Environmental Declaration 2023

Audi sites
Ingolstadt,
Münchsmünster,
Neuburg,
Neustadt

Environmental Declaration 2023

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,

This declaration contains a lot of good developments in a nutshell: In our Environmental Declaration 2023, we have summarized our environmental protection activities at the sites and demonstrate that we are doing everything in our power to make our operations more sustainable and environmentally friendly in line with our Audi strategy.

The last year was extremely challenging. The effects of climate change are becoming increasingly obvious and require prompt innovative solutions to reduce or avoid the use of fossil energy sources. Additionally, the war in Ukraine disrupted the supply security of important resources over night and massively increased the prices of all processes and materials along the value chain.

As a leading car maker, we are aware of our responsibility and do our best to minimize the effects of our vehicles and production on the environment and decrease the use of resources continuously.

Even in these challenging times, Audi is holding on to the goal of achieving net carbon-neutral production* at all its own sites, and thus also at the Ingolstadt site, by 2025. The Mission:Zero environmental program that was initiated for this purpose paves the way toward more sustainable production and logistics.

In this environmental declaration, we will present a number of projects as examples. For example, we have implemented numerous measures to reduce the consumption of the precious resource of water at all our plants, and the new paint shop for top coat application will also save a considerable amount of energy and reduce emissions. Our “Energy Analytics” project, where our employees are continuously looking for ways to save energy, shows that environmental protection is a team effort. We also briefly outline the promising “MaterialLoop” endeavor, which has already proven as part of a large-scale field test with used vehicles that material loops can be closed on balance.

Our non-profit Audi Environmental Foundation also makes an important contribution to reducing CO_2 in the region. In a study conducted in cooperation with the Weihenstephan-Triesdorf University of Applied Sciences, instruction manuals for how the neighboring Donaumoos (Danube Moor) can be rewetted to bond CO_2 and still be used for agriculture were illustrated as part of the “CO_2-regio” project.

This document provides you with an extensive insight into our strategies, initiatives and progress designed to avoid CO_2 emissions. We are happy to report that the Ingolstadt site will achieve net carbon neutrality in the coming year and not as from 2025, as was originally planned.

Our journey toward a carbon-neutral future is a continuous process that requires stamina and innovation and great commitment from our employees. Now we have come full circle: All these efforts go hand in hand with our move into a fully electric future. With our electric vehicles, we will take on a crucial role in the electrification of the production network and our environmental activities are an important foundation for creating a consistent overall image.

The purpose of our environmental declaration is not only to inform you of our efforts and results, but also to invite you to participate in the discussion and dialogue.

We hope you find it an inspiring read.

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 operation 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.

AUDI AG Ingolstadt

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 incidences 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.

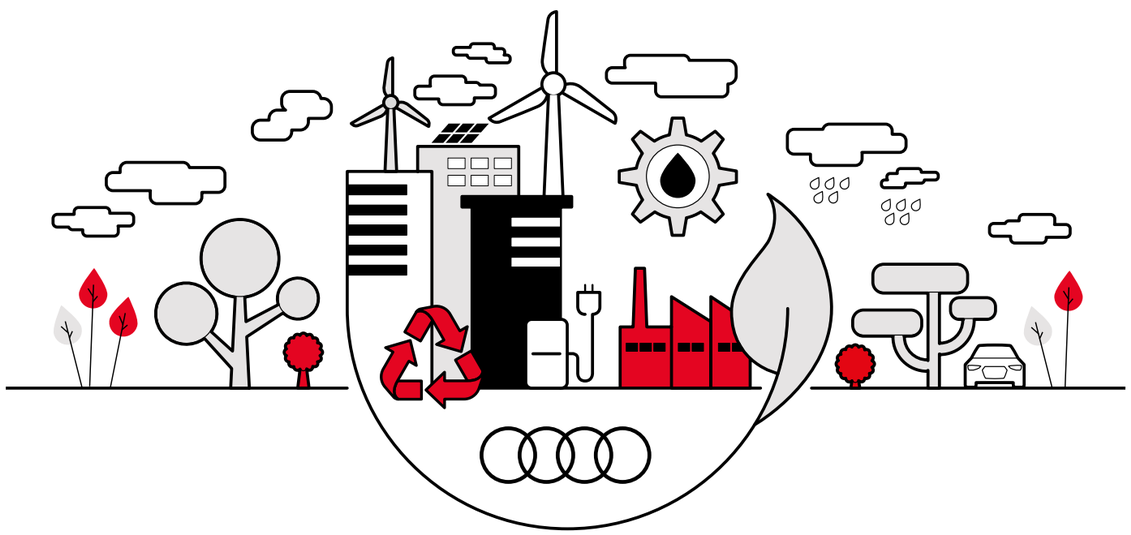
5. Continuous improvement
As part of our efforts to continuously improve the environmental impact of our products, services, processes and production facilities and to optimize them in terms of energy, our internationally recognized energy and environmental compliance management systems are validated 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.

▶ **The new Plant Manager is Dr. Siegfried Schmidtner, Environmental Management Officer for the sites.**

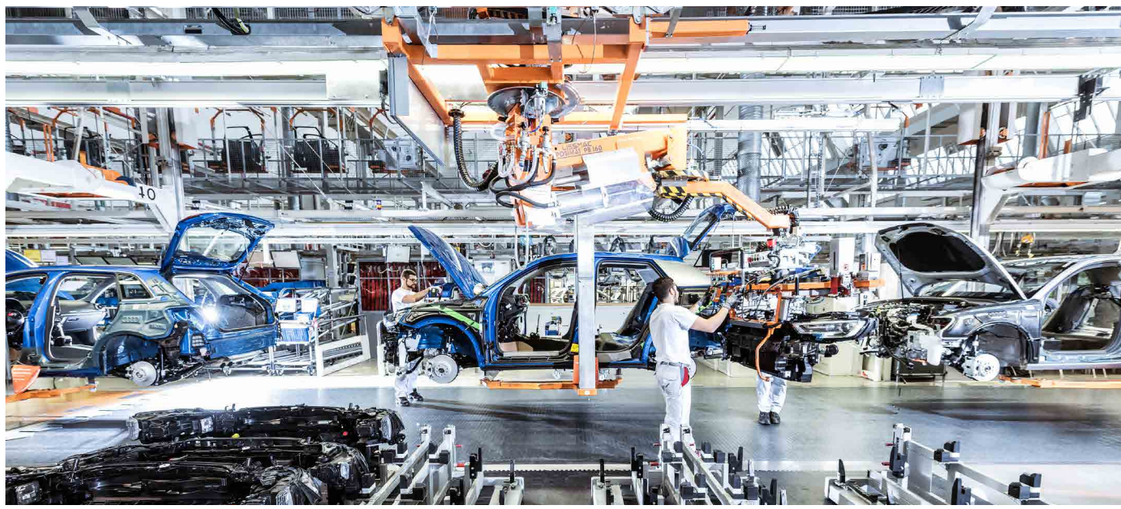
Environmental protection officer and environmental management officer
The Head of Environmental Protection takes on the role of environmental protection officer for the Ingolstadt, Münchsmünster, Neuburg and Neustadt sites. In this role, they are responsible for checking that compliance with all site 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 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 2023

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, waste and radiation protection).

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 U_029 in this connection. The further tasks of the department include performing internal environmental 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 accredited 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 2018 – 2022,” 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 location. 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 locations. Since all materials coming into the plant also leave it again, this procedure provides a sufficient level of accuracy. The use of iron/steel, aluminum and paints is shown for the production locations in addition.

Water:
The core indicator of water corresponds to the total freshwater consumption at the site in m³ and is comprised 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 – final inspection

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.

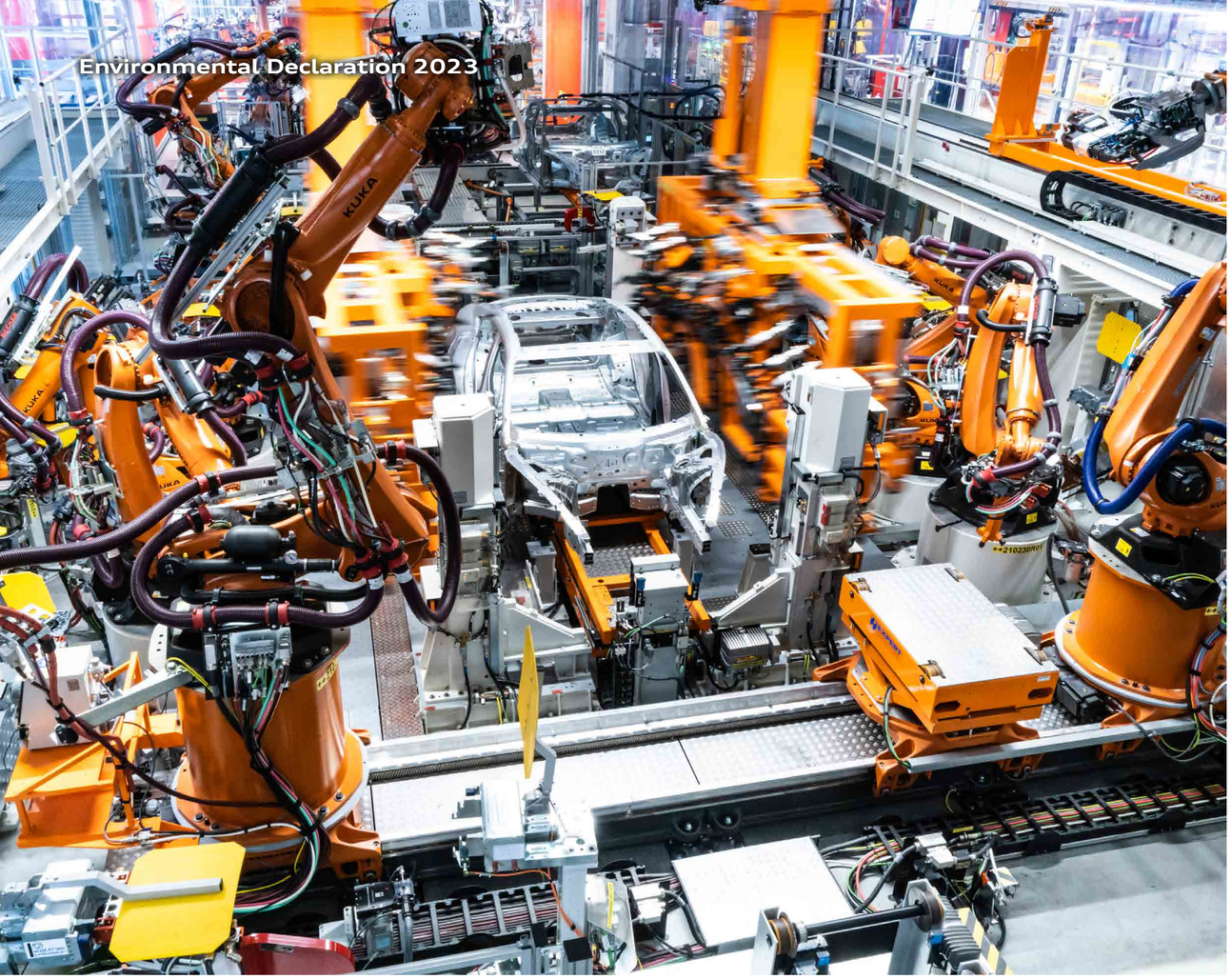
The advantage of the method of converting environmental impacts into impact points is that different environmental aspects can be compared and the environmental impact of the site can be shown as a single score, which allows the sites to compare themselves with themselves and among each other.

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 compliance, 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.

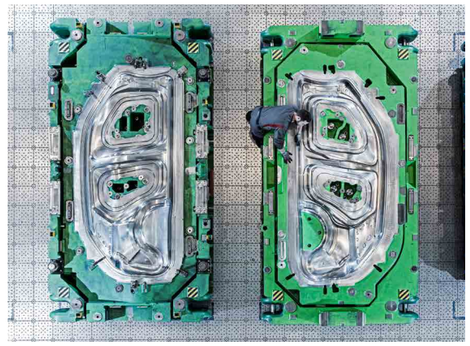
1_Logistics

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.

