



Sustainability Report 2020

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

Content

<input type="radio"/>	CEO statement
<input type="radio"/>	The two parts of this sustainability report
<input type="radio"/>	Part 1 – ADVA and its context
<input type="radio"/>	Context analysis
<input type="radio"/>	EU Taxonomy Report
<input type="radio"/>	Stakeholder engagement
<input type="radio"/>	Corporate social responsibility according to GRI
<input type="radio"/>	GRI environmental standards
<input type="radio"/>	Carbon emissions (Scope 1-3)
<input type="radio"/>	End-to-end delivery
<input type="radio"/>	Part 2 – Non-financial report according to HGB
<input type="radio"/>	Summary of our business model
<input type="radio"/>	Material aspects, risks and opportunities
<input type="radio"/>	Environment and Products: Emissions and circular economy
<input type="radio"/>	Sustainability in the supply chain
<input type="radio"/>	Anti-corruption and bribery
<input type="radio"/>	Information security
<input type="radio"/>	Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
<input type="radio"/>	Glossary
<input type="radio"/>	Corporate information
<input type="radio"/>	GRI content index

CEO statement	3	Part 2 – Non-financial report according to HGB	34
The two parts of this sustainability report	4	About this non-financial report	34
Part 1 – ADVA and its context	5	Report obligation and content	34
About ADVA	5	Report boundaries	34
Company key facts	5	Material aspects	34
Technology and infrastructure	6	Specific amounts reported in annual financial statement	34
Fiber-optic transmission technology	6	Report validation	34
Governance	8	Summary of our business model	35
Values and leadership principles	9	Material aspects, risks and opportunities	36
Sustainability organization	10	Relationship between the various analyzes	36
Context analysis	11	Sustainability risks and opportunities	37
ICT and its impact	11	Materiality analysis	40
Context analysis of the environmental management system	13	Sustainability strategy	42
EU Taxonomy Report	16	Assessments and performance	44
Stakeholder engagement	18	Environment and Products: Emissions and circular economy	46
Collaboration at industry alliances	19	Material topics, boundaries, management approach, and evaluation of this approach	46
Customer satisfaction rating	19	Carbon emissions (Scope 1-3)	48
Corporate social responsibility according to GRI	20	Ecodesign: portfolio lifecycle assessment	50
Material topics, boundaries, management approach, and evaluation of this approach	20	Ecodesign: energy efficiency, emissions and the SBTi	51
Information on employees	21	Circular economy: circular-economy processes	52
Training and career development	23	Circular economy: research project C-SERVEES	53
ADVA University	23	Sustainability in the supply chain	54
Equal opportunities	24	Material topics, boundaries, management approach, and evaluation of this approach	54
Girls’ Day 2019	24	Compliance in the supply chain	55
Further employee benefits	25	REACH and other component aspects	56
Occupational health & safety	25	Anti-corruption and bribery	57
Global sustainability challenge	27	Material topics, boundaries, management approach, and evaluation of this approach	57
Social engagement/volunteerism	27	Compliance management system	58
Buheesi E-/FTTV project	27	Business partner due diligence	58
GRI environmental standards	28	Information security	59
Environmental compliance	28	Material topics, boundaries, management approach, and evaluation of this approach	59
Resource efficiency	28	Information security awareness campaign	60
CE, RoHS, REACH, Conflict minerals	29	Post-Quantum security and resilience	60
Carbon emissions (Scope 1-3)	30	Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting	61
End-to-end delivery	32	Glossary	63
Transport mode and emissions	32	Corporate information	65
Packaging optimization	33	GRI content index	66

 CEO statement

- The two parts of this sustainability report
 - Part 1 – ADVA and its context
 - Context analysis
 - EU Taxonomy Report
 - Stakeholder engagement
 - Corporate social responsibility according to GRI
 - GRI environmental standards
 - Carbon emissions (Scope 1-3)
 - End-to-end delivery
 - Part 2 – Non-financial report according to HGB
 - Summary of our business model
 - Material aspects, risks and opportunities
 - Environment and Products: Emissions and circular economy
 - Sustainability in the supply chain
 - Anti-corruption and bribery
 - Information security
 - Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
 - Glossary
 - Corporate information
 - GRI content index
-



CEO statement

G102-14

Due to Covid-19, 2020 brought perhaps the greatest challenge of the 21st century to date. The effects of the pandemic are far-reaching, affecting both individuals and society. In the public debate, economic aspects are in the foreground, but the area of sustainability is also being changed by the crisis. It is to be feared that this area could suffer from the measures that are necessary to alleviate the consequences of Covid-19.

The Covid-19 pandemic has shown us that telecommunications and its infrastructure have not only made many of the lockdown measures more bearable, but have even made some, such as home offices, possible in the first place. For years, network operators and their suppliers received little attention, but now our industry has regained some attention and recognition. In addition, the otherwise problematic travel restrictions, as well as home working and the resulting reduction in commuter activities, have positive environmental effects.

We continued to work successfully on the topic of sustainability in 2020. We even decided to further tighten our SBTi targets to bring them in line with the global goal of limiting global warming to 1.5°C. We have also made good progress in the areas of circular economy and sustainability-related commitment in the supply chain. We will continue to do this even if Covid-19 continues to tie up resources in other ways. In view of the medium size of our company, it may not seem plausible at first that we can make a valuable contribution here. But in fact we can by continuing to support our customers in further expanding their infrastructure so that they in turn can help alleviate the effects of Covid-19.

I take full responsibility for driving ADVA with a balanced focus on sustainable business. We develop, produce and sell the best technology. 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 are 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.

It is a self-contained approach: good business that leads to the good of our world, our business partners and our employees.

Brian Protiva
Chief Executive Officer

The two parts of this sustainability report

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

Our 2020 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 system. 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 classified 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 63](#)

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

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 2020 (December 31), 1,870 employees were employed worldwide.

For our global presence, please see the picture below.

Quality and environmental commitment

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

^QGlossary: Page 63

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 2020](#).

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



Global presence of ADVA Optical Networking

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

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 became much more evident in 2020 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 general failures and cyber-criminal attacks.

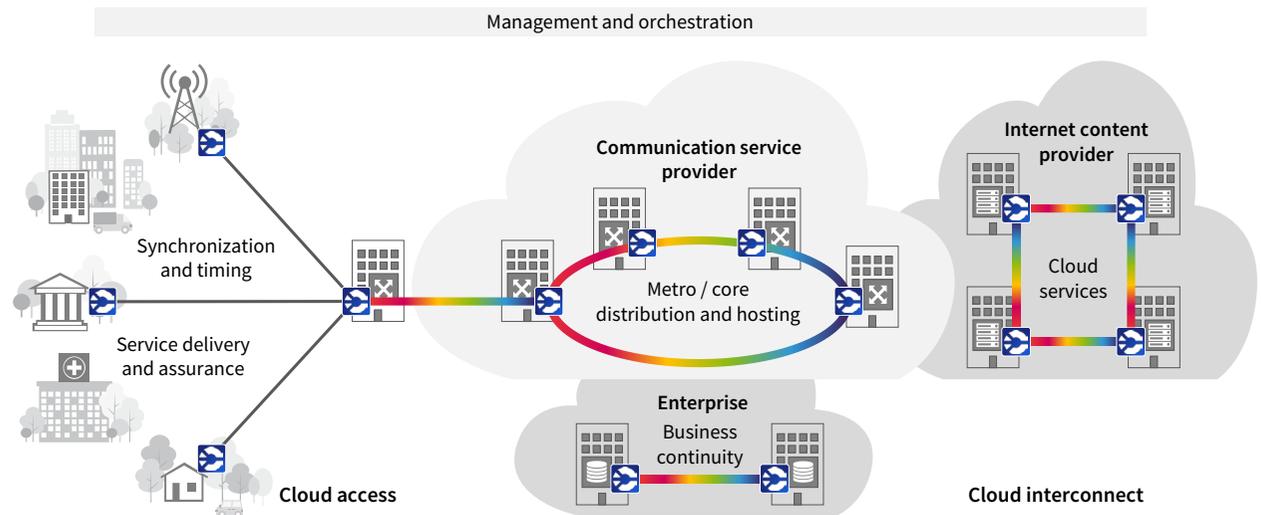
Overall, our portfolio includes fiber-optic transmission technology, Ethernet access and aggregation technology and solutions for the virtualization of network functions. In addition, ADVA supplies technologies for network synchronization and monitoring, as well as the software necessary for the safe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

Our portfolio is briefly described below.

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 (WDM⁹). With WDM, 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.

⁹Glossary: Page 63



Overview on ADVA's solutions

<input type="radio"/>	CEO statement
<input type="radio"/>	The two parts of this sustainability report
<input checked="" type="radio"/>	Part 1 – ADVA and its context
<input type="radio"/>	Context analysis
<input type="radio"/>	EU Taxonomy Report
<input type="radio"/>	Stakeholder engagement
<input type="radio"/>	Corporate social responsibility according to GRI
<input type="radio"/>	GRI environmental standards
<input type="radio"/>	Carbon emissions (Scope 1-3)
<input type="radio"/>	End-to-end delivery
<input type="radio"/>	Part 2 – Non-financial report according to HGB
<input type="radio"/>	Summary of our business model
<input type="radio"/>	Material aspects, risks and opportunities
<input type="radio"/>	Environment and Products: Emissions and circular economy
<input type="radio"/>	Sustainability in the supply chain
<input type="radio"/>	Anti-corruption and bribery
<input type="radio"/>	Information security
<input type="radio"/>	Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
<input type="radio"/>	Glossary
<input type="radio"/>	Corporate information
<input type="radio"/>	GRI content index

Ethernet

Ethernet is the dominant OSI^Q-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.

^QGlossary: Page 63

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, NFV^Q). 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.

^QGlossary: Page 63

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 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 by the joint management board at least once per year in-line with the defined risk management process.

In addition to the management board, there is an international supervisory board of three. 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 management-board level, several large departments (like engineering, operations, sales, service, etc.) exist 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 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, dozens 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 in 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 10](#)).

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

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
 - Context analysis
 - EU Taxonomy Report
 - Stakeholder engagement
 - Corporate social responsibility according to GRI
 - GRI environmental standards
 - Carbon emissions (Scope 1-3)
 - End-to-end delivery
- Part 2 – Non-financial report according to HGB
 - Summary of our business model
 - Material aspects, risks and opportunities
 - Environment and Products: Emissions and circular economy
 - Sustainability in the supply chain
 - Anti-corruption and bribery
 - Information security
 - Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
 - Glossary
 - Corporate information
 - GRI content index

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.

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index



- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

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). Its 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 facility. 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 contributions 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.

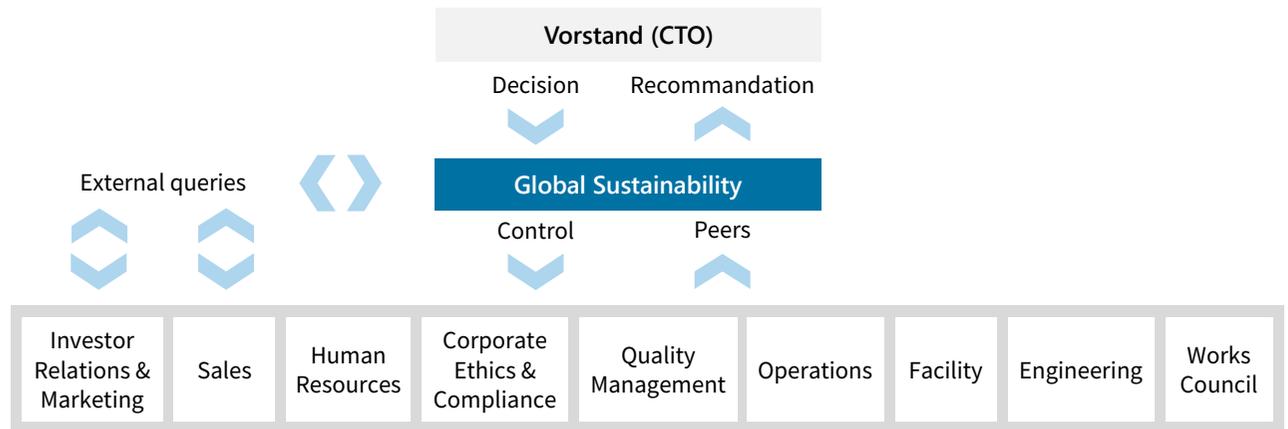
Further responsibilities include the ownership of the entire product-portfolio lifecycle analyses, the respective feedback into R&D and other departments, and content ownership of the group’s product ecodesign guide, which is part of the product lifecycle process.

The team actively participates in the TIA^Q Sustainability Initiative, with a dedicated focus on work in the TIA GHG^Q sub team.

^QGlossary: Page 63

In addition, the *sustainability committee* has an advisory capacity on certain aspects and questions regarding sustainability. For example, it meets on demand when decisions on proposals that have been submitted in our Global Sustainability Challenge (see the [CSR](#) chapter) are due.

The sustainability-related organizational structure is shown below.



The group’s sustainability organization

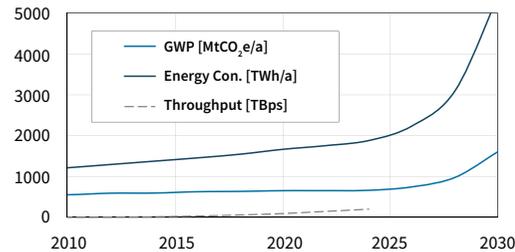
- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

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.

