



Sustainability report 2021

” Anyone who believes exponential growth can go on forever in a finite world is either a mad man or an economist.

Kenneth Boulding



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CEO statement

G102-14

2021 was another very challenging year. The Covid-19 pandemic entered its second year, with more lockdowns, mobile working and challenges in the value chain. The vital role of telecommunications was further demonstrated, as it made mobile working possible and enabled many virtual events, and the value of the infrastructure necessary for digitization was highlighted. As a result, network operators and their suppliers were able to regain some attention and recognition.

However, the reduction in travel and commuting activities seen in 2020 did not continue. The end of 2021 showed the highest global CO₂ emissions ever. And Covid-19 was not the only challenge for the value chain and telecommunications infrastructure. Firstly, there was a significant shortage of semiconductors. This had a strong impact on telecommunications, leading to price increases and delivery delays affecting every part of the industry. Next, areas of Western Europe were hit by unprecedented flooding due to extreme weather conditions. Global warming is believed to be the cause, putting the vulnerability of telecommunications infrastructure into

sharp focus. This once again illustrates the need for measures to mitigate and adapt to climate change. Among all the economic aspects of the challenges we face, this must not be overlooked.

In 2021, we also continued to successfully work on the area of sustainability. After tightening our SBTi targets to 1.5°C, we started preparing for participation in the Fit for 55 program. In addition, we're pursuing the necessary steps to advance circular-economy business models and to sustainably meet our responsibilities in the value chain.

The executive board and I take full responsibility for driving ADVA with a balanced focus on sustainable business. Our solutions are changing the communication infrastructure of our customers and thus the digital landscape of our society. We also understand that doing business is not just about making the best technology. We're therefore taking additional steps to ensure that our business success is permanent. In this way, we also support the well-being of our environment and the success of our employees. In the medium to long term, these sustainable practices are the only



way to conserve resources and reduce many of the associated costs.

Ours is a sustainable approach: good business that leads to the good of our world, our business partners and our employees.

A handwritten signature in black ink, appearing to read 'Brian Protiva'.

Brian Protiva
Chief executive officer

The two parts of this sustainability report

Our 2021 sustainability report is divided into two parts. Part 1 explains the context of ADVA, which is relevant both for an understanding of our business field and, more specifically, for the environmental management and energy management systems. Part 1 also contains information and answers on the Sustainability Reporting Standards of the Global Reporting Initiative (GRI[®] Standards 2016). This applies to content that has not been rated as material within the meaning of the German Commercial Code (HGB) but should be reported in accordance with GRI standards and the “comprehensive” option.

[®]Glossary: page 77

Part 1 includes the tabular compilation of the GRI indicators with the associated page references or short answers directly in the table. This can be found at the end of the sustainability report.

The GRI indices are marked in gray under the respective headings.

This also applies to Part 2 of the report, as it also contains answers to GRI indices. However, these are not part of the external validation.

Part 2 comprises the separate non-financial group report in accordance with section § 315b paragraph 3 of the German Commercial Code (HGB) and is referred to below as the “non-financial report” for the sake of simplicity. This non-financial report is prepared in accordance with §§ 315b and 315c, in conjunction with 289c to 289e HGB and serves to meet the requirements of the CSR Directive Implementation Act and is subject to a voluntary business audit with limited security in accordance with ISAE 3000 (Revised). Only the non-financial report in Part 2 is subject to this check. All information in Part 1 of the sustainability report does not belong to the non-financial report and is not part of the audit.



Part 1 – ADVA and its context

About ADVA

Company key facts

G102-3, G102-4, G102-7, G102-53, G202-2

Global presence

The group operates in 25 countries with 36 sites. ADVA has significant operations in Germany, Poland, UK, USA, Israel and China. At year end 2021 (December 31), 1,973 employees were employed worldwide.

For our global presence, please see the picture on the right.

Quality and environmental commitment

ADVA is certified according to TL 9000[®], ISO 9001[®], ISO 14001[®], ISO 22301[®] and ISO 50001[®]. We also perform our product-portfolio lifecycle assessments (LCA) in accordance with ISO 14040[®]/14044[®].

[®]Glossary: page 77

Public listing

ADVA is listed in the Prime Standard segment of the Frankfurt Stock Exchange (Symbol: ADV).



You can find more about ADVA in our [Annual Report 2021](#).

For any questions or comments regarding sustainability, please contact us at sustainability@adva.com.

Technology and infrastructure

G102-2

ADVA develops, manufactures, and sells solutions for a modern telecommunications infrastructure. On the one hand, this is our core business, but at the same time an important contribution to one of the social aspects. Our products are the basis of one of the most important infrastructures; they enable communication between people all over the world. Due to Covid-19, this again became more evident in 2021 than in previous years. The importance of this infrastructure is reflected in our portfolio, among other things, by the redundancy properties and encryption capabilities. These help to make the respective parts of the infrastructure less susceptible to, e.g., failures due to extreme-weather conditions and cyber-criminal attacks.

Overall, our portfolio includes fiber-optic transmission technology, Ethernet access and aggregation technology and solutions for the virtualization of network functions. In addition, ADVA supplies technologies for network synchronization and monitoring, as well as the software necessary for the safe operation of the networks. This is shown schematically in the figure below.

Our portfolio is briefly described here in this graphic.

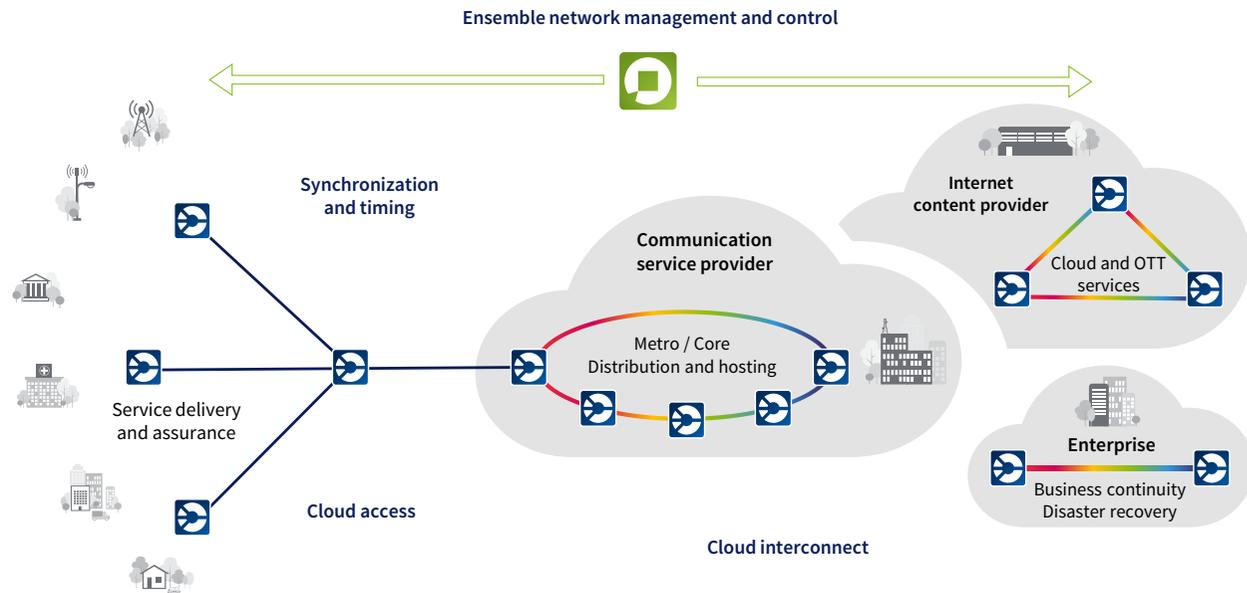
Fiber-optic transmission technology

Optical fiber is the optimal physical medium for transmitting large amounts of data over long distances. The bandwidth-length product of fiber optics by far exceeds that of all other transmission channels (copper-based or wireless). Therefore, fiber optics are the foundation of all high-speed networks. ADVA's optical transmission solutions are based on wavelength division multiplexing (WDM²). With WDM, mul-

multiple data streams are transmitted simultaneously over a pair of fibers by modulating each data stream per direction to an individual wavelength (i.e., color) of laser light. Each wavelength (more than 100 in total) carries different applications such as voice, video or data services. Combining (i.e., multiplexing) these wavelengths at one end of the fiber, transmitting them, and separating (i.e., demultiplexing) them at the far end maximize the

capacity of the fibers and make transmission more efficient. WDM supports all data protocols and transmission speeds and is the natural foundation for all high-capacity networks.

²Glossary: page 77



Overview on ADVA's solutions

Ethernet

Ethernet is the dominant OSI²-Stack Layer-2 data-link protocol for today's networks, supporting virtually all communication applications. ADVA provides feature-rich Ethernet transmission and demarcation solutions for fiber-based networks used to interconnect enterprises and mobile-network base stations with carrier networks. Features include aggregation, synchronization, monitoring, encryption, and virtualization.

²Glossary: page 77

Software

The importance of software in networking technology is increasing rapidly. On the one hand, network operation and monitoring are automated by means of intelligent software. This increases user-friendliness and simplifies network control and maintenance. On the other hand, more and more network functions are virtualized (network function virtualization, NFV²). With NFV, the tight coupling between hardware and software in network elements is dissolved, and individual network functions can be developed and provided independently of the underlying hardware. NFV is also one of the key technologies in data centers that enables reductions in energy consumption and therefore greenhouse gas (GHG) emissions.

²Glossary: page 77

IT security

Requirements regarding IT security – integrity, authentication and confidentiality – are ever increasing. This is reflected, e.g., by the EU NIS Directive. ADVA is offering three security packages under the brand name ConnectGuard. These enable lowest-latency state-of-the-art encryption on either the photonic layer, the Ethernet layer or, via NFV, on Layer 3 or 4 of the OSI stack.

Synchronization

Reference clock sources that deliver highly precise frequency and time-of-day information are crucial to the effective transmission of digital signals in several applications and network domains. Especially in mobile networks, the availability of highly accurate synchronization and timing information is crucial for the network-capacity increase and therefore, best end-user experience. With a complete end-to-end solution portfolio sold under the Oscilloquartz brand, ADVA can offer a smooth evolution across multiple generations of synchronization technologies.

Monitoring

Monitoring is not restricted to digital performance monitoring, as it is done in our transport and Ethernet-demarcation gear. It can be extended to the passive fiber plant, in particular in the fiber-rich access

space. Here, it helps to guarantee fiber integrity and to supervise complex fiber plant, even if the respective fibers are not yet lit by active gear. This enables, for example, certain service-level agreements. With the Advanced Link Monitoring (ALM) product line, ADVA can offer cost-effective and unique solutions that help our customers in not losing the view on their valuable passive fiber assets.

Governance

G102-18, G102-19, G102-20, G102-21, G102-24, G102-25, G102-26, G102-27, G102-28, G102-29, G102-30, G102-31, G102-32, G102-33, G102-34

ADVA Optical Networking SE, the parent company of the ADVA group, is organized according to the two-tier system. This means that in addition to the shareholders organized in the annual general meeting (AGM), it has two organs of action: the management board as the executive body and the supervisory board as the supervisory body.

The management board, which manages the company's business, consists of four executive officers (CEO, CTO, CFO, and CMSO). Governance functions are divided between the CEO, who is responsible for compliance, the group's quality management system and human resources, the CFO who is responsible for finance, risk management and legal, and the CTO who is responsible for technology and sustainability and as such, for most environmental aspects. All members of the management board are jointly responsible for the economic performance of the company. The correspondent review of the impact, risk and opportunity portfolio is performed at least once per year in line with the defined risk management process.

In addition to the management board, there is an international three-person supervisory board. Its members are appointed by the shareholders. The supervisory board appoints the members of the management board according to criteria that include expertise/experience, independence, diversity, and avoidance of conflicts of interest. Thus, the collective knowledge of the board is also mainly influenced by nomination. The supervisory board is also responsible for the approval of the group's annual financial report and this sustainability report. As such, the supervisory board is the highest governance body to review the impact, risk and opportunity analyses, including their effectiveness.

Below the management-board level, there are several large departments (like engineering, operations, sales, service, etc.) that are either led centrally or on a regional basis. Departmental heads typically have the hierarchical level of an SVP/VP or (Senior) Director, depending on the department's size and relevance and the concerned individuals' seniority.

The company follows a top-down strategic goal-setting process clustered into the areas of Customer Satisfaction, Growth & Profitability, Innovation, Operational Excellence and People, all of which are derived from the company's mission statement, core values and leadership principles. ADVA's strategic goals are broken down into departmental and individual goals cascading through the hierarchical ladder. As an example, the CTO defines the overall sustainability strategy which results in specific goals for multiple different departments and, in effect, hundreds of individual employees.

Consultation of shareholders is organized via the AGM. Regular consultation of other relevant stakeholder groups (e.g., customers) is, e.g., done via a structured customer satisfaction survey. Where relevant, immediate customer or other stakeholder feedback is provided to the management board. In addition, members of the management board may also directly consult with dedicated stakeholders (e.g., strategic customers).

The evaluation of the achievements of the management board is performed regularly (i.e., yearly) by the supervisory board. In addition, a variety of monthly (financial) metrics are generated, providing for a robust reporting and allowing quick reaction to arising risks or other unplanned events or circumstances. Actions (e.g., changes in long-term strategy or organization) are taken when required. As one related example, a dedicated sustainability department was created in 2015 in order to further strengthen ADVA's sustainability efforts (see [page 11](#)).

Critical concerns are communicated immediately (department leads to management board, management board to supervisory board). Details hereto including the applicable processes and mechanisms are outlined in the risk report of the [Annual Report](#).

Values and leadership principles

G102-16

Our success is based on strong core values that are defined and exemplified by the top management level. All superiors are aware of their responsibility in this regard. Specific leadership principles promote this understanding. The following core values and leadership principles (collectively: “Values”) support sustainability in everything we do.

Teamwork. We stand for open communication and cooperation. We promote an inclusive work environment that values the diversity of people and their thinking. Employees from around 50 nations at 36 locations and agencies worldwide, as well as an international works council without trade union relations, make ADVA unique.

Excellence. We strive for perfection in everything we do. This includes our commitment to consistently exceeding customer expectations. To measure this, surveys are conducted annually to measure the group’s Net Promoter Score. Significant improvements and consistently high scores have been achieved in recent years, particularly in sustainability. The overview of this can be found in the [customer satisfaction rating](#).

Responsibility. Our strategic goals “Growth and Profitability”, “Innovation”, “Operational Excellence” and “People” are the cornerstones of our corporate development. They are linked to specific performance indicators and are updated annually. Meaningful department, team and employee goals support the achievement of these goals and are checked and updated every six months.

Motivation. The group strives to retain and motivate its employees. In addition to anonymous surveys on satisfaction, regular breakfast meetings are organized with an ADVA board member, which enable a personal discussion on problematic topics. The resulting action points, e.g., possibilities for personal further training, more transparent communication or improved change management, are addressed by the board.

Integrity and honesty. Compliance with applicable laws and regulations as well as the ethical standards and principles of the company (“compliance”) is crucial to create trust with our customers, suppliers, partners, and colleagues. Our commitment to integrity and honesty is implemented in our [Group Code of Conduct](#) and via a clear and precise division of responsibilities for compliance.

Decisiveness. Timely and well-founded decision-making is essential to keep up with the ever-increasing pace of innovation in our industry. To ensure the necessary continuous personal development, we have implemented a holistic management training program that is offered to all employees concerned.

Respect. The group takes an active role in the local communities in which we operate. This includes humility in our behavior and respect and courtesy in dealing with others. The same applies internally and regardless of hierarchy levels.

Sustainability organization

G102-18, G102-19, G102-20, G102-29, G102-32

ADVA runs a dedicated Global Sustainability Department that directly reports to the chief technology officer (CTO). The team sets the group's sustainability strategy in close cooperation with the respective peers in other departments, e.g., Human Resources, Quality Management, Engineering or Facilities. It identifies steps to be taken and tracks implementation, progress, and performance.

The team also creates internal awareness for sustainability through different campaigns, provides training, and engages externally with various groups of stakeholders. In addition, it is responsible for collecting, together with the related peers, the various tracked sustainability data and the related reporting.

Global Sustainability further provides content for external dissemination, and contributes to research projects, e.g., the EU H2020 project [C-SERVEES](#). It answers sustainability assessments and provides input to respective tender sections or similar requests for information on the group's sustainability strategy, efforts, and performance. This includes ownership of the sustainability reports.

The sustainability department is the central point of contact for external sustainability-related queries, e.g., from CDP or dedicated customers. Other queries may arrive at certain other departments, e.g., Sales. Responses are compiled in cooperation with the peers of the respective departments.

Further responsibilities include the ownership of the entire product-portfolio lifecycle analyses, the respective feedback into R&D and other departments, and content ownership of the group's product Environ-

mental Requirements (formerly the Ecodesign² Guide), which is part of the product lifecycle process.

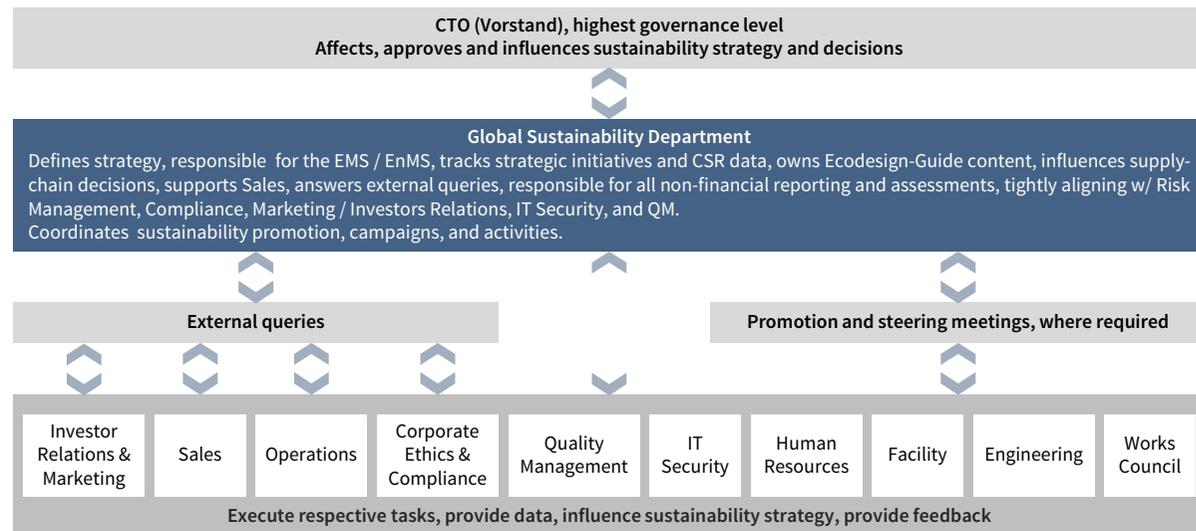
²[Glossary: page 77](#)

The team actively participates in the Experts Forum (ExFo) of Fraunhofer IPA in Stuttgart, Germany, as well as in the sustainability working group of the Telecommunications Industry Association (TIA³). This working group was led by ADVA from the beginning of 2021.

³[Glossary: page 77](#)

In addition, the *sustainability committee* has an advisory capacity on certain aspects and questions regarding sustainability. They meet when necessary.

The sustainability-related organizational structure is shown below.



The group's sustainability organization

Context analysis

ICT and its impact

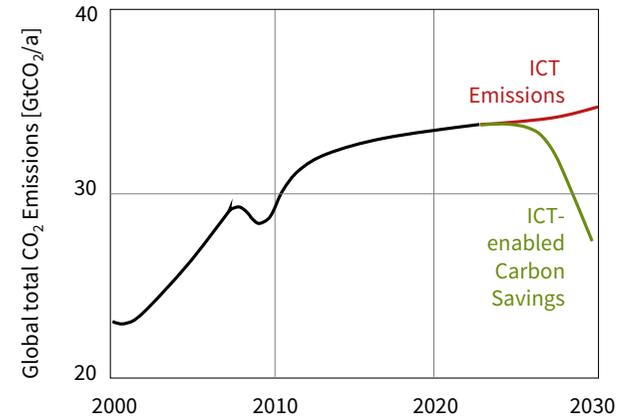
G103-1

ADVA's products are part of the global Internet or ICT sector. They are therefore part of an industry that consumes more than 2% of the electricity generated worldwide, and the trend is rising. This increase is a result of the steep rise in Internet bit rates. As a further consequence of electrical energy consumption, emissions from the ICT sector are also increasing. This is summarized in the diagram below, which is based on various sources.

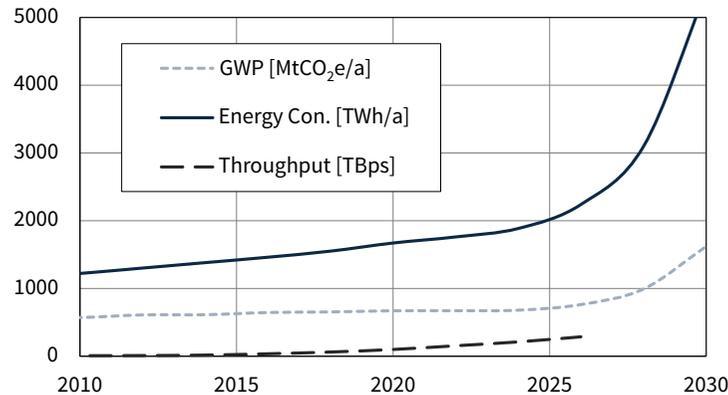
From the diagram and the references used, such as the Cisco Visual Networking Index (VNI), a fundamental problem in the

ICT sector can be derived: despite all efforts in terms of device efficiency, energy consumption and the associated CO₂ emissions are increasing. This is especially true for the network and data-center sub-areas, less so for the sub-area of ICT devices from private end customers. It is due to the development of ICT bit rates (or the throughput of devices or networks), which are growing exponentially. It is predicted that this exponential growth will continue for the next few years.

This leads to the requirement of continuous improvements of the network equip-



Global greenhouse gas emissions according to [ourworldindata.org/co2-and-other-greenhouse-gas-emissions] and the ICT emissions from the previous diagram as well as the possible emission savings according to #SMARTer2030 – ICT Solutions for 21st Century Challenges from GeSI.



Internet throughput in terabytes per second (broken line, based on the Cisco VNI), projection of global ICT energy consumption in terawatt hours per year (solid dark blue line, based on [Andrae, Feb. 2019, DOI: 10.13140/RG.2.2.25103.02724]) and the resulting CO₂ emissions (GWP, Global Warming Potential, dashed light blue line).

ment in terms of energy efficiency and emissions and is one of the main reasons for our focus on corresponding ecodesign and for the group's participation at the Science Based Targets initiative.

The ICT sector is one of the critical infrastructures, and not just since Covid-19. Namely, it also enables the significant reduction of global greenhouse gas emissions in various other sectors such as transport and logistics, traffic, energy networks and agriculture. The savings potential is ten times higher than ICT's own emissions. This is sometimes referred to as **Greening-by-ICT**. It is one of the few known ways to significantly reduce global energy consumption and the associated

emissions. This is shown above on the basis of global greenhouse-gas emissions.

Within the wireline networks sector, ADVA ranks amongst the top 10 suppliers in the optical-networking and access-switching sub-segments. Since the wireline-networks segment also contains copper and passive optical access networks, routing and switching, none of which is covered by the group's portfolio, the total impact of our products to the wireline-networks sub-segment is <10%. ADVA's contribution to total global ICT emissions is less than 1%.

According to our context analysis of the environmental and energy management systems, the materiality analysis of the non-financial report, our reporting on greenhouse-gas emissions and finally the comprehensive lifecycle assessments of our portfolio, energy consumption and the related emissions are the main environmental impacts of our ICT devices. This can at least be generalized to other ICT devices with a similar operating mode (24/7 continuous operation, long service life).

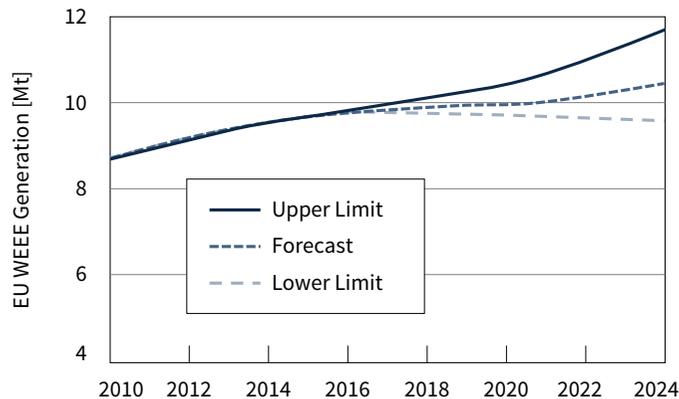
However, there are other environmental impacts.

According to the analyses mentioned, the next most important effects are those that

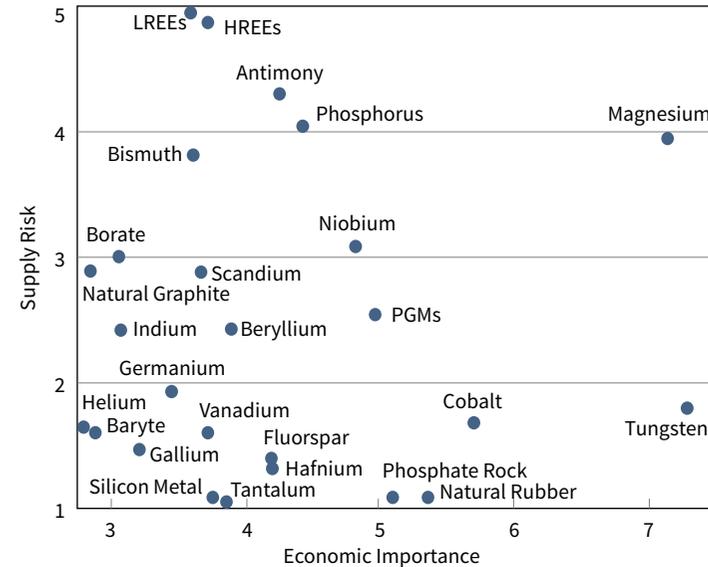
result from the material consumption in the manufacture of the devices and the related electronic scrap (WEEE, Waste Electronic & Electrical Equipment). Both can be positively influenced by appropriate mechanisms of circular economy, which also results in the materiality rating of circular economy.

[Glossary: page 77](#)

The forecast for WEEE generation in the EU is shown below. The diagram shows that WEEE generation is expected to increase. In some cases, very complex composition of electronic waste is also critical here. This makes efficient recovery of valuable materials difficult.