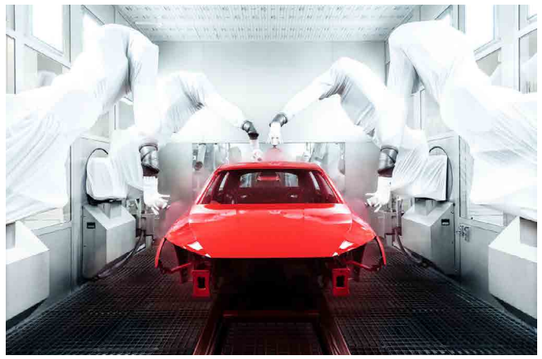
Involvement of the employees/Audi Ideas Program
The basics of production and important processes are described in the Audi Production System (APS), including all key aspects of environmental protection and possibilities for saving energy. The employees can use the APS to obtain information and also take 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.

The project team for planning the new top coat line: (from left to right) Klaus Wagner, Hannes Kupke, Stefanie Bährle and Jürgen Fahrendorf

New high-efficiency top coat line

Considerable reduction of environmental impact

As part of the gradual restructuring of the paint shop at the Ingolstadt site, a new top coat line is being installed that will operate largely without fossil energy consumption, significantly reduce water consumption and emissions and also meet the requirements of e-mobility.



Painting is the process stage with the highest environmental relevance

The paint shop is one of the biggest consumers of energy and resources for every car maker, which is why there is a particular focus on this area in the context of the restructuring of the top coat lines. The new top coat line pursues the major Audi goal of achieving net carbon-neutral production at the Ingolstadt site by 2025. Instead of gas, which is a fossil fuel, the new drying systems for hardening the coat surface will be operated with electricity – with "green electricity" to be precise. "The new top coat line will allow us to reduce our natural gas consumption by 30.2 GWh per year as compared to the current system technology," summarizes Jürgen Fahrendorf from Environmental Protection. The implementation of this measure can therefore save roughly 6,000 metric tons of CO_2 per year. It is therefore not surprising that the Federal Office for Economic Affairs and Export Control has agreed to provide funding to support the major reduction of CO_2.

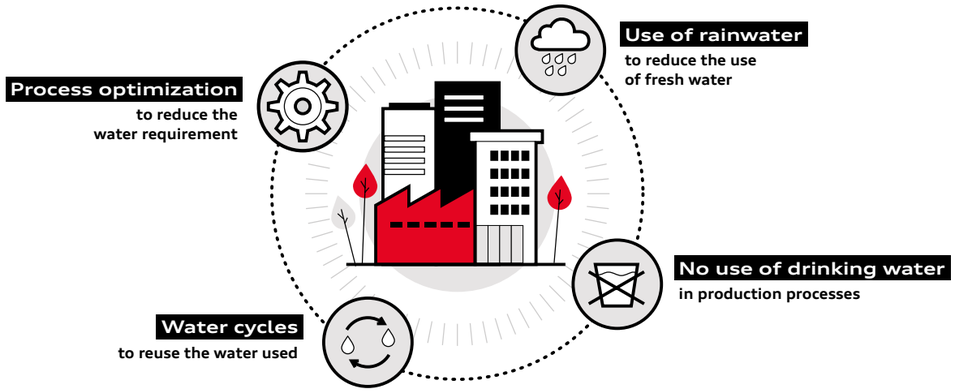
And the new top coat line offers even more outstanding reductions of environmental impact: The innovative paint separation technology combined with air circulation allows a progressive concentration of VOC rates (= volatile organic compounds). Regenerative post-combustion allows them to be cleaned in the reduced exhaust airstream, which reduces the VOC emissions drastically. The new top coat line is similarly impressive with regard to saving water. "While paint particles were bonded using water mist in the old system, the new top coat line uses cardboard filters," explains Klaus Wagner from the production restructuring project team. Stefanie Bährle from the paint shop process department summarizes that "according to all calculations, we will save roughly 31,700 m³ of water as from 2025 as compared with the existing system technology." These are massive savings that also make a significant contribution to the Audi Mission:Zero environmental program.

Audi is investing an amount in the three-digit millions in this high-tech system that drastically reduces the environmental impacts. This also includes planning and implementation in the existing systems. "It was a huge challenge in terms of planning and designing the system in such a way that the existing buildings and infrastructure could still be used," emphasizes project manager Hannes Kupke. "Building an entirely new system would have been far easier in the projection, but the ecological balance would have been significantly poorer by comparison."

Mission:Zero

Significant reduction of water consumption

The Audi Mission:Zero environmental program applies to all production sites and is based on the four fields of action of decarbonization, water usage, resource efficiency and biodiversity.



Audi has already achieved considerable success when it comes to saving the extremely important resource of water. The aim is to continue reducing the water consumption at the Ingolstadt site significantly by 2035. To this end, the following strategies have been defined:

> Optimization of water consumption in all production processes, including the greatest consumer of water in the plant: the paint shop.

> Expansion of the water cycles, e.g. by treating generated wastewater to turn it into new process water.

> Avoiding the use of drinking water. There are also a number of initiatives for avoiding the use of drinking water in production as far as possible at the Ingolstadt site.

> Use of rain water, e.g. by means of appropriate storage basins. Rain water has already been used at the Ingolstadt site since the 1980s. The rain water is collected and stored in underground retention basins with a volume of around 15,000 m^3. With the appropriate treatment, up to 200,000 m^3 of water can be used each year.

An interview with the two members of the "Water" site team for Mission:Zero – Karin Mozet and Christian Gelhaus.

You have both been concerned with reducing the water consumption at the Audi site in Ingolstadt for years. What progress has been made over the last five years? Is there any more potential for saving water?

Mozet: Of course, technical improvements are always being made. Since 2019, Audi has been operating a process water supply center for treating wastewater, at the heart of which is a membrane bioreactor (MBR). Industrial and sanitary wastewater is turned into high-quality process water in three treatment stages, which reduces the fresh water requirement in production by up to one third. This innovative water treatment method at Audi has helped us to save up to 500,000 m^3 of fresh water every year since it was introduced.

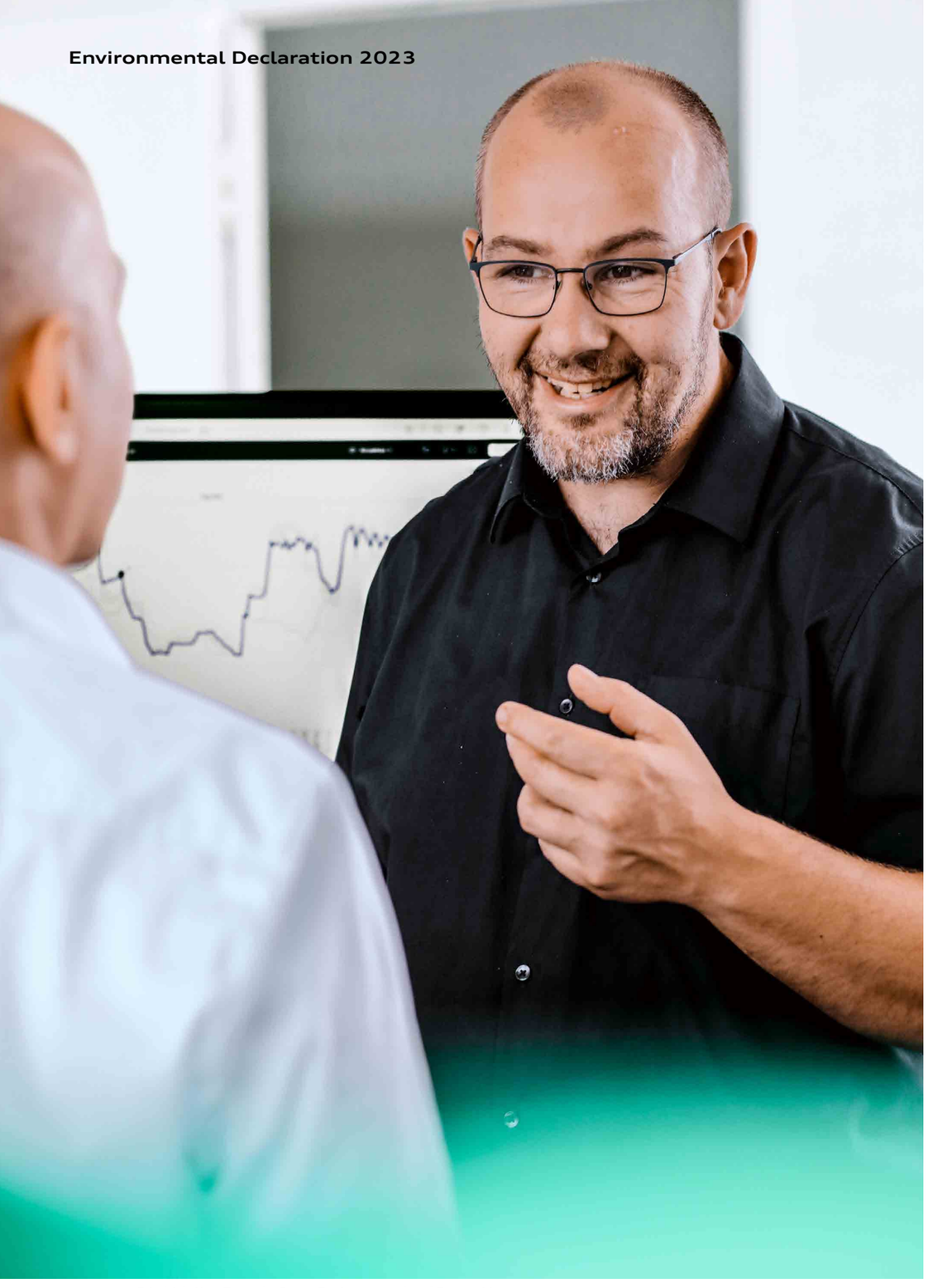
Gelhaus: Let me give you another couple of figures. With the cycle management and the new water treatment at the Ingolstadt plant, we have now increased the recycling rate to over 30% (33.5% in 2022). Without the system, the rate was still 4.6% in 2016. In 2022, we needed 803,560 m^3 of fresh water as compared with more than 1.5 million m^3 in 2016.

Members of the "Water" site team for Mission:Zero / Karin Mozet and Christian Gelhaus

The Mission:Zero environmental program was introduced at all Audi sites in 2019. What is the objective for Ingolstadt in terms of saving more water?

Gelhaus: The objective is to massively reduce water consumption across all production locations. A site team for water was also founded for Mission:Zero in Ingolstadt. It continuously monitors water consumption and individual main consumers at the site and introduces optimizations in cooperation with the operator in question where possible. This can be the mode of operation of a system or the connection of a new wastewater stream to the recirculation system (MBR).

Mozet: One thing is certain: Water is becoming an increasingly scarce resource worldwide that requires careful and sustainable treatment. The fact that Audi was the first premium car maker to join the Alliance for Water Stewardship (AWS) in 2023 shows that Audi is not concerned merely with economic effects when it comes to saving water. This global association comprising companies, non-governmental organizations and the public sector aims to ensure the responsible utilization of water resources throughout the value-added chain. After all, we also want to contribute to ensuring that we have a sufficient supply of drinking water and do not need to impose quotas by law as was the case in some regions in southern Europe in 2022.



Friedrich-Uwe Tontsch, Group Environmental and Energy Management

▶ **Energy Analytics is based on team work: Whenever unusual energy consumption is detected, conversations are sought with the employees involved. Together, they discuss and initiate measures that are suitable for saving resources.**

Energy Analytics

Investigating unusual consumption

Prices for energy have been skyrocketing not only since the war in Ukraine, and it is a relevant cost factor in every production process. Audi has therefore issued annual energy goals for the individual areas since 2010 which are to be achieved by means of energy saving measures. Since 2021, Energy Analytics software has been providing support with finding additional savings potential. This is currently the task of Friedrich-Uwe Tontsch from Group Environmental and Energy Management.