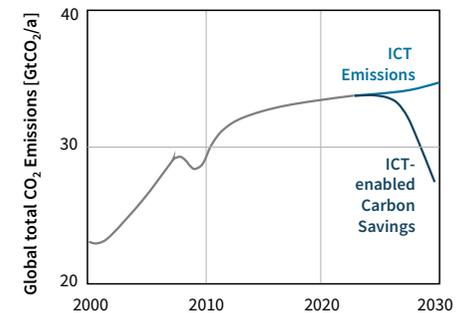


Internet throughput in terabytes per second (broken line, based on the Cisco VNI), projection of global ICT energy consumption in terawatt hours per year (solid dark blue line, based on [Andrae, Feb. 2019, DOI: 10.13140/RG.2.2.25103.02724]) and the resulting CO₂ emissions (GWP, Global Warming Potential,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

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.

It leads to the requirement of continuous improvements of the network equipment 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 below using global greenhouse-gas emissions.



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 GeSI Smarter2030.

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 <1%. ADVA’s contribution to total global ICT emissions is less than 1%.

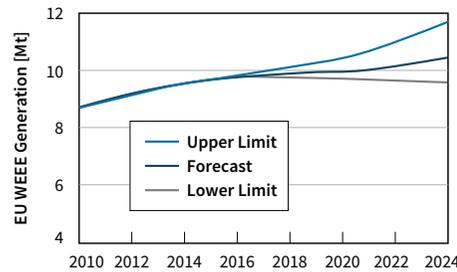
- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

According to our context analysis of the environmental management system, 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^o, Waste Electronic & Electrical Equipment). Both can be positively influenced by appropriate mechanisms of the circular economy, which also results in the materiality rating of circular economy.

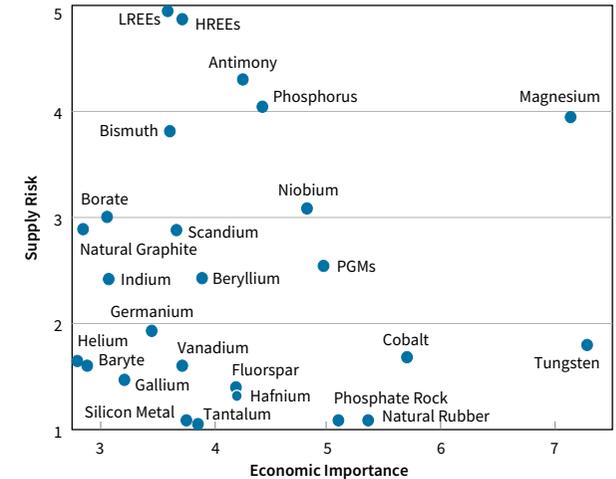
^oGlossary: Page 63

The forecast for WEEE production in the EU is shown below. The diagram shows that this production is expected to increase. The sometimes very complex composition of electronic waste is 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].

However, precisely this recovery is critical due to the raw-material situation. The EU list of critical raw materials from 2017 is shown graphically below. 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.



The EU 2017 Critical Raw Materials list.

Other ICT environmental impacts include (human, eco) 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.

<input type="radio"/>	CEO statement
<input type="radio"/>	The two parts of this sustainability report
<input type="radio"/>	Part 1 – ADVA and its context
<input checked="" type="radio"/>	Context analysis
<input type="radio"/>	EU Taxonomy Report
<input type="radio"/>	Stakeholder engagement
<input type="radio"/>	Corporate social responsibility according to GRI
<input type="radio"/>	GRI environmental standards
<input type="radio"/>	Carbon emissions (Scope 1-3)
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<input type="radio"/>	Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
<input type="radio"/>	Glossary
<input type="radio"/>	Corporate information
<input type="radio"/>	GRI content index

Context analysis of the environmental management system

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

Impact and context analysis

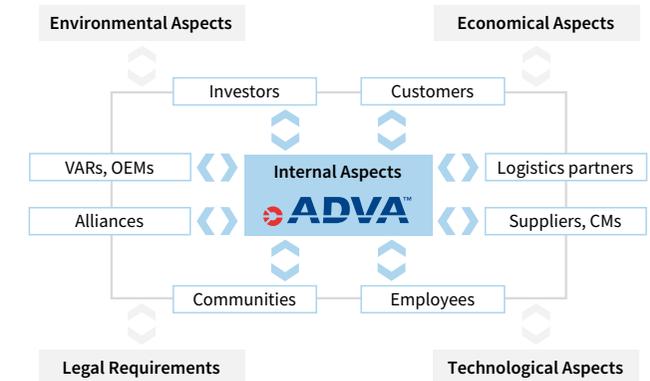
ISO 14001 requires a context analysis for the area of the environmental management system (EMS). This context analysis is intended to identify and evaluate relevant interest groups (stakeholders) and their interests or requirements as well as aspects with relevant effects on the group or those on which the group has relevant effects. 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, amongst others, via sustainability questionnaire
- 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 recent years, we have used the UN Sustainable Development Goals (SDGs) or their subsequent targets as the aspects to be assessed. We deviate from this for 2020 in this report. Although the SDGs cover many relevant environmental, labor, human rights, infrastructure and business aspects, they fail to explicitly name the root-cause problem underlying many of the areas addressed – population growth and overpopulation and also to address this proactively. In addition, target 8.1 explicitly contains the target of exponential economic growth, which is not realistic in limited systems.

For these reasons, we no longer use the SDGs.

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

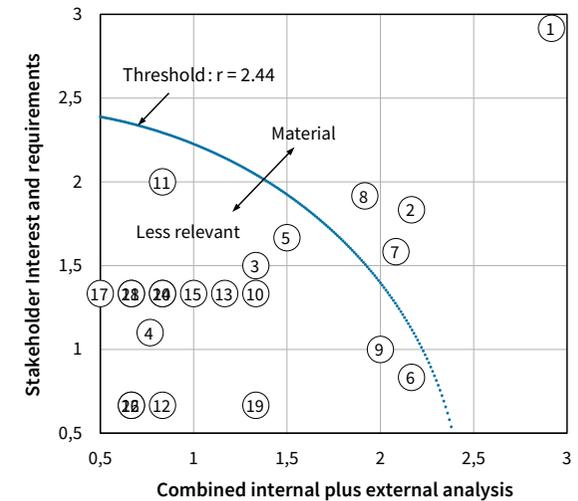
The following table shows the list of aspects examined in 2020.

List of EMS aspects considered in 2020

	Relevant aspects
1	Global warming
2	Resources depletion
3	Toxicity, SVHC, RECh, etc.
4	Water usage/pollution
5	Waste generation/handling
6	Macro-economics
7	Economics, competition EMS performance
8	Compliance (regulations)
9	Compliance (regional unbalance)
10	Technology, anything disruptive?
11	Customers, strict requirements
12	Customers, nice to have
13	Attract long-term invest?
14	Advantage for VARs, OEMs
15	Suppliers, LCA contribution
16	Influence on policy makers?
17	Requirements of communities
18	Employees interests
19	Organizational capability
20	(EMS) performance, competition
21	(EMS) performance, compliance
22	(EMS) cost...

The context analysis is shown in the following diagram. The respective numbers can be found in the table above. The X-axis shows the combined internal and external analysis, i.e. the combination of internal strengths and weaknesses as well as the influence of external framework conditions. The Y-axis depicts the interests and requirements of the stakeholders.

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



Context analysis of the environmental management system.

The two most highly weighted aspects are global warming and resource scarcity. They are followed by compliance aspects (e.g., with the REACH^Q regulation) and competition and their behavior or performance, especially in the environmental sector.

^QGlossary: Page 63

Global warming is obviously related to emissions. 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, 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) are weighted comparatively low. Again, there is no strong location/site reference.

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

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<input type="radio"/>	The two parts of this sustainability report
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<input type="radio"/>	Glossary
<input type="radio"/>	Corporate information
<input type="radio"/>	GRI content index

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 [Ecodesign](#), 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 highest priority. This is reflected in our SBTi⁹ participation and in particular the tightening of our targets for compatibility with the global climate goal of 1.5°C maximum global warming.

⁹Glossary: Page 63

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 is also 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 warming.**

This prioritization also has an impact on the related targets and performance indicators. With the exception 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 due to electricity consumption by 2032, compared to the base year 2016. This is the new, 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 REPORT

G203-2

At the end of 2020, the EU taxonomy required, as far as applicable and available, 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). Some NACE sectors and specific reporting requirements are partly described in detail in the taxonomy documents, although this was not yet completed at the end of 2020.

As an environmentally conscious manufacturer (see, for example, our SBTi participation) of ICT systems, ADVA is basically able to make 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 made possible in other sectors by ICT systems. The latter has already been explained under the term Greening-by-ICT in the chapters [ICT and its effects](#) and [eco-design: energy efficiency, emissions and the SBTi](#). On closer analysis, however, it turns out that the taxonomy in the form of the end of 2020 cannot be used for quantitative information on costs or income for ADVA. There are several reasons for this.

On the one hand, ADVA cannot be assigned to the NACE sector *J*, ICT, since electronics manufacturers are explicitly excluded here. 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. However, a very detailed analysis is required here compared to other high-performance solutions with the same functionality. Apart from the effort, this is *impossible* because there are no fundamental alternatives to ICT products (like the ones ADVA manufactures), and detailed data from similar competing products are generally not available. Therefore, the required external validation is also omitted, and the entire sector *J* approach has to be discarded for a quantitative report.

In the NACE sector *H*, Transport, the potentially interesting *ICT and Transport* category had not yet been defined at the end of 2020 and was therefore also unusable for a report. This category may be interesting, as any transport avoidance enabled by ICT could be mentioned here.

Furthermore, ADVA's potentially greatest contribution – enabling climate change mitigation in other areas through ICT – is impossible to quantify. This would require interrogating 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 we would never get a complete answer. The latter, in turn, is also due to the fact that in very many cases, our customers would have to ask *their* respective customers since, e.g., network operators (i.e., customers of ADVA) not always provide the respective *services*. This creates prohibitive effort, which also fails due to confidentiality agreements and the like.

This means that, even in the longer term, only qualitative taxonomy reporting remains.

At the end of 2020, there were four potentially reportable categories.

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

- a. This category includes, e.g., **expenses for own low-emission or zero-emission vehicles**. Formally, this falls into NACE Sector *H*, Transport. Vehicle electrification is defined as the main activity there. In this context, costs of around 23 kEUR were incurred in 2020, after around 24 kEUR in 2019.
- b. **Low-emission products** and the revenue generated with them should also be mentioned here. The Japanese *Ecology Guideline for the ICT Industry* can be used here (as the only applicable assessment guideline), although it is not mentioned in the taxonomy. The Ecology Guidelines define five efficiency classes. For an evaluation, we only consider the highest efficiency class to meet the requirement of the best available technology. Even then, however, it is impossible to precisely determine the sales generated with products in this highest efficiency class. The reason for this is that our modular WDM systems are sold in very many different configurations. These configurations cannot be covered by any evaluation standard. Thus, again only approximate or qualitative reporting remains. Using the reference configurations contained in the Ecology Guidelines, we can estimate

<input type="radio"/>	CEO statement
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<input type="radio"/>	Context analysis
<input checked="" type="radio"/>	EU Taxonomy Report
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<input type="radio"/>	Glossary
<input type="radio"/>	Corporate information
<input type="radio"/>	GRI content index

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<input type="radio"/>	Glossary
<input type="radio"/>	Corporate information
<input type="radio"/>	GRI content index

that well over half of the WDM configurations sold fall into the highest efficiency class. From this it can be deduced that around one third of the company’s total revenue is generated with energy-efficient products. Formally, this contribution is to be assigned to NACE sector C, Manufacturing.

- c. In addition, the OpEx for the development of low-emission products can be taken into account. These costs, too, can only be given qualitatively, as it is impossible to extract from the multitude of development activities those that wholly or partly serve energy efficiency. For example, some, but not all, measures to improve the heat dissipation of the devices also serve to improve energy efficiency, to an extent that cannot be further detailed. An estimate shows that up to 10% of the development expenditure in 2020, totaling around 100 MEUR, went to activities related to energy efficiency.
2. **Enabling climate-change mitigation in other areas.** This is the Greening-by-ICT area. It cannot be quantified. The best-known source on this, GeSI Smarter 2030, reports emissions savings in other relevant sectors that are a factor of 9.7 higher than ICT’s own emissions. As already stated, it is impossible to quantify this contribution. 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 infrastructure equipment worldwide, we can claim a corresponding share of the Greening-by-ICT emissions savings for us as mitigation-enabling activities. 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 2020 since according to our risk analysis, no significant risks have been identified so far, for example, in connection with extreme-weather conditions. In the area of the supply chain, no related risks were identified or activities implemented so far, neither.

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 also requires 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 and the requirements of the International Labor Organization.

The other taxonomy environmental goals 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 was not identified.

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, which also enables extensive protection against climate hazards.

Ultimately, relevant references shall be named, especially when considering the qualitative aspects. In addition to the *GeSI Smarter 2030* reference already cited, the following two references are primarily to be mentioned:

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

STAKEHOLDER ENGAGEMENT

G102-21, G102-31, G102-40, G102-42, G102-43, G102-44, G103-1, G103-2, G308-1

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 analysis and the materiality analysis (see the [related chapter](#)).

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.

In 2020 we carried out a dedicated **employee survey** due to the Covid-19 situation and the associated high proportion of employees who worked in the home office. The aim was to obtain feedback on our anti-Covid-19 measures and to assess the option of extended home-office use independent of Covid-19.

Next, our **supply chain** was a key area of our sustainability commitment. We significantly expanded the use of IntegrityNext, our supply-chain management software. This tool is intended to improve management in the area of sustainability and reduce the associated risks. In 2020, 74% of our suppliers with 96% of the purchasing volume were served by this software. We also continued the initiative to collect LCA data for photonics components directly from selected suppliers.

Finally, a new **customer satisfaction survey** (CSAT) was carried out in 2020. This is reported on the next page.