Volume of electronic waste in the EU according to [Magalini, F. et al. Study on Collection Rates of Waste Electrical and Electronic Equipment (WEEE), possible measures to be initiated by the Commission as required by Article 7 (4), 7 (5), 7 (6) and 7 (7) of Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE). Technical Report. 2016].



The EU 2017 Critical Raw Materials list.

However, precisely this recovery is critical due to the raw-material situation. The EU list of critical raw materials from 2017 is shown in the graph above. Many of the critical raw materials are essential for the ICT sector, such as metals of the platinum group (PGM), rare earth elements (LREE, HREE), gallium, germanium, etc.

Other ICT environmental impacts include (human, ecosystem) toxicity, water consumption and a few more. These are recorded in lifecycle assessments but are only of secondary importance relative to the energy consumption.

Finally, in connection with corporate social responsibility (CSR), there are the aspects of work, health and safety as well as some other aspects such as conflict minerals, modern slavery or corruption. Altogether, they require a holistic approach to sustainability in ICT.

Context analysis of EMS and EnMS

G102-11, G102-21, G102-29, G102-31, G102-40, G102-42, G102-43, G103-1, G103-2

Impact and context analysis

ISO 14001 requires a context analysis for the area of the environmental management system (EMS). This context analysis is intended to identify and evaluate relevant interest groups (stakeholders) and their interests or requirements as well as aspects with relevant impact on the group or those on which the group has relevant impact. This serves to work out the most important aspects. These aspects can be EMS-specific or have an influence on the EMS.

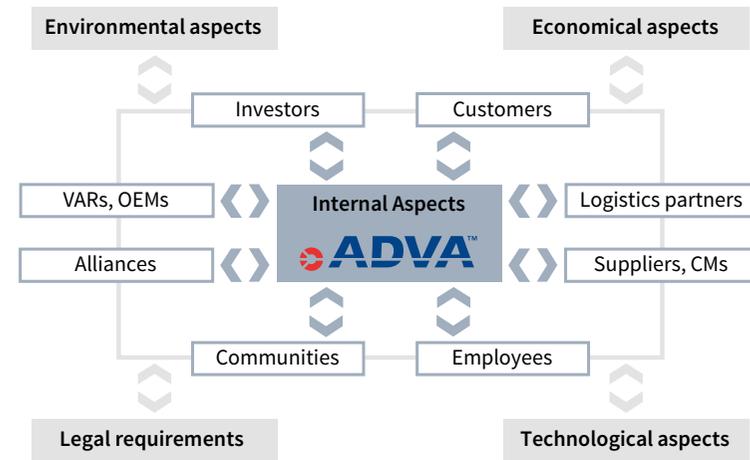
Due to the proximity of the content, this context analysis also largely covers the context of the energy management system (EnMS) according to ISO 50001.

Interested parties and the related interactions and contributions that need to be considered are:

- Investors, via bilateral communication and, e.g., sustainability questionnaires
- Large customers, via bilateral communication, and feedback from customer satisfaction (CSAT) survey
- Selected value-added resellers and suppliers, via bilateral discussions and coaching

- Legal and governmental bodies, via related legislation and regulation, including – limited – feedback via industry fora
- NGOs, industry fora and other associations like Telecommunications Industry Association, Fraunhofer ExFo, EcoVadis, CDP, SBTi, via active participation, bilateral discussions and feedback and analyses regarding assessments
- Feedback and analyses from (successful) award applications (Environmental awards, CSR awards, etc.)
- Supply chain, via surveys, audits, coaching and others
- Employees, via surveys (ESS), bilateral communication, suggestions for improvement and others

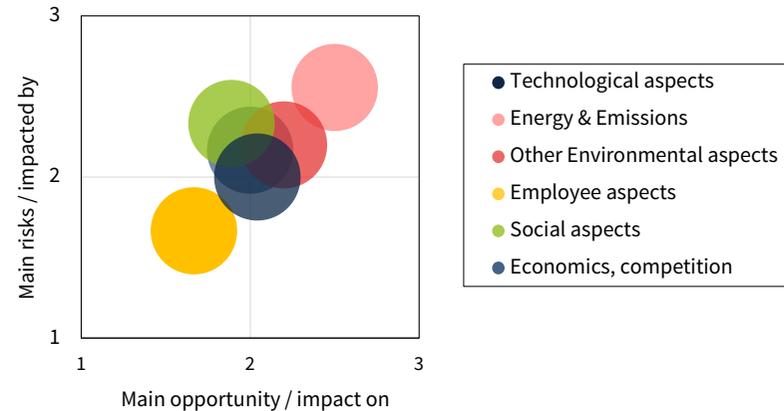
With these interest groups, the EMS context can be represented schematically as follows.



The examined EMS context.

In previous years, we have used the UN Sustainable Development Goals (SDGs) or their subsequent targets as the aspects to be assessed. We have been deviating from this since 2020 and, similar to the materiality analysis (see Part 2 of this report), use indicators that we have compiled ourselves. Although the Sustainable Development Goals (SDGs) cover many relevant environmental, labor, human rights, infrastructure and business aspects, they fail to actively address the core problem underlying many of the areas addressed – population growth and overpopulation – and even to only explicitly name this. In addition, target 8.1 explicitly includes the target of exponential economic growth, which in limited systems is not only unrealistic but also part of the environmental problem. For these reasons, we no longer use the SDGs as indicators for our context analysis

Similar to the [Materiality analysis](#) in Part 2, the context analysis is updated on a yearly basis. To this end, it is discussed, aligned and updated by several internal ADVA stakeholders. This includes the compilation of the considered aspects and their



Context analysis of the environmental and energy management system.

evaluations. Attention is also paid to consistency between the context and materiality analyses and the risk analysis. The ratings of the participating stakeholders are averaged linearly. Finally, the context analysis is presented to and agreed by a management review meeting.

The result of the context analysis for the EMS/EnMS is shown in the diagram above. The X-axis shows opportunities or possibilities for influencing. The Y-axis shows risks and the ability to be influenced by the examined aspects.

The analysis covers the entire company with all sites. Site-specific measures can be derived from subsequent analyses.

The most highly rated aspects are energy & emissions. They are followed by other environmental as well as the other aspects examined here in the context of the EMS/EnMS.

Energy and emissions are clearly related to the central environmental aspect of our time – climate change and global warming. This is closely related to our products and

to emissions caused by the electricity we use. Both contributions are covered by our participation in the Science Based Targets initiative (SBTi), with the second contribution also falling under the scope of the ISO 50001 EnMS. Both emissions contributions are only loosely connected to location or sites.

In contrast, the EMS aspects of water consumption/pollution and waste (volume, disposal) fall into the area of other environmental aspects. They are weighted comparatively lower. Again, there is no strong location/site dependence.

The remaining aspects tend to be rated even lower for the context examined here, the EMS and EnMS.

Relevance for EMS and EnMS

The context analysis basically confirms results from our comprehensive carbon-footprint reporting and from a portfolio-wide lifecycle analysis, refer to the chapters [Carbon emissions](#) and [Portfolio lifecycle assessment](#) respectively. From there, it becomes clear that GHG emissions account for the majority of the total group's environmental impact and need to be considered with the highest priority. This is reflected in our SBTi participation, with three emission targets that are compatible with the global climate goal of 1.5°C maximum global warming.

Global warming is followed by scarcity of resources. This aspect must primarily be addressed with circular economy mechanisms. The topic of circular economy is given a correspondingly high weight, it can also be found in the risk analysis. In addition, circular economy is also related to the reduction of emissions.

This is followed by the environmental aspects of water use and pollution, waste generation and treatment, and hazardous chemicals, which are weighted significantly lower. *These are considered in our portfolio lifecycle assessment.* Waste and its treatment are also taken directly into account in our CO₂ reporting. Therefore, all environmentally relevant parameters are considered in at least one way of tracking. From the high weighting of the emission aspects and global warming, several conclusions can be drawn with regard to the ISO standards and the related actions and strategies of the company.

Regarding **ISO 14001**, ADVA is *not* responsible for industrial-scale water usage or pollution. The group is also *not* responsible for large-scale waste generation. Where applicable, dedicated waste fractions (e.g., WEEE, cardboard) are separated and recycled. The latter can be derived from the [Environmental management](#) chapter.

In addition, the use of hazardous substances is limited to a *very small* amount, and ozone-depleting substances are neither used in our sites nor in our supply chain. **Thus, the environmental impacts of the group are determined by emissions or global warming.**

This prioritization also has an impact on the related targets and performance indicators. Except for the area of LCA, no quantitative targets are defined for the Environmental Management System (EMS) in addition to the climate-related SBTi targets. LCA is especially relevant for the Scope-3 SBTi target since a correct lifecycle assessment is a basic requirement for a targeted product and portfolio improvement.

Therefore, two targets are defined:

1. LCA shall cover >90% of commercially relevant portfolio
2. Level of confidence in LCA results to be as high as possible, according to respective due diligence.

ISO 50001 activities completely overlap with our SBTi Scope-2 target and as such, with one of the relevant carbon-emissions areas. This means that ISO 50001 falls within one of our top-priority, climate-related, areas.

According to its relevance, **two targets** have been defined that fall into the domain of ISO 50001:

1. SBTi Scope-2 target of -67% of the absolute emissions from electricity consumption by 2032, compared to the base year 2016. This is the officially accepted target that supports a maximum global warming of 1.5°C.
2. Reduction of electricity consumption at the relevant locations by 1.5% per year. An intensity metric has been developed for this target that considers the electricity consumption of our major laboratories.

EU Taxonomy Regulation report

G203-2

The EU Taxonomy² Regulation requires, as far as applicable, the disclosure of expenses (CapEx, OpEx) or income that are linked to activities, products or services that are related to climate-change mitigation or adaptation activities of the reporting company or enable these in other areas (e.g., other NACE sectors). In the next few years, similar information will be added in connection with other environmental parameters as well as corporate management (governance) and finally corporate social responsibility (CSR).

²Glossary: page 77

Climate change

As an environmentally conscious manufacturer of ICT systems, ADVA is principally able to make qualitative statements about its own performance, e.g., in the area of emission reduction as well as on corresponding reductions (i.e., climate change mitigation) that are enabled in other sectors by ICT systems. The latter has already been explained under the term Greening-by-ICT in the chapters [ICT and its impact](#) and [Product energy efficiency and Scope-3](#).

However, deeper analysis shows that most expenses or income that are eligible to the EU Taxonomy Regulation cannot be quantified.

There are several reasons for this.

Firstly this relates to the NACE sector categorization where ADVA cannot be assigned to the NACE sector *J*, ICT, as electronics manufacturers are explicitly excluded. This means, amongst others, that any greening-by-ICT effects cannot be ascribed to the ICT manufacturers, but rather to the network operators – a disregard for realities.

In NACE Macro Sector *C*, Manufacturing, some product classes are listed that are irrelevant to ADVA. Only the category of *manufacturing low-emission technologies* initially appears to be applicable. These technologies must lead to substantial emissions savings in other sectors. In our case, this is precisely possible in NACE sector *J*, ICT. However, a very detailed analysis is required here compared to other high-performance solutions with the same functionality. Apart from the prohibitive effort, this is *inherently impossible* because there are no fundamental alternatives to ICT products (like the ones ADVA manufac-

tures). Moreover, sufficiently detailed data from similar competing products are not available, amongst others in order to avoid the suspicion of industrial espionage. Thus, the required external validation also has to be omitted, and the complete sector-*J* approach has to be discarded for an exact quantitative report.

Furthermore, ADVA's potentially greatest contribution – enabling climate change mitigation in other areas through ICT – is impossible to quantify. This would require interviewing a four-digit customer base about the portion of their ICT services that support Greening-by-ICT within the overall mix of services that is transmitted via ADVA's ICT systems. This is impossible due to the large number of customers, and a complete answer would never be obtained. The latter, in turn, is due to the fact that in many cases, our customers would also have to ask *their* respective customers, since network operators or data center operators (i.e., customers of ADVA) **generally do not provide** the respective transmitted services. This creates prohibitive effort, which also fails due to confidentiality agreements and the like.

Therefore, with some exceptions, ADVA cannot provide eligible quantitative data. Even in the longer term, we will provide qualitative Taxonomy Regulation reporting mainly.

In return, we consider the EU Taxonomy Regulation in its current state as completely inappropriate for disclosures that correctly reflect our efforts and our performance regarding the aspect of climate change.

In 2021, four reportable categories were identified.

1. Own performance in the field of climate-change mitigation.

- a) This includes **low-emission products** and the sales generated with them. For this purpose, we use the Japanese Ecology Guideline for the ICT Industry. According to our analyses, which we have carried out regularly for several years, this can be considered as the only relevant applicable assessment guideline. However, this guideline is not listed in the Taxonomy Regulation. The Ecology Guidelines define five efficiency classes. For an evaluation, we only consider the highest efficiency class in order to meet the requirement of the best available technology. Even then, however, it is impossible to precisely determine the turnover generated with products in this highest efficiency class. The reason for this is that our *modular* WDM systems are sold in many different configurations. These configurations cannot be covered by any evaluation standard, not even by the Ecology Guidelines. Thus, only approximate or qualitative in-

formation can be considered here. Based on the reference configurations contained in the Ecology Guidelines, we can estimate that >80% of the sold WDM configurations fall into the highest efficiency class. With regard to our Ethernet products for network access, the efficiency assessment is also difficult, as these products largely elude the available assessed product classes due to a large number of additional proprietary functions. However, we can estimate that around 30% of our Ethernet products also fall into the highest efficiency classes of the closest products evaluated. From this it can be deduced that around 60% of the company's total turnover is generated with energy-efficient products. This cannot be derived more precisely. This contribution is formally assigned to NACE sector C, manufacturing industry.

- b) In addition, the OpEx for the development of low-emission products can be taken into account. These costs, too, can only be given qualitatively, since it is impossible to precisely separate those activities

that are wholly or partly used on energy efficiency from the multitude of general development activities. An estimate shows that up to a maximum of 10% of the development effort totaling around 77 MEUR in the EU in 2021 can be assigned to activities related to energy efficiency.

2. **Enabling climate-change mitigation in other areas.** This is the Greening-by-ICT area. The best-known source on this, *Digital with Purpose: Delivering a SMARTer 2030* by the Global e-Sustainability Initiative, reports emissions savings in other relevant sectors that are a factor of 9.7 higher than the ICT emissions. As stated earlier, it is not possible to precisely quantify ADVA's contribution to this. This applies both to sales (for which the exact proportion of Greening-by-ICT services that run via ADVA devices would have to be calculable) and to the operating costs that are necessary to develop the corresponding products. However, since ADVA is one of the 10 largest manufacturers of telecommunications equipment in the world, we claim a corresponding share of the Greening-by-ICT emissions savings for us while enabling mitigation.

However, this is not envisaged in the NACE sector-J description (ICT). Overall, we consider this contribution to be the most important environmental aspect that ADVA enables with its products.

3. **Own climate-change adaptation activities.** There were no activities in this area in 2021 because, according to our risk analysis, no significant risks have been identified so far, for example in connection with extreme-weather conditions. Also in the area of the supply chain, no related risks were identified or activities implemented.
4. **Enabling climate change adaptation in other areas.** This category includes, e.g., ICT services that provide early warning of extreme-weather situations. A quantification for this contribution (especially the related revenue) is again impossible. Practically, all ICT early-warning services are at least partially wireline-based, but the number of these services that are based on ADVA systems cannot be determined for the reasons already mentioned. Thus it can be stated qualitatively that a fraction of our products enable climate-change adaptation. This contribution is also rated as substantial.

The Taxonomy Regulation also requires all information to be checked against technical screening criteria. In addition to a substantial mitigation or adaptation contribution, these require fundamental compatibility with the other four environmental goals of the Taxonomy Regulation and the requirements of the International Labor Organization.

The other environmental goals of the Taxonomy Regulation relate to the use and protection of water, circular economy, environmental pollution, and the protection of ecosystems. These topics are regularly checked by our activities on the environmental management system (ISO 14001, including the lifecycle assessments of our products) and on circular economy. A particular incompatibility of the ICT activities could not be determined. In particular from the lifecycle assessments we can derive that our products are more dominated, in terms of their environmental impact, by their use rather than by their production. The effects of use, i.e., emissions, are positively overcompensated by the Greening-by-ICT effects (mitigation made possible in other sectors).

The minimum social safeguard required in the Taxonomy Regulation, such as compliance with the requirements of the International Labor Organization, are also observed. This is described in the chapter on [equal opportunities](#). Compliance with these requirements is also monitored in the supply chain.

Furthermore, a statement is required for all enabling adaptation activities as to how they for their part relate to climate hazards. It should be noted here that telecommunication networks can in principle be set up with multiple redundancies. This is also true for our products through corresponding functionalities. This includes, for example, that information can be transmitted simultaneously or alternatively via geographic intersection-free routes, which also enables protection against the effects of climate hazards. However, the flood disaster of July 2021 in Western Europe showed that entire network operator locations were destroyed. This has led the network operators to considering rebuilding the affected locations in safer locations.

Ultimately, relevant references shall be named, especially when considering the qualitative aspects. In addition to the already cited reference *Digital with Purpose: Delivering a SMARTer 2030* from the Global e-Sustainability Initiative, the following two references are primarily to be mentioned:

- *Using ICTs to tackle climate change*, ITU and GeSI², Feb. 2011
- *Information and communication technologies for climate change adaptation in cities*, ITU-T FG-SSC Technical Report, March 2015.

Both references deal with the connection between climate change and its mitigation or adaptation through ICT.

²[Glossary: page 77](#)

Circular economy

In addition to global warming, circular economy is probably the most important environmental matter. It addresses the issues of resource scarcity and the production of waste.

On the aspect of circular economy, own activities as well as activities enabled by ICT can be reported. The latter include, e.g., (reverse) logistics optimized through the use of ICT, or the contribution to the implementation of the asset administration shell (AAS) or the digital twin. The AAS has a clear reference to circular economy; it should contain information about the material content of products or their maintenance history, for example. Because it is cloud-based, it uses, in one way or another, the ICT infrastructure to which ADVA also contributes. This share of ADVA, which contributes to activities to be enabled, cannot be deduced quantitatively, similar to the previous chapter.

Own circular-economy activities include the respective share of ecodesign activities as well as the take-back and recycling process at our Meiningen location.

Ecodesign for circular economy includes the sub-aspects design for dismantling, design for ease of maintenance, guidelines for longevity and for the use of plastic and the like. These are part of the Environmental Requirements that were implemented in our Polarion development environment in 2021. However, so far the focus of our ecodesign has been primarily on energy efficiency due to the dominance of the use phase of our products on their LCA. Therefore, it is not yet possible to estimate our expenditure for circular-economy-related ecodesign. We therefore do not include any operational costs in this context.

The return and recycling process in Meiningen is described in more detail in the chapter [Value chain and circular processes](#). It includes the activities of (reverse) logistics, repair, the analysis of products and their components as well as the creation and management of certain component stocks derived from them. Overall, several employees are bound by these activities. The operational costs for this amounted to around 2.86 million Euros in 2021. This is an approximation.

The reuse of components also results in certain cost savings. As new and already used components cannot be compared, these savings cannot be stated.

The other environmental goals of the Taxonomy Regulation are not negatively influenced by our circular-economy activities. A simple estimate shows that, compared to new production, it is always better from an environmental point of view to repair products and, where it makes sense, to reuse them at least in part. However, this must be done within the optimal product lifetime, as described in the chapter [Resource availability and business models](#). This is usually the case for our products.

Similar to the previous climate change activities, minimum social safeguard is given.

Water, pollution, ecosystems

According to our materiality analysis, the risk assessment, the context analysis of the EMS/EnMS as well as our portfolio-wide lifecycle assessments, the aspects of water use and pollution, environmental pollution and protection of ecosystems play a subordinate role for ADVA, our activities and our overall environmental impact. The company's impact is rated as minor compared to emissions, and no significant risks have been identified. Accordingly, apart from a few basic activities that fall under the EMS, there are no special expenses. Accordingly, no costs or income are included here.

CSR, corporate governance

These matters will not be reported until after 2022.

TCFD-Report

The Task Force for Climate-related Financial Disclosure, TCFD, defines requirements for transparent reporting on climate-change-related financial risks and opportunities. These requirements cover the aspects of management, strategy, risk management as well as metrics and goals. All four aspects can be tracked and reported to different degrees.

Management

The management's responsibility for climate-related aspects is described in the [Sustainability organization](#) chapter in Part 1 of this report. Accordingly, the responsibility on the executive-board level lies with the CTO. Topics and key figures that are relevant to the climate are regularly presented and discussed in management reviews.

In the first half of 2021, specific numerical and measurable parameters were defined for climate-related remuneration for the entire executive board. These relate to our three SBTi targets and are based on the nominal annual emissions reductions to be achieved in the three SBTi/GHGP scopes.

Strategy

Operational emission reductions have been pursued at ADVA for a number of years. This applies both to the area of our ISO 50001 activities, i.e., electricity-related emissions, as well as to the area of transport and logistics, which is particularly about reducing air freight. The reductions are achieved through electricity savings or an increase in the share of renewable energy as well as the continuously pursued goal of minimizing air freight. Details on this can be found in the chapter [CO₂ emissions \(Part 1\)](#).

Since 2019, emissions reductions at ADVA have also been pursued strategically as part of our SBTi participation. Here, we have committed to reductions that are compatible with the 1.5°C target of maximum global warming compared to the pre-industrial state, also see the chapter [Carbon emissions \(Scope 1-3\) Part 2](#) in Part 2 of this report. This was also included in the strategic company goals in 2021. It affects the areas of electricity and vehicle emissions as well as the emissions of the sold products use phase.

Investigations into the resilience of our company strategy under different climate scenarios have started. Initial analyses lead to the expectation that the general infrastructure business is likely to *increase* due to the reduction in emissions made possible in other areas (Greening-by-ICT). Furthermore, it is expected that production will be more local again in the future in order to reduce transport emissions.

Risk management and climate change

Due to the potential scope of climate-related risks, these must be considered in the analyses, processes and actions of companies, and appropriate measures taken to mitigate the risks. ADVA is committed to this responsibility through a number of measures, including our SBTi participation and this TCFD report.

Climate-related risks and opportunities (opportunities where available) are regularly (at least once a year) and systematically examined at ADVA. This is done in two stages. First, an analysis of the climate risks and opportunities to be expected for ADVA is carried out. This is done in the sustainability department and using relevant reference documents, such as the IPCC AR5.

In accordance with the TCFD specifications, both, financial risks and opportunities in the transition phase and physical climate risks such as extreme-weather conditions etc. are considered. Transition risks and opportunities relate to the necessary mitigation and adaptation measures, from new regulations, increasing taxes, etc. As far as necessary and sensible, this also extends to the supply chain. Climate scenario analyses are also carried out for selected relevant areas. These include both the selection of suitable scenarios and the selection of relevant areas in which significant (cost) risks or opportunities can arise. Details are given later.

The following table summarizes the relevant aspects of the analysis that we have identified.

Physical climate risks

A	Sea level rise 0.3-0.6 m (toward 2100, depending on scenario), especially at US west coast and in Asia
B	Extreme precipitation events in Asia and in the Mediterranean area
C	More consecutive hot days, soil-moisture decrease, higher risk of droughts in Europe, southern US

Transition risks

1	High required ecodesign effort and cost
2	Higher ISO 50001 effort and cost
3	Fuel switching (buildings), cost, feasibility
4	Fuel switching (cars), cost
5	Transport-mode shift, cost, feasibility
6	Higher carbon taxes
7	Cost for extended circular economy
8	Effort and cost for any new regulations
9	Negative impact on company image

Transition opportunities

1	(Government) cooperation and rewards
2	Increase investors' long-term invests
3	Positive company image
4	Carbon-tax savings
5	Revenue through very efficient products
6	Revenue through mitigation/adaptation-enabling ICT
7	Strengthen resilience (company, supply chain)
8	Save transportation/travel cost

The aspects listed here take into account the location of our sites as far as possible from today's perspective. They are evaluated in the following diagram with regard to influence and the expected period of time for their occurrence. In particular, the transition risk no. 1, expenditure on ecodesign, is accompanied by appropriate processes at ADVA.

In the second stage of assessing climate risks, they are integrated into the company-wide risk management. This examines whether the previously identified and examined risks must be included in the company risk report. To do this, as described in the corresponding chapter in the [annual report](#), they must meet certain criteria with regard to potential impact, probability of occurrence and time horizon. If this is the case, the relevant climate risks are also listed in the company report. Conversely, they are not listed there if they merely represent a comparatively lower risk.

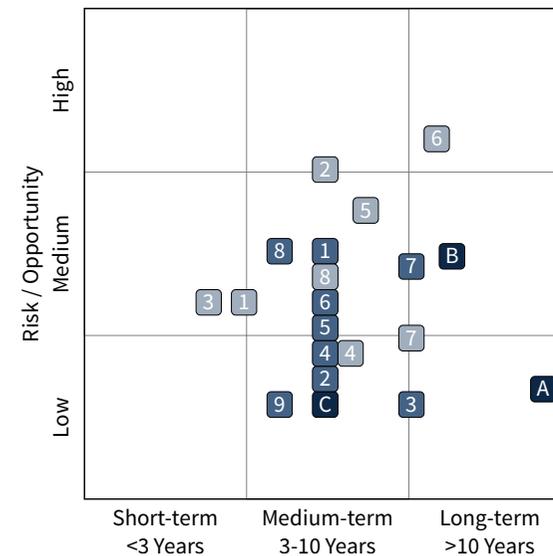
Risk management was largely revised in 2021. This allowed to also include non-financial risks or those with very long observation periods. This is the case for the risk report 2022-2024 and for the risk of climate change.

Climate-related risks are mitigated depending on their potential impact. In addition, financial opportunities are seized as long as they do not result in consequential

risks in other areas (compare the do-no-significant-harm principle in the [EU Taxonomy Regulation](#)) and can be implemented promptly.

If a climate risk meets the criteria of company-wide risk management, its mitigation rules automatically apply. This includes the definition of responsibility, regular management reviews and dedicated, tracked countermeasures. This is described in the chapter [Sustainability risks and opportunities](#).

Climate risks are addressed, among other things, through our SBTi participation, which in turn is part of the company strategy and the remuneration of the Executive Board. The corresponding measures to reduce emissions are therefore subject to regular internal and external controls. Therefore, over time, appropriate countermeasures are initiated as soon as there are significant deviations from the emission reduction paths.



Climate-related risks and opportunities. For the aspects presented here, see the table above for explanation.

