ADVA™

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

Kenneth Boulding

Sustainability report 2019

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CEO statement

G102-14

Social and environmental practices are important to ADVA Optical Networking because they support sustainable success for our business partners, our company, our children and most importantly our planet, helping to maintain a healthy quality of life well into our future.

In 2019, we continued improving various areas of our holistic sustainability approach. Given the group's size, it might seem implausible that we can make a difference. However, we are doing just that, which also helps our customers and other stakeholders.

Since our products drive our environmental impact through their long-life use, we are continuously innovating – creating better, smaller and more efficient products with reduced carbon footprint. In 2019, the related products use-phase emissions reduction became one of our targets officially approved by the Science Based Targets initiative.

The next steps, again approved by the Science Based Targets initiative, will tackle our own sites' emissions. This goes hand in hand with our ISO 50001:2011 activities.

To be clear, this engagement is not fully altruistic. Of course, we are focusing on increasing revenues and building profits. Our goal is enduring business success. Over the long run, sustainable practices are the only way to save resources and reduce many of the related cost.

I take full responsibility for driving ADVA forward with a balanced focus on the Triple Bottom Line. We design, produce and sell the best technology. Our solutions are transforming our customers' networks, and consequently our societies' digital landscape. We also understand business success is not just about making the best technology. To realize true leadership, we take the extra steps along the way to ensure our business success is enduring and we support the success of our people and the wellbeing of our natural world.

This just makes sense – good business that results in the greater good for our world and our business partners.

Brian Protiva
Chief Executive Officer

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The three parts of this sustainability report

The sustainability report at hand is divided into three different parts. In Part 1, the reader is introduced to ADVA Optical Networking and its context.

Subsequently, Part 2 covers a separate non-financial company report in accordance with the German Commercial Code (HGB) according to section § 315b paragraph 3. It is referred to hereinafter as "non-financial report". It is compiled in accordance with §§ 315b and 315c, in conjunction with 289c to 289e HGB and aims at meeting the obligations of the German CSR Directive Implementation Act. It is subject to voluntary, limited assurance audit according to ISAE 3000 (Revised). Only the non-financial report in Part 2 of this sustainability report is subject to the audit, Parts 1 and 3 are not part of the non-financial report and not part of the audit.

Finally, Part 3 provides further details on Sustainability Reporting Standards of the Global Reporting Initiative (GRI Standards 2016). Similar to Part 1, this refers to aspects that were not identified as material according to the HGB definition but are required according to GRI Standards and the Option "Comprehensive".

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At the end of the sustainability report, a table with all reported GRI indices and the related page links can be found.

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Part 1 – ADVA Optical Networking and its context

About ADVA Optical Networking

Company key facts

G102-3, G102-4, G102-7, G102-53

Global presence

The group operates in 24 countries with 36 sites. ADVA has significant operations in Germany, Poland, UK, USA, Israel and China. At year end 2019 (December 31), 1,903 employees were employed worldwide.

For our global presence, please see the picture below.

Quality and environmental commitment

ADVA is certified according to TL 9000:R6.1/R5.6, ISO 9001:2015, ISO 14001:2015, ISO 22301:2012 and ISO 50001:2011. We also perform our product-portfolio lifecycle assessments (LCA) in accordance with ISO 14040/14044.

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Public listing

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

You can find more about ADVA in our Annual report 2019.

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

Global presence of ADVA Optical Networking

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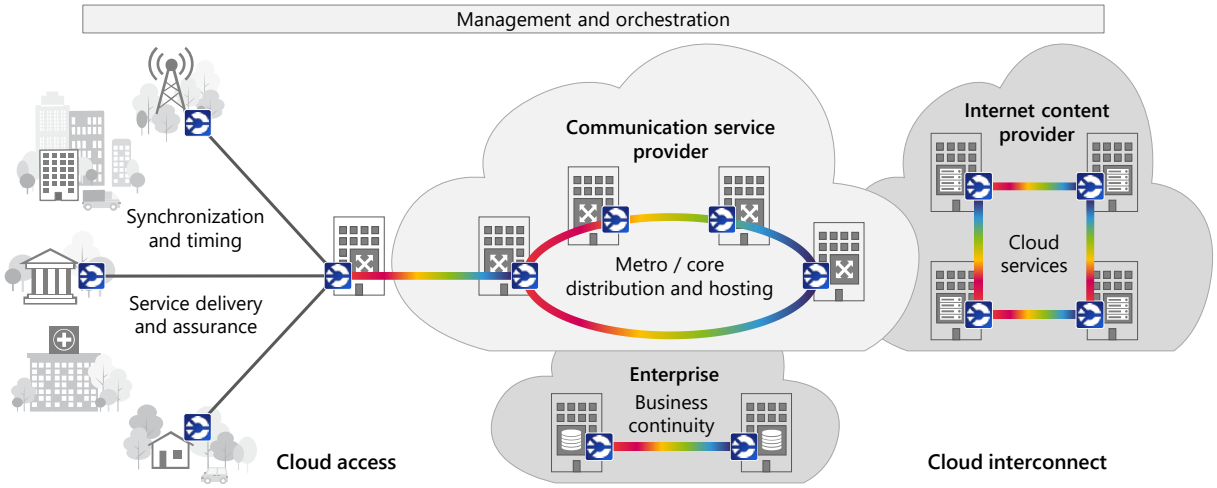
Technology

G102-2

ADVA develops, manufactures and sells solutions for a modern telecommunications infrastructure. This comprises fiber-optic transmission technology, Ethernet access technology and solutions for network virtualization. We further offer solutions for network synchronization and monitoring, and the required software to operate our products and the related networks.

Fiber-optic transport

Optical fiber is the optimum physical medium to transmit large amounts of data over long distances. The bandwidth-over-distance capabilities of fiber by far exceed those of any other physical medium such as copper or wireless technologies. Therefore, fiber-optic transport is the unchallenged foundation for all high-speed networks. ADVA's optical transmission solutions are based on WDM (wavelength division multiplexing). With WDM, multiple data streams are transmitted simultaneously over a single pair of optical fibers by modulating, per direction, each stream onto an individual wavelength (i.e., color) of laser light. Every wavelength (more than 100 in total) carries different applications such as voice, video, data or storage traffic. Combining (i.e., multiplexing) these wavelengths at one end of the fiber, transmitting them over distance and then separating (i.e., de-multiplexing) them at the far end maximizes the fibers' capacity and makes transmission more efficient. WDM supports all data protocols and transmission speeds and is the natural foundation for all high-capacity networks.



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Ethernet

Ethernet is the dominant OSI-Stack Layer-2 data-link protocol for today's networks, supporting virtually all communication applications. ADVA Optical Networking 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.

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). 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.

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IT security

Requirements regarding IT security – in particular 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 Optical Networking 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 Optical Networking can offer cost-effective and unique solutions that help our customers in not losing the view on their valuable passive fiber assets.

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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.

Critical concerns are communicated immediately (department leads to management board, management board to supervisory board). In 2019, no critical concerns requiring immediate communication were identified. Details hereto including the applicable processes and mechanisms are as outlined in the risk report in the Annual report.

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Sustainability organization

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

ADVA Optical Networking 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.

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 Sustainability Initiative, with a dedicated focus on work in the TIA GHG subteam.