<input type="radio"/>	CEO statement
<input type="radio"/>	The two parts of this sustainability report
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<input type="radio"/>	EU Taxonomy Report
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<input type="radio"/>	Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
<input type="radio"/>	Glossary
<input type="radio"/>	Corporate information
<input type="radio"/>	GRI content index

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.

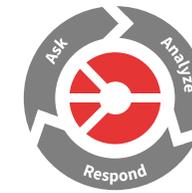
In 2020, we also continued our work with the **ExFo** (Experts' Forum) at **Fraunhofer IPA** in Stuttgart, Germany. The work of this forum is centered on the areas of REACH, RoHS^Q, WEEE and conflict minerals, but also includes aspects such as circular economy or emissions reduction. As an industry forum, the ExFo can provide advanced warnings in cases where the related regulations and directives become updated. Due to the Covid-19 situation, there were no physical meetings in 2020, rather these meetings took place virtually, on the Internet.

^QGlossary: Page 63

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
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- Anti-corruption and bribery
- Information security
- Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

Customer satisfaction rating

G102-43, G102-44



Our customer satisfaction is measured by the Net Promoter Score (NPS) on a yearly basis. For 2020, ADVA's NPS was 50%. This result underlines the company's focus and its commitment to continuous improvement of customer satisfaction.

In 2020, we conducted 66 interviews and more than 1000 ratings in nine categories, and around 1800 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	2020	2019	2018
Overall	50%	44%	52%
Technology & innovation	22%	20%	33%
Product quality & reliability	31%	41%	46%
Fault correction	40%	42%	50%
Proposals	68%	66%	53%
Order mgmt., shipping, invoicing	70%	47%	47%
Sustainability	63%	39%	73%
Project & account management	77%	79%	79%
Technical services	67%	56%	61%
Web content	29%	22%	32%

CORPORATE SOCIAL RESPONSIBILITY ACCORDING TO GRI

G103, G401, G403, G404, G405, G408, G409, G413

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

G103-1, G103-2, G103-3

Relevant sustainability aspects fall into the area of corporate social responsibility (CSR). The related actions and achievements complement our sustainability strategy with its primary focus on emissions. Regarding the Triple Bottom Line (profit-planet-people), the aspects affecting people are covered.

In general, CSR includes aspects of social and employee matters and respect of human rights. As such, it also covers important parts of the ILO labor and social standards. The related actions and facts about our employees can be found in this chapter. As far as employees in our supply chain are affected, this is described in the chapter [sustainability in the supply chain](#).

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

Dedicated management measures have been defined and implemented regarding employee matters and ILO labor and social standards, respectively. This includes the definition and implementation of internal processes, assignment of responsibilities, definition of internal KPIs, and evaluation on a half-year basis.

Most employee and some social concerns are tracked by the HR department. The aspects of occupational health and safety are tracked by Facilities, as this is where the strongest content overlap takes place. Consequently, highest-governance responsibility is with the CEO and CFO, respectively.

Unlike the environmental area (ISO 14001, ISO 50001), the CSR area is not served via externally certified management systems like ISO 45001. However, aspects like compliance with national preventive fire protection regulations are audited externally regularly.

Employee-matter aspects are regularly (as a target every two years) assessed internally via the Employee Satisfaction Survey (ESS). The ESS covers more than 10 categories, including internal communication, training, inclusion and benefits and payment. This allows critical aspects to be identified and the management approach to be checked regularly. Critical aspects result in dedicated initiatives under the supervision of the relevant board of directors.

In 2020, new software was introduced to better support various employee concerns. Effects from this will become apparent in the next few years.

The CSR-related processes and performance are also regularly (at least, on a yearly basis) evaluated through external assessments (TIA, covering certain health & safety aspects, and EcoVadis, covering labor and human rights aspects mainly). In addition, certain CSR aspects (namely labor and human-rights related) are also assessed via an increasing number of tool-based and on-site audits conducted by or on behalf of customers. Corrective actions are taken according to the related findings.

The feedback from the ESS and the external assessments have essentially confirmed our management approach. As a result of this feedback, the occupational health and safety area was restructured in 2019.

The management approach for CSR aspects applies to the complete company. There is no restriction to large locations (as is the case with the EnMS).

The most important aspects are described hereinafter.

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

Information on employees

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

On December 31, 2020, ADVA had 1,870 employees, including 22 apprentices (2019: 1,903 including 24 apprentices).

On average, ADVA had 1,861 employees in 2020, down from 1,882 in 2019 (and not considering apprentices). Furthermore, at year-end 2020 and 2019, there were 20 and 21 external temporary employees as well as 42 and 35 internal fixed-term employees each working for the company, respectively.

In 2020, the voluntary turnover rate was at 5.5% and the total number of new hires was 131.

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	2020	2019	2018
Males total	77.4%	77.6%	78.4%
Males in management	84.3%	85.5%	87.6%
Females total	22.6%	22.4%	21.6%
Females in management	15.7%	14.2%	12.4%

Team leader	2020	2019	2018
No male	59.1%	60,1%	60,1%
No female	19.3%	19.5%	19.0%
No total	78.4%	79.7%	79.1%
Yes male	18.2%	17.4%	18.3%
Yes female	3.4%	2.9%	2.6%
Yes total	21.6%	20.3%	20.9%

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	2020	2019	2018
	<30 years	10.0%	11.0%	10.8%
Male	30-50 years	56.4%	56.7%	57.6%
	>50 years	33.6%	32.3%	31.5%
Male average		44.5 years	44.0 years	43.8 years
	<30 years	11.1%	11.7%	11.3%
Female	30-50 years	61.0%	63.0%	61.8%
	>50 years	27.9%	25.3%	27.0%
Female average		42.9 years	42.3 years	42.7 years

Gender	Age group	2020	2019	2018
	<30 years	145	162	160
Male	30-50 years	816	837	852
	>50 years	486	477	466
Male total		1,447	1,476	1,478
	<30 years	47	50	46
Female	30-50 years	258	269	252
	>50 years	118	108	110
Female total		423	427	408
Employees total		1,870	1,903	1,886

<input type="radio"/>	CEO statement
<input type="radio"/>	The two parts of this sustainability report
<input type="radio"/>	Part 1 – ADVA and its context
<input type="radio"/>	Context analysis
<input type="radio"/>	EU Taxonomy Report
<input type="radio"/>	Stakeholder engagement
<input checked="" type="radio"/>	Corporate social responsibility according to GRI
<input type="radio"/>	GRI environmental standards
<input type="radio"/>	Carbon emissions (Scope 1-3)
<input type="radio"/>	End-to-end delivery
<input type="radio"/>	Part 2 – Non-financial report according to HGB
<input type="radio"/>	Summary of our business model
<input type="radio"/>	Material aspects, risks and opportunities
<input type="radio"/>	Environment and Products: Emissions and circular economy
<input type="radio"/>	Sustainability in the supply chain
<input type="radio"/>	Anti-corruption and bribery
<input type="radio"/>	Information security
<input type="radio"/>	Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
<input type="radio"/>	Glossary
<input type="radio"/>	Corporate information
<input type="radio"/>	GRI content index

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	2020	2019	2018
Finance/Admin/IT	177	167	158
Operations/QM	229	231	236
R&D	935	941	958
Sales/Marketing/Services	507	540	503
Apprentices	22	24	31
Employees total (year-end)	1,870	1,903	1,886

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

ADVA's work on being an attractive employer especially for women has been recognized several times by the German women's magazine BRIGITTE, most recently in 2020. ADVA was **awarded five out of five stars** in their recent assessment on best employers for women in Germany. This rating puts us in the top-120 group of employers for women in the country. The assessment contained 60 questions covering various aspects of women employment.

In 2020, 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 provided in the last table in this section. 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)	2020	2019	2018
Germany*	508	510	500
Austria	2	2	3
Switzerland	42	42	40
Italy	14	14	13
Spain	2	2	2
France*	16	18	16
Poland	366	356	318
Finland	8	8	9
Sweden	3	4	3
United Kingdom*	119	113	107
Netherlands	3	3	2
Russia	2	-	-
South Africa	4	5	4
USA	392	415	437
Canada	16	14	12
Brazil	2	2	2
Australia	10	11	11
China	137	137	132
Hong Kong	4	3	3
Japan	7	7	7
India	62	73	86
Singapore	14	15	15
Malaysia	1	1	2
United Arab Emirates	1	1	1
Israel	113	123	130
Total*	1,848	1,879	1,855

* Without apprentices

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI**
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

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.

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 16 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 2020, employees attended 218 training sessions. The duration per session was between 30 minutes and a full week (5 days).

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

Equal opportunities

G408, G409

ADVA is an equal-opportunity employer and has an ongoing 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.

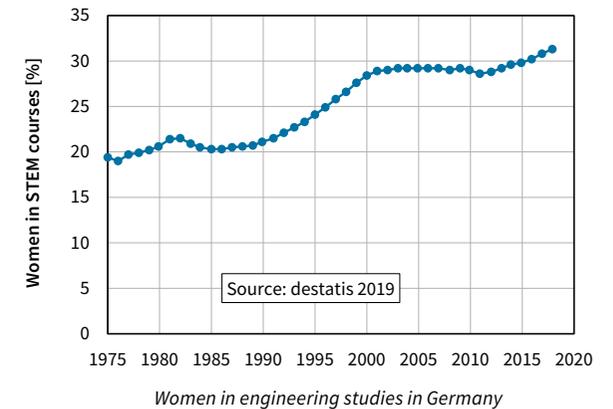
- Freely chosen employment
- Child labor avoidance
- Working hours
- Wages and benefits
- Humane treatment
- Non-discrimination
- Freedom of association

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 2019

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. In 2020, the Girls’ Day was canceled due to Covid-19. However, we will resume our participation as soon as possible.

<input type="radio"/>	CEO statement
<input type="radio"/>	The two parts of this sustainability report
<input type="radio"/>	Part 1 – ADVA and its context
<input type="radio"/>	Context analysis
<input type="radio"/>	EU Taxonomy Report
<input type="radio"/>	Stakeholder engagement
<input checked="" type="radio"/>	Corporate social responsibility according to GRI
<input type="radio"/>	GRI environmental standards
<input type="radio"/>	Carbon emissions (Scope 1-3)
<input type="radio"/>	End-to-end delivery
<input type="radio"/>	Part 2 – Non-financial report according to HGB
<input type="radio"/>	Summary of our business model
<input type="radio"/>	Material aspects, risks and opportunities
<input type="radio"/>	Environment and Products: Emissions and circular economy
<input type="radio"/>	Sustainability in the supply chain
<input type="radio"/>	Anti-corruption and bribery
<input type="radio"/>	Information security
<input type="radio"/>	Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
<input type="radio"/>	Glossary
<input type="radio"/>	Corporate information
<input type="radio"/>	GRI content index

Further employee benefits

G401-2

Next to health & safety benefits (see preceding 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 tracked internally. The work on this was significantly intensified in 2019 and 2020. This includes the creation of significantly improved process documents and new internal responsibility, see the management approach on [page 20](#). 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 which include (but are not limited to):

- First-aid training, incl. certification
- Labor safety and labor security
- Vision care
- Back check
- 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 set 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.

<input type="radio"/>	CEO statement
<input type="radio"/>	The two parts of this sustainability report
<input type="radio"/>	Part 1 – ADVA and its context
<input type="radio"/>	Context analysis
<input type="radio"/>	EU Taxonomy Report
<input type="radio"/>	Stakeholder engagement
<input checked="" type="radio"/>	Corporate social responsibility according to GRI
<input type="radio"/>	GRI environmental standards
<input type="radio"/>	Carbon emissions (Scope 1-3)
<input type="radio"/>	End-to-end delivery
<input type="radio"/>	Part 2 – Non-financial report according to HGB
<input type="radio"/>	Summary of our business model
<input type="radio"/>	Material aspects, risks and opportunities
<input type="radio"/>	Environment and Products: Emissions and circular economy
<input type="radio"/>	Sustainability in the supply chain
<input type="radio"/>	Anti-corruption and bribery
<input type="radio"/>	Information security
<input type="radio"/>	Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
<input type="radio"/>	Glossary
<input type="radio"/>	Corporate information
<input type="radio"/>	GRI content index

Description (G403-1, G403-2, G403-3)	Region		
	Europe	Americas	APAC
<p>A. The level at which each formal joint management-worker health and safety committee typically operates within the organization.</p> <p>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.</p>	<p>A. Site level (all major sites, small branch offices may not have such committees, in accordance with local legal requirements)</p> <p>B. 90%</p>	<p>A. Site level</p> <p>B. 100%</p>	<p>A. Site level (Emergency Response Committee in Shenzhen)</p> <p>B. 100%</p>
<p>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.</p> <p>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.</p> <p>C. The system of rules applied in recording and reporting accident statistics.</p>	<p>A. For UK: 4 injuries: 1 Back Strain (female); 3 cuts caused by packaging (1 male/ 2 female) 0 lost days For Germany: Number of occupational accidents – 3 Number of commuting accidents – 3 4 male, 2 female 11 lost days For rest of Europe: 0 occurrences.</p> <p>B. –</p> <p>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 in 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.</p>	<p>A. 0 slips/falls 0 lost days</p> <p>B. 0 fatalities, 0 slips/falls</p> <p>C. Accidents are logged in OSHA report and filed according</p>	<p>A. 0 occurrences</p>
Workers with high incidence or high risk of diseases related to their occupation	None	None	None

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
-  Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

Global sustainability challenge

The global sustainability challenge is the group’s internal complement to the global idea bank, dedicated exclusively to ideas related to the improvement of different aspects of sustainability. The challenge was implemented in 2016. It is an instrument of the company for actively involving our employees into the topic of sustainability.