For the analyzes, we mainly used two relevant references with regard to the transitional and physical risks:

- OECD/IEA. 2017: Energy Technology Perspectives 2017, Catalysing Energy Technology Transformations
- IPCC, 2013: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1535 pp.

The IEA reference describes above all measures that have to be taken to avoid dramatic climate change, IPCC AR5 describes regional and pathway-dependent climate and weather events to be expected.

Metrics and Goals

As shown in the chapter [CO₂ emissions](#) in *Part 1* of the report, we report all emissions that apply to ADVA, especially in Scope 3. This has been the case since 2017.

ADVA pursues science-based emission reduction targets in the SBTi, as described in the chapter [Carbon emissions](#) in *Part 2* of the sustainability report. The registration for the SBTi took place in 2016, the official approval of the original 2°C targets in 2019 and the approval of the more stringent 1.5°C targets in 2020. These targets are part of the company strategy and are also part of the management board remuneration.

Around 99% of the Scope 1+2 emissions as well as around 94% of the total emissions (Scope 1–3) are validated externally.

The metrics that are used to calculate climate-related risks and opportunities in the form of scenario analyses essentially come from two references that have already been listed before in the chapter [Risk management and climate change](#). Both references (IEA, IPCC AR5) define several scenarios with which climate change can be mitigated to different extents. Of these scenarios, B2DS (IEA) and RCP2.6 (IPCC AR5) or RTS (IEA) and RCP6.0 fit well

together, since they amount to roughly the same levels of global warming in 2100. In addition, the B2DS/RCP2.6 scenario fits well with our SBTi 1,5°C targets.

The risks mentioned in the references (and opportunities in the case of considering the transition phase) are first assessed qualitatively, in particular whether they are relevant for ADVA at all.

For risks of the transition phase, we predominantly consider the cost (and cost savings) related to emissions. An analysis of our emissions shows that it is primarily Scope-2 emissions and Scope-3 transportation emissions that need to be considered. This results from the amount of emissions on the one hand and the risk of rising costs due to CO₂ tax on the other. The results were presented in the [Scenario analysis](#) section. Other opportunities were also considered, see the previous section on [Risk management and climate change](#). However, these were not quantified further, as certain relevant parameters can only be quantified imprecisely.

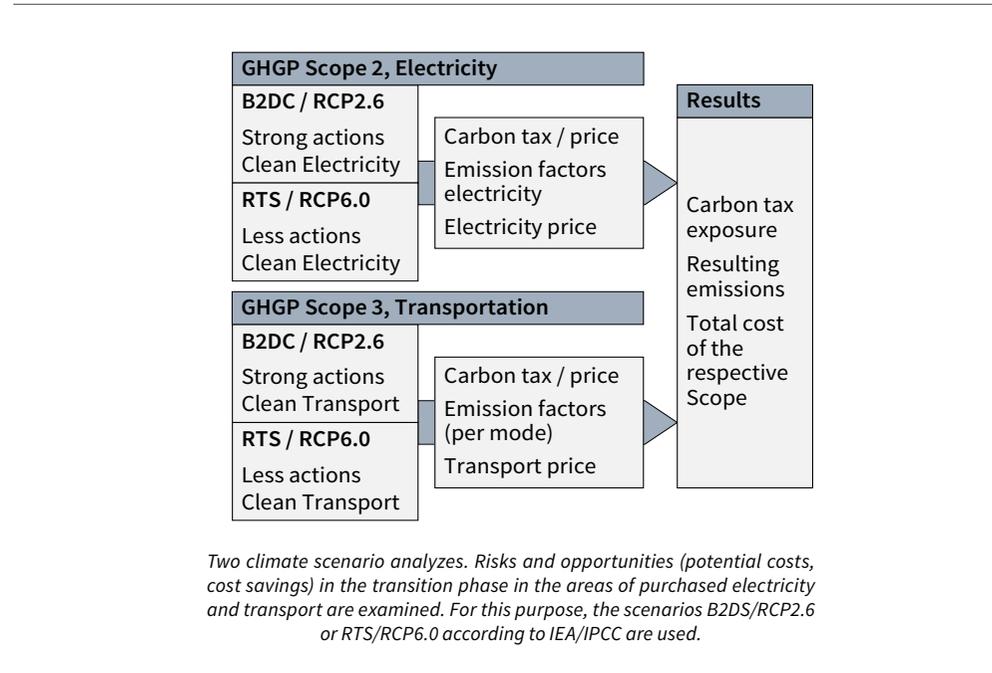
The physical climate risks were examined for their relevance for ADVA with the help of the IPCC AR5. The supply chain was also considered. This results in the relatively high weighting of increasing drought on the one hand and extreme precipitation on the other hand in the corresponding regions. The increasing level of the world's oceans is only seen as a risk for the second half of the 21st century.

Scenario analysis

The TCFD recommends climate scenario analyses for quantifying the risks and opportunities. At least two climate scenarios from relevant references should be used. We use the IEA and IPCC sources mentioned above. Two of the scenarios dealt with therein show good agreement. On the one hand, these are the Better-2°C Scenario (B2DS) of the IEA and the Representative Concentration Pathways 2.6 (RCP2.6) of the IPCC. Both describe a path to less than 2°C maximum global warming. This is also the path ADVA is committed to with its 1.5°C SBTi targets. The second scenario is the Reference Technical Scenario of the IEA or the RCP6.0 from the IPCC. These describe a path that, despite certain measures, leads to global warming of more than 2°C. These measures are better than Business as Usual (BAU), but have proven to be insufficient for a target of below 2°C global warming.

We analyze risks and opportunities in the transition phase for two areas: costs, cost savings and emissions with regard to the purchased electricity as well as the same parameters in the area of transport.

This is shown graphically below.



Two climate scenario analyzes. Risks and opportunities (potential costs, cost savings) in the transition phase in the areas of purchased electricity and transport are examined. For this purpose, the scenarios B2DS/RCP2.6 or RTS/RCP6.0 according to IEA/IPCC are used.

At ADVA, the B2DS/RCP2.6 path goes hand in hand with ambitious measures, as are also required in our SBTi participation. In contrast, the RTS/RCP6.0 path is less ambitious.

The resulting emissions and costs are calculated for both cases (electricity, transport). The latter are made up of the prices to be paid to the respective supplier and additional CO₂ taxes.

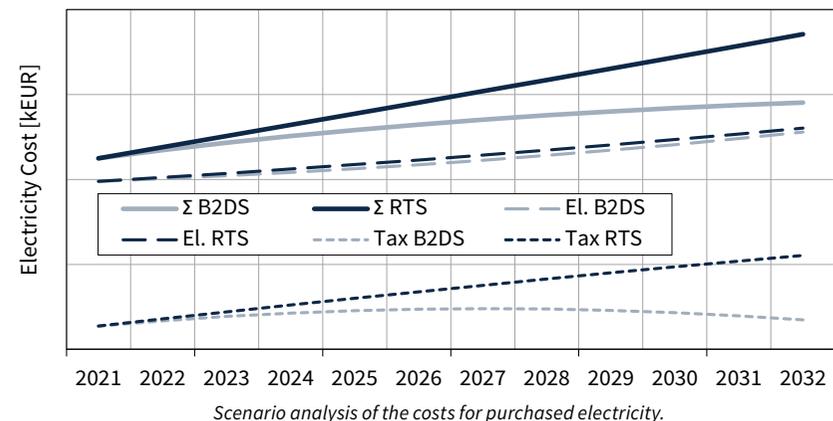
The best possible and realistic assumptions were made for all parameters – costs, taxes, emission factors, electricity consumption, tonnage volume, distribution of transport modes, etc., which are support-

ed with references where possible. This inevitably leads to certain errors, but our

analyses show clear trends that are retained even if the parameters vary greatly.

The quantitative result for costs and possible savings in relation to purchased electricity is shown below. The timeline runs until 2032, the target year for our SBTi goals. Costs are shown as a sum () and individually for CO₂ taxes and electricity costs for both scenarios.

A stronger increase for the cost of green electricity was assumed, but at the same time a slight decrease in consumption as a result of more effective ISO 50001 measures. Therefore, the electricity costs over time are almost identical for both scenarios. There is an increasing difference in the CO₂ tax, which results from the reduction in this tax as a result of an increasing share of green electricity.



Overall, there is an increasing cost advantage for the B2DS/RCP2.6 scenario. This scenario will also achieve the SBTi Scope-2 target in 2032. This goal is not achieved by the RTS/RCP6.0 path, although a certain emission reduction is achieved here, too.

The quantitative results for the costs and possible savings in the area of transport are shown over time in the diagram below. For reasons of comparability, the time axis runs up to the year 2032, although transport emissions are not an SBTi target for ADVA. However, they are a significant Scope-3 contribution to our emissions.

The diagram again shows transport costs, the related CO₂ taxes and the sum of the two components for the two climate scenarios described above. It should be noted here that the ordinate range shown is exactly eight times as large as in the diagram shown above for purchased electricity.

Cost and emission savings are achieved here (for the B2DS/RCP2.6 path) primarily by changing the transport modes. Air freight is primarily to be reduced here. If necessary, this is supplemented by a certain shift of land transport to railway, as this has significantly better emission fac-

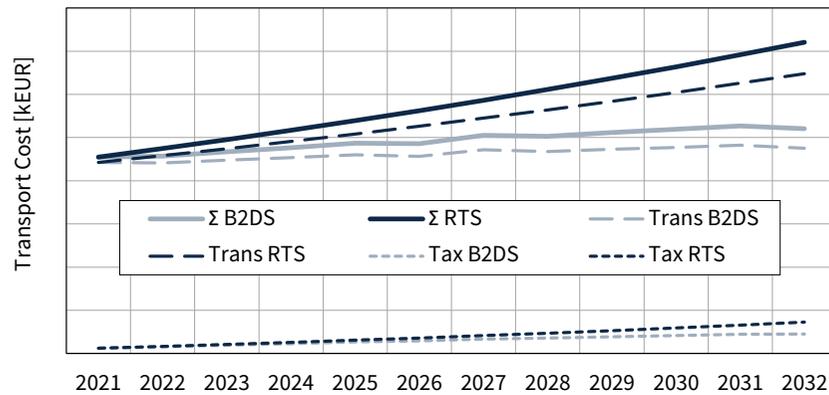
tors than road transport (difference of almost a factor of 10!). Cost savings also result from reducing the CO₂ tax.

Here, too, there are emission reductions for the B2DS/RCP2.6 path, in contrast to the RTS/RCP6.0 path, where emissions continue to rise. An annual increase in tonnage is assumed here. It is also assumed that, with the exception of rail transport, the emission factors of all other modes cannot be reduced significantly by 2032.

In summary, the B2DS/RCP2.6 path is also more cost-effective in the transport sector and leads to emission reductions. However, this will only be achieved if air freight can be reduced further.

The scenario analyses were presented in a dedicated management review due to their cost-saving potential, together with further considerations on the CO₂ tax and its possible reduction in some cases. This resulted in follow-up measures including different responsibilities, which aim to reduce the CO₂ tax as much as possible and thus at the same time lower the associated emissions. These measures are obviously of a long-term nature, so they will be monitored and reported regularly in the future.

The scenario analyses can lead to considerable cost savings if the corresponding B2DS/RCP2.6 paths are followed. Conversely, failure to pursue means taking appropriate financial and emissions-related risks. If the mentioned risk criteria are exceeded, the relevant scenario (or the corresponding area, e.g., transport) is included in the company-wide risk management and tracked accordingly.



Scenario analysis of costs in the area of transport.

Stakeholder engagement

G102-21, G102-31, G102-40, G102-42, G102-43, G102-44, G103-1, G103-2

Stakeholder engagement is relevant in the sustainability context as it helps to identify the different stakeholders' expectations and to update the prioritization of the sustainability-related activities. As such, it is instrumental for both, the [context analyses](#) and the [materiality analysis](#).

Regarding sustainability, relevant groups of stakeholders are those who have an interest in, or influence, the group's actions, strategy, or reputation in that area. This includes parties that are influenced by the group's actions.

The following **groups of stakeholders** have been identified:

- Customers
- Shareholders, investors
- Suppliers, contract manufacturers
- Legal, government agencies
- Associations, alliances, NGOs
- OEMs, VARs, service partners
- Logistics partners
- Communities
- Employees

The group's general approach to stakeholder engagement is to maintain a dialogue with the respective parties as regularly as possible. For certain stakeholders, e.g., some strategic customers, associations, interest groups and investor groups, this happens regularly and frequently and as part of the daily business. This allows us precise knowledge of the relevant requirements around sustainability with regard to the relevant interested parties, but it also gives us valuable feedback on their perspective and evaluation of our corresponding activities.

Other stakeholders are served at least regularly or even aperiodically through special campaigns.

Examples for our stakeholder engagement, with particular respect to our customers, can be found on the next page.

Collaboration at industry alliances

G102-12, G102-13

ADVA regularly contributes to sustainability-related industry alliances. Examples include our collaboration with the **TIA Sustainability Initiative**. Here, we periodically share best practice and contribute to the inclusion of sustainability aspects in the revision of the TIA standard TL 9000. In addition, ADVA has been leading the TIA Sustainability Working Group since the beginning of 2021.

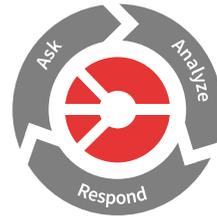
In 2021, we also continued our work with the **ExFo** (Experts' Forum) at Fraunhofer IPA in Stuttgart, Germany. The work of this forum is centered on the areas of REACH², RoHS², WEEE and conflict minerals, but also includes aspects such as circular economy or emissions reduction. As an industry forum, the ExFo can provide early warnings in cases where the related regulations and directives become updated.

²Glossary: page 77

Due to the Covid-19 situation, there were no physical meetings in 2021, all meetings took place virtually, on the Internet.

Customer satisfaction rating

G102-43, G102-44



Our customer satisfaction is measured by the Net Promoter Score (NPS) on a yearly basis. For 2021, ADVA's NPS was 48%. This result underlines the company's focus and its commitment to continuous improvement of customer satisfaction.

In 2021, we conducted 58 interviews and more than 1000 ratings in eight categories, and around 1500 specific comments. Per category, one to five questions with answers potentially scaling from 1 to 10 were asked. We asked for aspects that add the most value for our customers, and for the most important things that we should improve.

The development of our NPS is shown in the table below.

Development of our NPS.

Net Promoter Score	2021	2020	2019	2018
Overall	48 %	50 %	44 %	52 %
Technology & innovation	16 %	22 %	20 %	33 %
Product quality & reliability	26 %	31 %	41 %	46 %
Fault correction	47 %	40 %	42 %	50 %
Proposals	76 %	68 %	66 %	53 %
Order mgmt., shipping, invoicing	51 %	70 %	47 %	47 %
Sustainability & cyber security	65 %	63 %	39 %	73 %
Technical services	72 %	67 %	56 %	61 %
Web content	36 %	29 %	22 %	32 %

Corporate social responsibility according

G401, G403, G404, G405, G408, G409, G413

Information on employees

G102-7, G102-8, G401-1, G405-1

On December 31, 2021, ADVA had 1,973 employees, including 27 apprentices (2020: 1,870 including 22 apprentices).

On average, ADVA had 1,897 employees in 2021, up from 1,861 in 2020 (not considering apprentices). Furthermore, at year-end 2021 and 2020, there were 23 and 20 external temporary employees as well as 26 and 42 internal fixed-term employees working for the company, respectively.

In 2021, the voluntary turnover rate was at 6.1% and the total number of new hires was 206.

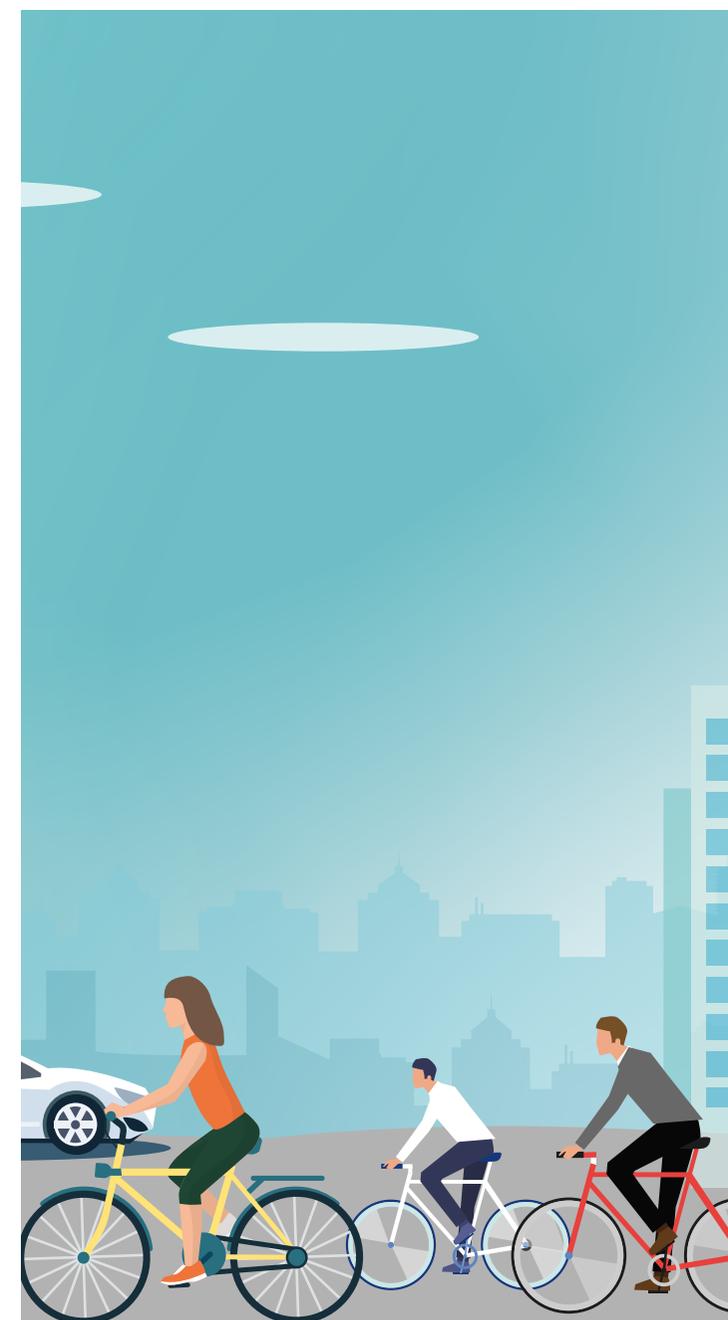
ADVA works continuously to achieve a more balanced relationship between men and women in the workforce. Our Human Resources Information System (HRIS) offers detailed reporting functions and helps to track and improve these and other aspects of diversity.

The development of our gender ratio for all employees and in management can be derived from the next two tables.

ADVA global	2021	2020	2019
Males total	77.9%	77.4%	77.6%
Males in management	83.9%	84.3%	85.5%
Females total	22.1%	22.6%	22.4%
Females in management	16.1%	15.7%	14.2%

Team leader	2021	2020	2019
No male	60.0%	59.1%	60.1%
No female	18.6%	19.3%	19.5%
No total	78.6%	78.4%	79.7%
Yes male	18.0%	18.2%	17.4%
Yes female	3.4%	3.4%	2.9%
Yes total	21.4%	21.6%	20.3%

Being an international company, the diversity of nationalities, age, gender and religion is crucial in helping us continually improve our work environment and be a great workplace with a unique culture based on strong core values. We are committed to equal opportunities and to hiring minorities and employing veterans and people with disabilities.



Quotas ensure a certain percentage of people with disabilities in our employment base. To this respect, we are cooperating with Bundesvereinigung Lebenshilfe e.V. in Germany since 2008 in order to integrate people with disabilities in the working environment. If the quotas are not achieved, a penalty is paid to the government.

The majority of our employees are between 30 and 50 years old. The age distribution by gender is shown in the next two tables.

Gender	Age group	2021	2020	2019
Male	<30 years	10.0 %	10.0 %	11.0 %
	30-50 years	56.4 %	56.4 %	56.7 %
	>50 years	33.6 %	33.6 %	32.3 %
Male average		44.5 years	44.5 years	44.0 years
Female	<30 years	11.1 %	11.1 %	11.7 %
	30-50 years	61.0 %	61.0 %	63.0 %
	>50 years	27.9 %	27.9 %	25.3 %
Female average		43.5 years	42.9 years	42.3 years

Gender	Age group	2021	2020	2019
Male	<30 years	179	145	162
	30-50 years	868	816	837
	>50 years	491	486	477
Male total		1,538	1,447	1,476
Female	<30 years	41	47	50
	30-50 years	279	258	269
	>50 years	115	118	108
Female total		435	423	427
Employees total		1,973	1,870	1,903

Our gender numbers may not look perfectly balanced. However, for reasons explained in the [Girls' Day](#) chapter, it is difficult to achieve a much better balance. This applies at least to the technical departments, which according to the table below make up a large part of the workforce.

Function	2021	2020	2019
Finance/Admin/IT	179	177	167
Operations/QM	274	229	231
R&D	994	935	941
Sales/Marketing/Services	499	507	31540
Apprentices	27	22	24
Employees total (year-end)	1,973	1,870	1,903

Our focus on R&D can clearly be derived from this table.

In 2021, we employed people of approximately 50 nationalities across 36 company sites.

The distribution of our employees at year-end, across the different countries where ADVA has operations is listed in the table on the following page. It becomes clear that we have significant operations in Germany, Poland, UK, USA, China, and Israel.

The data reported here is provided via our HRIS.

Employees per country (year-end)	2021	2020	2019
Germany*	537	508	510
Austria	3	2	2
Switzerland	41	42	42
Italy	15	14	14
Spain	3	2	2
France*	20	16	18
Poland	395	366	356
Finland	9	8	8
Sweden	3	3	4
United Kingdom*	122	119	113
Netherlands	3	3	3
Russia	2	2	-
South Africa	4	4	5
USA	407	392	415
Canada	23	16	14
Brazil	2	2	2
Australia	10	10	11
China	138	137	137
Hong Kong	4	4	3
Japan	7	7	7
India	67	62	73
Singapore	14	14	15
Malaysia	1	1	1
United Arab Emirates	1	1	1
Israel	115	113	123
Total*	1,946	1,848	1,879

* Without apprentices

Training and career development

G404-2

Training and further education is an important aspect for ADVA, which is regularly queried and evaluated in the ESS. After comparatively low rating in the ESS in 2015, our internal training program was significantly expanded. This was supplemented by a new orientation process for newly hired employees, which formalizes the respective trainings. We continue to use the ESS result as an indicator for the improvements achieved. In the ESS of 2019, the training aspect performed significantly better than in 2015. 2020 saw an irregular ESS, dedicated to Covid-19 and the mobile-working situation. Therefore, the regular ESS in 2021 was skipped. We plan to get back to the regular 2-years ESS period.

ADVA's career development is planned and organized to match the company's needs with the career goals and interests of our employees. It is supported by regular involvements of our employees, such as in the ESS or so-called Breakfast Meetings of small groups of employees with a member of the executive board. It is further supported by regular performance reviews, which take place twice a year and which include training plans. These measures help us to keep our employees informed and address employee satisfaction.

Career development involves employees managing their careers either within or between ADVA organizations. Together with their managers, employees can set goals and objectives for their own personal career development.

ADVA also launched a global in-house **management training program**, the MTP. This includes 17 active modules and is targeted at all leaders who have people-management responsibilities. The MTP helps managers maximizing both, individual and team performance.

ADVA University

G404-1, G404-2

ADVA is committed to running a state-of-the-art education, development and training program that also includes e-learning. This comprises comprehensive on-the-job training as well as specific continuing education opportunities to advance our employees' personal and professional development.

These development-related aspects are identified, documented and reviewed company-wide semi-annually within an electronic performance appraisal and competency management system.



The ADVA University portal is the single point of reference for all training needs.

Courses on various technical and non-technical topics that are regularly requested are offered. This includes technical trainings that are mostly conducted internally by ADVA's own technical experts.

Next to the technical (in-house) trainings, the actual ADVA University offering includes courses in the areas of languages, professional and communication skills, customer service, leadership and management, safety, social media and marketing, sales and negotiation, interpersonal skills, teamwork, time and project management, Microsoft software, desktop publishing, and finance and accounting.

The ADVA University is regularly updated based on employees' feedback.

In 2021, employees attended 251 training sessions. The duration per session was between 30 minutes and a full week (5 days).

Equal opportunities

G408, G409

ADVA is an equal-opportunity employer and has an on-going commitment to the creation of a workplace that is free of discrimination and harassment. This includes a **zero-tolerance policy** against all violations, and we also expect our suppliers to follow our [Supplier Code of Conduct](#), which is tightly connected to our general [Group Code of Conduct](#).

The company recruits, hires, trains and promotes individuals on all job levels without regard to race, religion, ancestry, sexual orientation, marital status, age, gender, physical or mental disability or any other characteristics.

The following international labor standards are the fundamental principles that ADVA is committed to. They aim to ensure the sustainable promotion and development of our employees.

- Freely chosen employment
- Child labor avoidance
- Working hours
- Wages and benefits
- Humane treatment
- Non-discrimination
- Freedom of association

Finally, the group is also committed to uphold the human rights of workers, and to treat them with dignity and respect as outlined in the Universal Declaration of Human Rights as well as in ADVA's Position on Slavery and Human Trafficking (see the following [link](#)). This also applies to our suppliers.

Girls' Day 2021

G405-1, G413-1

As a telecommunication systems provider, ADVA works in the STEM field (science, technology, engineering, math). Historically, gender distribution has been quite asymmetric in this domain:

The graphic shows the proportion of women in the STEM area in Germany. The data for other regions, e.g., UK, does not differ significantly. The ratio of women in STEM area is well below 50%. Therefore, it is difficult to achieve gender parity in our *technical departments* (which covers most of our workforce).

On the other hand, the company is committed to increasing the percentage of women working in our company. One of the ways this can be achieved is by engaging with girls at schools regarding technical and engineering (STEM) studies. This goal is followed by the *Girls' Day* in Germany that ADVA actively participated in the recent years. After the 2020 Girls' Day was omitted due to Covid-19, 2021 saw a virtu-

al, cross-location event in April. In our case, some first insights into the use of artificial intelligence for graphics processing were given. There was also a practical part, since we sent small electronics kits to the participating schoolgirls in advance. This allowed to conduct various experiments with circuitry that contained resistors and LEDs.

We plan to continue our participation at Girls' Days in the future.