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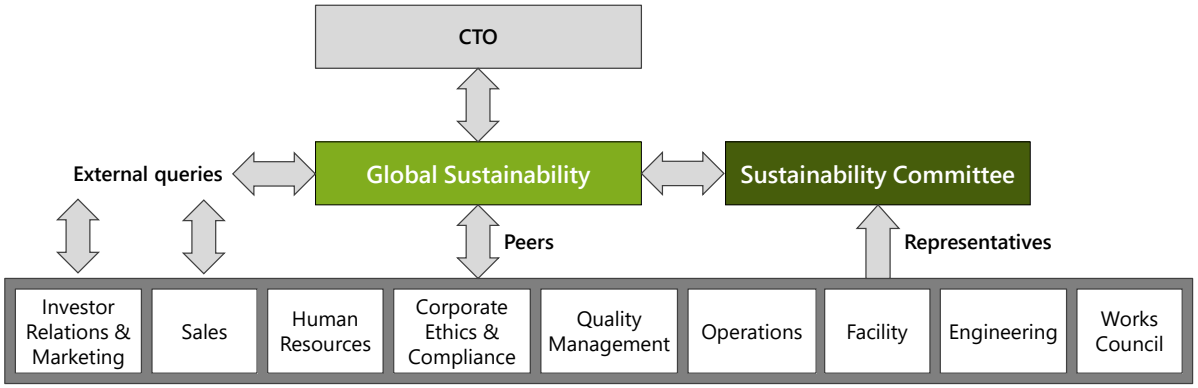
In addition, the **sustainability committee** has an advisory capacity on certain aspects and questions regarding sustainability. For example, it meets on demand when decisions on proposals that have been submitted in our Global Sustainability Challenge (see the CSR chapter in Part 3) are due.

The sustainability-related organizational structure is shown below.



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Context analysis

ICT and its environmental impact

G103-1

ADVA products are part of the global Internet, or ICT sector. As such, they are part of a sector that contributes approximately 2% to the global greenhouse gas (GHG) emissions. On the other hand, this same sector constitutes one of today's critical infrastructures that allows global communication and in addition enables GHG emissions abatement that is potentially more than 10 times higher than its own emissions. This is sometimes referred to as **Green-by-ICT**. It is one of the few known ways of substantially reducing global energy consumption and related emissions.

The global ICT sector can be split into three areas: data centers, networks, and end-user devices. The networks segment in turn splits into two approximately equally large parts, wireline and wireless networks. All ADVA products fall into the wireline networks category.

The relative and absolute environmental impact of the networks segment in terms of its electricity consumption can be derived from the following picture. It shows the consumption for Germany, but the development is applicable to the global ICT sector. The networks segment's consumption is predicted to grow significantly over the next couple of years, with growth rates of 6 to 8% per year. Even with emission factors improving in the period considered here, ICT emissions will grow. This is also confirmed by other relevant references like the Global e-Sustainability Initiative (GeSI). It leads to the requirement of continuous improvement of network equipment with regard to emissions and is one of the main reasons for our focus on related product ecodesign and for the group's SBTi participation.

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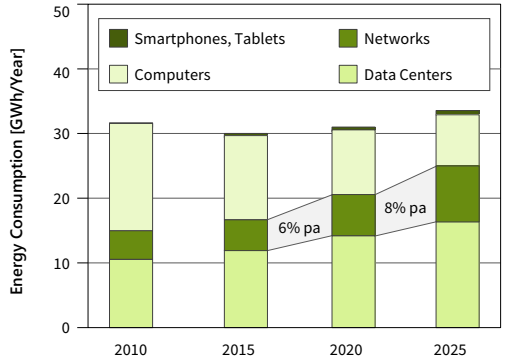
From the diagram and other references like the Cisco Virtual Network Index, a **fundamental problem of the ICT network sector** can be derived: despite all efforts regarding equipment efficiency, the energy consumption and the related carbon emissions are increasing. This is caused by the development of the ICT bitrates (or network throughput), which shows exponential growth behavior. This exponential growth is also predicted to sustain for the next couple of years. As a result, it is difficult to achieve absolute emissions reductions in this sector (exactly this is shown in the diagram).



ICT energy-consumption projections for Germany [Hintemann et al., Electronics Goes Green 2016+, Berlin, September 2016]

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 this sub-segment is <1%.

According to comprehensive GHG reporting and lifecycle assessment, energy consumption and the related emissions are ICT's primary environmental impact. However, there are other, less important impacts. Examples include resource depletion, (eco-) toxicity and some more.

Finally, and more related to corporate social responsibility, there are aspects of labor, health and safety, and conflict minerals. Together, all of these mandate a holistic approach to sustainability in ICT.

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ADVA impact and ISO context

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

Impact and context analysis

Determining the context of the company is required for the new versions of the ISO standards. Context analyses aim at identifying relevant stakeholders as well as areas of relevant impact on the group, or where the group does have a relevant impact on. For the environmental and energy management systems, it has to consider the relevant environmental aspects as well as other relevant external and internal aspects.

In general, **interested parties and the related interactions and input** that need to be considered include (this list is fairly comprehensive, but can of course always be complemented):

- 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
  - MuT award, Meilenstein award, two CSR awards we won in Germany in 2017 and 2018
  - British Telecom Game-Changing Challenge, which we won in 2014 and also in 2018
  - Other, earlier awards (from QuEST Forum, Layer123, and strategic customers)

For the context analysis, we use the United Nations **Sustainable Development Goals** (SDGs) as the most relevant and general set of sustainability-related aspects defined today. Within the SDGs, environmental aspects are complemented by labor, human-rights, infrastructure, and business aspects. Therefore, the SDGs also cover most areas considered by the GRI indices and also the majority of the standard HGB matters.

The 17 SDGs are meant to address global challenges, including those related to poverty, inequality, climate, environmental degradation, prosperity, and peace and justice. The SDGs may be well questioned since they do not explicitly address the most relevant of all problems and possibly the root cause of all other problems – global population growth. However, no other set of comparable goals exist, and therefore we use the SDGs for our context analysis.

The SDGs are sub-divided into **169 more specific targets.** A meaningful context analysis must consider the relevant targets instead of the high-level goals since some of the goals may sound misleading. Therefore, we performed a two-stage analysis. In the first stage, we agreed on relevant targets. Many of the 169 targets can be discarded quickly since they obviously refer to governments and other types of entities, not companies like ADVA. Some other targets describe aspects not influenced by and without clear influence on ADVA. The remaining targets comprise the short list relevant for and subject to our analysis. This list comprises less than 40 targets.

Similar to the materiality analysis in Part 2, the context analysis is updated on a yearly basis. It is discussed and reviewed with the key ADVA-internal stakeholders and presented to and agreed by a management review meeting.

The identified shortlist of targets in 2019 is shown in the following table.