One of the ideas submitted in 2020 suggested replacing plastic adhesive tape for product packaging with paper-based adhesive tape. After a detailed feasibility study, this proposal was implemented together with an appropriate packaging supplier. This suggestion is also described under [Packaging Optimization](#) at the end of Part 1 of this report.

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 2020.

Buheesi E-/FTTV project

G413-1

The Electricity & Fiber To The Village (E-/FTTV) project aims to find sustainable infrastructure solutions for rural areas in Uganda. It is based on the simultaneous roll-out of fiber optics for broadband access with the power grid. It thus makes a significant **contribution to the local subcounty infrastructure** of Buheesi.

Partners include the Ugandan Ministry of Energy and Mineral Development, the Rural Electrification Agency, the National Information Technology Authority Uganda (NITA-U), the Uganda Communication Commission’s Rural Community Development Fund, and Corning Optical Communications GmbH & Co. KG. On the German side, funding is provided by the Society for International Cooperation (GIZ). This support was increased by 15% in 2020 to compensate for the consequences of Covid-19. We have already briefly described the project in the last two sustainability reports.

After a temporary Covid-19 lockdown, the installations were completed. Amongst others, this allowed to connect a school in Buheesi to the broadband network.

As a more important consequence of this, NITA-U has made a nationwide agreement with the Uganda Electricity Distribution Company that enables the nationwide power grid to be used. This shared use of an infrastructure was exactly the original idea of the local project. The project has thus made an important contribution to the expansion of the infrastructure in Uganda.

GRI ENVIRONMENTAL STANDARDS

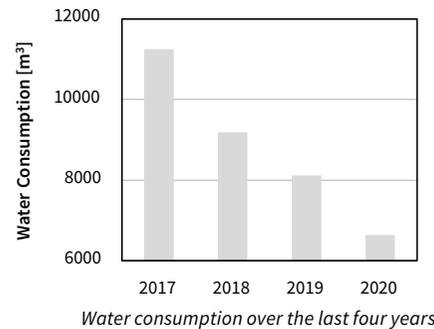
G305-6, G305-7, G306-1, G306-2, G306-3, G306-4, G306-5, G307-1

Environmental compliance

ADVA has an environmental management system (EMS) in accordance with ISO 14001, which is recertified every year. The last surveillance audit in Q4/2020 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 46](#).

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 2020, the consumption of hazardous substances at our sites in Meiningen, Gdynia and Neuchâtel was ~200 liters. This amount mainly consisted of Isopropyl Alcohol, plus some further cleaning agents and glues. A respective number of empty containers were transported inland.

In addition, 266 g of Cesium 133 for atomic clocks were procured in Neuchâtel.

Therefore, the remaining EMS aspect relates to waste generation and treatment. Waste production and treatment for 2020 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 2020 (2019)

Waste disposal	Weight [t]	GWP [tCO ₂ e]
Cardboard	118.5	2.5 (2019: 2.4)
Waste incineration	92.2	2.0 (2019: 2.0)
Plastic	9.4	0.2 (2019: 0.3)
E-scrap	16.9	0.4 (2019: 0.5)
Water consumption	Volume [m ³]	GWP [tCO ₂ e]
Water	6,639	2.3 (2019: 2.8)

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 2020.

Resource 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 (EnMS) and by the Scope-2 target within our SBTi commitment. For the EnMS, further information on the management approach can be found on [page 46](#).

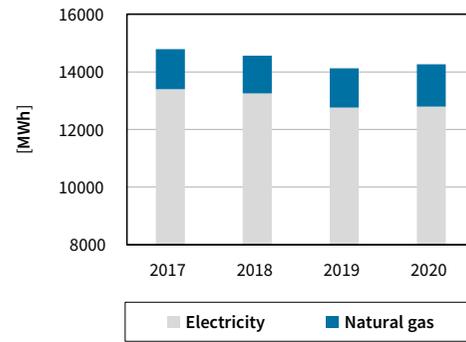
A small fraction of the energy consumed by the group relates to natural gas. This applies to four ADVA sites (out of 36) only.

No dedicated cooling or steam consumption is in place.

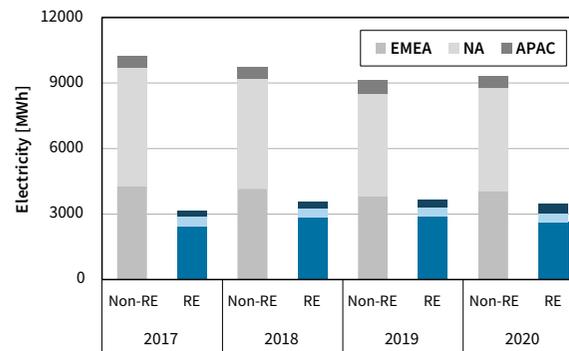
The two following figures show the development of energy consumption (natural gas plus purchased electricity) and the mix of renewable and non-renewable energies (information from our electricity providers and data from regional networks) over the last three years.

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index



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

For 2020, there was an increase in energy consumption in the range of 0.1% compared to the previous year.

The EnMS aims to reduce energy consumption by 1.5% per year. Since in particular locations with large laboratories are covered by the EnMS, an intensity metric must be used that takes the increasing bit rates of the Internet into account. This is necessary since parts of the Internet have to be mapped on a small scale in the laboratories (compare [ICT and its impact](#)).

In addition, advances in the energy efficiency of ICT devices must be considered. 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 is compliant with ECHA SCIP reporting requirements. 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 2020, the SVHC content in our products was below the reportable limit of 0.1% [w/w]. Furthermore, none of the substances of very high concern were used or imported in quantities of more than 1 t. Therefore, ADVA was not required to register with ECHA SCIP in 2020 either.

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 ~50% in 2020, caused by incomplete or missing answers. We are working on substantial improvement of this coverage.

As described under [sustainability in the supply chain](#), we started using a new software tool for sustainability-related supply chain management in 2019 and expanded this significantly in 2020. Over time, this tool, IntegrityNext, will complement and eventually replace other mechanisms that are used to obtain components data. IntegrityNext is increasingly used for data collection for REACH conformity. In addition, it will help to improve the response rate regarding conflict minerals.

CARBON EMISSIONS (SCOPE 1-3)

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

The group's GHG emissions for 2020 are summarized in the table below.

ADVA GHG inventory for 2020 (2019)

Source/category	Consumption 2020	GWP 2020 [tCO ₂ e]	GWP 2019 [tCO ₂ e]
Natural gas	1,471 MWh	269	269
Owned transport	3,877,550 km	627	871
Scope 1	Total Scope 1	897	1,140
Purchased electricity*	12,793 MWh	5,151	5,369
Scope 2	Total Scope 1 plus Scope 2	6,048	6,509
Capital goods	12,283 kEUR	4,442	5,265
Purchased goods			
Production-related		36,594	40,532
Non-production-related (other than paper)	1,191 kEUR	269	421
Purchased paper	4.3 t	3.1	7.9
Transmission and distribution losses	645 MWh	260	284
Transportation and distribution			
Inbound	22,760,875 t-km	6,422	9,353
Outbound	3,284,113 t-km	3,274	3,568
Waste disposal			
Cardboard	118.5 t	2.5	2.4
Plastic	9.4 t	0.2	0.3
Waste incineration	92.2 t	2.0	2.0
E-scrap	17.1 t	0.4	0.5
Business travel			
By air	2,045,467 (p)km	246	2,179
By car	151,828 km	30.7	96.2
By train	68,499 (p)km	0.0	0.7
Employee commuting		900	2,900
Use of sold products	600 GWh	215,315	242,639
End-of-life treatment of sold products		303	333
Scope 3	Total Scope 3	268,064	307,584

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

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

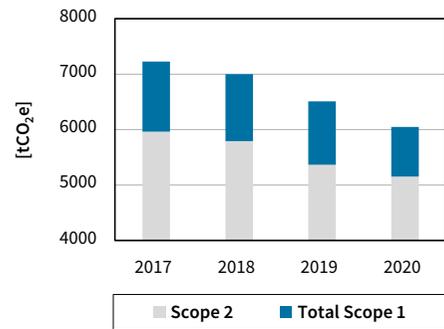
ADVA reports all GHGP^Q categories that are relevant for the group. GHG emissions are reported on the basis of operational control, and Scope-2 data is mainly location-based.

^QGlossary: Page 63

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 and the related approved targets.

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



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

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‰.

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

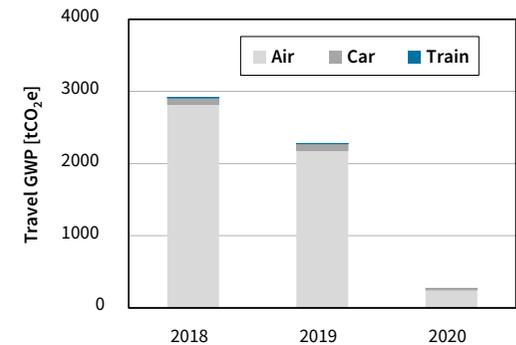
- **Home-office arrangement.** In 2020, during Covid-19, this became important primarily for operational reasons. However, we are working on enabling extended use of the home office even after Covid-19, also for emissions reasons. In 2020, this saved >75% commuting for the entire group.

- **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 2020, as many (business) trips became impossible due to Covid-19. Accordingly, video conferencing is also one of the basic requirements for using the home office (in addition to a stable corporate and worldwide VPN). In 2020 business travel emissions fell below half of the value of the previous year.

- **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 three years are reported in the following diagram.



Travel emissions development over the last three years

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery**
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

END-TO-END DELIVERY

G305-3

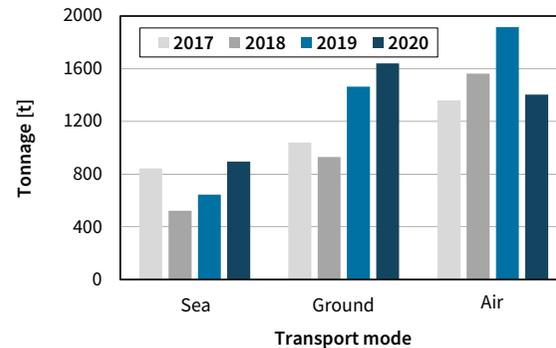
This chapter contains relevant environmental aspects from the perspective of both, the end-to-end value chain as well as the products’ complete lifecycle. These have an impact on carbon emissions and resource efficiency.

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

Transport mode and emissions

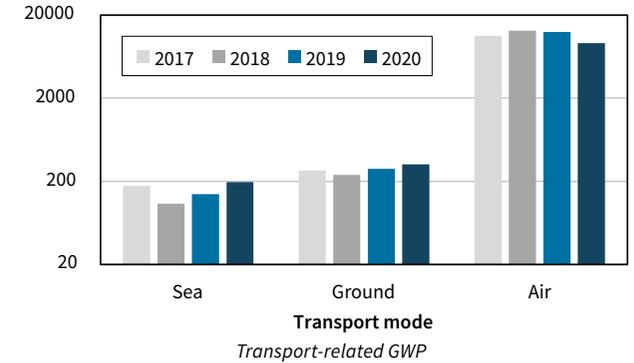
Freight transport – inbound plus outbound – is a main contributor to the GWP, as seen from the previous chapter. Transport emissions are determined by three parameters, the transport mode (including the associated emission factors), and distances and tonnage. The transport parameters can only be influenced 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 three years is displayed in the following diagram. Note that scale is linear.



Development of transport modes over time

The GWP resulting from transport is shown in the diagram below. Note the logarithmic scale in this diagram.



The underlying transportation emission factors are listed below.

Global transportation emissions factors

Emissions factors 2020 [kgCO ₂ e/(t·km)]		
Sea freight	Land freight	Air freight
0.0114	0.5148	1.1160

In 2020, considerations were intensified to relocate parts of the supply chain (back) to Europe. This would help to further reduce transport emissions. We expect results for 2021 and later.

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

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 also leads 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.

In 2020, more and more customers asked for plastic-free packaging. Up to now, this was only possible for products weighting up to 1 kg, since the necessary drop tests, which serve to effectively protect the products, were not passed above this weight. Therefore, we developed, together with a packaging supplier, new plastic-free packaging for products weighting more than 1 kg in 2020.

This has been achieved with a new, innovative design based on cardboard. The new packaging is both lighter and slightly smaller in size. As a result, almost 2 kgCO₂e can be saved in emissions per production and transport of one packaging unit (including the product). The introduction of the new packaging started in 2020. This will initially result in emission savings of around 10 tCO₂e per year. If this packaging can also be successfully adapted to other product lines, emissions savings of up to 100 tCO₂e per year are possible.

Another activity to reduce plastic in packaging was also implemented in 2020. This involved replacing plastic adhesive tape for packaging with plastic-free adhesive tape. This is based on a proposal from our sustainability ideas competition (see the [Global Sustainability Challenge](#) chapter). This suggestion was also taken up together with a packaging material supplier. In an intensive test phase, it was found that the new, plastic-free adhesive tape meets the mechanical requirements. It was therefore introduced in 2020 and will gradually replace the old plastic adhesive tape.



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 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 report follows our annual reporting structure and covers the period from January 1, 2020, to December 31, 2020. 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 2020.

Material aspects

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 prepared in accordance with Sect. 315b Para. 3 HGB including 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 61](#). 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.

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB**
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

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 the 2020 Annual Report on pages 32–37.

Our products for communication infrastructures address the UN sustainability goal No. 9, *Industry, innovation and infrastructure*. Among other functionalities, these products 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 required for save and secure networks operations. These markets are geographically distributed on all continents, with a focus on Europe and North America.

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.

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

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

MATERIAL ASPECTS, 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.

To be able to classify our activities/measures and the corresponding reporting, at least a basic understanding of ADVA and our market environment is necessary.