Further employee benefits

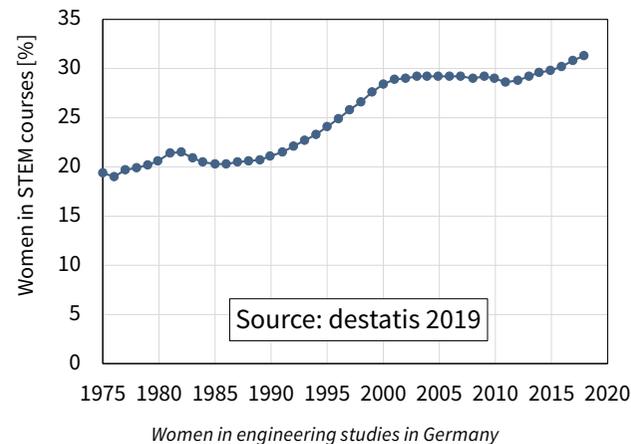
G401-2

Next to health & safety benefits (see next chapter), the company offers a range of further benefits to its employees. These include (but are again not limited to):

- Stock-options program
- Retirement provision
- Tuition reimbursement
- Food/snacks/beverages
- Various possibilities for time off. These include family medical leave, parental/maternity leave, jury duty leave, bereavement leave, military leave and more

- Team-building activities and group off-sites
- Various sports activities
- For the USA: life insurance, disability, and invalidity coverage

These benefits are available at all group sites, not just at significant locations, as long as they are not in contradiction with applicable local regulations. Part of these benefits is available to temporary and part-time employees as well.



Occupational health & safety

G401-2, G403-1, G403-2, G403-3

ADVA is not externally certified with regard to ISO 45001. However, many parts of this standard are followed internally. This includes respective process documents and internal responsibility. Furthermore, relevant parts of this matter, such as compliance with fire protection regulations, are regularly checked externally in accordance with national requirements.

We support a flexible, diverse and casual work environment, which stimulates change and motivates our people. We have designed **the work and life program** around our people because we know that they will spend the majority of their life at work. This program includes several benefits that include (but are not limited to):

- First-aid training, incl. certification
- Labor safety and labor security
- Vision care
- Fitness-center discount program

In addition, our employees have access to the company doctor and several inoculation offerings.

Further benefits of the work and life program were described in the previous chapter already.

Different statutory rules across the globe require the company to have coherent actions and reporting in place. It is the management layer's responsibility to implement and indemnify the agreed or legally required working conditions on a day-to-day basis. Regular management training on labor law is provided to secure the knowledge and further educate our team and line managers.

In addition, the general first-aid and safety training is mandatory for all employees. This is repeated on a yearly basis. Participation is tracked and documented electronically.

Employees facing specific risks at work receive dedicated training on a regular basis. The attendance is mandatory and is documented in personal files. All eligible employees (e.g., those working in certain labs) have to attend trainings on:

- Laser safety
- Electrostatic Discharge (ESD)
- Special chemical training

Being a high-tech company, more than 90 % of our workforce fulfill office-related jobs. Consequently, and due to the care we take, the risk of accidents at work is relatively low. This is confirmed by the regional statistics that are provided in the following table.

Description	Region		
	Europe	Americas	APAC
(G403-1, G403-2, G403-3)			
A. The level at which each formal joint management-worker health and safety committee typically operates within the organization.	A. Site level (all major sites, small branch offices may not have such committees, in accordance with local legal requirements)	A. Site level	A. Site level (Emergency Response Committee in Shenzhen)
B. Percentage of workers whose work, or workplace, is controlled by the organization, that are represented by formal joint management-worker health and safety committees.	B. 90%	B. 100%	B. 100%
A. Types of injury, injury rate (IR), occupational disease rate (ODR), lost day rate (LDR), absentee rate (AR), and work-related fatalities, for all <i>employees</i> , with a breakdown by region and gender.	A. For UK: 3 injuries: 2 cuts caused by packaging (1 male, 2 female), 1 cut caused by protruding plastic module to head (male) 0 lost days 0 fatalities For Germany: Number of occupational accidents – 1 (female) Number of commuting accidents – 4 (3 male, 1 female) 63 lost days For rest of Europe (Poland): Number of commuting accidents: 1	A. 0 slips/falls 0 lost days B. 0 fatalities, 0 slips/falls C. Accidents are logged in OSHA report and filed according	A. 0 occurrences
B. Types of injury, injury rate (IR), and work-related fatalities, for all <i>workers</i> (excluding employees) whose work, or workplace, is controlled by the organization, with a breakdown by region and gender.			
C. The system of rules applied in recording and reporting accident statistics.	B. – C. For rest of Europe: Accidents are reported to a first aider and then logged in the Accident Book For Germany: In addition to the report to the first aiders, worse accidents are reported to HR to fill out an accident report form that has to be sent to the health protection agency. If employees are on sick leave for more than 3 days, we have to inform the German employer's liability insurance association. In 2021, three accidents were sent to the German employer's liability insurance association.		
Workers with high incidence or high risk of diseases related to their occupation	None	None	None

Social engagement/volunteerism

G413-1

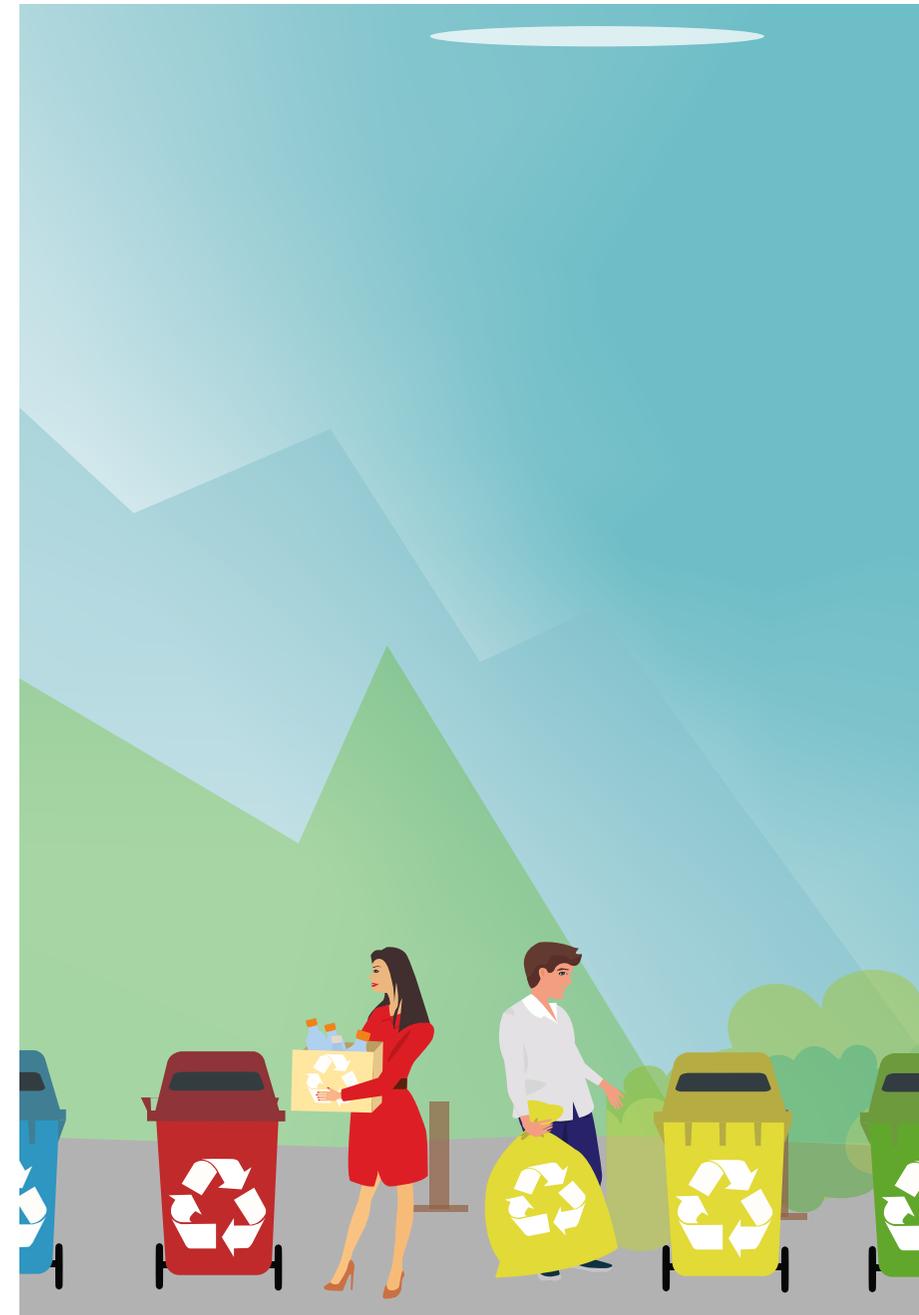
All major ADVA sites (i.e., with the exception of small, local sales offices), covering >90% of total headcount, have local community engagement and development programs in place which are run by each site's local HR department.

This includes development programs and events that address local communities' or institutions' (like children's homes) needs. Our employees regularly join volunteer teams in the related events. These volunteer programs help others and also allow our volunteers to develop their own skills and make contacts.

Due to Covid-19, less events took place in 2021. One of these events combined our local involvement with young people with a small excursus that should help clarify the importance of the STEM subjects (science, technology, engineering, math).

Initiated by the Schmalkalden student research center, supported by the cultural association Villa K and ADVA in Meiningen, a workshop was held in October 2021 in which eight young people were asked to build their own electric guitars. It also became apparent how much STEM there is in such instruments.

The workshop included a short excursion into the history of the electric guitar, the presentation of the technical properties of the materials used, some considerations on sustainability in wood cultivation, and an explanation of the functionality of the pickups of electric guitars. Then, the instruments were assembled, including individual designs. In the end, the participants had their own, fully functional instrument and hopefully also discovered a bit of fun and interest in STEM.



Environmental management

G305-6, G305-7, G306-1, G306-2, G306-3, G306-4, G306-5, G307-1

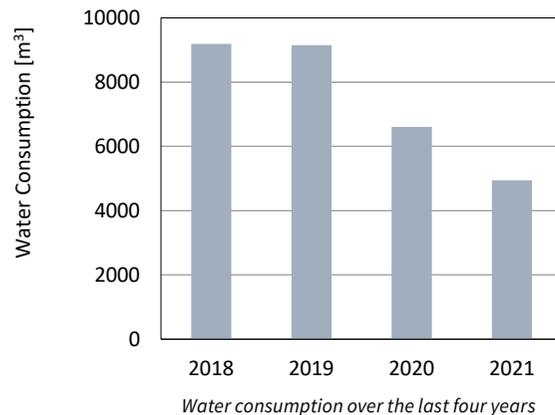
Environmental compliance

ADVA runs an environmental management system (EMS) in accordance with ISO 14001, which is recertified every year. In addition, major sites are covered by an energy management system (EnMS) according to ISO 50001, with identical recertification. The last surveillance audit in Q4/2021 showed only minor deviations. Corresponding corrective actions have already been initiated. Further information on the management approach can be found in Part 2 of the report on [page 61](#).

Material aspects in the EMS context have been described in the chapter [Sustainability strategy](#) in Part 2 of the report and under [Relevance for EMS and EnMS](#).

Apart from running buildings and a car fleet, the group does not produce any dedicated air emissions or discharges to water.

The water consumption of the group is shown in the following diagram.



No significant amounts of NO_x, SO_x and other particles are emitted. Likewise, ozone-depleting substances (ODS) are not critical. ADVA is screening its sites and its suppliers for the use of ODS and neither we nor our suppliers use them.

In 2021, the consumption of hazardous substances at our sites in Meiningen, Gdynia and Neuchâtel was ~240 liters. This amount mainly consisted of Isopropyl Alcohol, plus some further cleaning agents and glues. A respective number of empty containers were transported inland.

Therefore, the remaining EMS aspect relates to waste generation and treatment. Waste production and treatment for 2021 is stated in the table below, together with the water consumption and its related GWP. Plastics, cardboard and e-waste (WEEE) all go into the respective recycling streams.

Waste and water amount and GWP 2021 (2020)

Waste disposal	Weight [t]	GWP [tCO ₂ e]
Cardboard	128	2.7 (2020: 2.5)
Waste incineration	92.5	2.0 (2020: 2.0)
Plastic	10.1	0.2 (2020: 0.2)
E-scrap	13.5	0.3 (2020: 0.4)
Water consumption	Volume [m ³]	GWP [tCO ₂ e]
Water	4.960	2.1 (2020: 2.3)

Two relevant EMS targets relate to lifecycle assessment (LCA), as described under [Relevance for EMS and EnMS](#) and [Portfolio lifecycle assessment](#) in Part 2 of the report. These are ≥90% portfolio coverage and highest confidence of the LCA results. Both targets were achieved in 2021.

Resource- and energy efficiency

G302-1, G302-4

As pointed out in the [materiality analysis](#), the most relevant resources aspect for the group refers to the energy consumed. This primarily affects the purchased electricity. This particular area is covered by our ISO 50001 Energy Management System and by the Scope-2 target within our SBTi² commitment. For the EnMS, further information on the management approach can be found on [page 61](#).

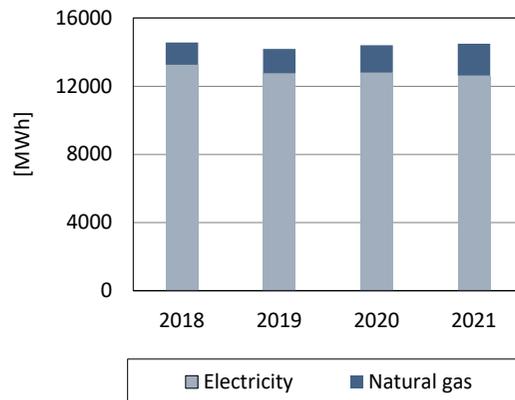
²Glossary: page 77

A small fraction of the energy consumed by the group relates to natural gas. This applies to five ADVA sites (out of 36) only.

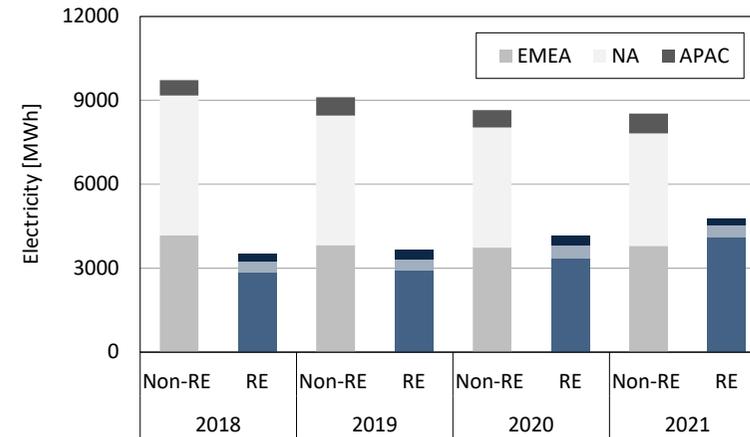
No dedicated cooling or steam consumption is in place.

The two following figures show the development of energy consumption (natural gas plus purchased electricity) and the mix of renewable and non-renewable energies (information from our electricity providers and data from regional networks) over the last four years.

For 2021, there was a slight increase in energy consumption in the range of 4% compared to the previous year.



Energy consumption of all major ADVA locations



Share of renewable (RE) and non-renewable (non-RE) energy in electricity purchased from ADVA and depending on the region

The EnMS aims to reduce energy consumption by 1.5% per year. However, the EnMS in particular covers locations with large laboratories. Since these laboratories show increasing energy consumption, following the increasing bitrates of the Internet, the energy consumption of the respective sites tends to increase as well. Increasing laboratory consumptions results because parts of the Internet have to be mapped on small scale in the laboratories (compare [ICT and its impact](#)). Therefore, an intensity metric must be used that takes the increasing bitrates of the Inter-

net into account. This increase can be derived, e.g., from sources like the Cisco VNI. In addition, advances in the energy efficiency of ICT devices must be considered for the metric. This improvement can be derived for our products, refer to [Product energy efficiency and Scope-3 emissions](#) in Part 2. With the resulting intensity metric, the EnMS reduction target was met.

CE, RoHS, REACH, Conflict minerals

All ADVA products are CE certified. Regarding the restriction of hazardous substances (RoHS), all products of the group are fully compliant with the Directive 2011/65/EU and the Delegated Directive 2015/863. This is ensured by respective engagement with the related components suppliers and contract manufacturers.

We also file the RoHS exemption in our internal databases. This allows fast identification and reaction in cases where certain specific exemptions expire.

In addition, ADVA reports all relevant data to the ECHA SCIP database. To do this, we systematically evaluate the material declarations of the components that we use in our products in order to be able to record substances of very high concern (SVHCs). In 2021, a limited number of components and hence, products, did contain SVHCs above the threshold of 0.1% [w/w]. The respective products are listed in SCIP.

Regarding the main conflict minerals (cassiterite, wolframite, coltan, and gold ore, coming from Eastern Congo and certain

other countries), the group follows the due-diligence and supply-chain traceability requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act and the Conflict Mineral Law of the US Securities and Exchange Commission (SEC). Total supply-chain coverage was ~59% in 2021, caused by incomplete or missing answers. We are working on substantial improvement of this coverage.

At the beginning of 2021, the previous four conflict minerals were supplemented by cobalt and mica. Similar due diligence is required here. Accordingly, the supply chain was also asked about these newly added substances, and these substances were also included in IntegrityNext, our tool for sustainability and risk-related supply chain management.

In 2019, we decided to intensify the work in the area of material declarations for the components we have installed. This was one of the recommendations that we extracted from our collaboration in the Fraunhofer Experts Forum. Material declarations indicate the respective weight per-

centage of all substances contained in the purchased components. This information can be important for REACH regulations (Registration, Evaluation, and Authorization of Chemicals). They can also be used for component LCA if, for example, there are no data records in the databases (GaBi, ecoinvent) for certain components.

At the end of 2021, the coverage of purchased components with material declarations was 72%. Our goal is to increase the filling rate of the material declarations to >90% in the medium term and to keep it at a high level despite fluctuations in the components. We consider this to be sensible, especially with regard to the upcoming REACH regulations, which are expected to become more stringent in the next few years.

CO₂ emissions (Scope 1–3)

G302-1, G302-5, G305-1, G305-2, G305-3, G305-5

The group's GHG⁹ emissions for 2021 are summarized in this table.

⁹Glossary: page 77

ADVA GHG inventory for 2021 (2020)

	Category	Consumption 2021	GWP 2021 [tCO ₂ e]	GWP 2020 [tCO ₂ e]
Scope 1	Natural gas	1,886 MWh	369	320
	Owned transport	3,554,303 km	639	627
	Total Scope 1		1,008	947
Scope 2	Purchased electricity*	13,309 MWh	5,158	5,151
	Total Scope 1 plus Scope 2		6,167	6,098
Scope 3	Capital goods	12,834 kEUR	4,623	4,442
	Purchased goods			
	Production-related		36,997	36,594
	Non-production-related (other than paper)	1,248 kEUR	282	269
	Purchased paper	3.1 t	2.3	3.2
	Transmission and distribution losses	700 MWh	283	287
	Transportation and distribution			
	Inbound	22,651,805 t·km	5,126	6,422
	Outbound	4,711,221 t·km	2,879	3,274
	Waste disposal			
	Cardboard	128 t	2.7	2.5
	Plastic	10.1 t	0.2	0.2
	Waste incineration	92.5 t	2.0	2.0
	E-scrap	13.5 t	0.3	0.4
	Business travel			
	By air	1,920,291 (p)km	208	246
	By car	40,818 km	9.3	30.7
By train	35,137 (p)km	0.0	0.0	
Employee commuting		900	900	
Use of sold products	592 GWh	205,455	215,315	
End-of-life treatment of sold products		292	303	
	Total Scope 3		257,062	268,092

* Electricity consumption of all major ADVA sites covering >90% of total headcount.

ADVA reports all GHGP² categories that are relevant for the group. GHG emissions are reported on the basis of operational control, and Scope-2 data is market-based.

²Glossary: page 77

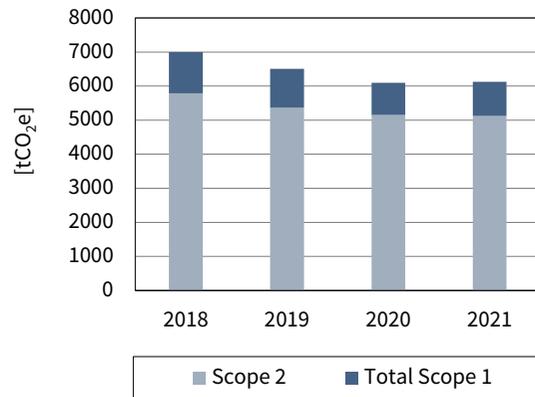
We do consider the relevant GHG other than CO₂.

Owned-transport emission (Scope 1), purchased-electricity emissions (Scope 2) and use-of-sold-products emissions (Scope 3) are addressed by our SBTi participation, see [Carbon emissions \(Scope 1-3\)](#) in Part 2.

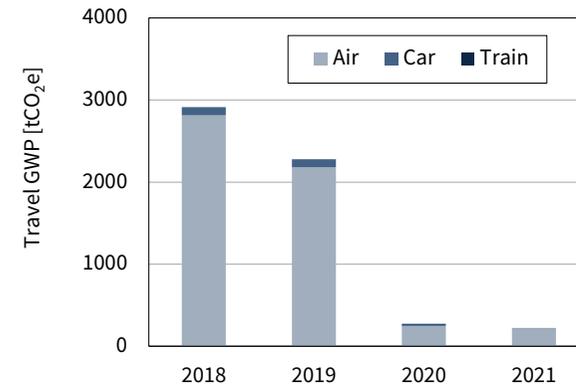
The development of the total ADVA Scope-1 and Scope-2 GHG emissions is shown in the following diagram.

Emissions from freight transport are addressed in the next chapter.

For business travel and commuting, there is certain overlap with the Scope 1, owned transport (car fleet) emissions, which cannot be fully eliminated due to some limited data ambiguity. Regarding the group's total GWP, this, however, leads to a negligible error of 1-2%.



Scope-1/2 emissions development over the last four years



Travel emissions development over the last four years

For both Scope-3 contributions (travel, commuting), however, the group runs several emissions-reductions initiatives.

These include

- Home-office arrangement. In 2021, this was again relevant due to Covid-19. In 2021, this saved almost 70% commuting for the entire group, compared to pre-Covid-19 years.
- Video conferencing. This is used, where possible, to avoid business travel. It holds in particular for journeys that are done only to participate short meetings. In total, it reduces business-travel emissions as well as cost. This was again of particular importance in 2021, as many business trips became impossible due to Covid-19. Accordingly, video conferencing is also one of the basic require-

ments for using the home office (in addition to a stable corporate and worldwide VPN). In 2021, business travel emissions again fell below 20% of the value of 2019.

- Subsidy for local public transport. This is available at certain ADVA locations. It helps to encourage employees to use public transport (and thus stabilizes/increases the share of public transport in commuting).

In total, these measures helped to reduce, or at least to stabilize, the related emissions.

The travel-related emissions of the last four years are reported in the following diagram.

End-to-end delivery

G305-3

This chapter contains relevant environmental aspects from the perspective of both, the end-to-end value chain as well as the products' complete lifecycle. These have an impact on carbon emissions and resource efficiency.

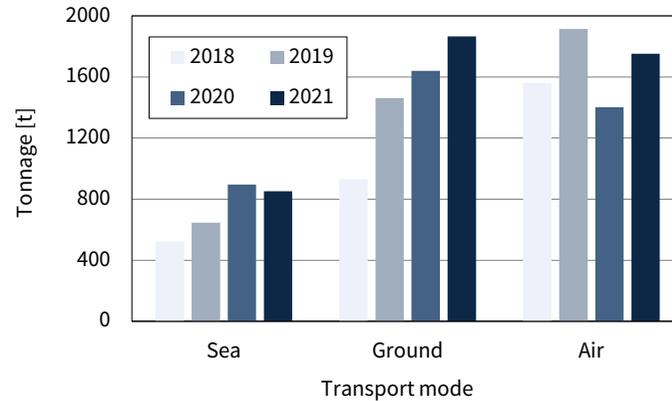
The main aspects in this segment are transport distances, modes and emissions, and packaging.

Transport mode and emissions

Freight transport – inbound plus outbound – is a main contributor to the GWP, as seen from the previous chapter. Transport emissions are determined by three parameters, the transport mode (including the associated emission factors), and distances and tonnage. The transport parameters can only be influenced to a limited extent if there is strong competitive pressure. They are largely determined by the location of the supply chain and customer requirements for delivery times.

The freight-split development over the last four years is displayed in the following diagram.

The GWP resulting from transport is shown in the next diagram.



Development of transport modes over time

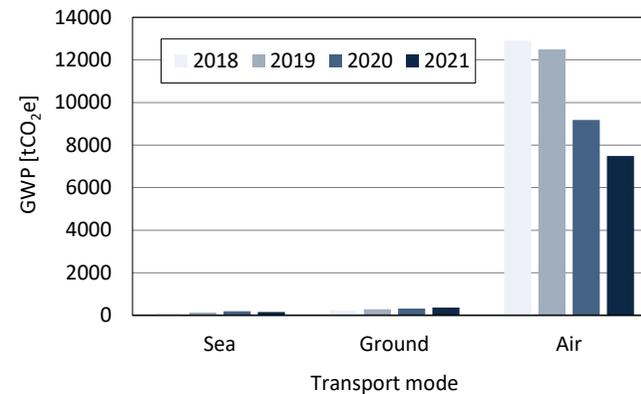
The underlying transportation emission factors are listed below. These factors were taken from the ecoinvent database, version 3.8 (2021).

Global transportation emissions factors. The land-freight factor is a weighted average of EU and rest-of-world figures.

Emissions factors 2021 [kgCO ₂ e/(t·km)]		
Sea freight	Land freight	Air freight
0.0094	0.520	0.728

In 2021, parts of the supply chain were re-located back from Asia to Europe. This affected both, one of our large contract manufacturers and the detailed planning of our TeraFactory in Meiningen. We expect noticeable effects on the emissions savings made possible by this in 2023 at the earliest.

At the same time, work aimed at reducing air freight was continued. Here it was possible for the first time to replace parts of the air freight with rail transport.