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SDG shortlist of targets for context analysis 2019

Target	Short description
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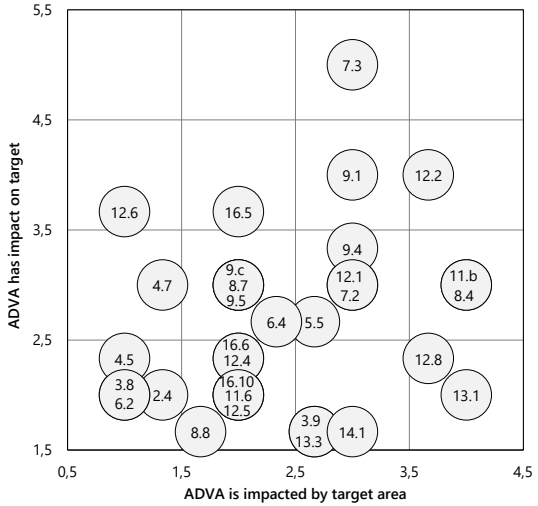
3.8	Essential health-care services
3.9	Reduce … hazardous chemicals in air, water and soil
4.5	Diversity and equal access in education
4.7	Knowledge needed for sustainable development
5.5	Women in leadership
6.2	Access to sanitation
6.3	Minimizing release of hazardous chemicals
6.4	Efficient water use
7.2	Substantial increase of renewable energy
7.3	Improve energy efficiency
8.4	Decouple economic growth from environmental degradation
8.7	End modern slavery
8.8	H&S (including supply chain)
9.1	Sustainable and resilient infrastructure
9.4	Upgrade and retrofit infrastructures and industries
9.5	Public and private R&D spending
9.c	Access to ICT
11.6	Air quality, waste management
11.b	Disaster risk management (cities)
12.1	Sustainable consumption and production
12.2	Resource efficiency
12.4	Lifecycle management of waste and chemicals
12.5	Waste reduction (prevention, recycling, reuse)
12.6	Sustainability reporting
12.8	Awareness for sustainable development
13.1	Resilience against climate-related hazards
13.3	Education, awareness on climate change
14.1	Reduce marine pollution from land-based activities
16.5	Reduce corruption and bribery
16.6	Accountable and transparent institutions
16.10	Public access to information

The context analysis against the identified shortlist of targets is shown in the following diagram. The numbers in the diagram refer to specific targets according to the table on the left. Note that we display the context analysis as the level of impact that ADVA has on the targets vs. the level that ADVA is impacted by the respective target area. The former tends to be positive impact or opportunities, the latter is more related to negative impact or risk.



Context analysis against SDG targets. Note the diagram boundaries.

In terms of impact on ADVA, target areas with highest risk are those related to climate hazards and the decoupling of economic growth and environmental hazards. Both obviously relate to global warming. They are ranked with potentially highest impact due to the incalculable risks in case global warming cannot be limited to an increase of 2°C (preferable 1.5°C) compared to the pre-industrial state.

Regarding ADVA's impact, energy efficiency stands out. This relates to our products, which clearly are the area where we can make the biggest positive contribution. Next relevant target areas are resource efficiency and sustainable infrastructure. The latter becomes clear when considering that ADVA is an ICT infrastructure vendor.

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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 SBTi participation and targets.

Next to global warming (but with a clear gap), environmental impact aspects include resource depletion, water usage and pollution, waste generation and treatment, and hazardous chemicals. **These are impact categories that are also considered in our portfolio-wide lifecycle assessments.** In addition, waste treatment is considered in our carbon reporting. Therefore, all relevant environmental impacts are considered in at least one way of tracking. From the rating in particular of emissions and global warming, conclusions can be drawn for the ISO management systems and the group's related actions and strategy.

Note that the context analysis also comprises target areas related to human rights and combating corruption and bribery.

Regarding **ISO 14001:2015**, 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[Q], cardboard) are separated and recycled. The latter can be derived from the Environmental management chapter.

[Q]Glossar: *Page 54*

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.

Instead, it is clear that the group's impact is dominated by global warming. Therefore, ADVA follows ISO 14001:2015 in principle, but we apply different priorities for its various aspects.

This prioritization also has an impact on the related targets and performance indicators. With the exception of the area of LCA, no quantitative targets are defined for the Environmental Management System (EMS). LCA, which is considered under ISO 14001:2015, is material for the Scope-3 SBTi targets. 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 50001:2011 activities completely overlap with our SBTi Scope-2 target and as such, with one of the relevant carbon-emissions areas. This means that ISO 50001:2011 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 50001:2011:

1. SBTi Scope-2 target (-20% compared to base year on absolute emissions over target runtime resulting from purchased electricity)
2. -1.5% per year in electricity consumption in relevant sites by 2020, from a 2015 base year

The context analysis also covers targets related to (occupational) health & safety. This is also covered by **ISO 45001**. ADVA is following most ISO-45001 aspects, however, without external certification. Nevertheless, selected aspects like fire safety, etc. are externally validated regularly.

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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 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
- Associations, alliances, NGOs
- OEMs, VARs, service partners
- Logistics partners
- Communities
- Employees

The group's general approach to stakeholder engagement is to keep in dialogue with the respective stakeholders in a regular fashion. For certain stakeholders, e.g., certain strategic customers, associations, communities, this happens on a daily-business basis. Other stakeholders are served periodically or even aperiodically via dedicated campaigns.

In 2019, three stakeholder groups saw dedicated actions. First, we conducted a new round of our **Employee Satisfaction Survey** (ESS). The major novelty was the addition of freely editable input. Globally, 86% of our employees answered the questionnaire, thus giving the ESS significant weight. No exceptionally bad areas mandating appointment as employee-matter aspect were identified this time.

Then, our **supply chain** again was a key area of our sustainability engagement. We continued the initiative of collecting photonics-components LCA data directly from selected suppliers. We also worked on some improvements regarding sustainability supplier audits and related supplier engagement. We decided to include sustainability aspects in **all** (re-) audits. This is supported by a new software that we started to implement in 2019 and that aims at improved sustainability supply-chain management and related risk reductions.

Finally, we conducted a new **Customer Satisfaction Survey** (CSAT). The results of this are reported on the next side.

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Collaboration at industry alliances

G102-12, G102-13

ADVA Optical Networking 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 GHG subteam. In 2019, we reported our experience with the SBTi to this forum.

In 2019, 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, WEEE and conflict minerals. As an industry forum, the ExFo can provide advanced warnings in cases where the related regulations and directives become updated.

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For the past couple of years, ADVA has also been a supporter of the **Carbon Disclosure Project** (CDP). The CDP is one of the platforms used by the group for carbon-emissions reporting, please also see the Assessments and performance chapter in Part 2 of this report.

Customer satisfaction rating

G102-43, G102-44

Our customer satisfaction is measured by the Net Promoter Score (NPS) on a yearly basis. For 2019, ADVA's NPS was +44%. This result underlines the company's focus and its commitment to continuous improvement of customer satisfaction.

This time, we conducted 50 interviews and more than 700 ratings in nine categories, and around 1000 specific comments. Per category, one to five questions with answers potentially scaling from 1 to 10 were asked. In particular, 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	2019	2018
Overall	**44%**	**52%**
Technology & innovation	20%	33%
Product quality & reliability	41%	46%
Fault correction	42%	50%
Proposals	66%	53%
Order mgmt., shipping, invoicing	47%	47%
Sustainability	39%	73%
Project & account management	79%	79%
Technical services	56%	61%
Web content	22%	32%

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Part 2 – Non-financial report according to HGB

About this report

Report obligation

G102-49, G102-54

As described in the beginning, the sustainability report at hand is divided into three 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. However, parts of the non-financial report have been compiled in the style of GRI.