Interview with Friedrich-Uwe Tontsch, Audi Group Environment and Energy Management

Mr. Tontsch, the energy goals system that has resulted in high annual energy savings of 35 GWh on average – or the energy consumption of roughly 1,400 single-family households – has already been around since 2010. What was the reason for introducing Energy Analytics in addition?

The specification of energy goals led to many overdue energy saving measures being implemented – however, the "low hanging fruits" were quickly found, and it is becoming increasingly difficult to find savings potential. Analyzing and visualizing energy data can help to find potential for saving energy.

Are you using artificial intelligence (AI) for this purpose?

Not quite – you have to make a distinction here. With AI it is difficult to understand how the results came about. With data mining, which is what we use in Energy Analytics, we prepare large volumes of data for the users to give them a better understanding of the connections, patterns or special characteristics of energy consumption. The preparation of the data makes the users aware of their consumption. It also creates acceptance when it comes to introducing and implementing sustainable measures.

Don't the constantly changing circumstances make it difficult to create comparability and identify connections?

That is true. But in addition to the energy consumption, we also collect the influencing factors that can be correlated with the consumption and have a significant influence on it, e.g. units or temperatures. Thanks to the roughly 500 million pieces of historical data, we can create models that provide us with a forecast of the consumption in each case.

That means, if you know the influencing factors for tomorrow, you can predict the energy consumption? Are you looking into a kind of "crystal ball for energy consumption," so to speak?

That's quite a suitable metaphor – but it's more than comparing the target and actual data of the current consumption. The deviations from the target value in particular are more interesting. If our consumption is below the target value, that means we have found parameters that have a positive effect on saving energy. If it is above the target value, the opposite is the case. When we detect such anomalies, we talk to the energy officers responsible, as they know their systems best and can therefore give a good assessment as to whether the additional consumption is justified. Energy Analytics can only work if we act as a team.

Where have you identified the greatest savings potential using Energy Analytics in the past?

Further reducing the base load clearly offers the greatest potential. It is evaluated on a weekly basis and discussed with the energy officers. For example, we reduced the base load by 70% in the body shop alone in 2022. This corresponds to cost savings of about €190,000 per year.

Meeting on the bog meadow near Pobenhausen, which will be the first to be rewetted: (from left to right) Josef Kreil (land owner), Jonas Galdirs (CO2-regio), Dr. Joachim Wloka (Audi Environmental Foundation) and Salomon Falla (CO2-regio)

Rewetting the bog

The Audi Environmental Foundation is funding a pilot project in the Old Bavarian Donaumoos to help the region achieve a positive climate balance

Bogs are considered to be hot spots of biodiversity and provide a habitat for numerous plants and animals that are adapted to wetlands in particular. Bogs are also natural water reservoirs and thereby contribute to flood alleviation. And, very importantly: Bogs are also considered to be particularly efficient long-term CO_2 reservoirs.

Bogs are far more important for climate protection than forests, for example, as they permanently bond large volumes of carbon dioxide in their layers of peat. However, all this works only if the bogs or the layers of peat are wet. The Old Bavarian Donaumoos, a lowland in the triangle between Ingolstadt, Neuburg an der Donau and Pöttmes, used to be the biggest low moor in Bavaria. Starting in the 18th century, it was gradually drained to gain cultivable land to be used for agriculture. However, draining the bog caused the layers of peat to recede and disappear, which resulted in considerable CO_2 emissions. There are now specific ideas and even initial concepts for rewetting the areas in the Donaumoos to prevent the layers of peat from receding further and to build them up again in the future.

Bogs

▶ **are an extremely important factor when it comes to reducing CO_2.**

How to successfully convert the land use to a sustainable method of cultivation that preserves the bog was the topic of the "CO_2-regio" feasibility study which was funded by the Audi Environmental Foundation (https://co2-regio.de/wp-content/uploads/2023/06/Abschlussbericht-Machbarkeitsstudie-CO2-regio.pdf). Scientists from the Weihenstephan-Triesdorf University of Applied Sciences (HSWT) researched the greenhouse gas compensation performance of bogs, forests and humus in the region between Ingolstadt and Augsburg for two years and prepared suggestions for the alternative use of rewetted bog areas. One of their findings was that bogs relieve the climate with up to 50 metric tons of CO_2 equivalents per hectare and year, which is significantly more than all the other areas they investigated.

The study also provides valuable insights on how regional farms can cultivate their land in a way that protects the bogs. Once the terrain has been rewetted, it cannot be cultivated as before. But there are alternatives: Given certain conditions, it is possible to set up photovoltaic systems, practice wet agriculture and livestock farming or cultivate special grassy marsh plants (paludiculture). Biochar could also play a role in the future.

The scientists also indicated and developed possibilities for financing the rewetting measures in the Donaumoos and how farmers can preserve the bog while cultivating it at the same time: for example, by issuing climate certificates whose value is measured by the CO_2 storage efficiency of the protective measure implemented. It's a win–win situation – sustainability and environmental protection as part of the regional value chain.

The CO2-regio climate office took up its work in May. The non-profit organization based in Neuburg an der Donau will consult land owners, supervise farms and implement climate protection projects in the Donaumoos that have been validated and verified by the HSWT. "We firmly believe that it is worth protecting the bogs and that this will make an important contribution to our region's positive climate balance in the future," says Dr. Rüdiger Recknagel, speaker of the Audi Environmental Foundation Management Board.

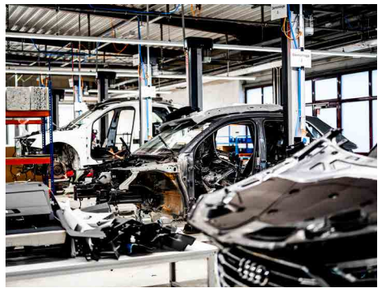
The deep black peaty soil is not particularly fertile, but an important reservoir for carbon and water.

* see Glossary, p. 76

“Material Loop”

Design for recycling is crucial

Together with 15 partner companies from the industry and research areas, Audi* is testing how vehicles that are no longer functional can be used as sources of material for the production of new vehicles.



Vehicles at the end of their life cycle ...

... become valuable secondary materials

The MaterialLoop project was carried out between the fall of 2022 and the summer of 2023. Together with 15 partner companies from the industry and research areas, Audi took a total of 100 vehicles at the end of their product life cycle and tested how vehicles that are no longer functional can be used as sources of material for the production of new vehicles, which recyclable materials offer further potential, which new technical processes need to be developed and what can already be implemented in an economically efficient and ecological way today.

▸ Sustainability starts with the development of recyclable parts.

As part of the project, valuable information on the construction of future models was collected. “Design for recycling” also played an important part in optimizing the recyclability of the products. The idea is to design parts and their components in such a way that they can be separated and sorted by material type during the recycling process when they reach their end of life. “Our objective is to make it even easier to reconcile recyclability with all of the technical requirements for our product. This is a major challenge, but offers us the opportunity to establish end-of-life vehicles as a high-quality material resource,” says Philipp Renner, who is responsible within Technical Development for matters relating to the circular economy.

For example, the findings gained in the project were collected in a guideline for plastic parts together with Technical Development and other specialist areas, with the aim of optimizing the recycling-friendly development of parts. The MaterialLoop project focuses on the four material groups aluminum, steel, plastic and glass (see infographic on page 91).

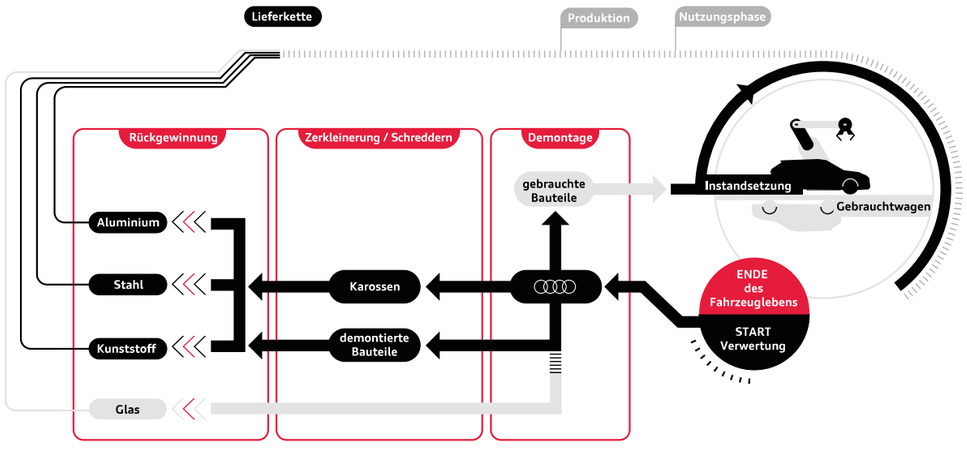
New life for recycled steel in the production of the Audi A4.

Audi has already been able to apply useful insights in practice. The project participants have already returned the first materials to automotive production. For example, the majority of the steel recycled as part of the project was used for the production of new models. In a first attempt, six steel coils were produced with roughly 12 percent of secondary steel from the MaterialLoop project that meet the high Audi quality requirements and can therefore be used even for the most sophisticated structural parts. Audi used it to produce roughly 15,000 inner door panels for the Audi A4 at the press shop in Ingolstadt. Analyses carried out as part of the project show that the portion of recycled steel from end-of-life vehicles in the coil could be increased even further in the future.

Circular economy as a future task

▸ **The end-of-life vehicle is a high-quality source of material at Audi. In the pilot project, recycled steel sourced from end-of-life vehicles was used for the first time in the production of inner door panels.**

Production of new steel coils for the Ingolstadt press shop



Simplified illustration of the MaterialLoop process

* MaterialLoop is the name of an Audi project as part of which the recyclability of materials is tested. The term should in no way be associated with the expectation that 100% of the raw materials gained can be recycled.

Environmental Declaration 2023

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 the “use of pioneering renewable energies.” Other studies prepared by Audi include one examining heat supply with renewable raw materials. However, they also include 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, art 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.

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 2022:

› Installation and operation of a new PVC line in N56
› Installation and operation of tank field A77
› Installation and operation of a new top coat line 6a in building N56
› Alternation of the approval notice for boiler house A12 in the context of the gas shortage
› Restructuring of building A61

Notifications in the reporting period
The following notifications under immission control law were carried out in 2022:

› Series production of EPIC200 KTL, building N51
› Expansion to include SuperPlus fuel grade for initial fueling, assembly and storage tanks
› Use of iron(III) nitrate, building N51
› Shutdown of underground tanks, buildings A3 and A16
› Centralization of VBT/attachment/finish in the IN body shop, building N28
› CP system – reclassification under water law, building N73
› CP system – hygiene measures, building N73
› Operating trial with nickel sludge-free phosphating, building N51
› Neutra 3 – additional flocking agent, building N44
› Extension of the operating trial with partial current treatment in KTL, building N51
› Operating trial with the replacement phosphating system, building N51
› Extension of the Neutra 3 operating trial – additional flocking agent, building N44
› Set-up of additional F90 containers, building T14
› Dismantling of the fueling systems for the test rigs, building T24
› Temporary increase of stock quantities due to revision at the GSB firm, area N50.2

Environmental impacts

Emissions in the form of organic solvents (VOCs), CO_2, SO_2, CO, formaldehyde, dust, NO_x, 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 suspension 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 2022, roughly 730 employees produced more than 16 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 2022.

Notifications in the reporting period
The following notifications under immission control law were carried out in 2022:

› Structural component manufacturing plant K10 K11 – modification of the mechanical finishing systems

Environmental impacts

Emissions in the form of organic solvents (VOCs), CO_2, SO_2, CO, formaldehyde, dust, NO_x, odor, noise and water-polluting substances, water consumption and waste.

Audi test site Neustadt

The Audi site in Neuburg is home to the Audi driving experience and the Motorsport Competence Center. 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 almost 400 workplaces in total.

Audi Driving Experience Center
Audi customers and guests can experience the entire model range up close in Neuburg, for example in advanced 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. Around 70,000 customers from over 50 countries have taken part in driving and safety training courses so far.

Motorsport Competence Center
Audi Sport develops high-performance technologies for racing cars at the Neuburg site. The race engines are tested on modern engine test benches under almost real conditions. Audi Sport organizes and coordinates the works activities for worldwide racing events from Neuburg. Racing events, whether public or private, are not held in Neuburg.