Transport-related GWP

Packaging optimization

G301-2, G301-3, G305-3

In addition to the actual transport, packaging also has a significant environmental impact. Its improvement concerns the reduction of greenhouse-gas emissions and the avoidance or reduction of certain materials. Emissions caused by packaging can be reduced by optimizing the size and weight of the packaging, as well as through reusability. The reduction in materials relates specifically to foams and plastics. According to lifecycle assessments, avoiding them and replacing them with cardboard can lead to emission savings.

As already described in the last sustainability reports, we have improved a lot of packaging in terms of size and reusability in recent years. Size plays a role here, as optimization can reduce transport emissions and costs.

The trend to reduce plastic in packaging also continued in 2021. This means complete avoidance or reduction of plastic or avoiding single-use plastic. Together with our packaging suppliers, we have developed or commissioned several new plastic-free packaging. However, it turned out that not all plastic-free packaging automatically improves in lifecycle assessment. In some cases, plastic will probably have to be used for some time to come. This is one of the reasons why we decided in 2021 to subject all new packaging to lifecycle assessments.



Combating corruption and bribery

Material topics, boundaries, management approach, and evaluation of this approach

G103-1, G103-2, G103-3

Integrity determines our actions. We strive to meet our ethical standards, which are anchored in our values and documented in our [Group Code of Conduct](#). All employees must comply with these standards. The related aspect of corruption and bribery among our own employees is rated as material. The same applies to corruption and bribery related to certain business partners.

The group's compliance management system (CMS) is supported by a central compliance department located in Munich, Germany, and six regional compliance officers (RCOs) that support compliance in addition to their regular function in the company. The RCOs strengthen ADVA's local culture of compliance, erase any potential boundaries that prevent employees from reporting concerns, and contribute their specific functional expertise to the group's CMS. Their activities are coordinated by ADVA's chief compliance officer who reports to the CEO and the supervisory board.

Whenever employees have questions or suggestions related to compliance or suspect incidents of non-compliance, they are encouraged to speak up. Besides a variety of clearly defined and actively communicated internal points of contact, an external ombudsman and an externally operated [Ethics and Compliance Helpline](#) enable confidential and anonymous reporting.

Our compliance activities are evaluated and assessed both internally as well as externally (TIA, EcoVadis, specific customers or the group's auditors). Depending on the type of review, different timelines do apply. While some of the reviews are conducted annually and/or continuously, others may apply only once in several years. Whenever there are material findings, corrective actions are taken.

The aim of our CMS is the **complete avoidance** of corruption and bribery in the entire company. Accordingly, the CMS is applied to all employees and at all locations.

It is therefore also ADVA's aim to train all employees on a regular basis. The implementation of this takes place based on a defined process and is supported and tracked by ADVA's HR department.

Since no confirmed cases of corruption or bribery have been reported or corresponding allegations have been made now for several consecutive years, we consider our management approach to be expedient.

Our commitment to compliance extends to our sales partners, distributors and service providers ("business partners"). In order to enable precise and **risk-based due diligence** for these business partners before entering into a business relationship, certain business partner categories and corresponding financial thresholds were defined.

Based on this, a three-step approach ensures effective risk reduction. Firstly, a risk-based due diligence is carried out for new business partners and updated periodically for existing business partners. Then, detailed framework agreements with robust compliance obligations are negotiated with all new business partners. Finally, risk-based monitoring enables the corresponding compliance risks to be further reduced. In 2021, a third-party provider was onboarded to further refine the "Know Your Customer" test and prevent corruption.

Apart from non-disclosure agreements (NDAs), ADVA's aim is to not enter into a contractual relationship without first completing the necessary due-diligence activities.

Like all internal processes, business-partner due diligence is also subject to regular internal assessments. This is also coordinated by the Chief Compliance Officer, so that in turn the CEO is responsible at the highest level.

We buy a wide variety of products and services, including hardware components for our system solutions, as well as expert services to manufacture, maintain or dispose of our products. Accordingly, we have a broad supplier base. We therefore see risks in our supply chain for both, environmental and employee matters.

As a material aspect, the supply chain is managed with various processes. This includes processes for risk analysis and evaluation of new suppliers, for (re-) auditing, contract templates and finally a compliance management system. Some of these processes are also described in more detail in the following chapter.

Accordingly, various goals were set for this area, such as a response rate for the new supply-chain management software IntegrityNext or an increase in the number of material declarations for the components we procure.

These processes and management approaches include the employees responsible for this and the responsibility at the highest level on the part of the CTO.

The management approaches are checked at least once a year through external assessments (EcoVadis, TIA) and audits (ISO audits, validation of the sustainability report) as well as accompanying internal risk analysis. Measures are taken in particular in the event of – imminent – deviations from the goals, but also in the event of a revaluation of the aspects. This includes analyses of causes (if key figures are not achieved) as well as the identification and implementation of improvement measures.

Based on the processes outlined here, we introduced a new software tool for supply-chain management in 2019 that specifically addresses risks in the supply chain in the areas of compliance and sustainability. One goal of this software, IntegrityNext, is to improve the scalability of our supply chain management on sustainability topics and the associated risk reduction. IntegrityNext works together with existing tools. It essentially contains two different modules. On the one hand, there is a tailor-made assessment module. This includes questions important for ADVA and can be expanded if necessary. Second, the tool includes the worldwide screening of a nine-digit number of Internet posts. The latter are filtered and correlated so that early detection, e.g., of serious compliance violations, can be provided with a high degree of security. In 2021, the number of product-related material suppliers recorded by IntegrityNext was again increased. At the end of the year, 76% of these suppliers were recorded. This covered 98% of the purchasing volume. Moreover, 100% of the product-related suppliers are recorded by the aforementioned social-media monitoring.

The processes and measures outlined here apply company-wide and for the entire supply chain. There is a certain focus on such suppliers with high delivery volumes.

So far, our management approaches have proven to be effective. Massive violations of conformity could not be determined.

Compliance management system

G102-17, G205-2, G206-1, G415-1

Ensuring compliance requires an organizational framework based on applicable laws and regulations, international standards and industry best practices. While such may deviate from country to country, they are very similar in terms of the required CMS. Considering this, we implemented a CMS in particular consisting of:

- A corporate culture characterized by integrity, accountability, transparency and a strong “tone from the top” (“Leadership”)
- Periodic identification of the company’s compliance risks (“Risk Assessment”)
- Proportionate risk mitigating processes (“Documented Procedures”)
- Adequate training and communication of all compliance elements and measures as well as respective processes (“Training and Communication”)
- Means for in-person as well as anonymous reporting of potential compliance violations including clear internal reporting lines, an external ombudsman and a third-party Ethics and Compliance Helpline (“Reporting and Whistleblowing”)

- Proportionate responses to compliance violations in line with our **principle of zero tolerance** (“Investigations and Response”)
- Continuous improvement of the CMS based on identified weaknesses (“Monitoring and Auditing”)

This understanding is acknowledged and documented by all employees when signing the company’s compliance acknowledgments and supported by in-person compliance trainings. Documentation of the written agreement is done via an electronic personnel management system. At the time of this report, this covered 90% of all active employees.

In addition, several **compliance training** courses were conducted. These follow ADVA’s rolling training plan with the aim of regular training for all employees. In 2021, the number of trained employees increased further and 987 employees were trained. In the previous year 2020, compliance training was held for around 230 employees (2019: 70 employees). The number is due to the restrictions because of Covid-19. The training courses also took place primarily via the Meta Compliance online platform. Participation is tracked and documented as for all mandatory training courses. In addition, web-based training on the ADVA Group Code of Conduct is being developed, which is to be rolled out in 2022.

With regard to corruption, there was no confirmed incident at the time of writing this report and no such allegation has been made against the company.

Business partner due diligence

With regard to the fight against corruption and bribery, the following types of business partners are to be mentioned in particular:

- Sales reseller and sales agents
- Customer service provider
- Logistics service provider
- Marketing/event service provider
- Organizations or associations

These business partners go through our due-diligence process which is standardized and semi-automated as far as possible. The due-diligence process typically includes a first high-level risk assessment on the basis of predefined criteria, an internal feedback loop and a rigid questionnaire, which has to be completed and signed by the concerned business partner’s management.

A total of 59 new and existing business partners went through the due diligence process in the reporting period.

In 2021, this resulted in one business partner rejected due to compliance risks (2020: 1).

Compliance in the supply chain

To ensure conformity, especially with environmental, employee and human-rights matters, we took multiple actions:

Our Code of Conduct and Supplier Code of Conduct. Our Code is derived from our values and sets forth the ethical standards that every employee of ADVA needs to comply with. Our commitment extends to our business partners and we strive to work with companies that operate under similar principles. In addition to our Code of Conduct, our [Supplier Code of Conduct](#) addresses specific points for our suppliers and is modeled on the framework of the Responsible Business Alliance (RBA, formerly EICC²). We do not tolerate any violations of the ILO labor standards.

²Glossary: page 77

Risk assessment for new suppliers. In order to ensure compliance with our Supplier CoC, ADVA has implemented a supplier assessment process. It intends to uncover risks and non-compliances and to address them. This process consists of a supplier survey, a risk assessment performed by us, and finally on-site supplier audits. Despite Covid-19 and the corresponding travel restrictions, six on-site audits were carried out in 2021. Our risk assessment includes the type of product or service as well as the location of the business partner. Consequences in the case of persistent serious violations can lead to termination of the supplier relationship.

Screening, qualification and contracting. ADVA implemented screening, qualification and contracting processes for strategic suppliers and other selected business partners. Our measures include standardized questionnaires, technical and operational support, and contracting according to pre-defined master purchasing agreements that require compliance with our ethical values, applicable laws or regulations.

Audits and monitoring. In addition to new suppliers, already existing suppliers are periodically newly evaluated. The respective period depends on the suppliers' relevance and any specific risks that have been identified. In 2021, three suppliers were re-audited on site against sustainability aspects.

Based on the audit results, no non-conformities were found, no further specific improvements were required, and no business relationships were terminated. However, corrective measures from the previous audits were followed up. For this we use a supplier corrective-action tracker.

The actions and processes described here consider environmental matters as well as those of employees and human rights in the supply chain. The latter includes **modern slavery**. ADVA tries to ensure that modern slavery does not occur in any part of our business or our supply chain. The actions and processes described above are used to address slavery and human trafficking in areas where they can occur. This is also done in compliance with the requirements of the Modern Slavery Act of

the United Kingdom of 2015, the California Transparency in Supply Chains Act of 2010 (SB 657) and similar laws.

The current company declaration on modern slavery can be viewed on our website at www.adva.com/en/about-us/sustainability.com.

Part 2 – Non-financial report according to HGB

About this non-financial report

Report obligation and content

G102-49, G102-54

As described in the beginning, the sustainability report at hand is divided into two different parts.

Part 2 covers a separate non-financial company report in accordance with the German Commercial Code (HGB) according to Sect. 315b Para. 3. It is referred to hereinafter as “non-financial report”. It is compiled in accordance with Sects. 315c, in conjunction with 289c to 289e, HGB and Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment and amending Regulation (EU) 2019/2088 (hereinafter “EU Taxonomy Regulation” or “Taxonomy Regulation”) and aims at meeting the obligations of the German CSR Directive Implementation Act.

No framework has been used to the full extent. The presentation of the concepts in various chapters is based on GRI 103 (Management Approach 2016 of the Global Reporting Initiative).

Report boundaries

G102-1, G102-50, G102-51, G102-52

This non-financial report follows our annual reporting structure and covers the period from January 1, 2021, to December 31, 2021. It contains data relating to ADVA Optical Networking SE including all wholly-owned subsidiaries. Together, these are referred to, collectively, as “we”, “us”, “our”, “the company”, “the group”, “ADVA” or “ADVA Optical Networking” hereinafter.

We report annually. The last sustainability report, which contained the non-financial report, was published in February 2021.

Material matters

G102-46

The non-financial report contains a materiality analysis. The identified material matters are discussed with regard to the related strategy, the most important initiatives, risks, opportunities and the achieved results.

Specific amounts reported in annual financial statement

Within this sustainability report, there are no relations to specific amounts reported in the group’s annual financial statements.

Report validation

G102-56

The non-financial report is subject to a voluntary limited-assurance audit by PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft (PwC) in accordance with ISAE 3000 (Revised) to verify that its disclosures comply with relevant legal requirements. More information on the assurance can be found in the independent auditor’s remarks in the independent assurance report on [page 75](#). The first part of this report is not subject to the assurance audit.

The respective details on the GRI indices are not required for the non-financial reporting according to HGB and are not part of the voluntary audit according to ISAE 3000 (Revised). This holds true also for GRI indices references in Part 2 of this sustainability report which serve both for the orientation of the reader and for the consistency of the reporting.

The GRI indices are marked in the respective chapter headings.

All references to information outside the annual report is continuative information and not part of the non-financial report.

Summary of our business model

G102-2, G102-6

ADVA develops, manufactures and sells solutions for a modern telecommunications infrastructure. As such, the group's products enable communication between people globally by constituting substantial parts of the backbone and the backhaul and access parts of one of today's most important infrastructures.

ADVA has a globally distributed supply chain. Production focuses on Asia, the EU and North America. In addition to procurement and production, there are important process-based activities in the areas of DevOps (development and operations), sales and marketing, quality assurance, IT, compliance and sustainability. A more detailed description of the business model can be found in our [Annual Report 2021](#) on pages 32–41.

Our products for communication infrastructures address the UN sustainability goal No. 9, *Industry, innovation and infrastructure*. Among other functionalities, they have encryption capabilities and mechanisms for restoring communication links. In this way, we address key social aspects and contribute to security against eavesdropping and physical failure of certain infrastructure areas.

In addition, the telecommunications infrastructure is an important enabler for massive emission savings in other sectors such as energy networks, the transport sector or building technology. Our products thus indirectly serve the UN sustainability goals 7 and 11, *Affordable and Clean Energy and Sustainable Cities and Communities*. The UN Sustainable Development Goal 13, *Climate action*, is also efficiently supported by the considerable emission savings potential.

The group's addressable market encompasses several applications for fiber-optic transmission technology, Ethernet access technology and solutions for network virtualization. Further, ADVA delivers solutions for network synchronization and monitoring, and the software that is re-

quired for save and secure networks operations. These markets are geographically distributed on all continents, with a focus on Europe and North America.

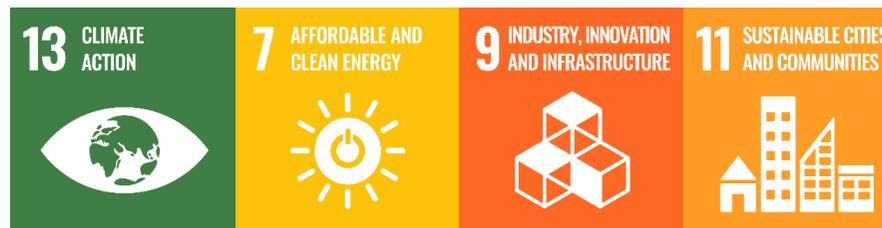
In some cases, we serve our customers directly, but the majority of our customers are served through OEM partners and value-added resellers (VARs).

The business models range from the pure sale of the products via the sale of the products together with associated maintenance contracts to the operation of products. The latter is still a small business area. It is a strategic company goal to expand the service share of sales.

The demand for the group's infrastructure solutions is driven by the global ICT (information and communication technology)

trends cloud computing, mobility (previously 4G, now 5G and in the future 6G), IoT/M2M (internet of things, machine-to-machine), industry 4.0, big data and high-performance computing (HPC) as well as intelligent power grids, cities and buildings. In addition, we assume that the demand for ICT infrastructure solutions through both climate change mitigation and adaptation will tend to increase as a result of the Greening-by-ICT effects that have been made possible. In 2020/2021, the demand has also slightly increased due to Covid-19.

ADVA operates 36 sites in 25 countries. The group runs major sites in Germany, Poland, the United Kingdom, the USA, Israel, and China.



SDGs addressed by ADVA

Material matters, risks and opportunities

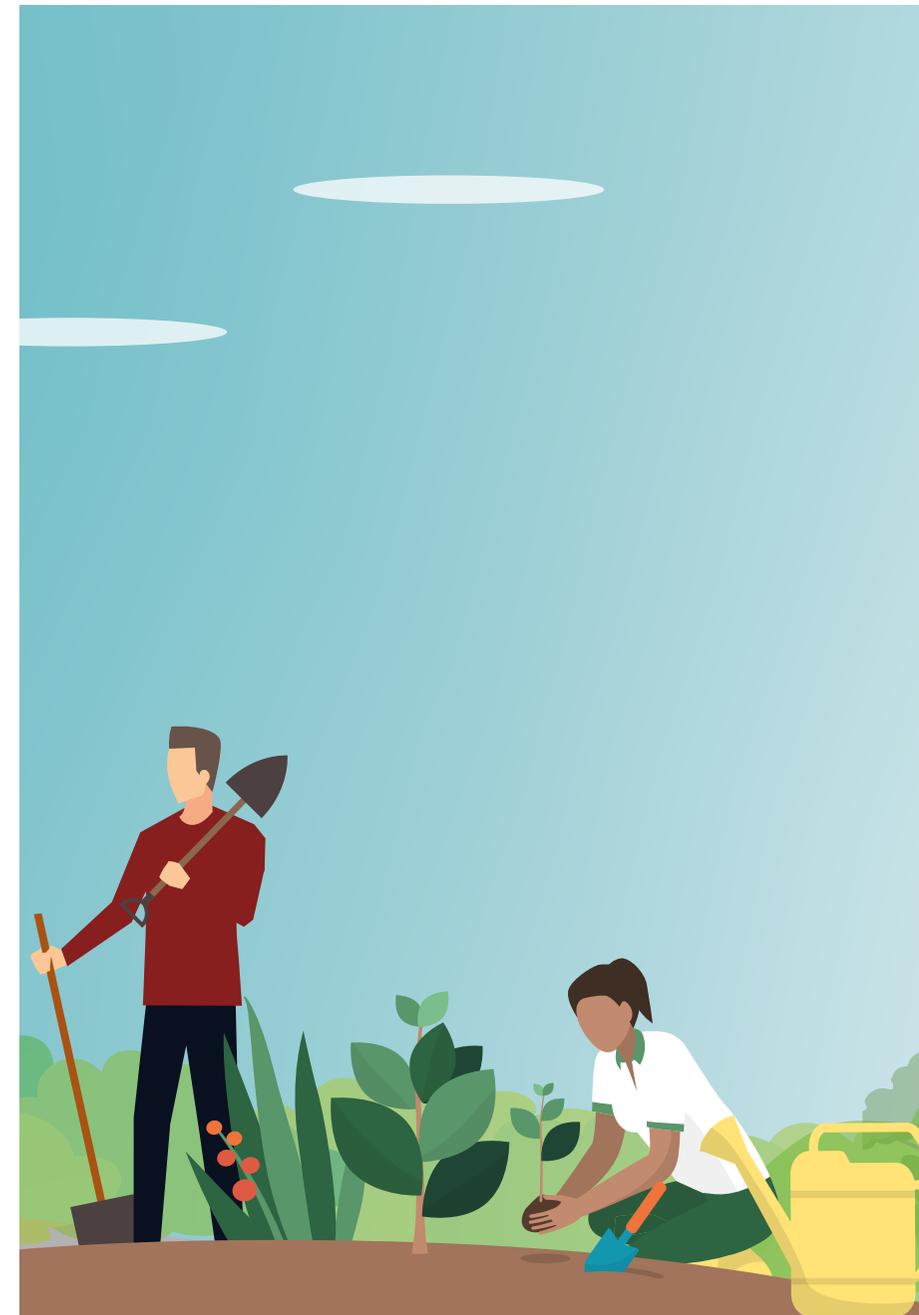
Relationship between the various analyzes

The German commercial code (HGB) defines matters that the non-financial report shall cover. In addition, company-specific matters can be defined. Together, reporting shall cover all information required for understanding the business trend, the company development and results, and the impact of the company's activities on the matters.

Innovation and the goal to make our customers successful are the foundation of ADVA. It is our motto to create a networked and sustainable future together with our customers. We summarize this with **Connecting, Extending and Assuring the Cloud**. Our open transmission technology enables our customers to provide the cloud and mobile communications services that are vital for today's society and to create new, innovative and sustainable services.

The global ICT sector is one of the few industrial sectors that enables overproportionate reductions of greenhouse gases in other sectors (see also [ICT and their effects](#)). Despite this important positive net balance, it makes little sense to reduce sustainability to this one aspect. Instead, a holistic view and essentially complete reporting are required.

In order to determine the aspects that are to be reported, the group relies on the analytical tools and processes of its risk management system. A materiality analysis is then carried out in order to also identify and prioritize the non-financial aspects. This approach and the related results are described in the following chapters [Sustainability risks and opportunities](#) and [Materiality analysis](#).



Sustainability risks and opportunities

G102-11, G102-15, G102-34, G201-2

The CSR Directive Implementation Act requires the disclosure of non-financial information on material matters. This also includes disclosures of the related risks that are connected to the business activities and relationships as well as the products and services and that very likely have, or will have, serious negative impact on the material matters as defined in Sect. 289c Para. 2 of the German HGB.

ADVA has impact on, and is potentially impacted by, different sustainability matters. This includes both risks and opportunities. The assessment of non-financial risks and opportunities in particular is closely linked to the materiality analysis.

The risk assessment was expanded from the end of 2021, in particular in order to be able to better map non-financial risks and opportunities. Until then, risks and opportunities were assessed mainly based on their financial impact. This took place according to the (net) likelihood of occurrence and by their (net) potential impact. A risk or opportunity is considered major if its expected **net impact on the group's**

pro forma operating income exceeds EUR 3 million in terms of ADVA's three-year business plan. The time horizon of the group's risk management system follows the defined strategic goals and currently extends to three business years after goal setting and approval by the group's supervisory board.

The effect was that material non-financial risks were captured and mitigated, but as part of other, already existing aspects. Hence, they were covered by the risk assessment, but were hardly apparent.

Now, non-financial risks and opportunities have also been included in risk management. This required a corresponding definition and, in particular, a clear widening of the time horizon. Non-financial risks and opportunities affect ADVA's standing if they occur. You can thereby have a major influence on sales and profitability in the medium to long term. The identification, tracking and evaluation of these risks and opportunities in ADVA's risk management system is based on the qualitative criteria of materiality and relevance. These are set

regularly by a team of evaluators led by the Head of Global Sustainability.

Non-financial risks and opportunities are recorded, tracked and mitigated both in the matters predefined by the German Commercial Code (HGB) and in the company-specific matters. The assessment looks at both their influence on ADVA's business and ADVA's influence on the matters. A time horizon of 2050 is considered in general. This means that in many cases, the financial impact within the next 10 years cannot be sensibly estimated.

Details on the group's risk management system, the underlying processes and responsibilities and a summary of all identified major risks and opportunities can be found in our [Annual Report 2021](#).

Based on the analytical tools and processes described, no risks were identified for 2021 in accordance with Section 289c Paragraph 3 No. 3 and 4 of the German Commercial Code, which are very likely to have or will have serious negative effects on the matters as defined in the German Commercial Code.

ADVA considers five of the 14 (2020: 14) risks listed in the annual report at the end of 2021 (2020: six) to be sufficiently relevant also with regard to sustainability aspects that they should be mentioned in the non-financial report.

Global warming, or climate change, is among the risks with an ultimately unknown time horizon. It can lead to unprecedented consequences for regional, national and global ecosystems and economies. *We therefore regard global warming as the singularly greatest risk that can be observed today.* This risk is one of the non-financial risks and concerns one of the environmental matters. It primarily addresses emissions and their reduction.

For a similar reason, we consider the (financial) risk of the **wrong product strategy** here. One aspect of this is the risk of not adequately weighting and not pursuing ecodesign. Energy efficiency in particular plays a role here, as this in turn has an impact on the resulting product emissions. Thus, the aspect of product strategy/energy efficiency is also one of the environmental matters.

The second non-financial risk is that of the **circular economy**. This is a company-specific matter. It encompasses the aspect of resource availability and the value chain.

Finally, in the context of the materiality analysis, the cyber risk and the risk of the loss of knowledge and skills play a role. Both are listed as financial risks in the risk assessment. The cyber risk or IT security is an independent matter. Loss of knowledge and skills belongs to employee matters. This primarily affects the aspect of employee satisfaction.

In addition to the risks and aspects mentioned, the (telecommunications) **infrastructure** aspect has again been rated material under social matters, similar to 2018. It is not listed as high risk in the risk assessment.

There were no material risks relating to the matters of **combating corruption and bribery** or **respect for human rights**. Regarding our supply chain, these topics are monitored with our tool IntegrityNext. In the reporting period, no incidents came to our knowledge. The same is true internally. For the reporting period, no incidents are known. The aspect of bribery/corruption at sales partners is listed in the risk assessment but is not material according to Section 289c of the German Commercial Code (HGB) due to our maximum impact rating.

Therefore, the matters of *combating corruption and bribery* and *respect for human rights* were rated lower in our assessments regarding potential negative impact, compared to the other matters listed. Both matters are therefore reported in Part 1 of this report.

The five risks are summarized on the following page.

Besides sustainability-related risks, solid progress in the field of sustainability can also lead to **positive impact** and related opportunities. A very notable positive effect relates to carbon emissions abatement, which is enabled by the respective use of our products. This effect, known as **Greening-by-ICT**, is predicted to over-compensate emissions caused by the ICT sector by a factor of almost 10 (see the chapter [Portfolio lifecycle assessment](#) and [ICT and its impact](#)). The Greening-by-ICT effect is one of the few known mechanisms for considerable global CO₂ savings.

Our work in the area of sustainability also supports increased positive awareness and reputation with related potential effects on business. One example of this is our EcoVadis rating, which potential business partners can request. Another important example is our participation in the [Science Based Targets initiative](#) (see the [Sustainability strategy](#) chapter in this report), where we already got first positive feedback and interest in our respective work by several stakeholders. So far, the business impact, in terms of added (pro-forma) EBIT, was not quantifiable. However, we expect this to grow over time.

Moreover, the group's opportunities may extend into the segment of sustainability-related supply-chain management, e.g., in cases where the group supports some of its suppliers in achieving better related performance. This would not only help the respective suppliers, it would also lead to potentially better relationships.