Report boundaries

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

This report follows our annual reporting structure and covers the period from January 1, 2019, to December 31, 2019. 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 April 2019.

Material aspects

G102-46

This second part of our sustainability 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. Only this second part is subject to the external validation.

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 second part of our sustainability 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 42. The first and the third part of this report are 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 (the non-financial report). However, this referencing is also used in Part 2 in order to allow an assignment of the reported matters and aspects to GRI indices.

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.

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Summary of our business model

G102-2, G102-6

ADVA Optical Networking 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.

This addresses the UN Sustainable Development Goal (SDG) No. 9, Industry, Innovation and Infrastructure. We therefore also regard this a relevant social aspect. We address this, for example, with encryption capabilities of our products, and protection and restoration mechanisms. These help making the respective infrastructure parts less vulnerable against eavesdropping attacks and against hardware failures and even fiber damages, respectively.

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.

The demand for the group's infrastructure solutions is driven by the global ICT (information and communication technology) trends cloud computing, mobility (in particular its latest generation, 5G), IoT (internet of things), Industry 4.0, and finally smart grids/cities/buildings. The latter also addresses the UN SDG No. 11, Sustainable Cities and Communities.

ADVA operates 36 sites in 24 countries. The group runs major sites in Germany, Poland, the United Kingdom, the USA, Israel, and China.

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Sustainability matters that are material for ADVA

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.

A prerequisite for understanding the group's sustainability activities hence is the understanding of its business model and context (see details within Part 1 of this report).

ADVA is a company founded on innovation and focused on helping our customers succeed with open next-generation networks. The group's mission is to be the trusted partner for **connecting, extending and assuring the cloud**. Our technology forms the building blocks of a shared digital future and empowers networks across the globe. We're continually developing open connectivity solutions that enable our customers to deliver the cloud and mobile services that are vital to today's society and key for a sustainable future.

ICT is one of few sectors that enable net GHG reductions (see Chapter ICT and its environmental impact for details). Still, limiting sustainability to net GHG emissions is not enough. Instead, more holistic and robust sustainability actions and reporting is required.

In order to determine the scope of the required reporting per HGB sustainability matter, the group relies on analytical tools and processes of its risk management system (see Annual Report). Subsequently, a robust sustainability materiality analysis ensures consideration and prioritization also of non-financial aspects. Proceeding and results are as described in the following chapters Key sustainability risks and opportunities and Sustainability materiality analysis.

Based on the outlined conceptual approach, ADVA identified four out of the five HGB matters as relevant for detailed non-financial reporting. In addition, the group considers its **products** as an additional matter to be reported on in depth, with (product) strategy, design & innovation (design to energy efficiency) and circular economy (design to circular economy) as the most relevant aspects.

Not considered relevant for detailed HGB reporting are social matters. This constitutes a change compared to the group's sustainability report of 2018 in which we reported on the social-matter aspect of infrastructure. The group nonetheless provides details on its efforts regarding social matters in the GRI-focused Part 3 of this report.

In summary, this non-financial reporting according to HGB includes details on the group's activities and measures regarding the following four matters. The sequence is in-line with the HGB. Products as ADVA-specific matter is combined with to the most comparable HGB matter, i.e., environment.

- Environmental matters and our products
- Employee matters
- Respect of human rights
- Combating corruption and bribery

In 2018, we reported on the supply chain as a cross-cutting issue. This time, supply chain is not reported explicitly because our risk analysis revealed that the major related aspect also falls into the human-rights matter. Therefore, reporting on supply chain and human rights is combined.

Reporting on these matters helps us to challenge and further strengthen our related efforts in the respective areas of sustainability. It also helps us to prepare for possible future changes to legislation.

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Key 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 connections 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 leads to risks as well as opportunities where aspects related to sustainability may be one of many factors or the dominant factor. Risks and opportunities are thereby classified according to the (net) likelihood of occurrence, multiplied 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 1 million in terms of ADVA's three-year business plan. 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.

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. As a consequence, **global warming** is not considered as a (major) risk as we do not expect any significant impact for the group within such three-year timeframe. Depending on its development – an increase of more or less than +2°C compared pre-industrial temperatures – global warming may nevertheless have an unprecedented impact on national, regional and global economies. We do regard this as the singular most severe risk observable today, albeit long-term.

Therefore, it is not listed in the assessment but it is one of the reasons for our focus on emissions and global-warming-related product aspects as the number-1 priorities in our long-term – 15 years determined by our SBTi participation – sustainability strategy.

Finally, most risks may subsequently impact the group's **employees.** Reasoning is that **risk occurrence may ultimately result in the need for cost saving measures** by the group, potentially including a reduction in the number of employees. Any related prevention nevertheless requires solid risk mitigation of the initial triggering event, i.e., the underlying (major) risk. As a result, the outlined consequence, even though clearly negative and material for concerned employees, is not covered in the non-financial reporting according to HGB.

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 seven of its identified 20 major risks at year end 2019 (end of 2018: five out of 17) as **relevant enough** to be mentioned in their relation to the respective HGB or ADVA-specific matters. It is worth noting that none of these seven risks relates to social matters.

The seven risks and their impact on the corresponding matters are summarized in the following table.

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Analysis of the impact of major risks on the matters and related (sustainability) aspects.

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 ADVA pursuing the development of products that are not energy-efficient or designed without considering sustainability requirements. This would lead to higher emissions and less resource efficiency of the products. The group's key mitigating measures include the definition and commitment to strict emission targets via the SBTi and stringent product guidelines internally referred to as "ecodesign".	Product strategy (see page 31, 32)
Product hardware design quality and regulatory compliance	**Environmental matters.** Potential impact on two matters (see next row), product hardware design quality and regulatory compliance may be undermined by product design decisions and faults leading to an unnecessary high carbon footprint. Again, our specific ecodesign focus plays an instrumental role in limiting such risk.	CO_2 emissions (see page 32)
	Matter: product. A certain probability exists that products, for a limited period, would not comply with tightened (product) regulations. For mitigation, the group is incorporating product compliance of its products already at the design stage and later in the development phase by means of the ecodesign guidelines.	Ecodesign (see page 32)
Circular economy risk	**Matter: product.** The Circular economy (CE) risk relates to potentially insufficient support of CE requirements of our products. In turn, this may translate to poor support of customer requirements/expectations, temporary violations of tightened CE regulations, or bad resource-efficiency or recycling characteristics.	Circular economy (see page 33f)
Harassment or discrimination claims or proceedings	**Employee matters.** ADVA is committed to ensuring equal employment opportunities without regard to race, religion, gender and any other protected factor and to prevent any related unwelcome behavior i.e. harassment. The group is proud about its international and diverse setup and employment base and its open, transparent and respectful culture and management style.	Equal opportunities, core values/leadership principles (see page 35)
Supplier and manufacturer quality	**Matter: respect for human rights.** ADVA buys product components from suppliers located in both developing as well as developed countries. Furthermore, the production of ADVA's systems is largely outsourced to electronic contract manufacturers around the globe. In addition to quality risks that may cause whole systems to be dysfunctional, the reliance on an international supply chain also increases the risk of forced labor in connection with ADVA products. For mitigating, the group applies robust, risk-based due diligence and continuous monitoring of its key suppliers and those considered high-risk.	Anti-slavery and human trafficking (see page 36)
Bribery	**Matter: combating corruption and bribery.** ADVA markets its products and services around the world. In recent years, its customer base and operational setup have become substantially more international, raising the risk for (alleged) bribery. For mitigation, ADVA has a dedicated anti-corruption program in place, which is based on a strong tone from the top and supported by a central compliance department and dedicated regional compliance officers.	ADVA's Compliance Management System (see page 38)
Compliance violations by intermediaries	**Matter: combating corruption and bribery.** ADVA relies on distribution partners to support its international business. While the group's ability to control the partner's activities are limited, compliance violations by intermediaries may, under specific circumstances, be attributed to ADVA. For mitigation, ADVA implemented robust risk-based due diligence procedures supported by solid contractual commitments and periodic risk-based partner reviews.	Sales and service partner due diligence (see page 39)

*The definition of major risks follows the principles of ADVA's risk management system as outlined in the Annual Report. The seven risks listed here are not material according to HGB.

