion of other possible measures aimed at reducing the still remaining $CO_2$ emissions caused by the products or activities of Audi and/or currently unavoidable $CO_2$ emissions within the scope of the supply chain, manufacturing and recycling of Audi vehicles, at least quantitative compensation is provided through voluntary and globally conducted compensation projects. Throughout the utilization phase of a vehicle, meaning from when a vehicle is delivered to a customer, $CO_2$ emissions produced are not taken into account.

**The $CO_2$ equivalent** describes the effect of different greenhouse gases on the climate in relation to the effect of $CO_2$. The global warming potential in $CO_2$ equivalents of carbon dioxide is equated with 1. Per definition, gases with a value greater than 1 have a greater global warming potential than $CO_2$.

**The charging time of the battery** and the maximum DC charging capacity at HPC charging terminals (High Power Charging) were determined according to DIN 70080 and may vary depending on a variety of factors such as ambient and battery temperature, the use of other country-specific connectors, the use of interior conditioning (e.g. remotecontrolled air conditioning of the vehicle), the pre-conditioning function to bring the traction battery to a temperature suitable for charging/driving, the available capacity at the charging terminal, the state of charge and the age of the battery. The charging capacity decreases as the state of charge increases. The charging losses are taken into account. The charging capacity depends on the type of mains connector used, the voltage in the country in question and the number of phases of the power supply system available as well as the customer's own domestic installation. It may therefore be lower on an individual basis. The power cable with industrial connector and the operating unit of the charging system are synchronized and enable a specific charging capacity. While technically the power cable can be replaced subsequently by a different industrial connector, the charging capacity may decrease as a result.



Environmental Declaration 2024

## Publishing details

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**Consulting/design/implementation:**
IMAGO 87, Agentur für Öffentlichkeitsarbeit und Mediengestaltung GmbH

**Picture source/picture credits:**
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**Date for the next environmental declaration:**
Audi will publish the next environmental declaration in 2025.

**Audi** Vorsprung durch Technik

**AUDI AG**
85045 Ingolstadt
www.audi.com
October 2024

Further information on official fuel consumption figures and the official specific $CO_2$ emissions of new passenger cars can be found in the "Guide on the fuel economy, $CO_2$ emissions and power consumption of all new passenger car models," which is available free of charge at all sales dealerships and from DAT Deutsche Automobil Treuhand GmbH, Hellmuth-Hirth-Str. 1, 73760 Ostfildern, Germany or at www.dat.de.