Influence of the risks on the HGB or ADVA-specific matters and sustainability aspects

Risk* (acc. to annual report)	Strategic Company goal	Impact on the respective matter	Aspects
Wrong product strategy	Innovation	Environmental matters. Wrong product strategy may result in relevant ecodesign aspects, especially energy efficient or design to recycling, being only insufficiently considered. This may negatively impact our competitiveness, including the increasingly important topic of ecodesign, and it may lead to higher emissions.	Product efficiency, emissions (see page 65 ff.)
Climate change	Operational Excellence	Environmental matters. Climate change is seen as the most important environmental concern. Insufficient support on the way to climate neutrality can ultimately have consequences that cannot be fully assessed, from extreme weather to impairment of supply chains and migration. The aspect of emissions is addressed through product efficiency and our own emissions.	CO ₂ emissions (see page 62 ff.)
Circular Economy	Innovation	Matter: circular economy. Negative influences in the area of circular economy (CE) arise from customer expectations/requirements that may not be met, the temporary violation of more stringent CE regulations or poor resource efficiency and thus poor availability. Furthermore, it cannot be ruled out that, due to design, products are poorly suited for future circular economy business models within the value chain.	Resources, value chain (see page 68 f.)
Cyber risk	Operational Excellence	Matter: Information security. Loss or unintentional publication of business data has various negative influences. These include the breach of confidentiality agreements, possible legal consequences, damage to the image (up to and including loss of customers), loss of intellectual property and possibly blackmail.	Confidentiality, Integrity, Availability (see page 73 f.)
Loss of knowledge and skills	People	Employee matters. The loss of knowledge and skills is caused by dissatisfied employees and their fluctuation. In some cases it can lead to both, major operational and innovation problems. It must be addressed via actions regarding the aspect of employee satisfaction. This is especially true in times of Covid-19.	Employee satisfaction, Covid-19 (see page 69 f.)

* The definition of risks follows the principles of ADVA's risk management system as outlined in the annual report. The six risks listed here are **not** material according to Sect. 289c Para. 2 of the German HGB.

Materiality analysis

G102-11, G102-44, G102-47, G103-1, G103-2

A materiality analysis is required for reporting according to HGB. The basis of our materiality analysis is our risk assessment. This includes the requirements of the German Commercial Code and GRI with regard to business relevance and the effects of ADVA on the matters according to the CSR Directive Implementation Act.

As part of the materiality analysis, participants from different departments conduct an annual assessment of the aspects identified in accordance with an internal process description. Further departments then receive the analysis for review and comments, after which the analysis is submitted to the board for approval.

The evaluations concern both dimensions of the analysis, business relevance and impact on the matters. We conduct a combined internal and external analysis for business relevance.

The external analysis considers factors of relevance that are external to the reporting entity, i.e., factors where the reporting entity has limited or no control on. These include, among others:

- The most relevant environmental, economic and social determining factors – like global warming – including related legislation (e.g., the climate agreement)
- Governmental funding and initiatives
- New technical needs (in ICT, e.g., in data centers) and innovations and developments (e.g., in recycling)
- General economic framework (e.g., exchange rates, inflation, Trade wars)
- Media perception and support
- Respective strategy, actions and performance of the competition

In the external analysis, the perspectives of relevant interest groups are also used to evaluate the aspects examined. Interested parties are listed in Part 1 of this report, in the chapters [Context analysis](#) and [Stakeholder engagement](#).

The internal analysis considers all relevant strengths and weaknesses of the reporting entity. It contains matters like:

- Technological and organizational competence (governance)
- Resources availability
- Business – customer satisfaction, stickiness and expectation, new opportunities, competitive advantages
- Business – cost, price, potential savings

The annual materiality-analysis process also includes the inclusion of new aspects or questioning of old aspects. For this purpose, important topics from the GRI sub-categories, aspects from the ISO context analyses, topics from the Sustainable Accounting Standards Board (SASB) and other relevant ADVA-specific topics are checked and, if necessary, selected for evaluation.

The respective evaluation criteria (as listed above) are also assessed and changed or supplemented if necessary.

Finally, the threshold for rating aspects material/non-material in the related graphic representation is defined. This resulted in a change in the representation. So far, we have considered the double materiality reservation in the analysis. We have changed this for 2021. Materiality is now given if the threshold value is exceeded in one of the dimensions (relevance for ADVA's business, ADVA's influence on the matters). For our illustration it follows from this that the non-material area in a two-dimensional diagram is given by the rectangle on the lower left.

The current list of aspects used in the materiality analysis is shown in the table below. The essential facts are highlighted in **bold**.

In our analysis, the environmental aspect of emissions and climate change clearly stands out from the other essential aspects. It is followed by the matters resource availability, Covid-19/mobile working and information security.

List of assessed aspects in 2021

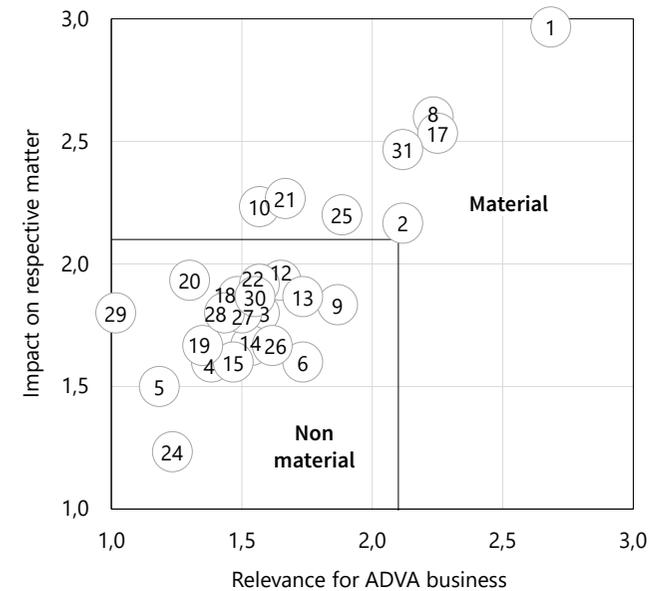
	Aspects	#
Environment	GHG emissions/climate change	1
	Energy management	2
	Waste	3
	Water management, pollution	4
	Safety and labeling	5
	Packaging & transportation	6
Circular Economy	Resource availability	8
	Compliance (WEEE, CM, etc.)	9
	Cooperation in the value chain	10
Regulatory and compliance	(German) supply chain act	12
	REACH, RoHS, WEEE, CM, ...	13
	Reporting	14
	Taxes (transparency, compliance)	15
Employees	Covid-19, Mobile working	17
	Occupational health and safety	18
	Labor practices (ILA)	19
	Harassment and discrimination	20
	Compensation & satisfaction	21
	Training & education	22
Social	Community	24
	Infrastructure	25
	Conflict minerals, cobalt, mica	26
Combating corruption and bribery	Internal bribery and corruption	27
	Bribery/corruption with sales partners	28
Respect for human rights	Combating modern slavery	29
	Harassment and discrimination	30
Information security	Confidentiality, integrity, availability	31

The following graph shows the materiality of these aspects. Material aspects lie outside the lower left rectangle, as indicated. They are also highlighted in the left table.

The materiality analysis shows clear continuity compared to previous years. Environmental matters and emissions continue to have the highest priority. Circular economy is now an independent matter. However, the topic was already there before. As in 2018, infrastructure as a social matter is rated as material. Supply chain is no longer an independent matter but appears under the new matter of circular

economy (value chain). As in the previous year, information security remains one of the material matters. Thus, the two changes in the materiality are that employee matters are again rated as material (as they were in 2019, but not in 2020), and that combating corruption and bribery is no longer rated as material.

The material aspects presented here are reported hereinafter. Matters rated as non-material are dealt with in Part 1 of this report.



Graphic representation of the materiality analysis 2021

Sustainability strategy

G102-15

ADVA's sustainability strategy is based on the material aspects. In our materiality analysis, the emissions aspects, which belong to the environmental matters, are rated higher than other aspects. Emissions are obviously related to global warming. The circular economy matter and energy management are also, at least indirectly, related to emissions and global warming.

Due to this clear result, we have a long-term focus in our sustainability strategy with priority 1 on reducing emissions, including product energy efficiency and the resulting reduction in emissions.

This focus is underlined by numerical targets. These targets are described under [Carbon emissions](#) (Part 2) and [Portfolio lifecycle assessment](#), respectively.

Regarding circular economy (CE), ADVA's strategic goal is to strengthen the CE business. To prepare for a higher amount of CE business, we participate in the EU Horizon-2020 research project [C-SERVEES](#) since 2018. The project aims at boosting circular economy in the electrical and electronics industry. For ADVA, this is to be done by intensifying so-called product service systems (PSS). Until the end of the project in 2022, no specific targets will be defined.

Circular economy is closely related to the value chain. This, in particular the supply chain, must be integrated in order to be able to successfully implement circular mechanisms. This also applies to the exchange of product-related information. We therefore continued two initiatives in 2021 that include the collection of sustainability-related supplier data and product-related material declarations. The latter are also important in the circular-economy context in order to be able to track and guarantee compliance with chemical substances for products with a long service life or reuse. Both initiatives will continue in the future.

The circular economy matter was supported by the implementation of the Environmental Requirements (guidelines for product ecodesign, formerly named Ecodesign Guide) in the product lifecycle process, which was completed in 2021. This was done in continuation of our related activities of the last few years. The activities against global warming are complemented by priority-2 activities on the other material aspects. These cover non-environmental topics.

The aspect of employee satisfaction must be mentioned here. The employee termination rate was last above the announced 5% target. Together with the Covid-19 situation, which for many employees has meant the extension of mobile working well into 2021, this has led to particular attention to the topic of employee satisfaction.

In 2020, an initiative in the area of information security started. This topic has continuously increased in importance in recent years. It was restructured internally with the aim of establishing even more resilient processes. As an important step towards this, an awareness campaign was started in 2020. This was continued in 2021.

Finally, the infrastructure aspect has to be mentioned. Our main goal in 2021 here was to maintain our supply availability with least disruption, despite Covid-19.

The initiatives and targets are summarized in the table below.

Sustainability aspects, main targets, detail-targets and initiatives in the three pillars of the Triple Bottom Line

Aspect	Key objectives	Targets in more detail	Key initiatives/activities	Status
Emissions and climate change	Decrease of the global ADVA CO ₂ footprint	Three SBTi 1.5°C targets,	Achievement of the SBTi targets by 2032 (base year: 2016)	Ongoing
		ISO 50001 reduction target, Two ISO 14001 LCA targets	Preparation for net zero goals (“Fit-for-55”)	Planned until 2023
Circular economy (CE) and value chain	Increase/scaling CE business Improving cooperation in the value chain	Planning/implementation of PSS	Participate in EU H2020 project C-SERVEES	Ongoing
		Increase of the supplier response rate in IntegrityNext to > 80%	Forced use of the IntegrityNext tool	Ongoing
		Increase in the fill rate of the material declarations to > 80%	Dedicated procurement of material declarations	Ongoing
Employee satisfaction	Reducing turnover rate	Turnover rate <5%	Initiative for employee satisfaction and lowering the termination rate	Started
Information security	Ensure awareness of the information security topic	>80% of all employees shall participate in the trainings on IT security in 2021	Creation of intranet-based training courses on IT security aspects, invitations to participate, tracking of participation	Ongoing
Infrastructure	Maintain supply availability, despite Covid-19	No numerical targets	Organization of spatial/temporal separation of employees with mandatory presence	Ongoing

Assessments and performance

G102-15, G103-2, G103-3

Regular assessments are a relevant control mechanism for the management approaches in the material sustainability areas.

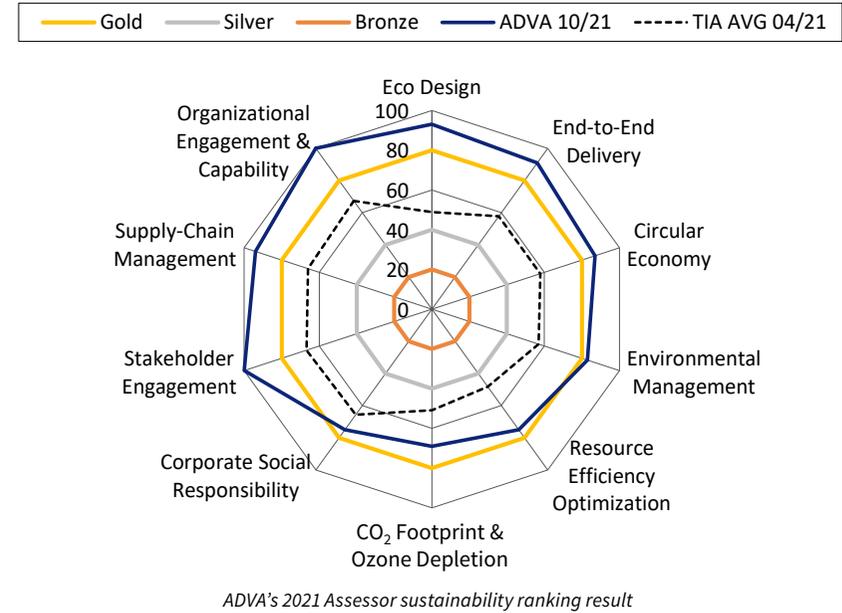
One relevant assessment tool covering the area of sustainability is used by the Telecommunications Industry Association (TIA) Sustainability Initiative. This initiative ties in with the QuEST Forum Sustainability Initiative, which already used the tool and the related model. The model is therefore of relevance for companies working in telecommunications.

We reported about the model in the recent reports repeatedly. ADVA started using it in 2013. The model divides the area of sustainability into 10 segments, which cover environmental, social, organizational and finally business topics.

The TIA sustainability model is supplemented by the TIA Sustainability Assessor, a web-based tool that supports companies' (self) assessments in sustainability.

The latest self-assessment results for ADVA showed our **fifth consecutive Gold rating** averaged across the segments of the TIA sustainability model. The last rating is shown in the following diagram, split into the 10 different segments of the TIA model. For comparison, the average value of all TIA assessments in the first half of 2021 is also shown.

The TIA assessment gives an overview on the performance in the different sustainability segments. Per segment, it comprises less than 10 questions. The TIA assessment should therefore be supplemented at least in certain relevant areas by more detailed assessments of global organizations.



Such more detailed assessments are also requested by some of our large customers. These requests lead to in-depth assessments of our carbon emissions by the *Carbon Disclosure Project* (CDP), and of environment and several CSR compliance matters by *EcoVadis*. Several of our customers have access to the results on either of the platforms. The number of these customers is slowly increasing over time. This is to be regarded as very positive, as it reduces the effort for (largely redundant) proprietary assessments.

In 2021, we achieved our **second EcoVadis Platinum rating** after three gold ratings in 2017-2019. The assessment areas included environment, labor & human rights, ethics, and sustainable procurement.



Furthermore, we were **rated B in the CDP climate-change assessment** in 2021 (2020: C, 2019: B, 2018: B minus). The assessment consisted of the CDP Climate Change questionnaire and the Supply Chain module. Both, the EEE industry and global average for 2021 were at *B minus* level. We were also **rated A minus in the CDP supplier-engagement assessment** (2020: B minus, 2019: B, 2018: B minus).

In line with our materiality analysis, the aspect related to deforestation is not included in our CDP assessments.

Finally, at the beginning of 2021, we received the Global Sustainability Award from TIA/QuEST Forum in the category Excellence in Network Equipment. This is our second TIA/QuEST Forum Award.

EU Taxonomy Regulation report

The EU Taxonomy Regulation is a classification system for sustainable economic activities. It aims at mobilizing private capital spending that is required to achieve climate neutrality in the next 30 years.

ADVA is obliged to release a non-financial group report in accordance with section § 315b paragraph 3 of the German Commercial Code (HGB). For the business year 2021, we report for the first time how and to which extent our operations relate to economic activities that can be classified as ecologically sustainable according to the EU Taxonomy Regulation.

Article 8 of the EU Taxonomy Regulation requires, as far as applicable, the disclosure of expenses (CapEx, OpEx) or income that are linked to activities, products or services that are related to climate-change mitigation or adaptation activities of the reporting company or enable these in other areas (e.g., other NACE sectors).

For the business year 2021, we make use of the exemption according to article 10 of the delegated act regarding article 8 of the EU Taxonomy Regulation.

Our economic activities

ADVA has assessed all its business activities according to the delegated act regarding the climate targets of the EU Taxonomy Regulation. This was done using the respective activity descriptions and in particular all potentially applicable NACE-sector methodologies provided in the Taxonomy Regulation documents. Here, it is to be noted that ADVA cannot be assigned to NACE sector J, ICT, since electronic manufacturers are explicitly excluded from sector J.

A detailed analysis of our business activities revealed that these do not fall under the delegated act regarding the climate targets of the [EU Taxonomy Regulation](#) and consequently, are **not eligible** to the Taxonomy Regulation.

There are several reasons for this, which are described in the [EU Taxonomy Regulation report](#) in Part 1 in more detail.

Accounting Policy

Article 8 of the [EU Taxonomy Regulation](#) defines three key performance indicators (KPI): revenue KPI, OpEx KPI and CapEx KPI, respectively. These KPIs are derived according to Annex I of the delegated act regarding article 8 of the EU Taxonomy Regulation and, at balance sheet date, on the basis of the International Financial

Reporting Standards (IFRS) of the International Accounting Standard Board (IASB), also considering the interpretations of the IFRS IC (IFRIC).

Revenue KPI

The portion of economic activities that are eligible to the Taxonomy Regulation, related to our total revenues, is calculated as that part of the net revenue that results from products and services in the context of economic activities that are eligible to the Taxonomy Regulation (numeraire), divided by the net revenue (denominator). The denominator of the revenue KPI is based on our consolidated net revenue in accordance with IAS 1.82(a). More details on our accounting procedures for our consolidated net revenue can be found in the annex of our [Annual Report 2021](#) in the explanations to the profit and loss statement under paragraph 22, revenues.

Our consolidated net revenue can be aligned with our consolidated financial statement, refer to the profit and loss statement in the chapter IFRS consolidated income statement of our [Annual Report 2021](#), revenues. For the numeraire, We did not identify any activities that are eligible to the Taxonomy Regulation, as explained above.

CapEx KPI

The CapEx KPI is defined as CapEx eligible to the Taxonomy Regulation (numeraire), divided by our total CapEx (denominator). For the numeraire, please see the explanations hereinafter.

The denominator of the CapEx KPI comprises the ingress in tangible and intangible assets in the business year before write-off and revaluation. This includes revaluation and depreciation for the business year 2021 without changes of the fair value. The denominator comprises the ingress to fixed assets (IAS 16), intangible assets (IAS 38) and the usufruct of immovable property (IFRS 16). More detail on our accounting procedures for our capital expenditures can be found in the notes section of our [Annual Report 2021](#) under note 4, recognition and measurement.

Our total CapEx can be aligned with our consolidated financial statement, refer to the notes section of our [Annual Report 2021](#), paragraph 14, fixed assets. It is the sum of all ingress of tangible and intangible assets and usufruct of immovable property.

OpEx KPI

The OpEx KPI is defined as OpEx that is eligible to the Taxonomy Regulation (numeraire), divided by our total OpEx (denominator). Regarding the numeraire, please see the explanation hereinafter.

The denominator comprises direct, non-capitalized cost. These cost result from R&D activities, asset-renovation activities, short-term rental agreements, maintenance and repair, and all other direct cost related to ongoing service of tangible assets. These include:

- Expenditures for R&D that are captured in the income statement for the reporting period as operating expense (refer to the income statement in our [Annual Report 2021](#), chapter IFRS consolidated income statement, research and development expenses, and note 23, selling and marketing, general and administration and research and development expenses). In accordance with our consolidated financial statement (IAS 38.126), this comprises all non-capitalized expenses that can directly be assigned to research and development activities.
- The amount of non-capitalized lease was derived according to IFRS 16. It contains expenses for short-term or immaterial lease (refer to the notes section of our [Annual Report 2021](#), note 14, fixed

assets). Although immaterial lease is not explicitly mentioned in the delegated act regarding article 8, we interpreted the legislation in a way that such lease is included.

- Maintenance and repair cost as well as other direct expenses in the context of daily service of tangible assets were compiled on the basis of the maintenance and repair cost assigned to our internal cost centers. The respective cost items can be found within different items of our income statement. This includes production cost (service in operations), distribution cost (servicing logistics), and administrative expenses (e.g., service of IT systems). This also includes building restoration.

Details of the OpEx and CapEx KPI numeraires

As described before, ADVA has not identified economic activities that are eligible to the EU Taxonomy Regulation. Therefore, we do not capture any CapEx or OpEx in the numeraires of the respective KPIs that are related to investments or processes that are connected with activities that are eligible to the Taxonomy Regulation. Moreover, there are no plans for CapEx in order to improve economic activities that are potentially eligible to the Taxonomy Regulation such that they better align with the Taxonomy Regulation, or to extent an eco-

nomic activity that is aligned with the Taxonomy Regulation.

Therefore, only “Category C” CapEx and OpEx might be rated as eligible to the Taxonomy Regulation. This comprises CapEx/OpEx related to the purchase of output from economic activities that are eligible and selected measures that allow certain activities (our non-eligible activities) to become low-emission activities or to save greenhouse-gas emissions (clause 1.1.2.2. (c) of annex I of the delegated act regarding article 8 of the EU Taxonomy Regulation). No such expenses have been done in the business year 2021.

The “Draft Commission Notice” that was published on February 2nd, 2022, could not be considered anymore. It substantiates the interpretation of the capital and operating expenditures (Category C of clause 1.1.2.2 and clause 1.1.3.2 of annex I of the delegated act regarding article 8 of the EU Taxonomy Regulation, respectively). Due to the late publication date, quality-assured capture and validation of the respective data will only be provided for the next business year.

Since the numeraires for all KPIs are zero, there is no risk duplicate counting of economic activities.

ADVA's KPIs

According to the explanations in the preceding chapter, our economic activities in 2021 are not eligible for the EU Taxonomy Regulation, also see the following table.

Overview of ADVA's economic activities 2021

	Total [MEUR]	Taxonomy-eligible [%]	Taxonomy-non-eligible [%]
Revenue	603	0	100
CapEx	66	0	100
OpEx	79	0	100

An appreciation of our economic activities OpEx and revenue in the context of climate change can be found in the [EU Taxonomy Regulation report](#) in Part 1.

Environmental matters: emissions and climate change

Material topics, boundaries, management approach, and evaluation of this approach

G103-1, G103-2, G103-3

According to our [Sustainability materiality analysis](#) and the resulting [strategy](#), the most material (priority-1) aspects are those that relate to carbon emissions and their reduction. This includes direct (GHGP Scope-1) emissions, emissions from energy consumption (Scope 2, Scope 3), and ecodesign (the latter influencing the dominant Scope-3 emissions). The high priority of the emissions-related aspects is reflected in our SBTi commitment and the official approval of our targets, which adds long-term stability to our sustainability strategy. Currently, we do not expect a change of this long-term focus on emissions.

Following the emissions aspect with priority-2 (still material) is the environment matter of circular economy, which leads to improved resource efficiency. Via the Greenhouse-Gas-Protocol Scope-3 category of production-related purchased goods (i.e., components), it also has carbon-emissions saving potential.

As highest-priority aspects, they are managed with dedicated processes (provisioning, update and application of the Environmental Requirements as part of the product lifecycle process, portfolio-wide lifecycle assessments) and management systems (ISO 14001 EMS, ISO 50001 EnMS). These processes and management approaches include assignment of dedicated staff, and the highest governance responsibility by the CTO and CFO, respectively. The high prioritization of the emissions aspect is also shown by the definition and tracking of targets. The latter comprise the three SBTi targets, the ISO 50001 reduction target, and two LCA-related targets. In 2020, the high prioritization was expressed through the tightening of our SBTi targets to support a maximum global warming of 1.5°C. The base year 2016 was retained from the previously existing 2°C targets. The SBTi targets are pursued by the CDP on an annual basis. The emission figures relevant for the SBTi are also an integral part of a regular management review. There, they are supplemented by important current topics if necessary.

For other environmental areas such as water or waste, no externally communicated targets have been defined. This is due to the fact that the group's impact in these areas is significantly lower compared to GHG emissions. However, both areas are continuously monitored and reported.

The management approaches are evaluated externally, at least, on a yearly basis, through assessments (CDP, EcoVadis, TIA) and audits (ISO audits, validation of this report) and accompanying internal audits and analyses. Corrective actions are taken in particular in cases of deviations from the targets (e.g., the ISO 50001 reduction target) and when aspects have undergone new internal rating. This comprises root-cause analyses (in cases of deviations from targets) and the identification and implementation of improvement actions. As an example, we started analyses in 2021 regarding the feasibility of further tightening our SBTi targets. Such goals run in the EU under the *Fit-for-55* package of measures, they include science-based net-zero goals.

In particular, the aspect of emissions applies company-wide and across all product families. This includes the acquisitions made in recent years. This also applies to the EMS. Only ISO 50001, which is also relevant for the SBTi Scope-2 target, refers to five large locations with ICT laboratories. This covers more than 40% of the total electricity consumption.

So far, our management approaches have proven to be effective. Plans have begun to convert our SBTi targets to net-zero targets, the respective implementation is planned for 2023.

Carbon emissions (Scope 1–3)

G305-1, G305-2, G305-3, G305-5

Following our emissions-reductions focus, ADVA committed to the [Science Based Targets initiative](#) (SBTi) in late 2016, as one of the first 200 companies worldwide. In the SBTi, we have three reduction targets related to the Scopes 1, 2 and 3 of the Greenhouse Gas Protocol (GHGP). These targets support a maximum of 1.5°C of global warming and are officially approved by the SBTi.

The SBTi emission-reduction targets have runtimes of 16 years. The base year is 2016, the starting year was 2017, and the target year is 2032. The targets will define the focus of the sustainability strategy – emission reduction – for this period.

These Scope-1 and Scope-2 targets aim at reductions of 67 % over the target runtime in absolute terms. The Scope-1 target refers to the company's car fleet. The reductions are to be enabled by less consumption per car, less mileage, and possibly smaller pool size. For the Scope-2 target, we are pursuing a higher proportion of renewable energies, such as in the electricity mix consumed. This is supported by our ISO 50001 activities.

The group's Scope-3 target relates to sold-products use-phase emissions. This is our largest GHG contribution (see the chapter [CO₂ emissions in Part 1](#)), and consequently deserves attention. Our target is to massively increase the energy efficiency of our products such that absolute sold-products use-phase emissions are reduced by 3 % in the target year 2032 (base year: 2016). This may seem to lack ambition, but it has to counteract the exponential Internet bandwidth increase and the related ICT network-segment energy consumption which, in general, is forecasted to not decrease (see the chapters [ICT and its impact](#) as well as [Portfolio lifecycle assessment](#)).

The emissions related to the SBTi targets are reported yearly, together with further (Scope-1, Scope-3) emissions, to the Carbon Disclosure Project (CDP). GHG emissions are reported on the basis of operational control. We use provider-specific (marked-based) data for Scope-2 emissions. We do consider the relevant GHG other than CO₂.