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% surface sealing of the test site would be permitted, only just under 40% of the surface area has been built up or asphalted.

▶ **Recipient of a renowned award for sustainable building: the Audi customer building in Neuburg.**

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
› Set-up and operation of test bed buildings for engine test beds F10

Notifications in the reporting period
The following notifications under immission control law were carried out in 2022:

› Expansion of the waste collection point to include hazardous waste
› Use of Ducati motorcycles >115 kW
› Use of biological reFuel C3 biofuel

Environmental impacts

Emissions in the form of organic solvents (VOCs), CO_2, SO_2, CO, dust, NO_x, 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 km 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 total of 43 km of various different types of tracks available here 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 is currently being equipped with new refrigerating machines for a 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 2022.

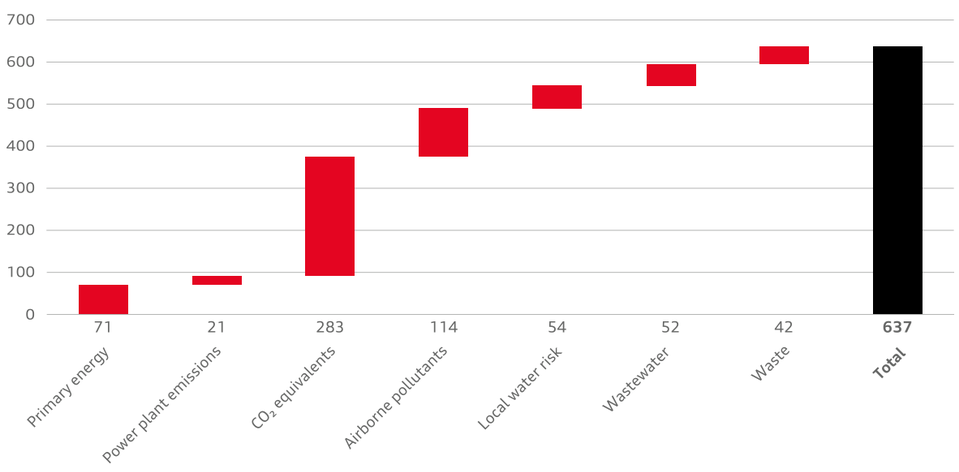
Environmental impacts

Emissions in the form of organic solvents (VOCs), CO_2, SO_2, CO, dust, NO_x, 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



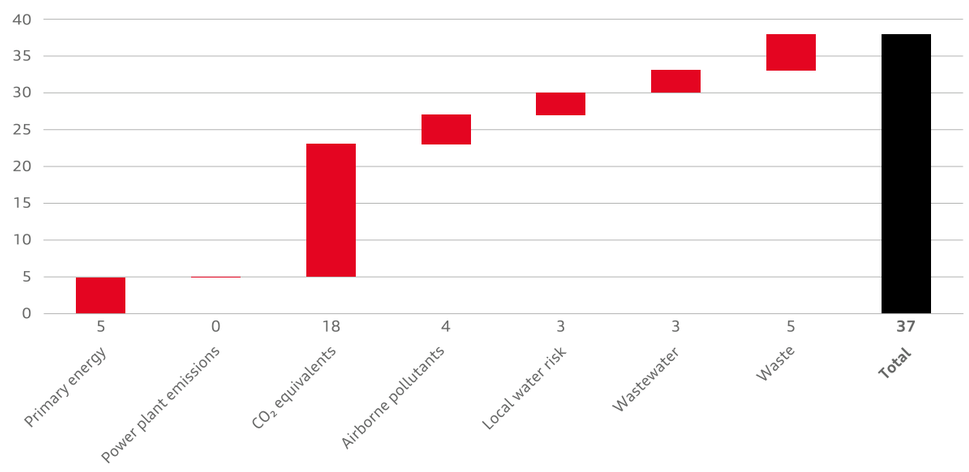
The environmental impact or impact points at the Ingolstadt site decreased considerably between their introduction in 2018 and 2022. The decrease is mainly due to fewer impact points in connection with CO_2 equivalents, waste and primary energy. In addition to the implementation of environmentally friendly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

Environmental aspect	Unit in billions	2018	2022
Primary energy	Impact points	106	71
Power plant emissions	Impact points	29	21
CO_2 equivalents	Impact points	443	283
Airborne pollutants	Impact points	133	114
Local water risk	Impact points	95	54
Wastewater	Impact points	45	52
Waste	Impact points	112	42
Total	**Impact points**	**963**	**637**
Target for 2030	**Impact points**		**610**
Target for 2050	**Impact points**		**0**

Environmental Declaration 2023

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

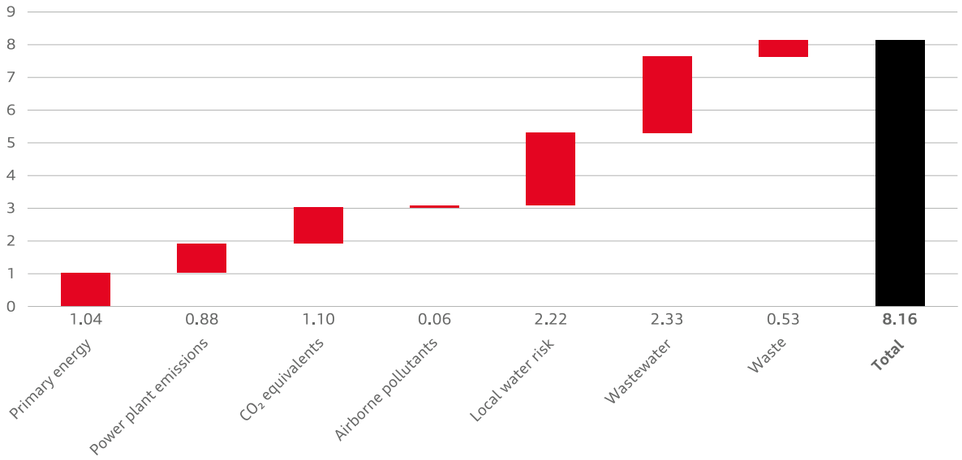


The environmental impact or impact points at the Münchsmünster site decreased considerably between their introduction in 2018 and 2022. The decrease is mainly due to fewer impact points in connection with waste, CO_2 equivalents and the local water risk. In addition to the implementation of environmentally friendly measures, the decrease in production also results in a lower environmental impact.

Environmental aspect	Unit in billions	2018	2022
Primary energy	Impact points	6	5
Power plant emissions	Impact points	0	0
CO_2 equivalents	Impact points	24	18
Airborne pollutants	Impact points	7	4
Local water risk	Impact points	5	3
Wastewater	Impact points	2	3
Waste	Impact points	13	5
Total	**Impact points**	**58**	**38**
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 2022. The change is mainly due to fewer impact points in connection with CO_2 equivalents, wastewater and the local water risk.

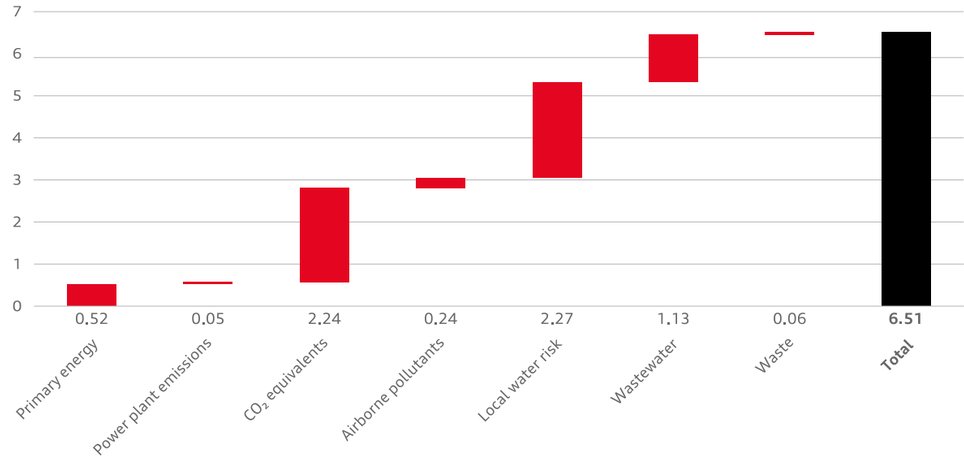
Environmental aspect	Unit in billions	2018	2022
Primary energy	Impact points	1.37	1.04
Power plant emissions	Impact points	1.06	0.88
CO_2 equivalents	Impact points	3.85	1.10
Airborne pollutants	Impact points	0.16	0.06
Local water risk	Impact points	3.20	2.22
Wastewater	Impact points	4.06	2.33
Waste	Impact points	0.34	0.53
Total	**Impact points**	**14.04**	**8.16**

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 2022. 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
Primary energy	Impact points	0.75	0.52
Power plant emissions	Impact points	0.07	0.05
CO_2 equivalents	Impact points	3.71	2.24
Airborne pollutants	Impact points	0.34	0.24
Local water risk	Impact points	3.47	2.27
Wastewater	Impact points	3.41	1.13
Waste	Impact points	0.06	0.06
Total	**Impact points**	**11.83**	**6.51**

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 site Ingolstadt

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	34.2	38.7
Ingolstadt, Rohrmühle	Mixed area	45	60	39.9	41.3
Etting, Florian-Geyer-Str.	Exclusively residential area	40	50	32.7	36.9

* 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 site Münchsmünster

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 site Neuburg

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	36.1	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 test site Neustadt

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 2023

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 structure 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 explorations 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 authority and the water management authority, 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 (rail 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 remediated 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, 2018-2022

The following section lists the core indicators as required by the EMAS 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	2018	2019	2020	2021	2022
Energy						
Total direct energy consumption	MWh	1,075,530	1,046,107	919,890	920,896	868,946
of which total consumption of renewable energy	MWh	563,646	538,284	458,037	448,574	495,269
Electrical energy (incl. in-house generation)	MWh	602,233	582,367	505,568	488,381	494,462
Thermal energy, of which		363,115	362,591	335,262	359,003	297,999
› In-house generation	MWh	277,178	285,058	263,824	278,891	209,459
› District heating sourcing	MWh	85,937	77,533	71,438	80,112	88,539
District cooling	MWh	482	318	273	222	262
Natural gas for production processes	MWh	109,700	100,832	78,786	73,290	76,223
Material usage (excl. water and energy sources)						
Mass throughput of raw material	t	982,522	910,410	718,102	616,206	691,552
Iron and steel	t	253,000	225,044	151,760	178,167	191,013
Aluminum	t	10,065	8,460	6,811	6,415	7,510
Paints	t	8,075	6,946	5,122	4,616	5,192
Water						
Water consumption	m³	1,454,966	1,031,974	987,888	817,148	803,560
Wastewater quantity	m³	993,335	641,701	661,726	543,700	518,040
Waste						
Volume of waste (excluding metallic waste), of which	t	32,774	32,852	36,756	26,242	24,839
Hazardous waste	t	14,268	14,065	20,972	11,750	10,361
› Hazardous waste disposed of	t	5,650	1,911	1,662	817	726
› Hazardous waste recycled	t	8,617	12,154	19,310	10,933	9,635
Non-hazardous waste	t	18,507	18,787	15,783	14,491	14,478
› Non-hazardous waste disposed of	t	129	119	69	162	31
› Non-hazardous waste recycled	t	18,378	18,667	15,714	14,330	14,447
Metallic waste	t	144,696	133,076	118,362	106,893	114,941