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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 identifiable today relates to carbon emissions abatement, which is enabled by the respective use of our products. This effect, known as **Green-by-ICT**, is predicted to over-compensate emissions caused by the ICT sector by a double-digit factor (see the chapter Ecodesign: energy efficiency, emissions and the SBTi). It is also one of very few known mechanisms that can enable substantial carbon saving globally (in sectors other than ICT).

Our work in the area of sustainability also supports increased positive awareness and reputation with related potential effects on business. The actual 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.

Finally, through our work, we can help other business partners to focus more on sustainability issues and the value of sustainable technology. This can indirectly support the climate goals of the IPCC (intergovernmental panel on climate change) through the related discussions and interactions with our stakeholders.

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In summary, it is clear that sustainability-related effects and requirements have a high impact on the group's success. In 2019, the impact on ADVA's major risks was limited as described, and this impact was counteracted by positive impact and opportunities. Such opportunities included lower environmental footprint (e.g., CO_2 emissions) or simply better reputation (e.g., following our EcoVadis ranking).

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 getting better related performance. This would not only help the respective suppliers, it would also lead to potentially better relationships.

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Sustainability 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. The risk assessment assures the consideration of the HGB and GRI requirements regarding the business relevance for ADVA and the related impact on the respective matters.

Unlike in 2018, for the social matters, no aspects with substantial risk were identified. Therefore, social matters are not regarded material and consequently not reported.

The materiality analysis is a process conducted on a yearly basis, with representatives of several departments rating the identified topics.

Based on GRI sub-categories and further information, e.g., from the SASB (sustainable accounting standards board) and topics defined or selected by ADVA, the most relevant topics are identified. These topics are rated with regard to their relevance for the business activities and their impact on the matters.

The materiality analysis comprises an impartial analysis of the respective aspects using external and internal criteria as well as the stakeholders' interest regarding the actions, performance and strategy of the group.

Interested parties are listed in Part 1 of this report, in the chapters Context analysis and Stakeholder engagement.

In combining different stakeholders' input for the materiality analysis, we apply a certain weighting for the stakeholder groups. In particular, due to their strong economic impact on ADVA, input from investors and customers is weighted twice as much as the input of the other stakeholder groups (which is not weighted/differentiated any further).

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. This includes, but is not limited to:

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)
- Media perception and support
- Respective strategy, actions and performance of the competition

The internal analysis considers all relevant strengths and weaknesses of the reporting entity. It contains aspects like (but is again not limited to):

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

The yearly process comprises the identification and collection of new aspects, deletion of old aspects, the related rating and, if applicable, the respective classification as material. Further, the rating criteria and their weightings are regularly challenged and changed, if necessary.

The actual list of relevant aspects that are used in the materiality analysis is provided in the table on the next page.

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List of considered aspects.

Category	
Environment	***GHG emissions / climate change***
	Energy management
	Waste
	Water management, pollution
	Compliance (REACh, RoHS, WEEE, CM, …)
	Resource efficiency
Product	Safety & labeling
	Packaging & transportation
	Design & innovation
	Circular economy
	Product strategy
	Quality
Employees	Occupational health and safety
	Labor practices (ILA)
	Harassment and discrimination
	Compensation & satisfaction
	Training & education
Soc.	Community
	Infrastructure
	Anti-corruption and -bribery
	Combating modern slavery
	Supply-chain responsibility
	IT security and data protection

The material aspects in the table are highlighted in ***bold-italic***. From these material aspects, a group of four clearly stands out. These four belong to the combined environment/ product matter. They are rated more important in both, the stakeholders' interests analysis and the combined internal and external analysis.

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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 CO_2 emissions. For the product-related aspects, this holds via energy-efficient design and the resulting emissions. The fourth aspect, circular economy, is indirectly linked to emissions as well (via usage of raw materials).

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 CO_2e emissions.**

This focus obviously addresses the environmental or planet pillar of the Triple Bottom Line and is underpinned by numerical targets. These targets are described under Carbon emissions and Portfolio lifecycle assessment, respectively.

Regarding circular economy, the strategic goal is the preparation for its broad-scale application. 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 ongoing activities to implement our Ecodesign Guide in the Product Lifecycle Process. This is in continuation of the efforts of the last three years.

The activities against global warming are complemented by priority-2 activities on the other material aspects.

Regarding the aspect design & innovation, the main initiative started in 2019 relates to an improvement of the coverage of material declarations across the components we purchase. This intends better preparation for upcoming additional REACh regulations and goes back to clear recommendations we derived from our work at the Fraunhofer ExFo (refer to Collaboration at industry alliances in Part 1 of this report). The related target is a substantial improvement over the current coverage of all purchased components with material declarations of ~30%. These declarations state the respective amount of the different chemical substances in the electronic components that we purchase and use for our products.

In order to also balance the sustainability strategy and related initiatives across the other pillars of the Triple Bottom Line, further initiatives were ongoing or have been started in 2019. This relates to employee matters, respect for human rights, and combating corruption and bribery. Regarding the first two matters, the specific aspects are harassment and discrimination at work and avoidance of any forms of modern slavery (in the supply chain), respectively.

For these aspects, targets have been defined as well. The initiatives and targets are summarized in the following table.

One further initiative of the last years is not listed in this table anymore. This initiative was addressing employee matters and has been closed successfully. It related to the integration of sustainability into our ESS (employee satisfaction survey). In the most recent 2019 ESS, this area was featured in the survey for the first time.

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Key initiatives and objectives in the three pillars of the Triple Bottom Line

Aspect	Key objectives	Targets in more detail	Key initiatives/activities	Status
Emissions	Decrease of the global ADVA CO_2 footprint	Three SBTi targets, ISO 50001:2011 reduction target, Two ISO 14001:2015 LCA targets	Have SBTi targets approved by SBTi Achieve SBTi targets within stated target runtime	Done Started
Circular Economy	Preparation of broad-scale CE business	No targets set yet, C-SERVEES project to be finished first	Participate in EU H2020 project C-SERVEES Improve recycling, in particular by applying the Design Guide	Ongoing Ongoing
Harassment and discrimination	Achieve awareness, enforce zero-tolerance policy	Target: zero occurrences	Related training campaign	Ongoing
Compliance management system	Ensure adequate awareness and commitment	Target: >98% of all employees committed to ADVA's Group Policies in written form	Compliance acknowledgement to be signed by new hires with signatures documented and tracked in ADVA's Human Resource Management System	Ongoing
Business partner due diligence	Ensure adherence to ADVA's compliance expectations and mitigation of related risks	Target: risk-based review of >30 new or already existing sales and service partners per year	Adequate risk-based due diligence prior to entering into a business relationship; robust contractual representations and periodic risk-based reviews	Ongoing
Design & innovation	Prepare for tighter REACh regulations	Target: significant increase in material-declarations coverage	Poll supply chain more regularly and more clearly for material declarations	Started

Reduce GHG emissions in all GHGP[Q] scopes with Science-Based Targets.