The electricity-related carbon emissions heavily depend on the emission factors that apply for the respective sites or areas. This mainly relates to Scope-2 (purchased electricity), and Scope-3 (use of sold products).

A small fraction of the energy consumed by the group relates to natural gas (Scope 1). The averaged emissions factor of natural gas in 2021 was **0.196 kgCO₂e/kWh** (2020: 0.199 kgCO₂e/kWh).

Since 2021, we exclusively use market-based emission factors for Scope 2. The emission factor for electricity purchased in 2021 and averaged across all our sites was **0.388 kgCO₂e/kWh** (2020: 0.403 kgCO₂e/kWh).

Based on our customer base, a weighted emission factor of **0.347 kgCO₂e/kWh** was used to assess the emissions of the products sold (Scope 3) in 2021 (2020: 0.359 kgCO₂e/kWh). This factor is lower than our location-related emissions factor, as some large customers have already completely switched to renewable energy for operating their grids. We have made assumptions to the best of our knowledge about the future relative share of these customers and the regional forecast of the development of emissions.

The GHGP Scope 1 and Scope 2 emissions as well as material Scope 3 emissions greenhouse gas emissions of our company are shown in the table on the following page.

Material GHG emissions for 2021 (2020)

GWP [tCO ₂ e]	Category	2021 (2020)
Scope 1	Car fleet DACH, UK*	377 (386)
	Car fleet total	639 (627)
Scope 2	Natural gas	369 (320)
	Purchased electricity**	5,158 (5151)
Scope 3	Use of sold products	205,455 (215,315)
	Production-related purchased goods	36,997 (36,594)

* Only validated for Germany, Austria, and Switzerland (“DACH”) and UK. This covers ~59% of the total car-fleet emissions. In 2020, only the emissions for the DACH region were validated.

** Electricity consumption of all major ADVA sites, which is covering >90% of our total headcount. The compilation of market-based data is described further above.

In 2021, car-fleet emissions in the DACH region compared to the previous year decreased (2020: 365, 2021: 327). We attribute this to corresponding measures such as charging stations for electric or hybrid vehicles in our car fleet. In addition, the mileage of the vehicles was also lower in 2021 as a result of the Covid-19 pandemic.

Scope 2 emissions very slightly increased in 2021, compared to 2020. They are clearly below the emissions of the base year 2016, but above the SBTi target. This is attributed to the electricity consumption of sites with large laboratories. Our target is to address this in 2022, for example by switching further sites to renewable energy.

Scope 3 emissions from the use of sold products and production-related purchased goods were further reduced in 2021, compared to 2020. There was a slight increase in the emissions from the production-related purchased goods. The reduction of emissions is attributed to improved electricity emission factors, together with a higher portion of service and software in our total revenue. In accordance with our SBTi Scope 3 target, we will continue our work on product energy efficiency.

The second-biggest emissions contribution results from production-related purchased goods. These are the emissions embedded in the components and (sub-) modules the group purchases. They result from the production of the components, including the extraction of raw materials

and any related logistics. These emissions are not addressed explicitly by our SBTi participation and targets. However, we are pursuing emission reductions through appropriate product ecodesign. This comprises actions that address emission-intensive components with the target to reduce their impact. These actions are enabled by portfolio lifecycle assessment (LCA) efforts, see the [Portfolio lifecycle assessment](#) chapter. Emissions from production-related purchased components can further be positively impacted by circular-economy methods.

Emissions from production-related purchased components are calculated via life-cycle assessments.

Current achievements of our SBTi targets are provided in the table below.

Status of ADVA's SBTi targets

	2016* Base	2032 Target		2021 Target	2021 Status
	GWP [tCO ₂ e]		[%]	GWP [tCO ₂ e]	
Scope 1	1,010	331	-67%	798	639**
Scope 2	6,003	1,969	-67%	4,742	5,158
Scope 3	242,383	234,627	-3%	239,959	205,455

* The emission figures for the year 2016 are not covered by the voluntary audit of the non-financial report (Part 2).

** The total owned-transport emissions are not covered by the voluntary audit of the non-financial report, see previous table.

Product energy efficiency and Scope-3 emissions

G302-5

The use-phase dominance in LCA in general and GWP in particular is the main guidance for our ecodesign. We are improving the power efficiency (measured in W/Gbps, watts per Gigabits-per-second) with every new product or modules.

However, our WDM and a substantial part of the Ethernet products are also affected by the **ICT trend of exponentially increasing bitrates**. This trend can be derived from well-known references like the Cisco Visual Network Index (VNI, see vni-wp.html).

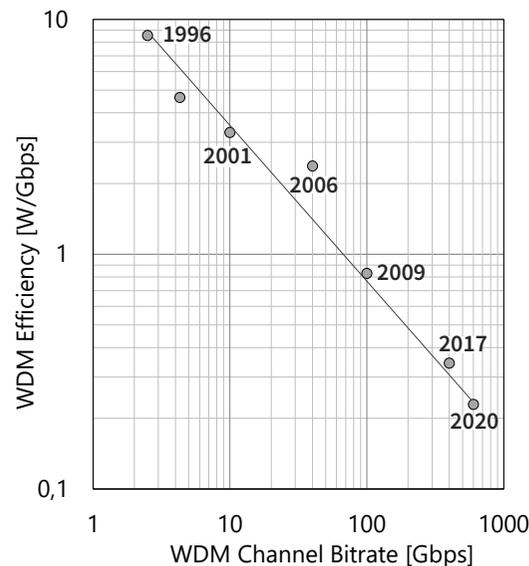
For WDM systems, the increase of bitrate so far has been somewhat faster than the increase of energy-efficiency. This means that WDM system generations *tend to consume increasing power over time*. Therefore, any emissions reductions must be enabled by **highest-possible efficiency supported by improving electricity emissions factors**. This is common to telecommunications core-network equipment today, it can be seen, e.g., for core IP routers as well.

Highest product power efficiency is the most relevant emissions-related aspect for ADVA. Our WDM equipment started at ~9 W/Gbps more than 20 years ago. It has now reached benchmark-setting efficiency of 0.23 W/Gbps. The development of the power efficiency over bitrate and system generations is shown in the following diagram.

Power efficiency currently is the most relevant emissions-related equipment parameter for WDM and certain other ICT equipment. Usage of this equipment, however, can enable GHG abatement outside the ICT sector which is potentially substantially higher than the one caused by the respective ICT usage itself. This effect is referred to as **Greening-by-ICT**. Hence, ICT

can be regarded as one of the few enablers of decreasing global GHG emissions. According to [GeSI Smarter2030](#), the ICT-enabled GHG abatement is almost 10x higher than the ICT GHG footprint itself.

The target for 2023 for the optimal efficiency of our WDM systems is below 0.20 W/Gbps. This is the continuation of last year's target (0.20 W/Gbps for 2022). This target will probably be achieved for certain configurations of *TeraFlex*.



Development of WDM per-channel power efficiency over time. The starting bitrate (2.5 Gbps) roughly corresponds with 1998, the latest bitrate (600 Gbps) corresponds with 2020. As indicated by the time scale, the development over time along the curve towards higher bit rates is approximately linear.

Portfolio lifecycle assessment

According to our combined materiality, context and end-to-end emissions analyses, ecodesign is one of ADVA's most material aspect. It can potentially enable the group's highest emission savings and also constitutes substantial opportunities through competitive advantages.

In ADVA, ecodesign is a formalized process. Here, the Environmental Requirements (formerly called Ecodesign Guide) were integrated into the product life cycle process (PLCP). These ecodesign guidelines cover the most relevant environmental product aspects, in particular **energy efficiency and circular economy**. The latter considers used (raw) materials and especially recycling. According to the internal assessment of the environmental requirements by the relevant development departments, we consider these to be sufficient to ensure the necessary results with regard to energy efficiency and design for circular economy.

Ecodesign must be guided by lifecycle assessments (LCA) covering the (commercially) largest portion of the portfolio. LCA shall consider the entire product life, from production via distribution and use to end of life. Consequently, ecodesign should consider these phases as well.

For about five years, ADVA performs lifecycle assessments, which almost cover the entire portfolio. This is done in accordance with ISO 14040/44 with the openLCA software and the ecoinvent and GaBi databases.

LCAs enable relevant product and portfolio optimizations. These in turn help achieving emission-reduction and other targets:

- Portfolio GWP optimization, in particular identification of those products with the highest global warming potential (GWP) reduction potential
- GWP lifetime optimization. This refers to the maximum lifetime a product should be given, and beyond which replacement with a more efficient successor product becomes **GWP net positive**. This holds for individual products and is independent from the portfolio GWP optimization.

- Identification of the most important (emission) contributions *after* the use phase. This is particularly important when products are already operated with renewable energy and shall be further improved.

When using emission factors like the one for today's average EU electricity mix, the LCA of our products is clearly dominated by the use phase. This refers to GWP and other environmental impact. This dominance holds as long as the related energy consumption is not yet fully based on carbon-neutral energy sources.

Only if this is the case, the next product phases relevant to the GWP must be improved. These can be identified from LCA. In all of our products, the production phase and the carbon embedded in the used components are the next most important.

Due to the relevance of LCA, **two related targets** have been defined:

1. $\geq 90\%$ of the commercially relevant product portfolio shall be covered by LCA. This is a moving target since the portfolio is continuously changed or complemented.
2. The level of confidence in LCA (i.e., its correctness) shall be as good as possible. This is to be supported by related due diligence.

These targets are also relevant in the context of ISO 14001.

In 2021, the first target was achieved. $\sim 94\%$ of the commercially relevant total portfolio was covered by LCA.

The LCA confidence-level target was further followed in 2021. Our LCAs lead to consistent results for different products that have similar use modes. In addition, external references are known that confirm the relative ratios of the relevant life-cycle phases of our LCA results, and the use-phase dominance. These references include reports and white papers from large manufacturers of ICT equipment. Hence, still no indication was found that would point into the direction of structurally wrong LCA results.

Circular economy: resource availability and cooperation in the value chain

Material topics, boundaries, management approach, and evaluation of this approach

G103-1, G103-2, G103-3

In accordance with our materiality analysis and the resulting strategy, the key aspects with priority 1 are those that relate to CO₂ emissions and their reduction.

The emissions are followed, with priority 2, by the aspect of circular economy (CE), which enables better resource efficiency. In addition, CE has potential for CO₂ savings in the GHGP Scope 3 category of product-related purchased goods.

CE is pursued at several levels at ADVA. On the one hand, there are CE processes for material reuse in reverse logistics. These are part of regular returns and thus of the business lifecycle process (BLCP). Second, CE-related ecodesign guidelines are implemented in the Environmental Requirements (formerly the Ecodesign Guide), which are part of the PLCP. Finally, improved CE business models will be explored.

These processes and management approaches include the employees responsible for this. In all three cases, responsibility at the highest level lies with the CTO.

For the area of circular-economy, two targets have been set related to the supply chain. These targets were followed in 2021, and they are valid for the next couple of years. First, the quota of suppliers answering in IntegrityNext shall be further increased. A similar target holds for the number of material declarations for the components that we purchase from the respective suppliers.

For both targets, 100% is hard to achieve in practice. Therefore, both are mid-term targets, and we strive for an increase year over year. The number of answers in IntegrityNext can be increased by improving the automation in that tool. Material declarations will be continued to be requested from the suppliers. Alternatively, they can be purchased from commercial data bases.

Both targets have clear relation to CE. Material declarations are necessary for extended lifetime or reuse of components. These material declarations enable to determine whether the substances that are contained in the components were regulated only after the component's production, e.g., by the REACH regulation. Current supplier profiles (e.g., in IntegrityNext) are part of the necessary due diligence regarding the supply chain. This helps to ensure that the supply chain is compliant regarding relevant matters (e.g., human rights, corruption). This, in turn, is the basis for any cooperation as required by CE. Moreover, more CE-specific questions can later be added to IntegrityNext.

At year-end 2021, the portion of material declarations was at 72%. In IntegrityNext, 77% of our suppliers had a profile, which covered 98% of our supply-chain spending.

Furthermore, a general cost-reduction goal applies to the BLCP.

The environmental requirements and their implementation in the PLCP are still too new to formulate numerical goals. This should change by 2023. The investigation of new CE business models has also not yet been completed, so that no goals have yet been formulated here. However, we expect that the first projects based on such new business models can also be completed by 2023.

The management approaches are checked at least once a year through external assessments (CDP, EcoVadis, TIA) and audits (ISO 9001/TL 9000 audits, validation of the sustainability report) as well as accompanying internal audits and analyzes. Correspondingly, measures are taken in the event of a revaluation of the facts. One example is the fact that we intensified our work on CE business models, in particular product service systems (PSS), in 2021.

So far, our management approaches have proven to be effective.

Resource availability and business models

G102-12

Since CE is a material aspect for us, we decided in 2017 to take part in the EU Horizon 2020 research project C-SERVEES. The project aims to strengthen the CE business in the EEE sector (electrical and electronic equipment). This should be done through systematic investigation, validation and the transfer of new CE business models. It includes industrial demonstrators from major industrial partners, of which ADVA is one.

A brief description is available under c-serveesproject.eu/.

The EU project C-SERVEES started in May 2018 and will end in October 2022. The consortium of the project consists of academia, research institutions, SMEs and three large industrial companies.

Project results achieved so far are available, in the form of the respective deliverables, under the link given above. New results from 2021 are briefly described hereinafter.



In 2021, as part of the project, we intensified our work on the topics of product lifetime optimization and product service systems (PSS). In general, CE pursues the goal of ensuring the availability of resources in the long term. The various CE loops – repair, refurbishing, reuse, recycling – which are designed to keep materials in use for as long as possible and to delay their final disposal in landfill or their thermal re-use in waste incineration for as long as possible, serve this purpose. However, certain product classes – including our WDM systems – are dominated in their overall environmental impact by their use phase. This results from their energy con-

sumption. However, they also become considerably more efficient from generation to generation, so that such products should be replaced after a certain period of time. Our analyses on this topic now allow these periods to be quantified. Sometimes, these periods are shorter than those required by CE with regard to longevity. A compromise between material and energy efficiency must therefore be advised for corresponding products such as our TeraFlex system.

The second important area of our CE analyses in 2021 related to PSS. These pursue the goal of supporting CE through business models that are as effective as possible in terms of material efficiency. This can be done, for example, through eco-leasing. Since the producer remains the owner of the product, he has the maximum incentive to design the product for optimal reusability right from the start. Our analyses show that different PSS up to eco-leasing seem feasible. This work will continue in 2022. Then, they should be reflected in first successfully implemented PSSs. In

this context, it should also be noted that PSS basically contain an important service component, which is in line with the company's strategic goal of expanding service sales.

Further details on this work can be found in the public C-SERVEES Deliverable D4.3. This deliverable will become available under the link stated earlier during the course of 2022. In addition, further publications on these topics are planned for 2022.

Until the conclusion of the C-SERVEES project in October 2022, no key figures on the issue of circular economy will be determined and tracked. However, the first successful PSS deals are targeted as early as 2022.

Value chain and circular processes

G301-2, G301-3, (G305)

Circular economy (CE) has the target to reduce the amount of raw material, energy and waste that is associated with the production of any products and services. In addition to the longest possible service life (see also the explanations in the previous chapter), savings can also result from the reuse of parts or components. The latter must be supported by appropriate processes. This can be found in our business lifecycle process (BLCP).

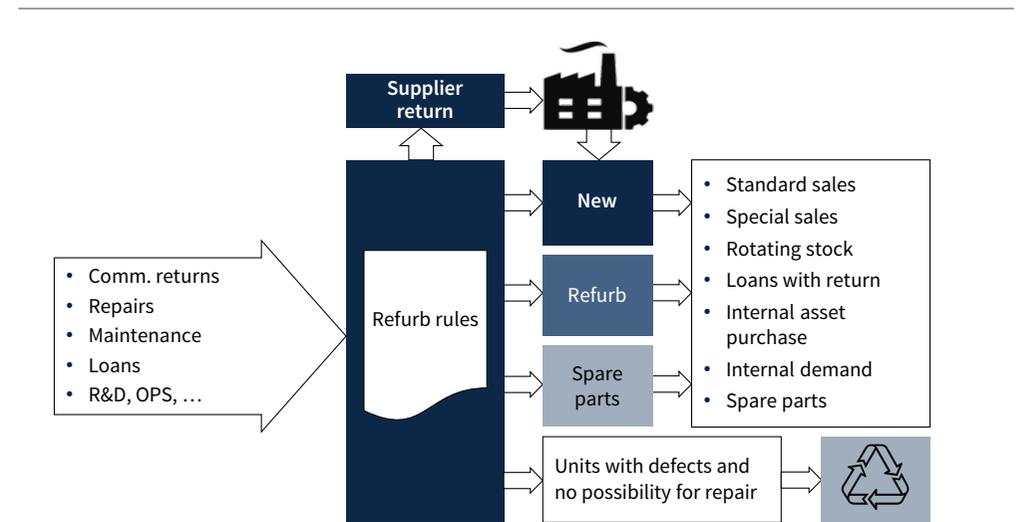
At our large logistics location in Meiningen, processes for analysis, reprocessing, reuse and recycling have been implemented for devices that are returned for various reasons. All these devices are analyzed for possible reuse. All systems or components without the possibility of reuse are professionally recycled by a nearby contract WEEE recycler, which also minimizes truck-roll mileage.

The processes include the creation and digital management of corresponding stocks for different components. These are filled, among others, from the returns. Correspondingly, there are stocks for new, refurbished or spare parts or parts with very slow life cycles. All stocks are checked

regularly in order to optimize the use of materials. This is done through order changes or modifications, and the main goal is to avoid scrapping. This is currently our focus. The check considers the respective material values, our inventory segmentation reporting is used as the basis.

The various component stocks allow cooperation with other participants in the value chain. In this way, components can be sold back to their suppliers depending on their potential for reuse (supplier return). In other cases, components can be sold to our CMs (Contract Manufacturers) if there is a need there or if there is better use. The process is illustrated in the picture below.

The provision of components in the value chain is an efficient CE mechanism to use components better or optimally. This is true for certain groups of components, in particular if these are not subject to functional obsolescence.



Process for the return of products and their analysis for further parts recycling. Recovered components are allocated to various stocks (new, refurbished, spare parts), sold to their manufacturers or to CMs, or recycled if they are completely unusable.

Employee matters: The Covid-19 situation and employee satisfaction

Material topics, boundaries, management approach, and evaluation of this approach

G103-1, G103-2, G103-3

Important sustainability matters fall into the area of corporate social responsibility (CSR). The associated activities and results complement our sustainability strategy with its primary focus on emissions. With regard to the triple bottom line (business-environment-people), the aspects affecting people are covered.

For ADVA, CSR includes social and employee matters as well as respect for human rights. This also covers important parts of the ILO labor and social standards, for example. The corresponding measures and statements about our employees can be found in this chapter and in the chapter [Corporate social responsibility](#) in Part 1. If employees in our supply chain are affected, this is described in the chapter [Compliance in the supply chain](#).

The analysis of material matters takes place at least once a year, based on our own analyses and contributions from all relevant interest groups. This is explained in more detail in the chapter [Materiality analysis](#).

Dedicated management measures have been defined and implemented specifically for the area of employee matters and the ILO labor and social standards. This includes internal processes, allocation of responsibilities, definition of targets and evaluation on a half-yearly basis. Most employee and some social matters are followed up by the HR department. The aspects of occupational health and safety are followed by Facilities, as this is where the strongest content overlap takes place. Accordingly, the responsibility at the highest level lies with the CEO or CFO, respectively.

In contrast to the environmental area (ISO 14001, ISO 50001), we do not pursue an externally certified management system such as ISO 45001 for employee matters. However, aspects like compliance with national preventive fire protection regulations are audited externally regularly.

Employee matters are regularly assessed in employee satisfaction surveys (Employee Satisfaction Survey, ESS). Our target is to do this every two years. This happened since 2011, with the exception of 2017,

when the ESS was skipped due to massive restructuring. 2020 saw an ESS with focus on Covid-19 and mobile working. Our future plan is to get back to the regular biennial mode.

ESS cover more than 10 categories, including internal communication, training, inclusion and benefits and pay. This allows the identification of critical aspects and the regular review of the management approach. Critical aspects result in dedicated initiatives under the supervision of the relevant board of directors.

Regarding employee satisfaction, one of the targets strategic to ADVA has been defined, a maximum of 5% for the voluntary attrition rate (also refer to the next chapter).

At the end of 2020, a new software tool, Workday, was introduced to better support various employee matters. This contains modules for the employee trainings offered and for career support. Effects from this will become apparent in the next few years.

Processes and results in the CSR area are also externally assessed annually in the TIA assessment (occupational safety matters) and in the EcoVadis assessment (labor and human rights). In addition, compliance with labor and human rights is checked in an increasing number of web-based assessments and external on-site audits that are carried out on behalf of customers. Any necessary improvement measures are then taken based on the respective results of these assessments.

The feedback from the ESS and the external assessments have essentially confirmed our management approach. For 2021, we got positive feedback related to the mobile-working situation.

The management approach for CSR aspects applies company-wide. There is no restriction to large locations (such as in the EnMS).

Material aspects are presented hereinafter.

Covid-19 and employee satisfaction

2021 was the second year of the Covid-19 pandemic. For ADVA, this meant that a significant proportion of our employees continued to work mobile, i.e., from home. We introduced this principle in April 2020 for those employees whose presence in the company was not absolutely necessary. Maintaining this measure also meant that only a few employees in the company were affected by proven infection with Covid-19 in 2021. Mobile work was accompanied by intensifying contacts with the respective employees via video chats and tele-conferencing with the aim of ensuring that contact was as frequent and regular as possible.

This was supplemented by various other measures for employees who were required to be present. For example, we have provided ADVA-branded masks and quick tests for those employees who came into the offices. Other measures included early notification of internal and public

vaccination offers, as well as a corona bonus for employees in logistics in Meiningen. This bonus was an appreciation since for these employees, presence was required since their work could not have been done from remote. These employees were subject to surplus load by night shifts, which resulted from the infection-preventing measures.

Furthermore, the (voluntary) termination rate represented a challenge for ADVA in 2021. A maximum termination rate of 5% is part of our strategic company goals since 2011. This relates to all employees. That target was not met in 2021 for the first time ever, the rate was around 6.1%. We consider this to be an important indicator of employee satisfaction. Accordingly, the churn rate has resulted in a series of analyses and measures. The analyses are based, on the one hand, on the last two employee satisfaction surveys (the last regular one from 2019 and the dedicated

query on mobile working from 2020), individual feedback and a comparison of key figures with other high-tech companies.

Measures regarding the termination rate, which started in 2021, include salary and benefit adjustments in different countries as well as an increased range of (online) training courses. An example is the new MTP17, which was developed for and included into our Management Training Program.

Social matters: infrastructure

Material topics, boundaries, management approach, and evaluation of this approach

G103-1, G103-2, G103-3

For ADVA, corporate social responsibility covers social and employee matters as well as respect for human rights. These matters are followed up with appropriate processes by our human-resources department (employee concerns) and compliance department (respect for human rights), respectively. These report to the CEO and CFO, respectively. The social matters considered in the materiality analysis, on the other hand, tend to represent cross-sectional topics that cannot be assigned to a single department and ultimately to a single member of the board.

The infrastructure aspect relates to ADVA's core business. ADVA is an ICT infrastructure supplier. In this respect, important internal processes and procedures are in place to support this aspect and, in particular, to meet changing customer expectations. This includes cooperation with customers as well as, e.g., special product functionalities that result from the use in the ICT infrastructure. Responsibility at highest governance level lies with the CTO.

Under the non-financial view on social matters, no quantitative targets have been formulated for the infrastructure aspect. A general target for customer satisfaction has been defined, which also holds for infrastructure customers. This target is a Net Promoter Score (NPS) of 50%.

As a cross-cutting aspect, infrastructure is therefore best covered by the ISO 9001 and TL 9000 quality standards. These are externally audited annually. Regarding the aspect at hand, the last audits did not reveal any negative results.

These audits or parts of them are supplemented by external assessments such as the EcoVadis assessment. Corresponding management approaches and processes apply company-wide.

We regard our management approaches as constructive. Despite the fact that we marginally missed our NPS target of 50% with an actual score of 48%, and despite both, Covid-19 and the semiconductor crisis, we were able to achieve and maintain very good customer relationships. Moreover, our company was approved as vendor for critical infrastructure in 2021 by the

German Bundesamt für Sicherheit in der Informationstechnik, BSI (Federal Office for Information Security).

For 2022, the target for the NPS is at least 50%.

ICT infrastructure

ADVA develops, produces and sells solutions for the telecommunications infrastructure. Our products enable communication between people all over the world by forming a reliable part of today's important communication infrastructure. We consider this an important social aspect and address it with special product functions.

The ICT sector is one of the critical infrastructures. This became evident worldwide in 2020 with Covid-19. This impression was clearly reinforced again in 2021 with the flood disaster, especially in parts of Germany.

Covid-19 led to a further increase in the use of the Internet and a corresponding increase in the volume of data. This was also due to the increased use of mobile working. However, many work processes could be maintained through mobile working. This would not have been possible without the ICT infrastructure.

Similar to 2020, it was a critical concern of our network-operator customers in 2021 that ADVA was able to ensure the upkeep of the ability to deliver, especially under the Covid-19 conditions. This was also one of our relevant targets for this period.

Consequently, ADVA has implemented a number of successful measures during this time, in particular in our site in Meiningen. This included a generous implementation of mobile working for departments in which presence is not absolutely necessary. In cases where presence was required, a concept of spatial and temporal separation of the related employees was implemented. This led to the nonappearance of site closures and only a small number of proven infected employees. Overall, ADVA was able to maintain its ability to deliver. We plan to maintain these measures throughout the further course of the pandemic.

The flood disaster of July 2021 in Western and Central Europe once again emphasized the importance, but also the vulnerability, of the ICT infrastructure. This was destroyed in some limited areas along with rail and road infrastructure, which further hampered relief efforts. As a result, the flood disaster clearly showed how important climate change adaptation is for the infrastructure. On the part of the network operator, this has led to the question of where the new replacement locations have to be set up so that they are not destroyed again in the event of further flooding. On the part of our products, e.g., protection-switching or restoration concepts can help to bypass interrupted fiber-optic cables. For a long time, such concepts have been part of several product functions that increase the reliability of our ICT infrastructure solutions. Our target is to support the related customer requirements also in the future.