	Unit	2018	2019	2020	2021	2022
Biodiversity [1]						
Total site area	m²	2,855,931	2,856,516	2,861,692	2,860,616	2,884,627
Total plant area	m²	1,765,268	1,864,979	1,868,412	1,869,413	1,853,896
Land consumption (sealed surface area) [2]	m²	1,109,731	1,113,763	1,108,716	1,102,277	1,702,310
Total natural area at the site	m²	-	-	4,000	11,000	12,000
Total natural area away from the site	m²	-	122,900	122,900	122,900	128,300
Emissions						
Total greenhouse gas emissions						
Total greenhouse gas emissions [3]	t CO_2 equivalent	160,207	155,812	134,922	121,585	101,286
Total emitted CO_2 from stationary systems [4]	t CO_2	127,794	123,770	114,583	102,127	80,032
Directly emitted CO_2 from mobile systems [5]	t CO_2	30,986	30,002	19,595	17,235	20,032
CO_2 equivalents from HFC and HCFC emissions [6]	t CO_2 equivalent	1,427	2,040	744	2,223	1,221
Total emissions into the air [7]						
NO_x (nitrogen oxides)	t	77.31	80.45	73.80	67.53	69.40
PM (dust)	t	11.47	9.30	7.45	6.39	8.61
SO_2 (sulfur dioxide)	t	0.07	0.06	0.05	0.04	0.09
VOC (organic solvents)	t	582	456	439	393	442

[1] Some values not available for preceding years; total natural area at the site was first recorded for 2020.
[2] 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) 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	2018	2019	2020	2021	2022
Product output						
Total output volume of all products (total output)	t	805,051	744,482	562,984	483,072	551,772
of which pressed parts for external use	t	56,848	66,116	40,803	32,176	31,151
Vehicles produced	Unit	491,262	441,608	337,834	285,958	332,981

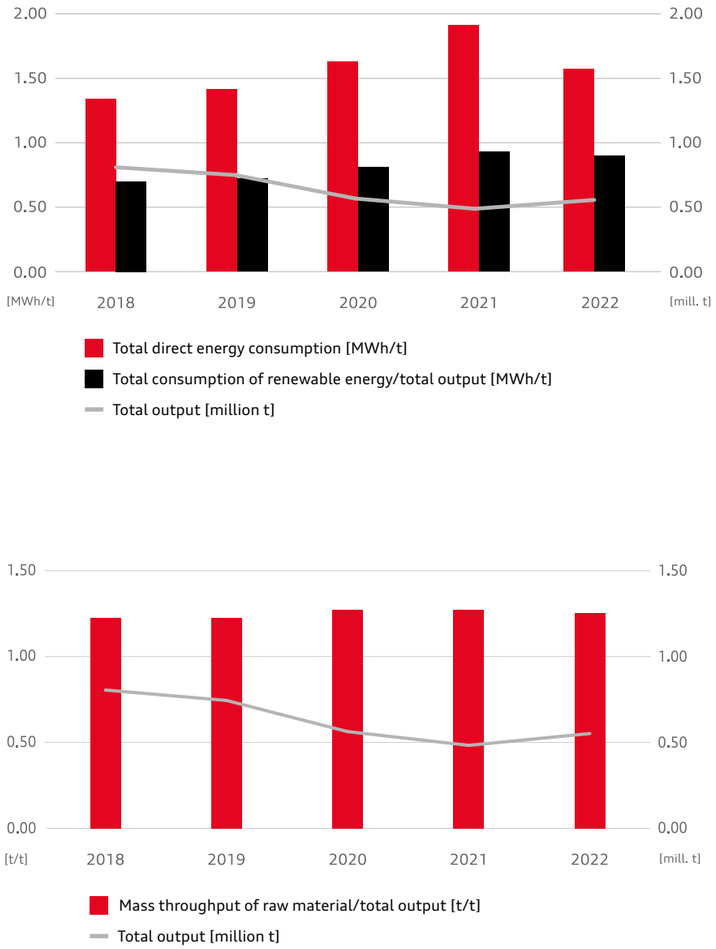
* The core indicators for energy, waste and total greenhouse gas emissions shown comprise the plant and larger external locations near the plant.

▶ **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

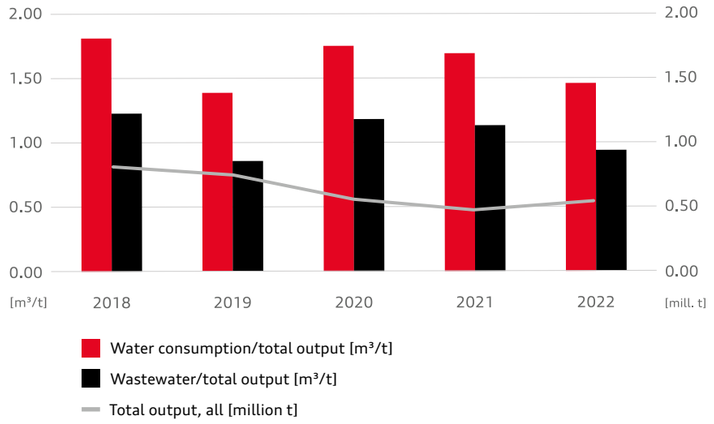
Since 2018, the development of the core indicators at the Ingolstadt site has been strongly characterized by declining vehicle unit figures and a decrease of the total output. The positive effects of the measures for improvement implemented to reduce the environmental impacts are reduced by increasing base load or offset in some cases. 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. Despite the shortage of natural gas and the energy crisis, the vehicle unit figures and the total output were higher in 2022 as compared with the previous year.

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 of total direct energy consumption/total output between 2018 and 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. However, the total consumption of renewable energy/total output remained relatively steady in 2022, as the operation of the internal combined heat and power plant in particular was limited while carbon-neutral district heat and green electricity were still procured.

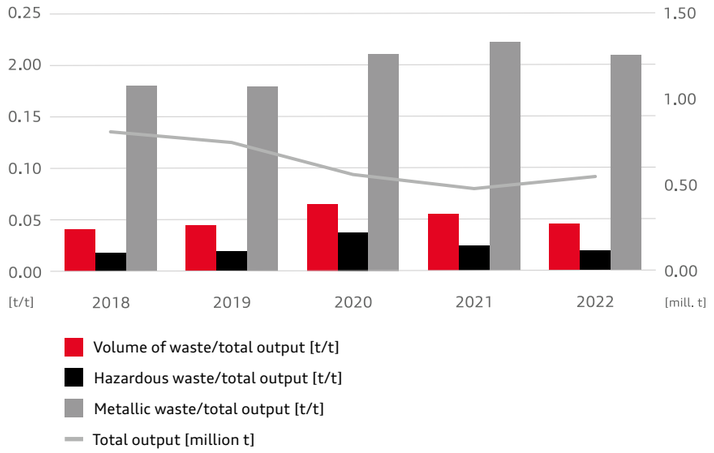


Material usage
The mass throughput of raw material/total output has remained relatively steady over the years.

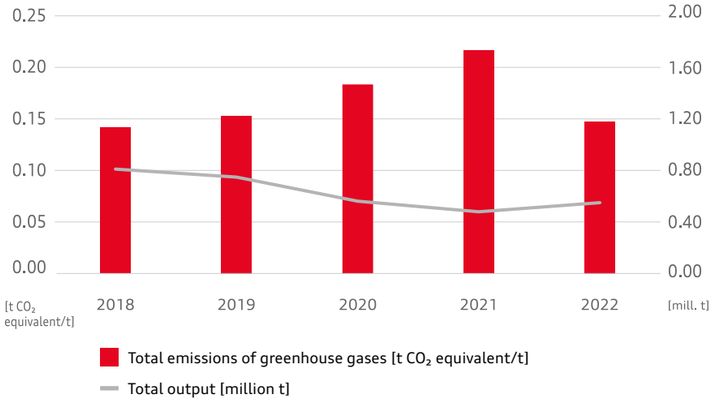
Water
Thanks to the introduction of the membrane bioreactor, water consumption and wastewater were reduced significantly in 2019. The special situation in 2020 due to the coronavirus pandemic resulted in lower water reuse and thus an increase in the amount of wastewater and water consumption. Water reuse was improved considerably in 2021 and 2022.



Waste
While the total output decreased between 2018 and 2021, the specific waste volumes for each total output did not follow this development 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 since 2020. In 2022, the volume of waste was reduced as compared with the previous year despite a considerable increase in production.



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 deteriorated because production declined while the base load remained unchanged. Production recovered in 2022, and the gas shortage and measures resulting from it such as the reduction of the temperature in halls and offices as well as the decreased heat and power generation in the plant's own CCHP system made themselves noticeable.



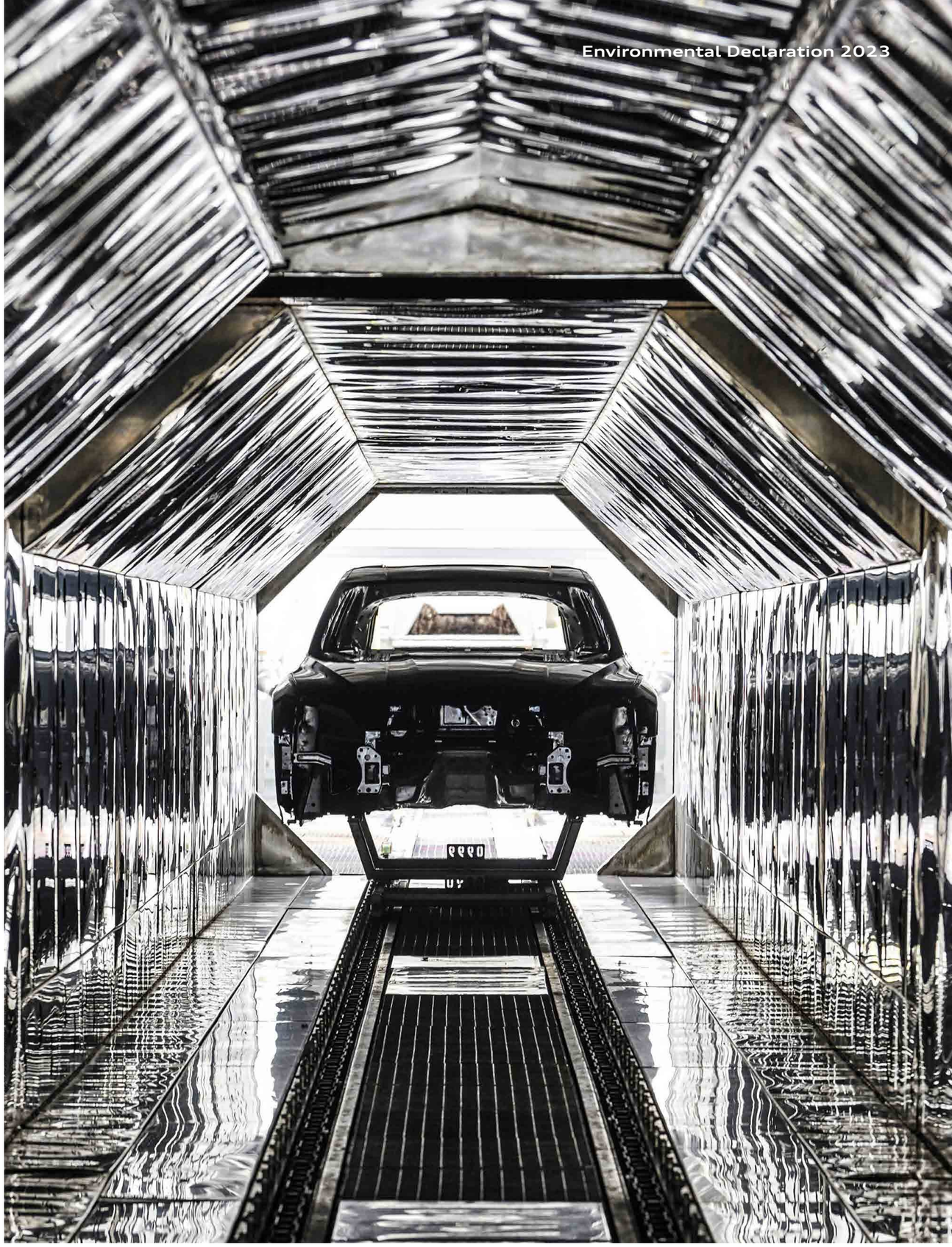
Biodiversity
The core indicator of land consumption (sealed surface area)/total output has increased continuously since 2018, which, until 2021, could be attributed mainly to a decrease in the total output. A new detailed recording of the sealed surface areas was made for the entire plant area, including parking lot areas, roads and footpaths, in 2022. Up to and including 2021, only data on the surface areas sealed by buildings was available. 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.