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 is one of few sectors that enable **net GHG reductions** (see Chapter [ICT and its impact](#) for details). 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 is required.

In order to determine the reported aspects, the group relies on the analytical tools and processes of its risk management system. A materiality analysis is then carried out in order to consider 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](#).

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
-  Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

<input type="radio"/>	CEO statement
<input type="radio"/>	The two parts of this sustainability report
<input type="radio"/>	Part 1 – ADVA and its context
<input type="radio"/>	Context analysis
<input type="radio"/>	EU Taxonomy Report
<input type="radio"/>	Stakeholder engagement
<input type="radio"/>	Corporate social responsibility according to GRI
<input type="radio"/>	GRI environmental standards
<input type="radio"/>	Carbon emissions (Scope 1-3)
<input type="radio"/>	End-to-end delivery
<input type="radio"/>	Part 2 – Non-financial report according to HGB
<input type="radio"/>	Summary of our business model
<input checked="" type="radio"/>	Material aspects, risks and opportunities
<input type="radio"/>	Environment and Products: Emissions and circular economy
<input type="radio"/>	Sustainability in the supply chain
<input type="radio"/>	Anti-corruption and bribery
<input type="radio"/>	Information security
<input type="radio"/>	Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
<input type="radio"/>	Glossary
<input type="radio"/>	Corporate information
<input type="radio"/>	GRI content index

Sustainability risks and opportunities

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

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

ADVA has impact on, and is potentially impacted by, different sustainability aspects. This includes both risks and opportunities.

At ADVA, risks are classified 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 its strategic goals and currently extends to three business years after goal setting and approval by the group’s supervisory board.

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 2020](#).

Due to the time horizon of three years, the risk of global warming is not considered in the risk report in the annual report, although it may, depending on the development – less than or in worst case significantly more than 2°C warming compared to the pre-industrial age – 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, albeit with a longer time horizon.*

This makes emissions, as part of the environmental aspects, the main risk. This is addressed in the sustainability strategy through our long-term and ambitious participation in the SBTi.

Global warming is not captured (as material) in the time horizon of our risk analysis, since the first essential milestone according to the Paris Agreement is not to be reached until 2030 and it may only then become clear how global warming will develop.

Based on the applied analytical tools and processes, no risks have been identified according to Sect. 289c Para. 3 Nos. 3 and 4 HGB that very likely have, or will have, a material negative impact on any matter as defined by the German HGB.

Nevertheless, ADVA considers six of its identified 14 risks in the annual report at year end 2020 (end of 2019: seven out of 20) as relevant enough, in their relation to the respective sustainability aspects, to be mentioned in the non-financial report.

These risks fall into the HGB **matters of the environment and combating corruption and bribery**. In addition, the risks relate to the ADVA-specific **matters product, information security, and supply chain**.

As in the previous year, we therefore do not consider **social matters** to be material. No significant risks were identified here. The only comparatively important aspect is (telecommunications) infrastructure. This infrastructure became even more important in 2020 due to Covid-19, albeit this did not lead to really critical or material rating in our analyses.

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
-  Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

As a change compared to previous years, **employee matters** and **respect for human rights** are not rated as material. No critical aspects were identified for employee matters that could significantly affect the company's business development. This is due to the facts that critical aspects from previous years no longer existed and that with Covid-19, only uncritical restructuring (home office) was necessary. Most of the other identified risks also have a potential, indirect impact on employee matters due to resulting necessary cost reductions. This could potentially include layoffs. Any related prevention, however, requires the avoidance or mitigation of the triggering risk. Therefore, these aspects, although potentially material for our employees, are not part of this non-financial report.

Regarding respect for human rights, no aspects were rated as material, neither. So far, modern slavery and related counter measures were regarded material. However, our more recent analysis no longer confirms this – especially when considering a supply chain in the electronics sector and in comparison, for example, to the textile or agricultural industry.

Finally, unlike in 2019 but as in 2018, the supply-chain matter was rated material. A related risk was identified in the risk report as well as certain associated sustainability aspects.

The six 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 [Ecodesign: energy efficiency, emissions and the SBTi](#)). 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 could be requested from potential business partners. 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 yet 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.

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities**
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

Major Risk* (see annual report)	Impact on the respective matter	Aspect (see following chapters)
Wrong product strategy	Matter: product. A wrong product strategy may result in relevant ecodesign aspects, like energy-efficient or design to recycling, are only insufficiently considered. This may negatively impact our competitiveness, especially in the area of ecodesign, and it may lead to higher emissions.	Product strategy (see page 50f)
Product hardware design quality and regulatory compliance	Environmental matters. This risk has potential impact on two matters (see next row). It includes (wrong) design decisions that lead to product emissions in the use phase that are higher than best practice and that do not comply with emissions as allowed in the context of global warming.	CO ₂ emissions (see page 48)
	Matter: product. Product design (incl. ecodesign) and quality can have negative impact, independent from the product strategy. Badly implemented ecodesign aspects can lead to brand damage, competitive disadvantages, regulatory problems, and finally higher emissions.	Ecodesign (see page 51)
	Matter: product. Circular economy (CE) poses a risk for products. Negative impact may result from customer expectations that are not fulfilled, the temporary violation of new CE regulations or poor (product) resource efficiency and recyclability. Moreover, it cannot be excluded that products, caused by their design, are not well suited for upcoming CE business models.	Circular economy (see page 52f)
Business data confidentiality	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 59)
Supplier and manufacturer quality	Matter: Supply Chain. Sustainability aspects can have strong impact. Individual suppliers may not comply with sustainability requirements. This may cause ADVA brand damage and poor performance, e.g., regarding material declarations or CSR, which in turn may require restructuring in the supply chain and thus may impact lead times negatively.	Sustainability in the supply chain (see page 54)
Bribery	Matter: combating corruption and bribery. ADVA’s addressable market has a volume of over 10 billion euros, thus increasing the risk of unethical behavior. This can result in direct costs as well as legal consequences and a corresponding damage to the image.	ADVA’s Compliance Management System (see page 58f)
Compliance violations by intermediaries	Matter: combating corruption and bribery. ADVA markets its products and services largely through (external) sales partners. Since the group’s ability to control its sales partners is limited, possible compliance violations by the partners could also be directly attributed to ADVA or indirectly cause corresponding damage to the image.	Sales and service partner due diligence (see page 58f)

* The definition of major 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.

<input type="radio"/>	CEO statement
<input type="radio"/>	The two parts of this sustainability report
<input type="radio"/>	Part 1 – ADVA and its context
<input type="radio"/>	Context analysis
<input type="radio"/>	EU Taxonomy Report
<input type="radio"/>	Stakeholder engagement
<input type="radio"/>	Corporate social responsibility according to GRI
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<input type="radio"/>	Information security
<input type="radio"/>	Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
<input type="radio"/>	Glossary
<input type="radio"/>	Corporate information
<input type="radio"/>	GRI content index

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 aspects according to the CSR Directive Implementation Act.

As part of the materiality analysis, three participants from different departments carry out an annual assessment of the topics identified in accordance with an internal process description. Two 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 aspects 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 as material / non-material and the related graphic representation is defined. This threshold is a segment of a circle with a certain radius in the two-dimensional diagram representation.

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

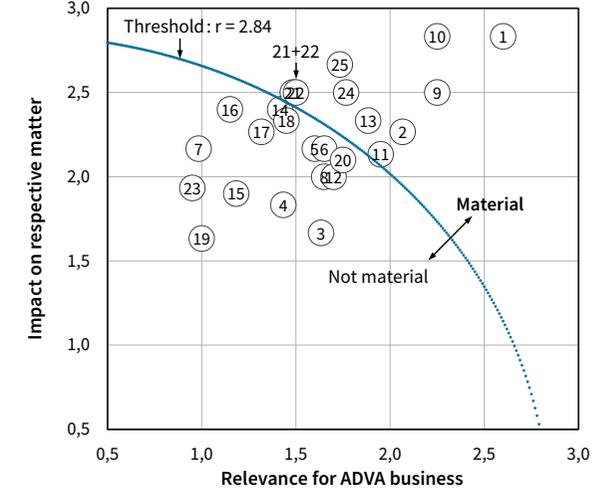
In our analysis, the emissions and resource-related environmental aspects clearly stand out from the other essential aspects. They are followed by the newly added aspect of information security.

List of assessed aspects in 2020

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities**
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

	Aspects	#
Environment	GHG emissions, climate change	1
	Energy management	2
	Waste	3
	Water management, pollution	4
	Compliance (REACH, RoHS, WEEE, CM, ...)	5
	Resource efficiency	6
Product	Safety & labeling	7
	Packaging & transportation	8
	Design & innovation	9
	Circular economy	10
	Strategy	11
	Ability to deliver	12
	Quality	13
Employees	Occupational health and safety	14
	Labor practices (ILA)	15
	Harassment and discrimination	16
	Compensation & satisfaction	17
	Training & education	18
Social	Community	19
	Infrastructure	20
Combating corruption and bribery	Internal Bribery and Corruption	21
	Bribery/Corruption with sales partners	22
Respect for human rights	Combating modern slavery	23
Supply Chain	Supply-chain responsibility	24
Information security	Confidentiality, Integrity, Availability	25

The graph below shows the materiality of these aspects. The radius for the threshold value for materiality was set in such a way that it basically separates the right upper quadrant according to the double-materiality requirement. This leads to the identification of the material aspects, as also highlighted in the table.



Graphic representation of the materiality analysis 2020

The circle segment in the diagram separates material from non-material aspects. We consider a circle to be useful for such a separation (compared to other curves). The radius of 2.84 creates a high threshold for materiality.

When describing the material aspects, we combine the environmental aspects with those of the products. This makes sense, since in both cases CO₂ emissions are the most important sustainability aspect, followed by resource efficiency.

In addition to creating the required transparency, reporting on the material topics also helps us to continuously question and improve our corresponding activities. The latter also serves to prepare for any future changes to the statutory reporting requirements.

Sustainability strategy

G102-15

ADVA's sustainability strategy takes into account all identified aspects that are considered material. In our materiality analysis, the aspects of the combined matter environment/products are rated more important than the other material aspects. Three of these aspects (GHG emissions, design & innovation, product strategy) are directly linked to CO₂ emissions. For the product-related aspects, this holds via energy-efficient design and the resulting emissions. Circular economy is also linked, at least indirectly, to emissions and global warming

Due to this clear result, we developed a long-term focus with priority 1 on global warming and product ecodesign that leads to better energy efficiency and reduces CO₂ emissions.

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

Regarding the circular economy, ADVA's strategic goal is to strengthen the circular economy business. To prepare for a higher amount of circular-economy 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. Until the end of the project in 2022, no targets will be defined for this aspect.

The aspect circular economy is complemented by the activities to implement our Ecodesign Guide in the Product Lifecycle Process that almost have been completed in 2020. This is in continuation of the efforts of the last years.

The activities against global warming are complemented by priority-2 activities on the other material aspects. Most of these cover non-environmental aspects.

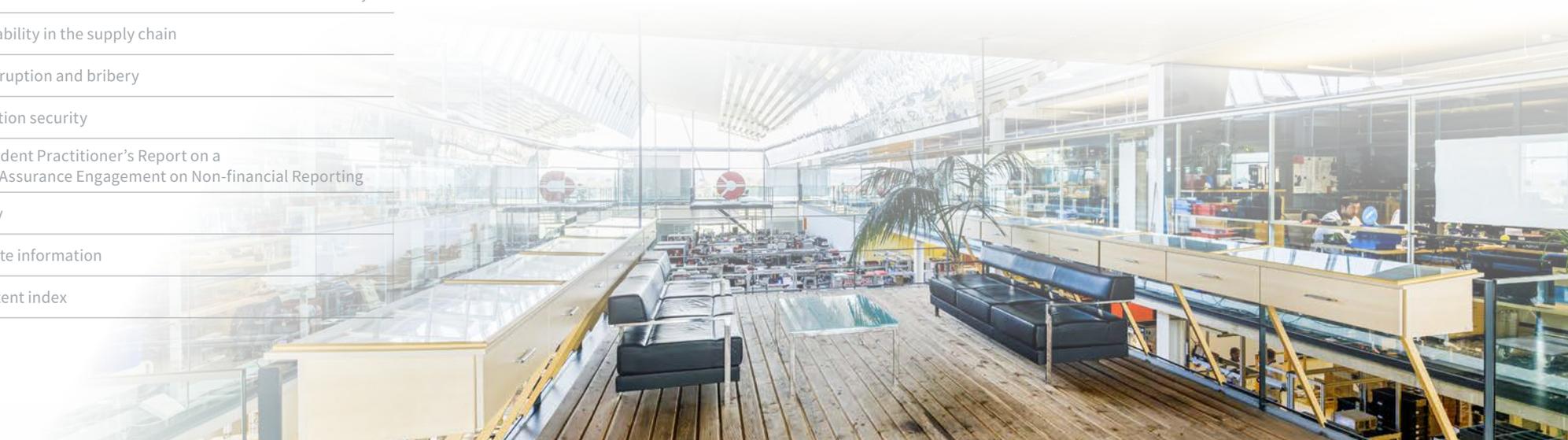
This applies, in continuation of the previous years, to combating corruption and bribery. In accordance with our risk analysis, we consider the corresponding internal and external risks separately and with different target figures.

Another initiative in the supply chain is also in continuation of last year's activities. On the one hand, this is about generally improved communication with the supply chain and, on the other hand, specifically about improved statements on material declarations for the components purchased.

A new addition in 2020 is an initiative in the area of information security. 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.

The initiatives and targets are summarized in the table below.