Another important aspect of the ICT infrastructure is the need to protect it against cyber-attacks. The number of these attacks has been increasing for years, and since ICT plays a key role in industry, administration and authorities, countermeasures are required. Again, ADVA addresses this with product functions that include, for example, advanced encryption technologies. These technologies are continuously enhanced with the target to always representing the state of the art.

For these and other reasons, including our internal security management, ADVA was also generally approved as a supplier by the BSI (Federal Office for Information Security) in 2021. Our WDM technology can therefore be used for transmission in public authority networks with security classification classified information – only for official use (VS-NfD).

Information security

Material topics, boundaries, management approach, and evaluation of this approach

G103-1, G103-2, G103-3

Every day we process sensitive information in order to fulfill our duties to our customers, contractors, employees, service providers, government agencies and other third parties. Protecting against unauthorized access and unauthorized modification of this information is therefore of vital importance to ADVA and is reflected in our product lifecycle, our business processes and systems. Further goals of our activities in the area of information security concern the availability of the data relevant for our business processes as well as compliance with legal regulations.

Information security was included as a new matter in 2020 and will remain as such this year, derived from risk and materiality analyses. The aspect at risk is the confidentiality or the loss of business data. This can lead to the breach of confidentiality agreements, the corresponding possible legal consequences, loss of trade secrets, damage to image and even loss of customers. Other potentially important aspects include the integrity and availability of data, information and systems.

Our information security management system (ISMS) enables and coordinates activities in all relevant business processes, up to the product lifecycle process. This affects various departments, and highest-level responsibility lies with the CFO.

Further development of these activities is a continuous process and requires both, organizational and technical actions. This includes, for example, further training and instructions.

A regular management review is part of the ISMS in order to guarantee a continuous exchange and to inform about the current status, open topics and further steps.

The ISMS is subject to both, internal and external audits. These take place internally on a voluntary basis every year. External audits also take place annually as part of the ISO-9001/TL-9000 audits. A certification of the ISMS according to ISO 27001 is currently being analyzed.

As an area that is given a greatly improved process landscape, the definition of suitable goals and key figures is still not fully completed. A target for employees to participate in the awareness campaign has already been defined in 2020. In 2021, this target was retained. In addition, the software for personnel management was also replaced in 2021 in order to fully meet the requirements of the GDPR (General Data Protection Regulation).

In 2022, we will continue to focus on raising employee awareness, further improvements to the infrastructure, our data security and the area of secure development processes.

The measures and processes for information security apply company wide. In contrast to ISO 50001, for example, small offices and employees in the home office are also considered, as these are associated with at least the same risks.

In 2021, as in the previous year, there were no significant incidents in the area of information security according to own rating.

In summary, we consider the year 2021 as positive in the area of information security. This approach will be continued over the next few years. In addition to our own employees, this can also relate to information security aspects relating to our products.

Information security-awareness campaign

In 2020, an awareness campaign was started with the aim of raising our employees' awareness of information security aspects – confidentiality, integrity, availability – and creating awareness of where they are exposed to risks in their daily handling of data and IT, or even where they are generating risks themselves. In 2021, we added topics related to GDPR, secure programming and physical security.

The campaign consisted of a series of animated training courses that also included basic comprehension queries. The goal of regular participation of 80% of all employees was defined. In 2021, 89% of all employees have taken at least one of the 9 available courses and 77% of all employees have completed at least 5 courses.

Post-Quantum security and resilience

The aspects of confidentiality and availability are not only relevant for our internal data handling. They are also addressed through corresponding functionalities of our products so that these products can offer our customers improved information security with regard to these aspects.

The aspect of confidentiality is addressed in our products using the latest encryption technology. Our WDM technology can, thanks to approval by the German Federal Office for Information Security (BSI), be used for transmission with the security classification VS-NfD (classified – for official use only).

To also ensure availability during data transport, our products have several protection and restoration mechanisms, for example to prevent the complete transmission interruption in the event of a fiber failure.



Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting

To ADVA Optical Networking SE, Martinsried/München

We have performed a limited assurance engagement on the Separate Non-financial Group Report of ADVA Optical Networking SE, Martinsried/München, (hereinafter the "Company") for the period from 1 January to 31 December 2021 (hereinafter the "Separate Non-financial Group Report").

Responsibilities of the Executive Directors

The executive directors of the Company are responsible for the preparation of the Separate Non-financial Group Report in accordance with §§ (Articles) 315c in conjunction with 289c to 289e HGB ("Handelsgesetzbuch": "German Commercial Code") and Article 8 of REGULATION (EU) 2020/852 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 June 2020 on establishing a framework to facilitate sustainable investment and amending Regulation (EU) 2019/2088 (hereinafter the "EU Taxonomy Regulation") and the Delegated Acts adopted thereunder, as well as for making their own interpretation of the wording and terms contained in the EU Taxonomy Regulation and the Delegated Acts adopted thereunder, as set out in section "EU Taxonomy Regulation Report" of the Separate Non-financial Group Report.

This responsibility includes the selection and application of appropriate non-financial reporting methods and making assumptions and estimates about individual non-financial disclosures of the Company that are reasonable in the circumstances. Furthermore, the executive directors are responsible for such internal control as the executive directors consider necessary to enable the preparation of a Separate Non-financial Group Report that is free from material misstatement whether due to fraud or error.

The EU Taxonomy Regulation and the Delegated Acts issued thereunder contain wording and terms that are still subject to considerable interpretation uncertainties and for which clarifications have not yet been published in every case. Therefore, the executive directors have disclosed their interpretation of the EU Taxonomy Regulation and the Delegated Acts adopted thereunder in section "EU Taxonomy Regulation Report" of the Separate Non-financial Group Report. They are responsible for the defensibility of this interpretation. Due to the immanent risk that indeterminate legal terms may be interpreted differently, the legal conformity of the interpretation is subject to uncertainties.

Independence and Quality Control of the Audit Firm

We have complied with the German professional provisions regarding independence as well as other ethical requirements.

Our audit firm applies the national legal requirements and professional standards – in particular the Professional Code for German Public Auditors and German Chartered Auditors ("Berufssatzung für Wirtschaftsprüfer und vereidigte Buchprüfer": "BS WP/vBP") as well as the Standard on Quality Control 1 published by the Institut der Wirtschaftsprüfer (Institute of Public Auditors in Germany; IDW): Requirements to quality control for audit firms (IDW Qualitätssicherungsstandard 1: Anforderungen an die Qualitätssicherung in der Wirtschaftsprüferpraxis – IDW QS 1) – and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Responsibility of the Assurance Practitioner

Our responsibility is to express a conclusion with limited assurance on the Separate Non-financial Group Report based on our assurance engagement.

We conducted our assurance engagement in accordance with International Standard on Assurance Engagements (ISAE) 3000 (Revised): Assurance Engagements other than Audits or Reviews of Historical Financial Information, issued by the IAASB. This Standard requires that we plan and perform the assurance engagement to obtain limited assurance about whether any matters have come to our attention that cause us to believe that the Company's Separate Non-financial Group Report, other than the external sources of documentation or expert opinions mentioned in the Separate Non-financial Group Report, are not prepared, in all material respects, in accordance with §§ 315c in conjunction with 289c to 289e HGB and the EU Taxonomy Regulation and the Delegated Acts issued thereunder as well as the interpretation by the executive directors disclosed in section "EU Taxonomy Regulation Report" of the Separate Non-financial Group Report.

In a limited assurance engagement the procedures performed are less extensive than in a reasonable assurance engagement, and accordingly a substantially lower level of assurance is obtained. The selection of the assurance procedures is subject to the professional judgement of the assurance practitioner.

In the course of our assurance engagement, we have, amongst other things, performed the following assurance procedures and other activities:

- Gain an understanding of the structure of the Company's sustainability organisation and stakeholder engagement
- Inquiries of the executive directors and relevant employees involved in the preparation of the Separate Non-financial Group Report about the preparation process, about the internal control system relating to this process and about disclosures in the Separate Non-financial Group Report
- Identification of likely risks of material misstatement in the Separate Non-financial Group Report
- Analytical procedures on selected disclosures in the Separate Non-financial Group Report
- Comparison of selected disclosures with corresponding data in the consolidated financial statements and in the Group Management Report
- Evaluation of the presentation of the Separate Non-financial Group Report
- Evaluation of the process to identify taxonomy-eligible economic activities and the corresponding disclosures in the Separate Non-financial Group Report

In determining the disclosures in accordance with Article 8 of the EU Taxonomy Regulation, the executive directors are required to interpret undefined legal terms. Due to the immanent risk that undefined legal terms may be interpreted differently, the legal conformity of their interpretation and, accordingly, our assurance engagement thereon are subject to uncertainties.

Assurance Opinion

Based on the assurance procedures performed and evidence obtained, nothing has come to our attention that causes us to believe that the Separate Non-financial Group Report of the Company for the period from 1 January to 31 December 2021 is not prepared, in all material respects, in accordance with §§ 315c in conjunction with 289c to 289e HGB and the EU Taxonomy Regulation and the Delegated Acts issued thereunder as well as the interpretation by the executive directors disclosed in section "EU Taxonomy Regulation Report" of the Separate Non-financial Group Report.

We do not express an assurance opinion on the external sources of documentation or expert opinions mentioned in the Separate Non-financial Group Report.

Restriction of Use

We draw attention to the fact that the assurance engagement was conducted for the Company's purposes and that the report is intended solely to inform the Company about the result of the assurance engagement. Consequently, it may not be suitable for any other purpose than the aforementioned. Accordingly, the report is not intended to be used by third parties for making (financial) decisions based on it. Our responsibility is to the Group. We do not accept any responsibility to third parties. Our assurance opinion is not modified in this respect.

München, den 22. Februar 2022

PricewaterhouseCoopers GmbH
Wirtschaftsprüfungsgesellschaft

Hendrik Fink	ppa. Felix Wandel
<i>Wirtschaftsprüfer</i>	<i>Wirtschaftsprüfer</i>
<i>[German public auditor]</i>	<i>[German public auditor]</i>

Glossary

E

Ecodesign

Systematic (product) design measures that reduce or minimize the environmental product footprint. These measures are based, amongst others, on lifecycle assessment.

EICC (Electronic Industry Citizenship Coalition)

The EICC is a nonprofit coalition of electronics companies committed to supporting the rights and wellbeing of workers and communities worldwide affected by the global electronics supply chain. EICC members commit and are held accountable to a common code of conduct. In 2017, the EICC became the Responsible Business Alliance (RBA).

EU Taxonomy Regulation

The Taxonomy Regulation (EU) 2020/852 is an EU regulation that defines criteria whether business activities are eligible for being rated as ecologically sustainable. It affects companies that are obliged to publish a non-financial report.

G

GeSI (Global e-Sustainability Initiative)

In collaboration with major ICT companies, GeSI is a leading source of impartial information, resources and best practices for achieving integrated social and environmental sustainability through ICT.

GHG (greenhouse gas)

GHG are gases that are responsible for the effect of global warming. The most relevant GHG are water vapor, carbon dioxide, methane, nitrous oxide, ozone and several chloro- and hydrofluorocarbons.

GHGP (Greenhouse Gas Protocol)

Through the GHGP, World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) work with businesses to help companies measure, manage, report and reduce their carbon emissions. More: ghgprotocol.org.

GRI (Global Reporting Initiative)

GRI is an international independent organization that helps businesses, governments and other organizations understand and communicate the impact of business on critical sustainability aspects such as climate change, human rights, corruption and many others.

I

ISO 14001:2015

A standard developed and published by the [International Organization for Standardization](https://www.iso.org) (ISO). It defines an environmental management system (EMS) for the manufacturing and service industries.

ISO 14040/ISO 14044

Two standards that fall into the area of environmental management and lifecycle assessments. ISO 14044 replaces the former standards ISO 14041 to 14043.

ISO 22301:2019

This standard defines the structure and requirements to implement an effective system for maintaining business continuity.

ISO 50001:2018

An ISO standard that supports organizations and companies in setting up a systematic energy management system (EnMS).

ISO 9001:2015

Defines the requirements for a quality management system. Organizations use the standard to demonstrate the ability to consistently provide products and services that meet customer and regulatory requirements.

N

NFV (network functions virtualization)

NFV is a network-architecture concept that uses the technologies of server virtualization for virtualizing network-node functions, i.e., to implement them, where applicable, in software. It aims at accelerating product development and reducing the reliance on specific hardware. The concept can lead to a certain level of dematerialization. If implemented properly, it can also lead to better network (node) utilization and therefore, better energy efficiency.

O

OSI (Open Systems Interconnection) stack/model

The OSI model is a conceptual model that characterizes and standardizes the communication functions of an ICT system without regard to its underlying internal structure and technology, aiming at interoperability of diverse systems. Originally, the model partitioned ICT systems into seven abstraction layers. The model is a product of the [Open Systems Interconnection](https://www.iso.org) project at the ISO, it is standardized as ISO/IEC 7498-1.

R

REACH (Registration, Evaluation, Authorization and Restriction of Chemicals)

A regulation issued by the European Union addressing the production and use of chemical substances and the potential impact of these substances on human health and the environment.

RoHS (Restriction of Hazardous Substances)

A directive issued by the European Union regarding the restriction of specific hazardous substances used for the production and processing of electronic devices and components.

S

SBTi (Science Based Targets initiative)

The SBTi is a partnership between the Carbon Disclosure Project, UN Global Compact, the World Resources Institute and the World Wide Fund for Nature. It aims at helping companies determining how much they must cut emissions to support the restriction of global warming to within 2°C compared to pre-industrial temperatures. Find out more under sciencebasedtargets.org/.

T

TIA (Telecommunications Industry Association)

TIA is the leading trade association representing the global information and communications technology (ICT) industry through standards development, policy initiatives, business opportunities, market intelligence and networking events. TIA enhances the business environment for companies involved in ICT and the greening of technology. In 2018, TIA merged with the QuEST Forum. (QuEST Forum was the producer of the telecommunications quality standard TL 9000.) TIA is accredited by ANSI. For more information, please refer to www.tiaonline.org.

TL 9000

In 1998, QuEST Forum developed the TL 9000 quality management system (QMS) to meet the supply-chain and operational-quality requirements of the global ICT industry. TL 9000 is built on ISO 9001.

W

WDM (wavelength division multiplexing)

WDM is a standardized technology used for maximizing the fibers' transport capacity. It uses different laser wavelengths per fiber, each carrying individual information.

WEEE [Directive 2012/19/EU](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32012L0019)



A directive issued by the European Union improve the environmental management of WEEE (waste electrical and electronic equipment) and to contribute to a circular economy. To enhance resource efficiency, it focuses on the improvement of collection, treatment and recycling of electronics at the end of their life. Amongst others, it features the wheelie bin.

Corporate information

G102-3

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ADVA on the web

More information about ADVA, including solutions, technologies and products, can be found on the company's website at www.adva.com.

The PDF file of this sustainability report as well the previous GRI reports are located on the ADVA website and can be downloaded at www.adva.com/en/about-us/sustainability.

GRI content index

G102-55

GRI	Disclosure	Reference	Comments
GRI 102: General disclosures			
Organizational profile			
	102-1	Name of the organization	ADVA Optical Networking SE
	102-2	Activities, brands, products, and services	7 f., 48
	102-3	Location of headquarters	6, 79
	102-4	Location of operations	6
	102-5	Ownership and legal form	ADVA Optical Networking SE is a European stock corporation (“Societas Europaea”).
	102-6	Markets served	SR21: 48 AR21: 34
102	102-7	Scale of the organization	SR21: 6, 28 ff. AR21: 34
	102-8	Information on employees and other workers	28 ff.
	102-9	Supply chain	AR21: 36 f.
	102-10	Significant changes to the organization and its supply chain	In 2021, ADVA had a globally dispersed supplier base, with a certain center in Asia. Total number of relevant suppliers, ranging from components suppliers to contract manufacturers, is in the range of 80. This also includes logistics suppliers.
	102-11	Precautionary Principle or approach	No significant changes.
	102-12	External initiatives	14, 50 f., 53 f.
	102-13	Membership of associations	27, 67
	102-14	Statement from senior decision-maker	27
102	102-15	Key impacts, risks, and opportunities	SR21: 50 ff., 57 f. AR21: 72 ff.
Ethics and integrity			
102	102-16	Values, principles, standards, and norms of behavior	10
	102-17	Mechanisms for advice and concerns about ethics	45

GRI	Disclosure	Reference	Comments
Governance			
102-18	Governance structure	SR21: 9, 11 AR21: 15 ff.	
102-19	Delegating authority	9, 11	
102-20	Executive-level responsibility for economic, environmental, and social topics	9, 11	
102-21	Consulting stakeholders on economic, environmental, and social topics	9, 14, 26	
102-22	Composition of the highest governance body and its committees	AR21: 15 ff.	
102-23	Chair of the highest governance body	AR21: 15 ff.	
102-24	Nominating and selecting the highest governance body	9	
102-25	Conflicts of interest	9	
102-26	Role of highest governance body in setting purpose, values, and strategy	9	
102-27	Collective knowledge of highest governance body	9	Collective knowledge is also maintained via feedback by the department leaders.
102-28	Evaluating the highest governance body's performance	9	
102-29	Identifying and managing economic, environmental, and social impacts	9, 11, 14	
102-30	Effectiveness of risk management processes	SR21: 9 AR21: 72 ff.	
102-31	Review of economic, environmental, and social topics	9, 14, 26	
102-32	Highest governance body's role in sustainability reporting	9, 11	
102-33	Communicating critical concerns	9	
102-34	Nature and total number of critical concerns	SR21: 50 AR21: 74	
102-35	Remuneration policies	AR21: 62 ff.	
102-36	Process for determining remuneration		Performance-based, no consultants
102-37	Stakeholders involvement in remuneration		Shareholder involvement via AGM
102-38	Annual total compensation ratio		On-target earnings: targeted base salary plus variable pay ratio, full-time and part-time employees (excluding apprentices) are included with full-time equivalent compensation. The overall compensation ratio (ADVA globally) in 2021 was 9.5 (2020: 8.6).
102-39	Percentage increase in annual total compensation ratio		The percentage increase was 10.5% (compare 102-38 for 2021 and 2020).

GRI	Disclosure	Reference	Comments	
Stakeholder engagement				
	102-40	List of stakeholder groups	14, 26	
	102-41	Collective bargaining agreements		0 %
102	102-42	Identifying and selecting stakeholders	14, 26	
	102-43	Approach to stakeholder engagement	14, 26, 27	
	102-44	Key topics and concerns raised	26, 27, 53	
	Reporting practice			
	102-45	Entities included in the consolidated financial statements		This report covers all entities covered in the financial statement (annual report).
	102-46	Defining report content and topic boundaries	47	
	102-47	List of material topics	53 ff.	
	102-48	Restatements of information		None
	102-49	Changes in reporting	47	Inclusion of EU Taxonomy Regulation report as part of the NFR
102	102-50	Reporting period	47	From January 1, 2021 to December 31, 2021.
	102-51	Date of most recent report	47	Last report, Sustainability report 2020, was published in February 2021.
	102-52	Reporting cycle	47	Annual
	102-53	Contact point for questions regarding the report	6	
	102-54	Claims of reporting in accordance with the GRI Standards	47	This report has been prepared in accordance with the GRI Standards: Comprehensive.
	102-55	GRI content index	80 ff.	
	102-56	External assurance	47	
GRI 200: Economic				
Economic performance				
	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach		Please refer to the chapters <i>Business overview</i> and <i>Risk report</i> in AR21.
200	201-1	Direct economic value generated and distributed	AR21: 48	
	201-2	Financial implications and other risks and opportunities due to climate change	SR: 50 f. AR21: 74	
	201-3	Defined benefit plan obligations and other retirement plans		Does not apply. ADVA has no defined retirement program.
	201-4	Financial assistance received from government	AR21: 99, 114, 132	

GRI	Disclosure	Reference	Comments
Market Presence			
200	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	Please refer to the chapters <i>Business overview</i> and <i>Risk report</i> in AR21.
	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	Not applicable
	202-2	Proportion of senior management hired from the local community	6 90%, from director level, regional around significant operations
Indirect Economic Impacts			
200	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	Please refer to the chapters <i>Business overview</i> and <i>Risk report</i> in AR21.
	203-1	Infrastructure investments and services supported	ADVA is one of the largest employers in Meiningen, Germany.
	203-2	Significant indirect economic impacts	17
Procurement Practices			
200	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	
	204-1	Proportion of spending on local suppliers	~30%
Anti-corruption			
200	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	14 , 43 , 53
	205-1	Operations assessed for risks related to corruption	AR21: 72 ff. All significant operations are regularly assessed.
	205-2	Communication and training about anti-corruption policies and procedures	45
	205-3	Confirmed incidents of corruption and actions taken	No confirmed incidents of corruption have occurred in 2021.
Anti-corruption behavior			
200	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	53 f. , 43
	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	45 Antitrust is an important part of ADVA's compliance framework and covered within the company's code of conduct. No known cases of violations do exist.
Tax			
200	207-1, -2, -3	Approach to tax; Tax governance, control, and risk management; Stakeholder engagement and management of concerns related to tax	Rated not material in the materiality analysis

GRI	Disclosure	Reference	Comments
GRI 300: Environmental			
Materials			
	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	12 f. , 53 f. , 61
300	301-1	Materials used by weight or volume	~75% renewable for both packaging and products; ~25% non-renewable for both packaging and products
	301-2	Recycled input materials used	42 , 68
	301-3	Reclaimed products and their packaging materials	42 , 68
Energy			
	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	12 , 14 f. , 53 f. , 61
	302-1	Energy consumption within the organization	37 ff.
300	302-2	Energy consumption outside of the organization	Scope 3 emissions are reported, not energy consumption (see GRI 305-3).
	302-3	Energy intensity	ADVA shows absolute energy consumption, see GRI 102-48.
	302-4	Reduction of energy consumption	37 f.
	302-5	Reductions in energy requirements of products and services	39 , 64
Emissions			
	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	12 , 14 f. , 53 f. , 61
	305-1	Direct (Scope 1) GHG emissions	39 , 62
	305-2	Energy indirect (Scope 2) GHG emissions	39 , 62
300	305-3	Other indirect (Scope 3) GHG emissions	39 , 41 f. , 62
	305-4	GHG emissions intensity	ADVA shows absolute energy consumption, see GRI 102-48.
	305-5	Reduction of GHG emissions	39 , 62
	305-6	Emissions of ozone-depleting substances (ODS)	36
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	36

GRI	Disclosure	Reference	Comments
Effluents and waste			
103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	14 f. , 53 f. , 61	
306-1	Waste generation and significant waste-related impacts	36	
300 306-2	Management of significant waste-related impacts	36	
306-3	Waste generated	36	
306-4	Waste diverted from disposal	36	
306-5	Waste directed to disposal	36	None
Environmental Compliance			
300 103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	14 f. , 53 f. , 61	
307-1	Non-compliance with environmental laws and regulations	36	
Supplier environmental assessment			
300 103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	14 f. , 53 f. , 61	
308-1	New suppliers that were screened using environmental criteria		100 %
308-2	Negative environmental impacts in the supply chain and actions taken		No specific occurrences
GRI 400: Social			
Employment			
103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	14 f. , 28	
400 401-1	New employee hires and employee turnover	28	This is not tracked by gender and age group.
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	32	Note some of these benefits are also available to temporary or part-time employees.
401-3	Parental leave		75 employees took parental leave. 68 employees returned to work after parental leave ended.

GRI	Disclosure	Reference	Comments
Labor/management relations			
400	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	14 f. , 28
	402-1	Minimum notice periods regarding operational changes	2 weeks to 12 months, depending on region and type of change.
Occupational health and safety			
400	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	14 f. , 28
	403-1	Workers representation in formal joint management-worker health and safety committees	33 f.
	403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	33 f.
	403-3	Workers with high incidence or high risk of diseases related to their occupation	33 f.
403-4	Health and safety topics covered in formal agreements with trade unions	ADVA has an occupational safety committee (Arbeitssicherheitsausschuss, ASA) with participation of employees. This committee meets on a quarterly basis. Amongst others, it conducts internal site audits.	
Training and education			
400	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	14 f. , 28
	404-1	Average hours of training per year per employee	31
	404-2	Programs for upgrading employee skills and transition assistance programs	30
	404-3	Percentage of employees receiving regular performance and career development reviews	100%
Diversity and equal opportunity			
400	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	14 f. , 28
	405-1	Diversity of governance bodies and employees	28 , 32
	405-2	Ratio of basic salary and remuneration of women to men	This is not tracked. The ratio is not influenced by gender, but rather by the assignment to different departments.

GRI	Disclosure	Reference	Comments
Non-discrimination			
400	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	28 , 53 f.
	406-1	Incidents of discrimination and corrective actions taken	No incidents
Freedom of association and collective bargaining			
400	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	28
	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	None. This is addressed by our Group CoC and Supplier CoC as stated in the main report. It is validated by self and supplier audits.
Child labor			
400	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	28 , 69
	408-1	Operations and suppliers at significant risk for incidents of child labor	28 , 31 None. This is addressed by our Group CoC and Supplier CoC as stated in the main report. It is validated by self and supplier audits.
Forced or compulsory labor			
400	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	28 , 71
	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	28 , 31 None. This is addressed by our Group CoC and Supplier CoC as stated in the main report. It is validated by self and supplier audits.
Local communities			
400	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	71
	413-1	Operations with local community engagement, impact assessments, and development programs	32 , 35
	413-2	Operations with significant actual and potential negative impacts on local communities	None
Supplier social assessment			
400	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	28 , 46 ff. , 66
	414-1	New suppliers that were screened using social criteria	100 %
	414-2	Negative social impacts in the supply chain and actions taken	No respective suppliers (with negative impact) are known, following regular assessments and due diligence.

GRI	Disclosure	Reference	Comments
Public policy			
400	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	43
	415-1	Political contributions	45 None
Customer health and safety			
400	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	During the development phase, all products are subject to H&S assessments according to the given standards (TL, ISO, REACH, RoHS ...) and certification requirements (CE, UL, WEEE, (laser) safety ...). H&S is continuously monitored across all products and services, and appropriate actions are taken if needed.
	416-1	Assessment of the health and safety impacts of product and service categories	
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	None
Customer Privacy			
400	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	73
	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	In 2021, no substantiated complaints have been identified. Certification according to ISO 27001 is under consideration.
Socioeconomic compliance			
400	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	43
	419-1	Non-compliance with laws and regulations in the social and economic area	No known fines of non-compliance with laws and regulations concerning the provision and use of products and services.
SR21: Sustainability report 2021			
AR21: Annual report 2021			