[1] CCHP system = combined cooling, heat and power system

Core indicators R / Ingolstadt site

	Unit	2018	2019	2020	2021	2022
Energy						
Total direct energy consumption/ total output	MWh/t	1.336	1.405	1.634	1.906	1.575
of which total consumption of renewable energy/total output	MWh/t	0.700	0.723	0.814	0.929	0.898
Material usage (excl. water and energy sources)						
Mass throughput of raw material/ total output	t/t	1.220	1.223	1.276	1.276	1.253
Water						
Water consumption/total output	m³/t	1.807	1.386	1.755	1.692	1.456
Wastewater/total output	m³/t	1.234	0.862	1.175	1.126	0.939
Waste						
Volume of waste [1]/total output	t/t	0.041	0.044	0.065	0.054	0.045
of which hazardous waste/total output	t/t	0.018	0.019	0.037	0.024	0.019
Metallic waste/total output	t/t	0.180	0.179	0.210	0.221	0.208
Biodiversity						
Land consumption (sealed surface area)/ total output	m²/t	1.38	1.50	1.97	2.28	3.09
Total natural area at the site/ total output	m²/t	-	-	0.01	0.02	0.02
Total natural area away from the site/ total output	m²/t	-	0.17	0.22	0.25	0.23
Emissions						
Total greenhouse gas emissions/ total output	t CO_2 equivalent/t	0.20	0.21	0.24	0.25	0.18
NO_X (nitrogen oxides)/total output	kg/t	0.096	0.108	0.131	0.140	0.126
PM (dust)/total output	kg/t	0.014	0.012	0.013	0.013	0.016
SO_2 (sulfur dioxide)/total output	kg/t	0.001	0.0001	0.0001	0.0001	0.0002
VOC (organic solvents)/ total output	kg/t	0.723	0.613	0.780	0.814	0.802

[1] excluding metallic waste



The new top coat line at the Ingolstadt site is a further step toward carbon-neutral production

Core indicators A / Münchsmünster site*

	Unit	2018	2019	2020	2021	2022
Energy						
Total direct energy consumption	MWh	82,411	80,116	69,309	71,980	67,211
of which total consumption of renewable energy	MWh	41,166	37,632	33,220	34,614	36,367
Electrical energy (incl. in-house generation)	MWh	45,690	43,491	38,344	38,715	36,670
Thermal energy, of which › In-house generation › District heating sourcing	MWh	9,677 9,677 -	10,351 10,351 -	9,882 9,882 -	11,639 11,639 -	8,419 8,419 -
District cooling	MWh	-	-	-	-	-
Natural gas for production processes	MWh	27,044	26,274	21,083	21,626	22,123
Material usage (excl. water and energy sources)						
Mass throughput of raw material	t	121,932	129,960	103,697	112,504	101,564
Iron and steel	t	32,497	50,263	41,995	53,864	48,313
Aluminum	t	7,885	4,518	4,046	4,598	3,496
Paints	t	62	60	38	43	38
Water						
Water consumption	m³	73,054	87,815	56,829	43,390	43,385
Wastewater quantity	m³	57,061	67,977	45,457	33,133	32,404
Waste						
Volume of waste (excluding metallic waste), of which	t	1,738	1,141	835	803	817
Hazardous waste	t	672	475	415	369	363
› Hazardous waste disposed of	t	135	66	69	44	22
› Hazardous waste recycled	t	537	408	346	325	341
Non-hazardous waste	t	1,067	666	420	434	455
› Non-hazardous waste disposed of	t	1	34	6	1	1
› Non-hazardous waste recycled	t	1,066	632	414	432	454
Metallic waste	t	38,459	35,790	28,737	30,259	29,317
Biodiversity [1]						
Total site area	m²	310,553	539,158	540,594	540,594	540,594
Land consumption (sealed surface area)	m²	-	158,653	157,270	157,270	157,270
Total natural area at the site	m²	-	151,900	141,679	141,679	141,679
Total natural area away from the site	m²	-	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	2018	2019	2020	2021	2022
Emissions						
Total greenhouse gas emissions						
Total greenhouse gas emissions [2]	t CO_2 equivalent	8,848	9,093	7,600	7,909	6,389
Total CO_2 emitted from stationary systems [3]	t CO_2	8,662	8,996	7,579	7,896	6,370
Directly emitted CO_2 from mobile systems [4]	t CO_2	28	28	19	12	17
CO_2 equivalents from HFC and HCFC emissions [5]	t CO_2 equivalent	158	69	2	0	2
Total emissions into the air [6]						
NO_x (nitrogen oxides):	t	5.746	4.851	4.086	4.258	3.273
PM (dust)	t	0.075	0.076	0.069	0.423	0.460
SO_2 (sulfur dioxide)	t	-	-	-	-	-
VOC (organic solvents)	t	1.860	1.680	1.148	1.290	1.148

[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	2018	2019	2020	2021	2022
Product output						
Total output volume (total output) of all products	t	81,734	93,028	74,125	81,442	71,430

Aluminum coils in Production

The disposal of used oil is strictly monitored

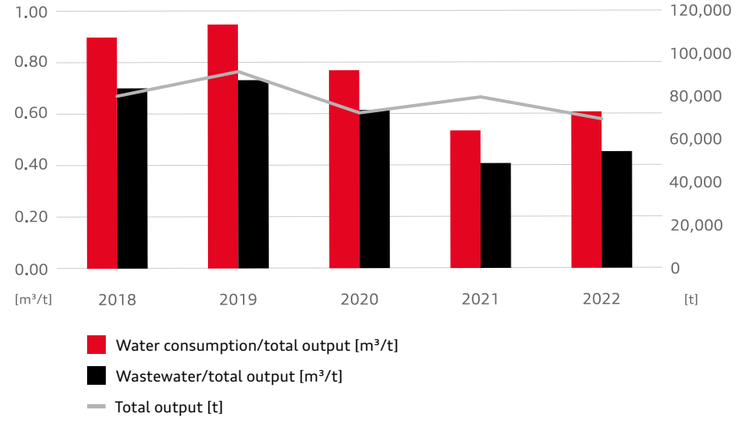
Core indicators R / Münchsmünster site

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 of the total output of the press shop. This volume decreased again in 2022. In addition, weight optimizations implemented for processed blanks resulted in a decrease of the total output of chassis module manufacturing in 2022.

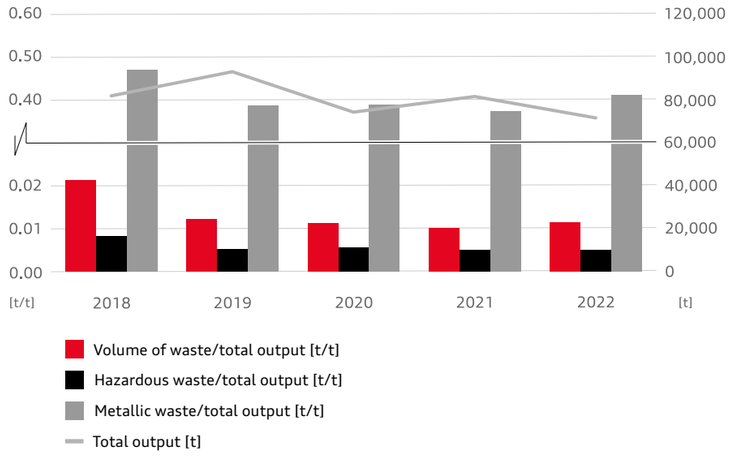
Energy
Due to the strong increase in the total output between 2018 and 2019, the energy base load of production is distributed across a greater output, which results in a lower energy consumption/ total output. The opposite effect can be seen between 2021 and 2022. During these years, the total output 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 the operation of the internal combined heat and power plant was limited due to the gas shortage and the volume of green electricity procured externally increased proportionately.

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

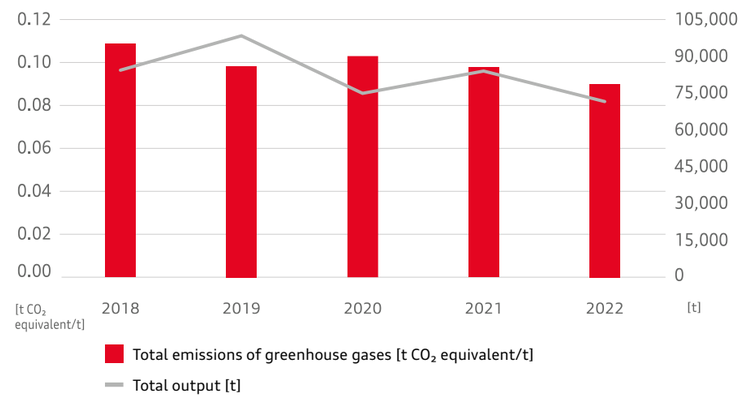
Water
The water consumption/ total output was reduced over the years thanks to optimizations in the production processes. Following an increase in water consumption in 2019, the output-specific water consumption and the output-specific wastewater quantity decreased again considerably in 2020 and 2021. In 2022, the output-related water consumption and wastewater quantity increased again slightly.



Waste
The volume of waste/ total output was reduced in 2018 and 2019 thanks to optimizations of the production processes and the introduction of an emulsion evaporation plant. The volume of waste is subject to some fluctuations and not immediately dependent on the total output.



Emissions
The greenhouse gases are based on the energy consumption. As explained for the total consumption of renewable energy/ total output, the limited operation of the natural-gas-powered internal combined heat and power plant resulted in the lowest total greenhouse gas emissions/total output for the emissions in 2022.



Biodiversity
Changes to the areas in m²/total output result exclusively from the developments of the total output. The absolute 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. These absolute values have remained unchanged since 2020.

Core indicators R / Münchsmünster site

	Unit	2018	2019	2020	2021	2022
Energy						
Total direct energy consumption/ total output	MWh/t	1.008	0.861	0.935	0.884	0.941
of which total consumption of renewable energy/total output	MWh/t	0.504	0.405	0.448	0.425	0.509
Material usage						
Mass throughput of raw material/ total output	t/t	1.492	1.397	1.399	1.381	1.422
Water						
Water consumption/total output	m³/t	0.894	0.944	0.767	0.533	0.607
Wastewater/total output	m³/t	0.698	0.731	0.613	0.407	0.454
Waste						
Volume of waste [1]/total output	t/t	0.021	0.012	0.011	0.010	0.011
of which hazardous waste/total output	t/t	0.008	0.005	0.006	0.005	0.005
Metallic waste/total output	t/t	0.471	0.385	0.388	0.372	0.410
Biodiversity						
Land consumption (sealed surface area)/ total output	m²/t	-	1.71	2.122	1.93	2.202
Total natural area at the site/ total output	m²/t	-	1.63	1.911	1.74	1.983
Total natural area away from the site/ total output	m²/t	-	0.00	0.000	0.00	0.000
Emissions						
Total greenhouse gas emissions/ total output	t CO_2 equivalent/t	0.108	0.098	0.103	0.097	0.089
NO_X (nitrogen oxides)/total output	kg/t	0.070	0.052	0.055	0.052	0.046
PM (dust)/total output	kg/t	0.001	0.001	0.001	0.005	0.006
VOC (organic solvents)/ total output	kg/t	0.023	0.018	0.015	0.016	0.016