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
-  Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index



Aspect	Key objectives	Targets in more detail	Key initiatives/activities	Status
Emissions	Decrease of the global ADVA CO ₂ footprint	Three SBTi targets, ISO 50001 reduction target, Two ISO 14001 LCA targets	Stricter SBTi targets for 1.5°C compatibility Achievement of the SBTi targets by 2032 (base year: 2016)	Done Started
		Circular Economy	Preparation of broad-scale CE business	No targets set yet, C-SERVEES project to be finished first
Supply Chain Management	Improving communication with the supply chain, preparing for stricter regulations that also affect the supply chain, e.g. REACH			Increase in the supplier response rate in IntegrityNext Increase in the fill rate of material declarations
		Corruption & Bribery of sales partners	Ensure adherence to ADVA's compliance expectations and mitigation of related risks	Risk-based review of >30 new or already existing sales and service partners per year
Internal Corruption & bribery	Ensuring knowledge and commitment to the content of ADVA's Group Policies			>98% of all employees shall commit to ADVA's Group Policies in written form
		Information security awareness	Ensure awareness of the information security topic	>80% of all employees shall participate in the trainings on IT security in 2020

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities**
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities**
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

Assessments and performance

G102-15, G103-2, G103-3

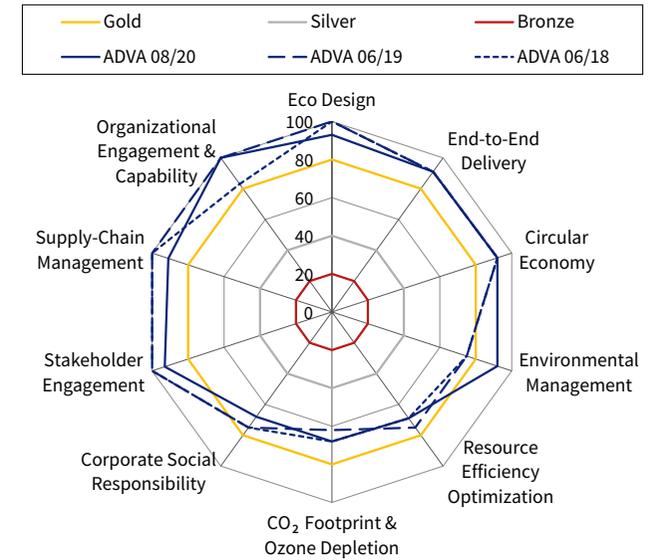
Regular assessments are relevant control mechanism for the management approaches in the material sustainability areas.

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 aspects.

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 **fourth Gold rating** averaged across the segments of the TIA sustainability model. The last three ratings are shown in the following diagram, split into the 10 different segments of the TIA model.



Assessor sustainability ranking results of the last three years

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 therefore should be complemented by more detailed assessments in relevant areas, conducted by global organizations.

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities**
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

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 aspects by EcoVadis. Some of our customers have access to the results on either of the platforms. The number of these customers is also slowly increasing, which shows that CDP and EcoVadis are increasingly playing the role of consolidated global platforms. This is to be regarded as very positive, as it reduces the effort for (largely redundant) proprietary assessments.

In 2020, we achieved our **first EcoVadis Platinum rating**. The assessment areas included environment, labor & human rights, ethics, and sustainable procurement.



In the 2020 **CDP assessment**, we achieved the **C rating** (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 2020 were at C level.

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

<input type="radio"/>	CEO statement
<input type="radio"/>	The two parts of this sustainability report
<input type="radio"/>	Part 1 – ADVA and its context
<input type="radio"/>	Context analysis
<input type="radio"/>	EU Taxonomy Report
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<input type="radio"/>	Anti-corruption and bribery
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<input type="radio"/>	Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
<input type="radio"/>	Glossary
<input type="radio"/>	Corporate information
<input type="radio"/>	GRI content index

ENVIRONMENT AND PRODUCTS: EMISSIONS AND CIRCULAR ECONOMY

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.

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

We regularly re-evaluate this aspects rating, at least once per year, based on own analyses and relevant stakeholders’ input. We change it if required, however, we currently do not expect a downgrade of the high environment-related rating and the focus on emissions.

As highest-priority aspects, they are managed with dedicated processes (e.g., ecodesign guide, portfolio lifecycle assessment) 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 validations (ISO audits, validation of this report) and accompanying internal audits and analyses. Corrective actions are taken in particular in cases of deviations from the KPI 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 2019 regarding the feasibility of committing to even more ambitious SBTi Scope-1 and Scope-2 targets. This was implemented in 2020 and accepted by the SBTi.

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. By changing our SBTi targets to support a maximum of 1.5°C global warming, the measures to reduce electricity emissions will be intensified in the future. This is to be done through a forced increase in the share of renewable energies.

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
-  Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

The sub-matter of products is also systematically pursued at ADVA. This also applies to the aspects of strategy and quality and their effects, especially on emissions.

Poor product strategy or quality has potentially negative effects on the environmental behavior of our products and thus also on the high-priority aspect of emissions. Examples are the potential non-observance of environmental aspects in the strategy or in the quality management system (QMS), with the risk of poor product properties as a result. There is also a connection to emissions in the QMS. In 2020, the Telecommunications Industry Association (TIA) worked on an expansion of the QMS standard TL9000, which in future may also cover emissions. This is expected to be the case from 2021.

Due to the environmental focus, the product aspects strategy and quality were identified as relevant in the materiality analysis. The strategy also basically specifies the degree to which environmental aspects are taken into account within the overall requirements for our products. In the future, the QMS may also be used to track at least certain environmental aspects such as emissions. This starts when these aspects are queried as necessary measurements in TL9000.

Due to the internal division of tasks, the responsibility for product quality lies at the highest governance level with the CTO or the CEO. Both, CTO and CEO are also responsible for product strategy. In addition, both aspects are followed by dedicated departments (QMS) or cross-departmental teams (strategy).

Product quality is subject to a regular management review, which takes place at least once a year and more often if necessary. This issue is followed for the entire group and for all relevant locations as well as for all product lines.

The product strategy is pursued using a proprietary management approach. The team concerned agrees on this in review meetings every quarter. The objectives pursued are long-term sales stability, a corresponding sustainable product portfolio and the expansion of ADVA’s product-related competencies. Accordingly, this team has sales responsibility.

Product quality is guaranteed by two quality assurance standards that build on one another, namely ISO 9001 and TL9000. Both are externally recertified annually. TL9000 also defines quality parameters to be tracked, the so-called TL measurements. The aim here is to be above the TIA average of the respective TL measurements. This average is made available by TIA in anonymized form as a reference. Since the average is constantly improving because of the QMS work of all TIA participants, our target in this regard also changes. Internal audits are also part of the QMS.

Product quality will continue to be checked annually via our Customer Satisfaction Survey (see [there](#)). Since 2018, the result of the survey in terms of product quality has deteriorated slightly. Therefore the improvement of the evaluation of the product quality, as well as the Net Promoter Score, is the focus of the Management Board.

We rate the management approaches for the product aspects strategy and quality as expedient. In recent years, ADVA has become one of the 10 largest system manufacturers for network equipment.

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
-  Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

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 2017, the group submitted its proposals for reduction targets related to the Scopes 1, 2 and 3 of the Greenhouse Gas Protocol (GHGP) to the SBTi for official evaluation and approval. These targets were compatible with the original targets of a maximum of 2°C global warming compared to the pre-industrial state. **These targets were approved in March 2019.**

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. In 2020, we applied for the Scope 1 and Scope 2 targets to be tightened to ensure they are compatible with the new global target of a maximum global warming of 1.5°C. The base year 2016 was retained from the previously existing 2°C targets. **These new targets were accepted by the SBTi in August 2020.**

These new 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 [Carbon emissions](#) chapter), 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 [Energy efficiency, Emissions and the SBTi](#)).

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 data where available for Scope-2 emissions and thus it is based on a mix of market and location methods. 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).

Electricity emission factors for Scope-2 in Germany and England are based on data we got from our electricity suppliers (market based). For all other regions, we mainly use grid factors published by the US EPA's Emission & Generation Resource Integrated Database, the UK Department of Environment, Food and Rural Affairs, and theecoinvent database, respectively (location based).

The globally weighted emission factor for electricity consumed at ADVA sites was **0.403 kgCO₂e/kWh in 2019** (2019: 0.421 kgCO₂e/kWh).

Based on our customer base, a weighted emission factor of **0.359 kgCO₂e/kWh** was used to assess the emissions of the products sold (Scope 3) in 2020 (2019: 0.370 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.

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy**
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

The material ADVA GHG emissions numbers are also summarized in the following table.

Material GHG emissions for 2020 (2019)

GWP [tCO ₂ e]	Category	2020 (2019)
Scope 1	Car fleet DACH*	366 (533)
	Car fleet total	627 (871)
Scope 2	Purchased electricity**	5,151 (5,369)
	Use of sold products	215,315 (242,639)
Scope 3	Production-related purchased goods	36,594 (40,532)

* Only validated for Germany, Austria, and Switzerland (“DACH”).

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

In 2020, car fleet emissions were reduced compared to the previous year. 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 lower in 2020 because of Covid-19 and the greater use of the home office.

Scope 2 emissions were reduced due to improved average emission factor.

Scope 3 emissions from the use of sold products in 2020 were clearly reduced, compared to 2019. This 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. Instead, we address these emissions by respective product ecodesign, which in turn is enabled by our portfolio lifecycle assessment (LCA) efforts, see the [Ecodesign](#) 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 lifecycle assessments.

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

Status of ADVA’s SBTi targets

	2016* Base	2032 Target	2020 Status
	GWP [tCO ₂ e]	[%]	[tCO ₂ e]
Scope 1	1,010	808	-67%
Scope 2	6,003	4,802	-67%
Scope 3	242,383	235,111	-3%

* 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.

Following consultation with the SBTi in connection with the tightening of our SBTi targets, 2017 has now been set as the starting year.

<input type="radio"/>	CEO statement
<input type="radio"/>	The two parts of this sustainability report
<input type="radio"/>	Part 1 – ADVA and its context
<input type="radio"/>	Context analysis
<input type="radio"/>	EU Taxonomy Report
<input type="radio"/>	Stakeholder engagement
<input type="radio"/>	Corporate social responsibility according to GRI
<input type="radio"/>	GRI environmental standards
<input type="radio"/>	Carbon emissions (Scope 1-3)
<input type="radio"/>	End-to-end delivery
<input type="radio"/>	Part 2 – Non-financial report according to HGB
<input type="radio"/>	Summary of our business model
<input type="radio"/>	Material aspects, risks and opportunities
<input checked="" type="radio"/>	Environment and Products: Emissions and circular economy
<input type="radio"/>	Sustainability in the supply chain
<input type="radio"/>	Anti-corruption and bribery
<input type="radio"/>	Information security
<input type="radio"/>	Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
<input type="radio"/>	Glossary
<input type="radio"/>	Corporate information
<input type="radio"/>	GRI content index

Ecodesign: portfolio lifecycle assessment

According to our combined materiality 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 where a **design guide** has been integrated into the product lifecycle process. This guide covers the most relevant environmental product aspects, in particular **energy efficiency** and the **circular-economy aspects** of raw-material intake and recyclability. According to internal process evaluation, the design guide is regarded appropriate and sufficient to ensure the required improvements regarding energy efficiency and circular-economy product design.

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 aspects as well.

Since almost four years, ADVA performs life cycle assessment, which almost covers the entire portfolio. This is done in accordance with ISO 14040/44 with the OpenLCA software and the ecoinvent and GaBi databases.

LCA 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 aspects next relevant after use-phase efficiency. This is particularly important when products are already operated with renewable energy and shall be further improved.

Considering today’s average electricity emission factors, LCA of virtually all our products is 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.

Once the electricity emission factor improved sufficiently, the next relevant product GWP aspects 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 2020, the first target was achieved. ~92% of the commercially relevant total portfolio was covered by LCA.

The LCA confidence-level target was further followed in 2020. Our LCA lead to consistent results for different products that have similar use modes. In addition, at least two external references are known that confirm the relative ratios of the relevant lifecycle phases of our LCA results, and the use-phase dominance. Hence, still no indication was found that would point into the direction of structurally wrong LCA results.

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy**
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

Ecodesign: energy efficiency, emissions and the SBTi

G302-5

The use-phase dominance in LCA in general and GWP in particular is the main guidance for our eco-design. 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 Virtual Network Index (VNI, see [vni-wp.html](#)).

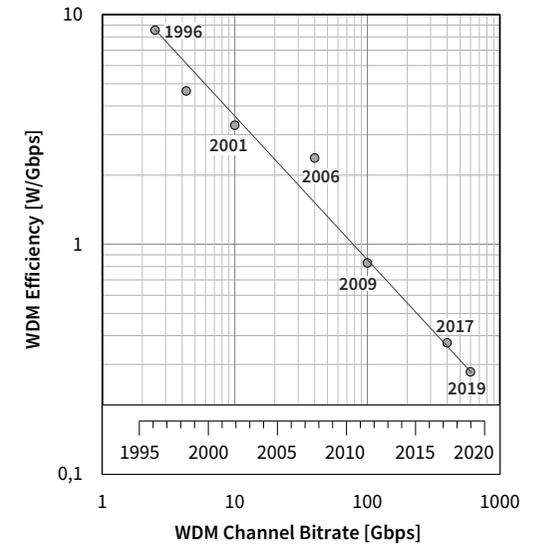
For WDM systems, the increase of bitrate so far has been somewhat faster than the increase of energy-efficiency. This means that WDM system generations *tend to consume increasing power over time*. Therefore, any emissions reductions must be enabled by **highest-possible efficiency supported by improving 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 almost 0.25 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 **green-by-ICT**. Hence, ICT can be regarded as one of the few enablers of decreasing global GHG emissions. According to [GeSI⁹Smarter2030](#), the ICT-enabled GHG abatement is almost 10x higher than the ICT GHG footprint itself.