[Q]Glossar: *Page 54*

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Assessments and performance

G102-15, G103-2, G103-3

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

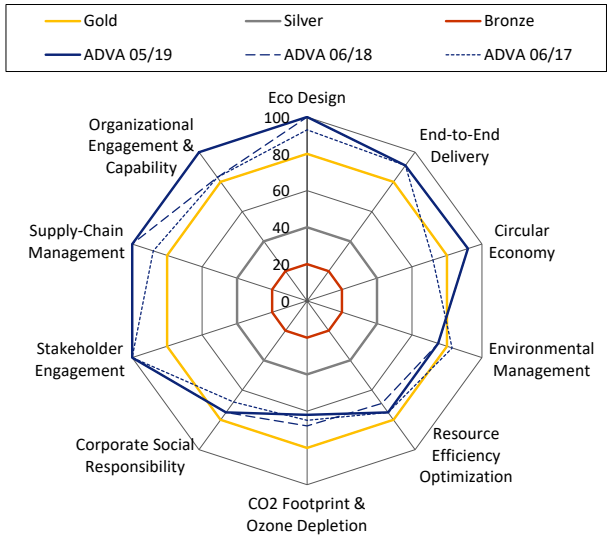
One relevant assessment tool covering the area of sustainability is used by the Telecommunications Industry Association (TIA) Sustainability Initiative. This initiative is the successor of the former QuEST Forum Sustainability Initiative, which already used the tool and the related model. Consequently both, model and tool, are relevant for companies working in telecommunications.

We reported about the model in the recent reports repeatedly. It covers the segments shown in the picture below. The model was originally developed by British Telecom for sustainability assessments in their supply chain. ADVA started using it in 2013.

The sustainability model of the TIA Sustainability Initiative

The TIA sustainability model is complemented by the TIA Sustainability Assessor, a web-based tool which supports sustainability (self-) assessments.

The latest self-assessment results for ADVA as of May 2019 showed our **third consecutive Gold rating** averaged across the segments of the TIA sustainability model. These three ratings are shown in the following diagram, split into the 10 different segments.



Assessor sustainability ranking results of the last three years

Older versions of our materiality analysis used the TIA segments instead of GRI and other material aspects. Not unexpectedly, this had little impact on the outcome of the analysis, i.e., our strategy decisions.

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The TIA assessment gives an overview on the performance in the different sustainability segments. Per segment, it comprises less than 10 questions. In addition, its weighting regarding the environmental sector (via ecodesign, CO_2 footprint & Ozone depletion, environmental management certification, resource efficiency optimization and end-to-end coverage) is specifically centered at (ICT) product manufacturers. The TIA assessment therefore should be complemented by more detailed assessments in relevant areas, conducted by global organizations. Such more detailed assessments are also requested by some of our large customers. These requests lead to in-depth assessments of our carbon emissions by the Carbon Disclosure Project (CDP), and of environment and several CSR compliance aspects by EcoVadis. Some of our customers have access to the results on either of the platforms.

In 2019, we achieved our **third consecutive EcoVadis Gold rating**. The assessment areas included environment, labor & human rights, ethics, and sustainable procurement.

In the 2019 **CDP assessment**, we achieved, for the first time, **B rating** (2018: B minus). The assessment consisted of the CDP Climate Change Questionnaire and the Supply Chain module. This rating is the group's highest CDP rating achieved so far. This was enabled, amongst other activities, by our SBTi participation and targets approval. Both, the EEE industry and global average for 2019 were at C level.

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

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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 14001:2015 EMS, ISO 50001:2011 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 50001:2011 reduction target, and two LCA-related targets.

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.

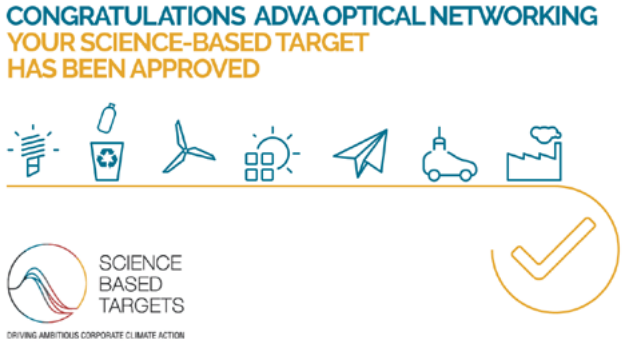
The management approaches are evaluated externally, at least, on a yearly basis, through assessments (CDP, EcoVadis, TIA) and validations (ISO audits, validation of this report) and accompanying internal analyses). Corrective actions are taken in particular in cases of deviations from the KPI targets (e.g., the ISO 50001:2011 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. So far, our management approach has proven successful.

The material aspects hold for the whole group, with a focus on larger sites for the EMS and EnMS.

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. The SBTi is a global initiative with more than 700 participating parties where companies can commit to reducing emissions in order to support a maximum global temperature increase below 2°C compared to pre-industrial temperatures as described in IPCC AR5.



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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. After in-depth discussions with the SBTi, **our targets were approved in March 2019.**

Our Scope-1 and Scope-2 targets aim at reductions of 20% 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, the purchased-electricity emissions are to be reduced by purchasing electricity with a higher amount of renewables and/or installing solar panels at sites that we own. This is supported by our ISO 50001:2011 activities and started already in 2018.

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. 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 ICT and its environmental impact chapter in Part 1 of this report).

The SBTi emission-reduction targets have runtimes of 15 years, which is recommended by the SBTi. They will define the focus area – emissions reductions – for a 15-years sustainability strategy.

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 CO_2.

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

The globally weighted emission factor for electricity consumed at ADVA sites was **0.421 $kgCO_2e/kWh$** in 2019 (2018: 0.438 $kgCO_2e/kWh$).

Based on our customer base, a weighted average emission factor of **0.370 $kgCO_2e/kWh$** has been used for assessing GHG emissions of sold products (2018: 0.382 $kgCO_2e/kWh$). This emission factor is lower than the one used for our Scope-2 emissions because several large customers run their networks already with renewable energy. For the future relative percentage of these customers and for the regionalized prediction of the emission factors we used assumptions according to the best of our knowledge.

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

Material GHG emissions for 2019 (2018)

GWP [tCO_2e]	Category	2019 (2018)
Scope 1	Car fleet DACH	533 (548)
	Car fleet total*	871 (951)
Scope 2	Purchased electricity**	5,369 (5,800)
Scope 3	Use of sold products	242,639 (218,004)
	Production-related purchased goods	40,532 (35,792)

* Only the numbers for Germany, Austria and Switzerland (DACH) are part of the validation oft he non-financial report.