[1] excluding metallic waste

Press Shop – unfolded tool for side wall frame

Core indicators A / Neuburg site

	Unit	2018	2019	2020	2021	2022
Energy						
Total direct energy consumption	MWh	8,616	9,078	8,501	8,716	7,396
of which total consumption of renewable energy	MWh	4,978	5,438	4,769	4,651	4,309
Electrical energy (incl. in-house generation)	MWh	4,978	5,438	4,769	4,651	4,309
Thermal energy, of which › In-house generation › District heating sourcing	MWh	3,638 - 3,638	3,640 - 3,640	3,732 - 3,732	4,065 - 4,065	3,087 - 3,087
District cooling	MWh	-	-	-	-	-
Natural gas for production processes	MWh	-	-	-	-	-
Material usage (excl. water and energy sources)						
Fuels	l	270,971	257,964	132,009	79,979	100,904
Water						
Water consumption	m³	50,444	44,299	39,205	42,330	37,172
Wastewater quantity	m³	13,819	8,728	7,854	7,864	7,925
Waste						
Volume of waste (excluding metallic waste), of which	t	178	302	221	199	185
Hazardous waste	t	51	203	126	105	94
› Hazardous waste disposed of	t	45	190	116	96	89
› Hazardous waste recycled	t	6	14	10	9	5
Non-hazardous waste	t	127	98	95	94	91
› Non-hazardous waste disposed of	t	0	0	0	0	0
› Non-hazardous waste recycled	t	127	98	95	94	91
Metallic waste	t	-	-	-	-	-
Biodiversity [1]						
Total site area	m²	470,000	470,000	470,000	470,000	465,690
Land consumption (sealed surface area)	m²	-	172,000	172,000	172,000	167,850
Total natural area at the site	m²	-	298,000	298,000	298,000	297,840
Total natural area away from the site	m²	-	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	2018	2019	2020	2021	2022
Emissions						
Total greenhouse gas emissions						
Total greenhouse gas emissions [2]	t CO_2 equivalent	1,232	1,200	670	380	398
Total CO_2 emitted from stationary systems [3]	t CO_2	440	432	228	23	32
Directly emitted CO_2 from mobile systems [4]	t CO_2	792	768	442	357	365
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	0.03	0.01	0.01	0.01
PM (dust)	t	0.00114	0.00110	0.00047	0.00033	0.00048
SO_2 (sulfur dioxide)	t	0.00057	0.00052	0.00022	0.00015	0.00021
VOC (organic solvents)	t	1.93	1.75	0.75	0.53	0.72

[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) 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

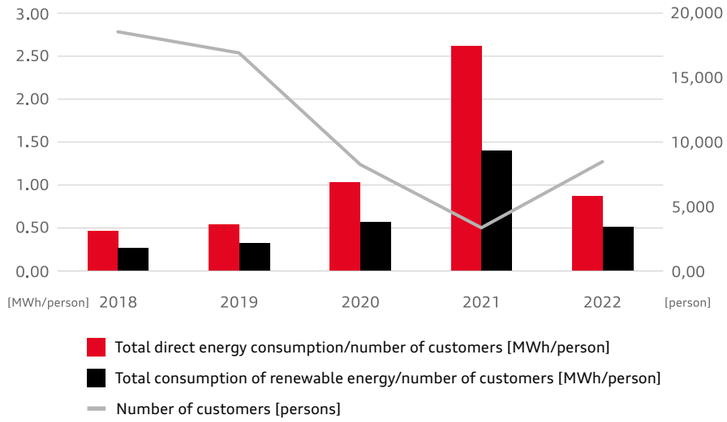
	Unit	2018	2019	2020	2021	2022
Product output						
Number of customers	Person	18,613	16,965	8,263	3,330	8,484
Number of driving events	Unit	434	417	170	217	274

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

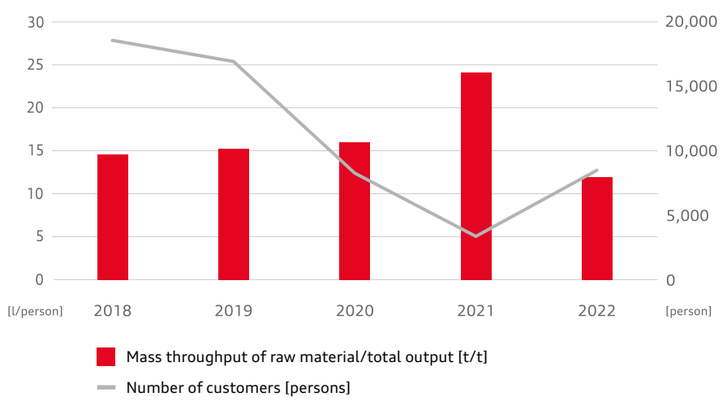
Core indicators R / Neuburg site

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 of the engine test beds that started in 2018 in particular is clearly visible in the core indicators. In 2020 and 2021, this effect was intensified due to the considerable decline in customer numbers as a result of the coronavirus pandemic (sum of active and inactive customers and visitors). The drop in the number of customers is reflected in a significant increase of the core indicators. The conference rooms and restaurant have been open again since May 2022, and near normal driving experience operations have been possible again.

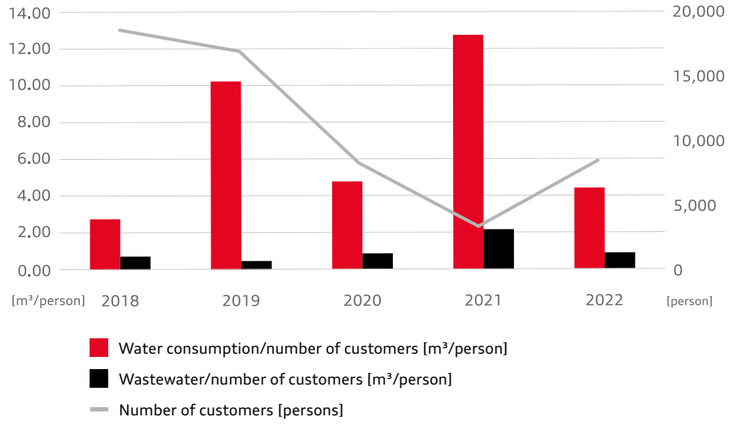
Energy
An increase in the energy consumption per customer can be seen as from 2019. The increase in 2019 is essentially due to the increased electricity consumption resulting from the ongoing electrification of the vehicles. In 2020 and 2021, the increase can also be attributed to the drop in customer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



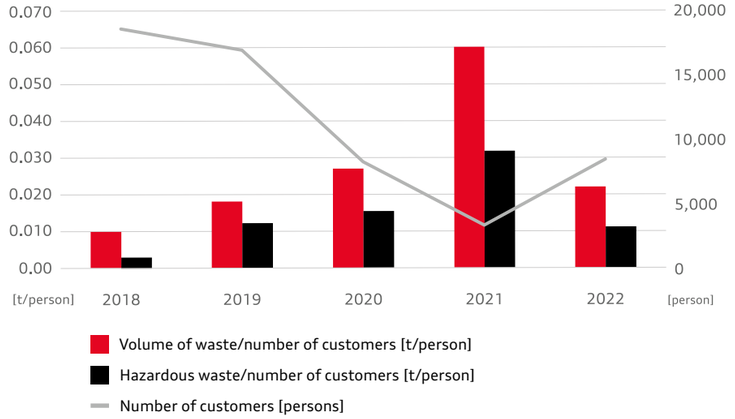
Material usage
The material usage or mass throughput of raw material at the Neuburg site comes from the fuel consumption. In addition to a decrease in the fuel consumption of the engine test beds, a decrease in the fuels filled has also been recorded since 2018. The fact that the fuel consumption per customer increased nevertheless until 2021 is due to the considerably smaller number of customers as compared to the previous years. Since driving experience operations were almost back to normal in 2022, a decrease in the fuel consumption per customer can be seen again.



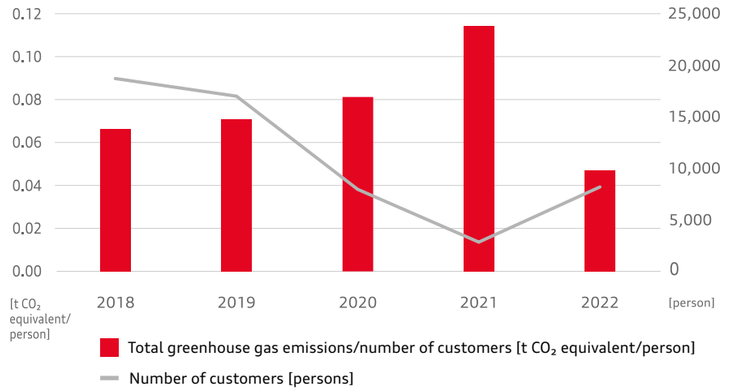
Water
The water requirement depends essentially on the need for cooling water and the weather. Around 70% of the water is needed for watering the dynamic handling area. The wastewater quantity fluctuates and depends essentially on the need for cooling water and the resulting process wastewater.



Waste
The visible significant increase in the total volume of waste (excluding metallic waste) per customer 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 especially in 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 until 2021, the total greenhouse gas emissions per customer reached an all-time low in 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 until 2021. A further, more detailed evaluation of the individual areas was performed in 2022.

Core indicators R / Neuburg site

	Unit	2018	2019	2020	2021	2022
Energy						
Total direct energy consumption/ number of customers	MWh/ person	0.46	0.54	1.03	2.62	0.87
of which total consumption of renewable energy/number of customers	MWh/ person	0.27	0.32	0.58	1.40	0.51
Material usage						
Fuel consumption/number of customers	l/person	14.56	15.21	15.98	24.02	11.89
Water						
Water consumption/number of customers	m³/person	2.71	2.61	4.74	12.71	4.38
Wastewater/number of customers	m³/person	0.74	0.51	0.95	2.36	0.93
Waste						
Volume of waste/number of customers	kg/person	9.55	17.78	26.71	59.74	21.82
of which hazardous waste/ number of customers	kg/person	2.74	11.98	15.24	31.63	11.08
Biodiversity						
Land consumption (sealed surface area)/ number of customers	m²/person	-	10.14	20.82	51.65	19.78
Total natural area at the site/ number of customers	m²/person	-	17.57	36.06	89.49	35.11
Total natural area away from the site/ number of customers	m²/person	-	0.00	0.00	0.00	0.00
Emissions						
Total greenhouse gas emissions/ number of customers	t CO_2 equivalent/ person	0.066	0.071	0.081	0.114	0.047
NO_x (nitrogen oxides)/ number of customers	kg/person	0.002	0.002	0.001	0.003	0.001
PM (dust)/number of customers	kg/person	0.00006	0.00006	0.00006	0.00010	0.00006
SO_2 (sulfur dioxide)/ number of customers	kg/person	0.00003	0.00003	0.00003	0.00005	0.00003
VOC (organic solvents)/ number of customers	kg/person	0.104	0.103	0.091	0.158	0.085

Neuburg: high-quality biotope along the offroad course

Core indicators A / Neustadt site

	Unit	2018	2019	2020	2021	2022
Energy						
Total direct energy consumption	MWh	-	-	-	-	4,812
of which total consumption of renewable energy	MWh	-	-	-	-	2,963
Electrical energy (incl. in-house generation)	MWh	-	-	-	-	2,963
Thermal energy, of which › In-house generation › District heating sourcing	MWh	- - -	- - -	- - -	- - -	1,849 1,849 -
District cooling	MWh	-	-	-	-	-
Natural gas for production processes	MWh	-	-	-	-	-
Material usage (excl. water and energy sources)						
Fuels	l	-	-	-	-	209,818
Water						
Water consumption	m³	-	-	-	-	31,278
Wastewater quantity	m³	-	-	-	-	3,857
Waste						
Volume of waste (excluding metallic waste), of which	t	-	-	-	-	21
Hazardous waste	t	-	-	-	-	7
› Hazardous waste disposed of	t	-	-	-	-	7
› Hazardous waste recycled	t	-	-	-	-	0
Non-hazardous waste	t	-	-	-	-	14
› Non-hazardous waste disposed of	t	-	-	-	-	0
› Non-hazardous waste recycled	t	-	-	-	-	14
Metallic waste	t	-	-	-	-	-
Biodiversity						
Total site area	m²	-	-	-	-	2,596,237
Land consumption (sealed surface area)	m²	-	-	-	-	406,700
Total natural area at the site	m²	-	-	-	-	2,189,537
Total natural area away from the site	m²	-	-	-	-	235,336

	Unit	2018	2019	2020	2021	2022
Emissions						
Total greenhouse gas emissions						
Total greenhouse gas emissions [1]	t CO_2 equivalent	-	-	-	-	810
Total CO_2 emitted from stationary systems [2]	t CO_2	-	-	-	-	373
Directly emitted CO_2 from mobile systems [3]	t CO_2	-	-	-	-	437
CO_2 equivalents from HFC and HCFC emissions [4]	t CO_2 equivalent	-	-	-	-	0
Total emissions into the air [5]						
NO_x (nitrogen oxides):	t	-	-	-	-	0.19
PM (dust)	t	-	-	-	-	-
SO_2 (sulfur dioxide)	t	-	-	-	-	-
VOC (organic solvents)	t	-	-	-	-	0.05

[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	2018	2019	2020	2021	2022
Product output						
Number of users (test drives)	Test drive	-	-	-	-	17,956

Prototype-safe development and testing in Neustadt

Testing an Audi e-tron 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. This is the first time that the Neustadt site is included in the environmental declaration. The core indicators were therefore also recorded for the first time for 2022 and there is no comparison value from earlier years.