⁹[Glossary: Page 63](#)

The target for the efficiency of our WDM systems is a value of 0.20 W/Gbps for the year 2022.



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 2019. As indicated by the time scale, the development over time along the curve towards higher bit rates is approximately

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy**
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

Circular economy: circular-economy 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. The main savings are projected to result from an extended lifetime (incl. second life where applicable), parts or components reuse and finally optimized recycling. The latter must avoid downcycling (in the worst case: energy recovery by incineration) with the aim to recover the highest-possible percentage of all precious materials in best-achievable quality and purity. This needs to be supported by respective ecodesign.

In recent years we have implemented take-back, refurbishment and recycling processes, especially in Germany and the UK. In some customer-specific cases, this also includes the return and recycling of third-party devices. We have also developed optimized reverse logistics especially for this purpose for a large customer in the UK.

In addition, there is a process at our site in Meiningen for the analysis, refurbishment, parts reuse, recycling of 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. Depending on the re-use potential, the components are sold back (supplier sale) or put in appropriate stocks for new, refurbished or spare parts.

This process will be increased in personnel in 2021. This is due to increased workload. Amongst others, this results from customers for whom we must guarantee that the data carriers contained in returned devices will be destroyed for reasons of IT security.



- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy**
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

Circular economy: research project C-SERVEES

G102-12

Despite our related efforts, we still do not see large-scale circular economy business. Since we regard the CE concept material according to our [Materiality analysis](#), we decided to join an EU Horizon 2020 research project, **C-SERVEES**. The project aims at boosting CE business in the EEE (electrical & electronic equipment) sector through the development, testing, validation and transfer of new CE business models. These include large demonstrators on the part of the large 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 has a duration of four years. In the first half of 2020, it was extended by six months due to delays attributable to Covid-19. The consortium of the project consists of academia, research institutions, SMEs and three large industrial companies.

In the reporting year, work on our project demonstrator was intensified. This included the development of new types of sensors from an ecodesign perspective. These sensors represent an extension of our ALM product line. They are used to monitor buildings.

The aim is to install a three-digit number of these sensors in a large former industrial plant that is being renovated. From this, knowledge shall be derived as to whether such devices, that have a very long service life of up to several decades due to their installation in a building infrastructure, have CE potential. This is accompanied by studies on suitable business models for such long-lived installations.

Furthermore, we carried out extensive analyses of which CE mechanisms (e.g., remanufacturing) and which CE business models (e.g., product service systems, PSS) are best for ICT devices. These analyses specifically took into account the characteristics of ICT network technology (e.g., long service life). The results were also published at the *Electronics Goes Green 2020+* conference. As an important result of this, it was found among other things that arbitrary lifetime extensions are not useful for the ICT systems under consideration. This is due to the rapid progress made by the successor systems with regard to energy efficiency. Also, not all product service systems appear to be equally suitable. For example, further intensification of shared use, in particular of core network devices, is not possible, since these networks have already been optimized as far as possible with regard to their utilization. This work will be continued within the project term.

Until the conclusion of the C-SERVEES project in October 2022, no targets and key figures on the circular economy will be set and pursued.

SUSTAINABILITY IN THE SUPPLY CHAIN

G102-9, G103-2, G308-1, G407-1, G408-1, G409-1, G414-1

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

G103-1, G103-2, G103-3

We purchase a wide range of products and services, including hardware components for our solutions and expert services to help develop, produce, maintain or even dispose of our products. Accordingly, we have a broad supplier base. That is why we see risks in our supply chain for both, environmental and employee matters.

Aspects in the supply chain are regularly evaluated (e.g., in the risk analysis). The aspect of sustainability in the supply chain in 2020 was again rated as relevant in the materiality analysis. The main aspects here are general communication or ability to communicate on sustainability topics with a broad supply chain as well as their conformity to special aspects such as REACh.

As 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 (see the chapter on [Combating corruption and bribery](#)). Some of these processes are also described in more detail in the following chapter.

Accordingly, different targets 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 by the CTO.

The management approaches are checked at least once a year by 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 reevaluation of the aspects. This includes root-cause analyses (if targets 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. The aim 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. IntegrityNext essentially consists of two different modules. On the one hand, there is a tailored assessment module. This includes important questions for ADVA and can be expanded if necessary. Second, the tool includes the worldwide screening of a seven-digit number of Internet posts. The latter are filtered and correlated so that early warning, e.g., of serious compliance violations, can be guaranteed with a high level of security. In 2020, the number of product-related material suppliers recorded by IntegrityNext increased significantly. At the end of the year, 74% of the suppliers were recorded. This covered 96% of the purchasing volume. 100% of the product-related suppliers are tracked by the social media monitoring.

The processes and measures described here apply company-wide and for the entire supply chain. A certain focus is 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.

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

<input type="radio"/>	CEO statement
<input type="radio"/>	The two parts of this sustainability report
<input type="radio"/>	Part 1 – ADVA and its context
<input type="radio"/>	Context analysis
<input type="radio"/>	EU Taxonomy Report
<input type="radio"/>	Stakeholder engagement
<input type="radio"/>	Corporate social responsibility according to GRI
<input type="radio"/>	GRI environmental standards
<input type="radio"/>	Carbon emissions (Scope 1-3)
<input type="radio"/>	End-to-end delivery
<input type="radio"/>	Part 2 – Non-financial report according to HGB
<input type="radio"/>	Summary of our business model
<input type="radio"/>	Material aspects, risks and opportunities
<input type="radio"/>	Environment and Products: Emissions and circular economy
<input checked="" type="radio"/>	Sustainability in the supply chain
<input type="radio"/>	Anti-corruption and bribery
<input type="radio"/>	Information security
<input type="radio"/>	Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
<input type="radio"/>	Glossary
<input type="radio"/>	Corporate information
<input type="radio"/>	GRI content index

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 issues for our suppliers and is modeled on the framework of the Responsible Business Alliance (RBA, formerly EICC[®]). We do not tolerate any form of forced or compulsory labor.

[®][Glossary: Page 63](#)

A complete revision of the Supplier Code of Conduct took place in 2020. The topic of information security was added.

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. Due to Covid-19 and the corresponding travel restrictions, no on-site audits were carried out in 2020. 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. In the course of 2019, we began implementing specific software in order to be able to better scale this risk assessment and further improve its content.

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 2020, no suppliers were re-audited on site against sustainability aspects. This is due to Covid-19 and the corresponding travel restrictions.

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 <https://www.adva.com/en/about-us/sustainability.com>.

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

REACH and other component aspects

In 2019, we decided to intensify the work in the area of material declarations for the components we use. This was one of the clear recommendations that we extracted from our collaboration in the Fraunhofer Experts Forum. Material declarations indicate the respective weight percentage 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 components LCAs if, e.g., there are no data records in the databases (GaBi, ecoinvent) for certain components.

At the end of 2020, the coverage of the purchased components with material declarations was at 63%. Our **target** is to increase the filling rate of material declarations and to keep it at a high level despite fluctuations in the components. We consider this to be useful especially with regard to upcoming REACH regulations, which are expected to become more stringent in the next few years.

This goal has not yet been achieved in 2020. The reason for this is that the corresponding activities were only intensified in the course of 2019. We expect the percentage to increase over the next few years and eventually reach the intended high rate. We consider the current rate of material declarations to be uncritical, as no stricter REACH regulations have been announced in the short term.

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
-  Anti-corruption and bribery
- Information security
- Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

ANTI-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 classified as material. The same applies to corruption and bribery on the part of certain business partners.

In 2020, both the Group Code of Conduct and the Supplier Code were revised in terms of content.

The group’s **compliance management system (CMS)** is supported by a central compliance department located in Munich, Germany, and six regional compliance officers (RCO/-s) 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 chief executive officer 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 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.

Apart from non-disclosure agreements (NDAs), ADVA’s aim is not to 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.

<input type="radio"/>	CEO statement
<input type="radio"/>	The two parts of this sustainability report
<input type="radio"/>	Part 1 – ADVA and its context
<input type="radio"/>	Context analysis
<input type="radio"/>	EU Taxonomy Report
<input type="radio"/>	Stakeholder engagement
<input type="radio"/>	Corporate social responsibility according to GRI
<input type="radio"/>	GRI environmental standards
<input type="radio"/>	Carbon emissions (Scope 1-3)
<input type="radio"/>	End-to-end delivery
<input type="radio"/>	Part 2 – Non-financial report according to HGB
<input type="radio"/>	Summary of our business model
<input type="radio"/>	Material aspects, risks and opportunities
<input type="radio"/>	Environment and Products: Emissions and circular economy
<input type="radio"/>	Sustainability in the supply chain
<input checked="" type="radio"/>	Anti-corruption and bribery
<input type="radio"/>	Information security
<input type="radio"/>	Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
<input type="radio"/>	Glossary
<input type="radio"/>	Corporate information
<input type="radio"/>	GRI content index

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 95% 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 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.

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.

In 2020, new software in the area of employee management was introduced due to compliance requirements with the General Data Protection Regulation.

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 50 new and existing business partners went through the due diligence process in the reporting period.

In 2020, this resulted in one business partner rejected due to compliance risks (2019: 0).

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 and obligations 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 life cycle, 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.

The aspect of information security is new under ADVA's material aspects and was derived from the 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.

In accordance with the increased relevance, a restructuring with corresponding responsibility was created at the end of 2019 for the topic of information security. This includes the responsibility at the highest company level with the CFO.

The new structure enabled the expansion of measures in all relevant business processes and our product life cycle and thus to improve the entire information security management system (ISMS). This development was not yet completed in 2020 and further requires continuous work on organizational and technical measures. These include, for example, further training sessions.

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 now 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 not yet announced.

As an area that is given a greatly improved process landscape, the definition of suitable goals and key figures has not yet been completed. A target for employees to participate in the awareness campaign has therefore been defined for 2020. In 2021 we will keep this awareness of employees as a goal and dedicate ourselves to improvements in the infrastructure, our data security and the area of secure development processes. This work started in 2020, amongst others, with the replacement of the software for personnel management, as the old software did not meet the requirements of the GDPR (General Data Protection Regulation).

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 the same risks.

In 2020, there were no significant incidents in the area of information security. However, due to increasingly higher-weighted risks in the area of information security, the new structure described was created.

In summary, we consider the start of the new management approach in the area of information security in 2020 as positive. 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.

- CEO statement
- The two parts of this sustainability report
- Part 1 – ADVA and its context
- Context analysis
- EU Taxonomy Report
- Stakeholder engagement
- Corporate social responsibility according to GRI
- GRI environmental standards
- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
- Summary of our business model
- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
- Anti-corruption and bribery
- Information security
- Independent Practitioner's Report on a Limited Assurance Engagement on Non-financial Reporting
- Glossary
- Corporate information
- GRI content index

- CEO statement
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- Carbon emissions (Scope 1-3)
- End-to-end delivery
- Part 2 – Non-financial report according to HGB
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- Material aspects, risks and opportunities
- Environment and Products: Emissions and circular economy
- Sustainability in the supply chain
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- Glossary
- Corporate information
- GRI content index

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.

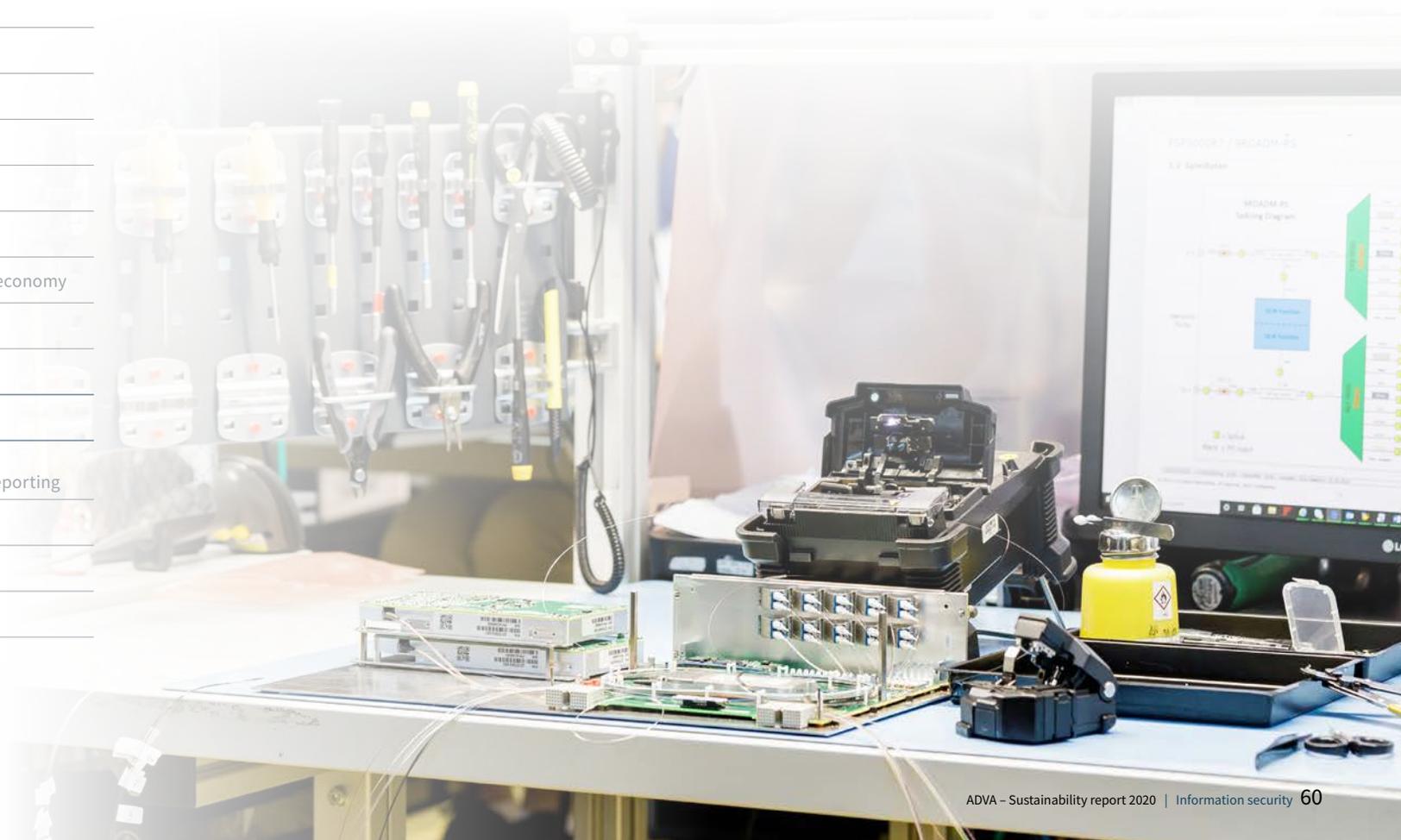
The campaign consisted of a series of animated training courses that also included basic comprehension queries. The goal of regular participation of 80% of all employees by 2021 was defined. In 2020, >70% of all employees attended at least one of the 9 available courses.