** 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.

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In 2019, we achieved reductions regarding the emissions from our car fleet and from the purchased electricity, compared to 2018. We attribute this to various reduction activities. For example, we issued a new car-fleet policy including an emissions bound beyond which penalties have to be paid. In addition, we installed first charging stations for electric and hybrid cars in our car fleet.

Reductions of the Scope-2 emissions are attributed to both, a certain reduction in electricity consumption and an improvement of the globally averaged emission factor.

Scope-3 GHG emissions did increase in 2019. We attribute this to a massive increase of the number of hardware products sold. The related increase was not fully compensated by better product energy efficiency and improving emission factors, respectively. Following our SBTi Scope-3 target, we will continue our efforts to further improving the 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.

In 2019, we changed the calculation of the production-related purchased-goods emissions. Our LCA calculations revealed a ratio between the two Scope-3 emissions listed in the preceding table that remained almost constant for very many products that were analyzed and over a period of more than two years. For 2019, we therefore derived the production-related purchased-goods emissions from the use-of-sold-products emissions using this ratio. However, we will check in the future if this approach remains valid.

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

Status of ADVA's SBTi targets

	2016* Base	2018* Start	2032 Target		2019 Status
	GWP [tCO_2e]			[%]	[tCO_2e]
Scope 1	1,010	951	808	-20%	871**
Scope 2	6,003	5,800	4,802	-20%	5,369
Scope 3	242,383	218,004	235,111	-3%	242,639

* The emission figures for the year 2016 and 2018 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.

The numbers for Scope 3 (sold-products use-phase emissions) for 2016 and 2018 had to undergo correction, following the identification of an error in the former calculations. For 2019, this correction is already considered. The Scope-1 numbers for the car fleet for Germany, Austria and Switzerland have also been corrected. They are now directly based on the respective amount of the consumed fuel instead of manufacturer statements.

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Ecodesign: Portfolio lifecycle assessment

According to our combined materiality and end-to-end emissions analyses, ecodesign is 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 assessment (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 three years, ADVA conducts portfolio-wide LCA, in accordance with ISO 14040/14044, and based on the openLCA software, together with ecoinvent and GaBi databases and dedicated components-suppliers data.

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 almost all cases, this relates to the production phase and the carbon embedded in the used components.

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

1. ≥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 14001:2015.

In 2019, the first target was achieved. After the acquisition of MRV Communications in 2017 (which added many products to our portfolio), we were able to analyze most of their products, thus covering ~90% of the commercially relevant portfolio (again).

The LCA confidence-level target was further followed in 2019. 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.

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Ecodesign: Energy efficiency, emissions and the SBTi

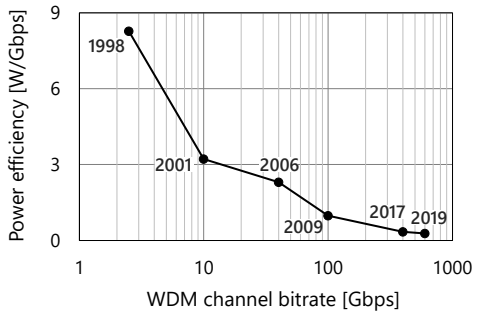
G302-5

The use-phase dominance in LCA in general and GWP in particular is the main guidance for our ecodesign. We are improving the power efficiency (measured in watts per Gbps) 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 0.2 W/Gbps. The development of the power efficiency over bitrate and system generations is shown in the following diagram.



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.

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 GeSI Smarter2030, the ICT-enabled GHG abatement is almost 12x higher than the ICT GHG footprint itself. Other sources quote even higher GHG reduction potential in the range of 19:1 compared to the ICT emissions [The role of ICT in reducing carbon emissions, British Telecom, 2016].

Ecodesign: Actions regarding REACh

In 2019, we decided to increase our efforts in the area of **material declarations** with respect to the components that we purchase. The aim is to get, over time, a significantly better coverage of the purchased components by their respective material declarations. This was a recommendation that we derived from our work at the Fraunhofer ExFo. Material declarations state the respective weight portion of all (chemical) substances that are contained in a given purchased component. This declaration may become relevant for the REACH directive (Registration, Evaluation, and Authorization of Chemicals) in the future. The data is also useful for components LCA when, e.g., for the respective component no data can be found in the data bases (GaBi, ecoinvent).

In 2019 (and after the MRV acquisition), the coverage of all purchased components with material declarations is ~30%. The **target** is to increase this coverage significantly, and to keep it at a high level, despite fluctuations in the components portfolio. We regard this necessary due to potentially increasing REACh-Directive requirements.

In 2019, the KPI on material declarations has not been achieved. The coverage still is in the range of 30%. Reason is that we ramped the related work up only during the course of 2019. We expect the coverage to increase over the next years, finally reaching the target value. We regard this uncritical since near-term, no stricter regulations are seen.

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Circular economy: Circular-economy processes

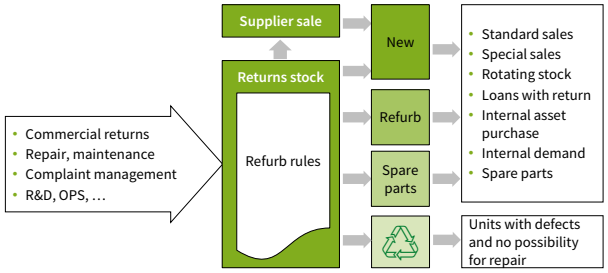
G305

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 (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 the recent years, we implemented a number of take-back, refurbishment and recycling processes especially in the UK, and a larger-scale refurbishment and recycling process in our main site in Meiningen, Germany, called Supplier Sale.

In the UK, we implemented several processes with two large customers. These include take-back, refurbishment and recycling. (Reverse) logistics are optimized in cooperation with the respective logistics providers. The processes are applied to our own as well as to third-party equipment. Supported by reverse logistics which has been optimized in cooperation with logistics suppliers, this cover 4-digit product-unit numbers per year.

In addition to these customer-specific processes, we implemented a refurbishment / parts reuse / recycling process for any equipment sent back to our site in Meiningen. An overview is shown in the figure below.



Supplier-Sale refurbishment and reuse process in Meiningen

All equipment sent back is analyzed for potential components reuse and refurbishment. Systems or components without a possibility for reuse are professionally recycled by a contract WEEE recycler located close to Meiningen, which also minimizes truck-roll mileage. Depending on the degree of reuse potential, the components are sold back (supplier sale, new) or get into respective stocks for new, refurbished or spare parts. This also helps extending the use of components that have reached production stop.

For the future, we plan to complement this process by a dedicated Recycling RMA (Return Material Authorization). This aims at coping with the increased amount of equipment that is sent back with the dedicated obligation for recycling (e.g., due to security issues) more efficiently.

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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, according to our Materiality analysis, as material, we decided to join an EU Horizon 2020 research project, **C-SERVEES,** which aims at boosting CE business in the EEE (electrical & electronic equipment) sector through the development, testing, validation and transfer of new CE business models. A brief description is available under c-serveesproject.eu/.