	Unit	2018	2019	2020	2021	2022
Energy						
Total direct energy consumption/ number of users	MWh/ test drive	-	-	-	-	0.27
of which total consumption of renewable energy/number of users	MWh/ test drive	-	-	-	-	0.16
Material usage						
Fuel consumption/number of users	l/test drive	-	-	-	-	11.69
Water						
Water consumption/number of users	m³/test drive	-	-	-	-	1.74
Wastewater/number of users	m³/test drive	-	-	-	-	0.21
Waste						
Volume of waste/number of users	kg/test drive	-	-	-	-	1.18
of which hazardous waste/ number of users	kg/test drive	-	-	-	-	0.38
Biodiversity						
Land consumption (sealed surface area)/ number of users	m²/test drive	-	-	-	-	22.65
Total natural area at the site/ number of users	m²/test drive	-	-	-	-	121.94
Total natural area away from the site/ number of users	m²/test drive	-	-	-	-	13.11
Emissions						
Total greenhouse gas emissions/ number of users	t CO_2 equivalent/ test drive	-	-	-	-	0.045
NO_x (nitrogen oxides)/number of users	kg/test drive	-	-	-	-	0.011
VOC (organic solvents)/number of users	kg/test drive	-	-	-	-	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 2023

Environmental aspect	Environmental protection target	Individual measure	Target deadline	Status
Water Wastewater	Reduction of wastewater with cleaning agent/chemical residues	T8 car wash: changeover from chemical/mechanical to biological water treatment	Q3/2023	●
	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	2027	◑ 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	○ 2
	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	2023	◑
	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	○
Waste Resources	Operating trial to assess the potential of reducing hazardous waste by treating the flushing medium used in the paint shop	Implementation of a coagulation system for treating waste from hydraulic flushing	2023	● 15
	Reduction of resource consumption in Logistics in the area of packaging materials	Key figure development of packaging material with a strong environmental impact (from fossil raw materials or for thermal recycling) for new vehicle projects and reduction in series production by 475 t by 2025 across plants	2025	● 3
	Reduction of clean oil consumption for hydraulic oil	Changeover from hydraulic oil to re-refined oil in the sheet metal part disposal systems	2026	◑ 4

Environmental aspect	Environmental protection target	Individual measure	Target deadline	Status
Waste Resources	Reduction of coil base oiling of steel coils	Gradual changeover of coil base oiling from prelube I to prelube II	Q4/2025	◑ 5
	Reduction of resource consumption in Logistics in the area of packaging materials	Reduction of single-use plastic packaging in PPE41 for top parts	2026	○
	Flagship project for the recycling of plastic (approx. 250 metric tons/year) and door seals (approx. 10 t/year)	Recycling of plastics (caps), use of recyclate for wheel well liners, door seals from thermal to material recycling	2022	● 6
	Reduction of hazardous waste	Recycling of residual amounts of PVC from silo cleaning	2023	●
Emissions	Reduction of CO_2 emissions in the transport chain from the supplier to the plant (material transport)	Reduction of transport emissions during material transport from the supplier to the plant across all Audi plants by 64,000 t by 2025	Q4/2025	◑ 7
	Reduction of noise emissions on I06 (Rohrmühle)	Replacement of the extraction system for exterior facilities at T5 with an indoor extraction system	Q1/2023	●
	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	◑ 8
	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	◑
	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	◑ 9
	Saving thermal energy (natural gas and district heating) in the entire Ingolstadt plant	Reduction of the hot water flow temperature from 135°C to 120°C	2022	●
	Saving energy by modernizing the systems	Complete renewal of elevator installations no. 181 and 182	2022	●
	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	2026	○ 10
	Waste heat use	Use of waste heat from cooling water (reservoir, heat pumps, low-temperature network, high-performance combined circulation systems in ventilation and air-conditioning technology)	2029	○
	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 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	○

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

Environmental aspect	Environmental protection target	Individual measure	Target deadline	Status
Biodiversity	Awareness-raising and communication	Key visuals: container design competition	2023	◑ [11]
	Promotion of biodiversity at the site	Completion of biodiversity concept implementation	2022	● [15]
	Promotion of biodiversity at the site	Implementation of the biodiversity concept	ongoing	◑ [15]
	Promotion of biodiversity at the site	Finalization of the area-specific maintenance plan	2023	◑ [12] [15]
	Awareness-raising and communication	Implementation of at least 3 awareness-raising measures per year	2023	◑
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	2023	◑
	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	2023	◑
	Check of the potential of explosion protection measures for CNG and H2 vehicles on the vehicle test rigs	Test facility for vehicles with alternative drive systems	2024	◑ [13] [15]
	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 2. Raising awareness among employees regarding the connection between environmental protection and eating habits 3. Gradual (adjustment of the menus for the) reduction of the CO_2 foot(d)print of Audi gastronomy	2025	◑ [14]
	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); 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	◑
	Reduction of emissions generated by the private transport of Audi employees	In the future, the employees of AUDI AG will be given the opportunity to benefit from bicycle leasing models with attractive terms	2023	●
	Environmental compatibility of commuter mobility	WOC (residence clusters), participation in the "New Mind" mobility project for the optimization of public transport modalities at the site	2023	● [15]
	CO_2 reduction by avoiding vehicle transport	Flexible use of the employee parking garages (N69) for vehicles to be delivered to customers etc.	2023	◑ [15]

[1] Feasibility has been checked; target deadline was adjusted as implementation is only possible once the new rainwater treatment system has been commissioned.
[2] Target deadline was adjusted as implementation is only possible once the new rainwater treatment system has been commissioned.
[3] The target cannot be shown specifically for only the IN site (sum across all plants).
[4] The target deadline was adjusted due to a sensible oil change interval.
[5] The target deadline was adjusted due to the postponement of the EQ6 SOP.
[6] Due to reasons relating to production, around 75 metric tons of plastic and around 25 metric tons of door seals were recycled in 2022.
[7] The target cannot be shown specifically for only the IN site (sum across all plants); the target is being revised due to changed external parameters.
[8] The target deadline was adjusted due to technical complexity.
[9] The target deadline was adjusted due to technical complexity.
[10] The target deadline was adjusted due to changed parameters.
[11] The target deadline was adjusted – the competition has taken place and the design was implemented in 2023.
[12] The target deadline was adjusted due to the preparation of technical requirements.
[13] The target deadline was adjusted due to technical complexity.
[14] The target deadline was adjusted due to a change of service provider.
[15] The wording of environmental protection/individual measures was adjusted.

High-power charging (HPC) makes extremely fast charging possible

Environmental program, Product 2023

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 base year of 2015 and by 40% by 2030 as compared to the (base 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 Q4/2030	◑
	Expansion of the range of electrified drive concepts	NEV: 40% of new Audi vehicles are equipped with an electrified drive system (at least one battery-electric vehicle is offered in each core segment)	Q4/2025	◑
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	◑

Environmental program, Münchsmünster 2023

Environmental aspect	Environmental protection target	Individual measure	Target deadline	Status
Transport	Reduction of the emissions in truck traffic in Münchsmünster	– The roadmap is reassessed and revised in the context of natural gas supply – Roadmap for reducing emissions in truck traffic; goal: carbon-neutrality (Münchsmünster site) – Analysis of CO_2-free transport options in Münchsmünster	Q2/2023	●
Biodiversity	Increase of the biodiversity index from 0.2 to 0.3	– Expansion of the biodiversity concept for Münchsmünster – Handling of invasive plant species at the site (transfer of knowledge to apprentices) – Care for and expansion of the wild bee wall – Care for the biotope in Schrannenbach – Working with plants together with the educational field – Guided tours for Audi employees (transfer of knowledge) – Guided tours & projects with school classes from the region – Planning a habitat for amphibians – Additional second life wood & rhizome – Stand-up display with information on biodiversity	Q2/2025	◑
Waste	Recording the waste streams	Clustering of the waste streams in coordination with the OUs responsible	Q4/2022	●
	Reduction of coil base oiling for steel coils	Gradual changeover of coil base oiling from prelube I to prelube II	Q4/2025	◑

Environmental program, Neuburg 2023

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	2024	◑ [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	◑ [2]
Transport	Reduction of CO_2 emissions by the track management fleet	Change of the track management vehicles to electrified vehicles	Q4/2022	●
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
[2] The target deadline was adjusted due to the availability of BEV products

Environmental program, Neustadt 2023

Environmental aspect	Environmental protection target	Individual measure	Target deadline	Status
Neighborhood	Stakeholder management	Performance of an annual dialogue with local residents > stakeholder dialogue	Annually	Ongoing
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	◑

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

Validation

Dr. Bernd Scholz
Dipl.-Chemiker
Umweltgutachter

Vom 26.07.2023 bis 22.11.2023 (gesamt 23 Tage) 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 2023 (Revalidierung) 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 2023 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 05.12.2023

Dr. Bernd Scholz
Umweltgutachter, DE-V-0037

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

Registration data with the Chamber of Commerce

CERTIFICATE

EMAS
VERIFIED ENVIRONMENTAL MANAGEMENT

AUDI AG

Sites

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

Registration-No.: DE-155-00040

Date of first registration
19th January 2021

This certificate is valid until
4th December 2026

This organisation has established an environmental management system according to EU-Regulation Nr. 1221/2009 and EN ISO 14001:2015 (section 4 to 10) to promote the continual improvement of environmental performance, publishes an environmental statement, has the environmental management system verified and the environmental statement validated by a verifier, is registered under EMAS (www.emas-register.de) and therefore is entitled to use the EMAS-Logo.

IHK München und Oberbayern

Munich, 12th December 2023

Dr. Manfred Gößl
Chief Executive Officer

Certification

CERTIFICATE

This is to certify that

AUDI AG

85045 Ingolstadt
Germany

with the organizational units/sites as listed in the annex

has implemented and maintains an Environmental Management System.

Scope:
Manufacture of motor vehicles and motor vehicle engines

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 14001 : 2015

Certificate registration no.	547237 UM15
Valid from	2023-12-13
Valid until	2026-12-03
Date of certification	2023-12-13

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

DQS GmbH

Christian Gerling
Managing Director

DQS IS A MEMBER OF IQNET

Accredited Body: DQS GmbH, August-Schanz-Straße 21, 60433 Frankfurt am Main, Germany
The validity of this certificate can only be verified by the QR-code.

Environmental Declaration 2023

Certification

CERTIFICATE

This is to certify that

AUDI AG

85045 Ingolstadt
Germany

with the organizational units/sites as listed in the annex

has implemented and maintains an Energy Management System.

Scope:
Manufacture of motor vehicles and motor vehicle engines

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 50001 : 2018

Certificate registration no.	547237 EMSt21
Valid from	2023-12-13
Valid until	2026-12-03
Date of certification	2023-12-13

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

DQS GmbH

Christian Gerling
Managing Director

DQS IS A MEMBER OF IQNET

Accredited Body: DQS GmbH, August-Schanz-Straße 21, 60433 Frankfurt am Main, Germany
The validity of this certificate can only be verified by the QR-code.

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.

Environmental Declaration 2023

Publishing details

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The vehicles shown on the title page, page 2 and pages 26/27 are concept vehicles that are not available as series-production vehicles.

Date for the next environmental declaration:
Audi will publish the next environmental declaration in 2024.

Audi Vorsprung durch Technik

AUDI AG
85045 Ingolstadt
www.audi.com
Date published:
October 2023

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-Scharnhausen, Germany.