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 level 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.



COPY OF THE INDEPENDENT PRACTITIONER'S REPORT ON A LIMITED ASSURANCE ENGAGEMENT ON NONFINANCIAL REPORTING*

To ADVA Optical Networking SE, Martinsried/München

We have performed a limited assurance engagement on the separate non-financial group report pursuant to § (Article) 315b Abs. (paragraph) 3 HGB (“Handelsgesetzbuch”: “German Commercial Code”) of ADVA Optical Networking SE, Martinsried/München, (hereinafter the “Company”) for the period from 1 January to 31 December 2020 (hereinafter the “Non-financial Report”).

Responsibilities of the Executive Directors

The executive directors of the Company are responsible for the preparation of the Non-financial Report in accordance with §§ 315c in conjunction with 289c to 289e HGB.

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

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.

Practitioner’s Responsibility

Our responsibility is to express a limited assurance conclusion on the Non-financial Report based on the assurance engagement we have performed.

Within the scope of our engagement, we did not perform an audit on external sources of information or expert opinions, referred to in the Non-financial Report.

We conducted our assurance engagement in accordance with the 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 allow us to conclude with limited assurance that nothing has come to our attention that causes us to believe that the Company’s Non-financial Report for the period from 1 January to 31 December 2020 has not been prepared, in all material aspects, in accordance with §§ 315c in conjunction with 289c to 289e HGB.

* PricewaterhouseCoopers GmbH has performed a limited assurance engagement on the German version of the separate non-financial group report and issued an independent assurance report in German language, which is authoritative. The following text is a translation of the independent practitioner’s report.

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<input type="radio"/>	Part 1 – ADVA and its context
<input type="radio"/>	Context analysis
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<input type="radio"/>	Corporate information
<input type="radio"/>	GRI content index

In a limited assurance engagement, the assurance procedures are less in extent than for a reasonable assurance engagement, and therefore a substantially lower level of assurance is obtained. The assurance procedures selected depend on the practitioner's judgment.

Within the scope of our assurance engagement, we performed amongst others the following assurance procedures and further activities:

- Obtaining an understanding of the structure of the sustainability organization and of the stakeholder engagement
- Inquiries of the Company's management and personnel involved in the preparation of the Non-financial Report regarding the preparation process, the internal control system relating to this process and selected disclosures in the Non-financial Report
- Identification of the likely risks of material misstatement of the Non-financial Report
- Analytical evaluation of selected disclosures in the Non-financial 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 non-financial information

Assurance Conclusion

Based on the assurance procedures performed and assurance evidence obtained, nothing has come to our attention that causes us to believe that the Company's Non-financial Report for the period from 1 January to 31 December 2020 has not been prepared, in all material aspects, in accordance with §§ 315c in conjunction with 289c to 289e HGB.

Intended Use of the Assurance Report

We issue this report on the basis of the engagement agreed with the Company. The assurance engagement has been performed for purposes of the Company and the report is solely intended to inform the Company about the results of the limited assurance engagement.

The report is not intended for any third parties to base any (financial) decision thereon. Our responsibility lies only with the Company. We do not assume any responsibility towards third parties.

München, 23 February 2021

PricewaterhouseCoopers GmbH
Wirtschaftsprüfungsgesellschaft

Hendrik Fink
Wirtschaftsprüfer
[German public auditor]

ppa. Nico Irrgang

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<input type="radio"/>	Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
	Glossary
<input type="radio"/>	Corporate information
<input type="radio"/>	GRI content index

GLOSSARY

E

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).

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.

GEVA (GHG emissions per unit of value added)

GEVA is one way of defining intensity metrics for emissions, i.e., metrics that account for company growth. It is one of the metrics that are accepted by the SBTi. You can find out more online here: sciencedirect.com/science/article/pii/S0301421512003461.

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 issues such as climate change, human rights, corruption and many others.

I

ISO 14001

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

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

ISO 50001

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.

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<input type="radio"/> Anti-corruption and bribery
<input type="radio"/> Information security
<input type="radio"/> Independent Practitioner’s Report on a Limited Assurance Engagement on Non-financial Reporting
 Glossary
<input type="radio"/> Corporate information
<input type="radio"/> GRI content index

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](#) 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



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 at the improvement of collection, treatment and recycling of electronics at the end of their life. Amongst others, it features the wheelee bin.

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<input type="radio"/>	GRI content index

CORPORATE INFORMATION

G102-3

Corporate headquarters

ADVA Optical Networking SE
 Campus Martinsried
 Fraunhoferstraße 9a
 82152 Martinsried/Munich
 Germany

t +49 89 890 665 0

Registered head office

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 98617 Meiningen-Dreissigacker
 Germany

t +49 3693 450 0

Americas office

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 5755 Peachtree Industrial Boulevard
 Norcross, Georgia 30092
 USA

t +1 678 728 8600

Asia-Pacific office

ADVA Optical Networking (Shenzhen) Ltd.
 18/F, Maoye Times Square
 Haide 2nd Road
 Nanshan District
 Shenzhen
 P.R. 518054
 China

t +86 755 8621 7400

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 <https://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	For further information: https://www.adva.com/en/about-us
	102-3	Location of headquarters	
	102-4	Location of operations	
	102-5	Ownership and legal form	ADVA Optical Networking SE is a European stock corporation (“Societas Europaea”)
	102-6	Markets served	SR20: 35 AR20: 24, 42
102	102-7	Scale of the organization	NB20: 5, 21ff AR20: 42, 46
	102-8	Information on employees and other workers	21ff
	102-9	Supply chain	SR20: 54 AR20: 33f
	102-10	Significant changes to the organization and its supply chain	No significant changes
	102-11	Precautionary Principle or approach	13, 36f, 40f
	102-12	External initiatives	19, 53
	102-13	Membership of associations	19
Strategy			
102	102-14	Statement from senior decision-maker	3
	102-15	Key impacts, risks, and opportunities	NB20: 36ff, 42f AR20: 57ff
Ethics and integrity			
102	102-16	Values, principles, standards, and norms of behavior	9
	102-17	Mechanisms for advice and concerns about ethics	57
Governance			
	102-18	Governance structure	NB20: 8, 10 AR20: 13ff
102	102-19	Delegating authority	8, 10
	102-20	Executive-level responsibility for economic, environmental, and social topics	8, 10
	102-21	Consulting stakeholders on economic, environmental, and social topics	8, 13, 16
	102-22	Composition of the highest governance body and its committees	AR20: 13ff

GRI	Disclosure	Reference	Comments
102-23	Chair of the highest governance body	AR20: 13ff	
102-24	Nominating and selecting the highest governance body	8	
102-25	Conflicts of interest	8	
102-26	Role of highest governance body in setting purpose, values, and strategy	8	
102-27	Collective knowledge of highest governance body	8	Collective knowledge is also maintained via feedback by the department leaders.
102-28	Evaluating the highest governance body's performance	8	
102-29	Identifying and managing economic, environmental, and social impacts	8, 10, 13	
102-30	Effectiveness of risk management processes	NB20: 8 AR20: 57ff	
102-31	Review of economic, environmental, and social topics	8, 13, 18	
102-32	Highest governance body's role in sustainability reporting	8, 10	
102-33	Communicating critical concerns	8	
102-34	Nature and total number of critical concerns	NB20: 36 AR20: 59	
102-35	Remuneration policies	AR20: 54ff	
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 in 2020 was 8.6 (2019: 8.6).
102-39	Percentage increase in annual total compensation ratio		The percentage decrease was 10.4% (compare 102-38 for 2020 and 2019)
Stakeholder engagement			
102-40	List of stakeholder groups	13, 16	
102-41	Collective bargaining agreements		0%
102-42	Identifying and selecting stakeholders	13, 16	
102-43	Approach to stakeholder engagement	13, 18, 19	
102-44	Key topics and concerns raised	18, 19, 40	
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	34	
102-47	List of material topics	40ff	
102-48	Restatements of information		Scope-1/2 data is not normalized to value added (GEVA) anymore
102-49	Changes in reporting	34	Validated non-financial report acc. to HGB now as Part 2 of this Sustainability Report

GRI	Disclosure	Reference	Comments	
102	102-50	Reporting period	34	From January 1, 2020 to December 31, 2020
	102-51	Date of most recent report	34	Last report, Sustainability report 2019, was published in February 2020.
	102-52	Reporting cycle	34	Annual
	102-53	Contact point for questions regarding the report	5	
	102-54	Claims of reporting in accordance with the GRI Standards	34	This report has been prepared in accordance with the GRI Standards: Comprehensive.
	102-55	GRI content index	66ff	
	102-56	External assurance	34	
GRI 200: Economic				
Economic performance				
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 AR20
	201-1	Direct economic value generated and distributed	AR20: 43	
	201-2	Financial implications and other risks and opportunities due to climate change	NB20: 36f AR20: 59	
	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	AR20: 98, 104	
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 AR20
	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	AR20: 43	
	202-2	Proportion of senior management hired from the local community	AR20: 59	
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 AR20
	203-1	Infrastructure investments and services supported		ADVA is one of the largest employers in Meiningen, Germany.
	203-2	Significant indirect economic impacts	16	
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		Please refer to the chapters <i>Business overview</i> and <i>Risk report</i> in AR20
	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	11, 40, 57	
	205-1	Operations assessed for risks related to corruption	AR20: 57ff	All significant operations are regularly assessed.
	205-2	Communication and training about anti-corruption policies and procedures	57	
	205-3	Confirmed incidents of corruption and actions taken		No confirmed incidents of corruption have occurred in 2020.

GRI	Disclosure	Reference	Comments
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	40f, 57
	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	57 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.
GRI 300: Environmental			
Materials			
300	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	11f, 40f, 46
	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	33, 52
	301-3	Reclaimed products and their packaging materials	33, 52
Energy			
300	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	9, 11f, 40f, 46
	302-1	Energy consumption within the organization	28ff
	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 GRI102-48
	302-4	Reduction of energy consumption	26f
	302-5	Reductions in energy requirements of products and services	51, 30
Emissions			
300	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	11, 13f, 40f, 46
	305-1	Direct (Scope 1) GHG emissions	30, 48
	305-2	Energy indirect (Scope 2) GHG emissions	30, 48
	305-3	Other indirect (Scope 3) GHG emissions	30, 34f, 48
	305-4	GHG emissions intensity	ADVA shows absolute energy consumption, see GRI102-48
	305-5	Reduction of GHG emissions	30, 48
	305-6	Emissions of ozone-depleting substances (ODS)	28 None
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	28
Effluents and waste			
300	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	13f, 40f, 46
	306-1	Waste generation and significant waste-related impacts	28
	306-2	Management of significant waste-related impacts	28
	306-3	Waste generated	28 None
	306-4	Waste diverted from disposal	28
	306-5	Waste directed to disposal	28 None

GRI	Disclosure	Reference	Comments
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	13f, 40f, 46
	307-1	Non-compliance with environmental laws and regulations	28
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	54
	308-1	New suppliers that were screened using environmental criteria	16, 54
	308-2	Negative environmental impacts in the supply chain and actions taken	No specific occurrences.
GRI 400: Social			
Employment			
400	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	13f, 20
	401-1	New employee hires and employee turnover	21
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	25
	401-3	Parental leave	68 employees took parental leave. 54 employees returned to work after parental leave ended.
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	13f, 20
	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	13f, 20
	403-1	Workers representation in formal joint management-worker health and safety committees	25f
	403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	25f
	403-3	Workers with high incidence or high risk of diseases related to their occupation	25f
	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	20
	404-1	Average hours of training per year per employee	23
	404-2	Programs for upgrading employee skills and transition assistance programs	23
	404-3	Percentage of employees receiving regular performance and career development reviews	100%

GRI	Disclosure	Reference	Comments
Diversity and equal opportunity			
	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	13f, 20
400	405-1	Diversity of governance bodies and employees	21, 24
	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.
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	20, 40f
	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	20
	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	54 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	20
	408-1	Operations and suppliers at significant risk for incidents of child labor	54 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	20
	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	54 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	40f
	413-1	Operations with local community engagement, impact assessments, and development programs	24, 27
	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	40f, 54f
	414-1	New suppliers that were screened using social criteria	54
	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	57
	415-1	Political contributions	57 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	59
	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	In 2020, 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	57
	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.
SR20: Sustainability report 2020			
AR20: Annual report 2020			