The EU project C-SERVEES started in In May 2018 and has a duration of four years. The consortium of the project consists of academia, research institutions and industrial SMEs and large companies. ADVA is one of the large industrial partners

In the first year of the project, extensive stakeholder surveys were conducted that yielded insight in particular into the different interested parties' view regarding CE roadblocks, challenges and opportunities. The most interesting results from the survey are listed below.

- All stakeholders rated Blockchain and 3D printing, two out of a larger number of technologies and actions we asked for the stakeholders' rating in terms of potential relevance for CE, as comparatively low. Both technologies are in scope of the C-SERVEES project. The other actions included, e.g., (EU) funding and ecodesign.
- The survey revealed the trend of shifting responsibilities and challenges deeper into supply chains. This contradicts the reluctance to bear (part of) the higher cost that this might cause in the supply chains.
- Both, over-regulation and lack of regulation of the area of CE were regarded critical. This seems to indicate that stakeholders are in favor of well-balanced CE regulation.
- Several stakeholder groups considered the trend of replacing products rather than repairing them as a critical social aspect. Renunciation of this trend is not yet seen.
- Some stakeholder groups also raised their skepticism regarding renting or leasing models. These models were explicitly asked for as alternatives to buying products.
- Improved reputation repeatedly was stated as most important economic CE opportunity. This seems to indicate that by the respective stakeholders, no clear potential CE revenue increase had been identified. This is underpinned by high (relevant) rating of CE aspects like taxing, incentives and general financial viability of CE products and services.

In the remaining time, effort will be spent on demonstrators (which, in the case of ADVA, will involve telecommunications equipment) and ecodesign aiming at extended lifetime and recycling capabilities.

As long as the C-SERVEES project has not finished (which will be in 2022), no targets and performance indicators are defined and tracked for the CE aspect.

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Employees: Discrimination and harassment

G102-16

Equal opportunities

G408, G409

ADVA Optical Networking is an equal opportunity employer and has an on-going commitment to the creation of a workplace free of discrimination and harassment. For ensuring such, we are committed to a **zero-tolerance policy** and also expect our suppliers to follow our Supplier Code of Conduct which is tightly integrated into and supplements 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, national origin, age, gender, physical or mental disability or any other protected characteristics. Details on our global setup can be found in Part 1 of this report (see section Global presence) with specific activities and employee numbers being provided in Part 3 (see chapter GRI social standards),

On a high-level, the following international labor standards are the fundamental principles that ADVA is committed to and that aim to ensure equitable and sustainable growth for all 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. The latter can be found in the Ethics and compliance chapter in this report and online here.

Core values and leadership principles

ADVA's sustainable success is based on strong core values, modeled by the top and demonstrated by example. All line managers are aware of their respective responsibilities. Specific leadership principles foster such understanding. The following core values and leadership principles (collectively: "Values") support sustainability in everything we do.

Teamwork. We embrace open communication and collaboration. We are committed to promote an inclusive work environment that values diversity of people and thought. Employees from roundabout 48 nations at 36 different sites and representations around the globe and an international ADVA Works Council without trade-union ties are what makes ADVA exceptional.

Excellence. We are striving towards excellence in whatever we do. This includes our commitment to consistently exceed customer expectations. In order to measure our respective success, annual surveys are conducted measuring the group's Net Promoter Score. Throughout the last years, significant improvements were achieved yielding high scores. They are shown in the detailed overview in the Customer satisfaction rating chapter in this report.

Accountability. Our strategic goals "Growth and Profitability", "Innovation", "Operational Excellence" and "People" are the cornerstones of our corporate development. They are tied to specific performance indicators and updated on an annual basis. Meaningful departmental, team and employee objectives support the achievement of our strategic goals and are reviewed and updated every six months.

Motivation. The group strives to engage and motivate its employees. Besides anonymous satisfaction surveys, regular breakfast meetings with a member of ADVA's board are organized and allow for a personal discussion of areas of concern. Resulting action items are followed up with by the board.

Integrity and honesty. Compliance with applicable laws and regulations and the adherence to the company's ethical standards and principles ("Compliance") is essential for establishing trust with our customers, suppliers, partners and colleagues. Our commitment to integrity and honesty translates into our Group Code of Conduct and a clear and precise allocation of responsibilities for ensuring compliance.

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Decisiveness. Timely and informed decision-making is essential for keeping up with our industry's ever-increasing pace of innovation. To ensure continuous personal development, we implemented a holistic management-training program which is offered to all concerned employees.

Respect. The group takes on an active role in the local communities that we are operating in. This includes humility in our manners and respect and courtesy when treating others. The same applies also internally and regardless of the level of hierarchy involved.

Human rights: ADVA's position on slavery and human trafficking and sustainability in the supply chain

G102-9, G103-2

Our commitment

Integrity is at the core of who we are. At ADVA, we are committed to running our business responsibly. We strive to live up to our ethical standards embodied in our values and documented in our Group Code of Conduct ("Code"). Our efforts are supported by periodic training sessions for all employees and a dedicated team with clearly allocated responsibilities within the areas of compliance, sustainability and corporate social responsibility. In addition, we actively encourage all individuals to report any perceived deficiency either to our ombudsman or via our Ethics and Compliance Helpline (see this link).

Modern slavery and human trafficking

Nobody should be forced to undertake work against their will. For millions of people around the world this statement unfortunately does not reflect reality as they are exploited and forced into work. As a result, they often suffer physical, psychological and sexual abuse.

ADVA tries to ensure that modern slavery is not taking place in any part of our business or supply chain. Our standards include a variety of different policies and practices to address slavery and human trafficking issues in the different areas where they may occur. This aligns with the United Kingdom Modern Slavery Act of 2015, the California Transparency in Supply Chains Act of 2010 (SB 657) and other similar laws and regulations. As the focus of our activities is the development, selling and servicing of network equipment but not the production of such, our business depends on hundreds of suppliers and service providers and several contract manufacturers. It is hence in our supply chain where we see the highest risk for modern slavery and human trafficking.

Why this is the case and what we do to ensure that our supply chain is free of modern slavery is hence outlined in the following.

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ADVA's supply chain

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

We buy a wide range of different things, including hardware components for our solutions and expert services to help develop, produce, maintain or even dispose of our products. To ensure that slavery and human trafficking does not occur within our supply chain, we took multiple actions, including the following:

Our Code and Supplier Code of Conduct. Our Code derives 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, 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.

Risk assessment. 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. The process comprises the types of products and services, respectively, as well as the location of the business partner. Consequences of this assessment, in cases of persistent severe violations against the CoC, can go as far as the termination of the business relationship. Throughout 2019, we started with the implementation of a specialized IT-based solution to further improve this risk assessment with regard to scalability and content.

Glossar: *Page 54*

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. Next 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 2019, two suppliers were re-audited on-site against sustainability aspects. In these re-audits, no significant problems were found. Consequently, no immediate specific improvements were required, and no business relationships were terminated. The total number of new and re-audits was actually higher.

Finally, we decided in 2019 to include sustainability aspects in all new and re-audits.

In addition, we introduced a new software for supply-chain management that specifically addresses supply-chain risks regarding compliance and sustainability. This aims at improving the scalability of our supply-chain management and related risk mitigation.

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Anti-corruption and bribery

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

G103-1, G103-2, G103-3

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 at the company. The RCOs strengthen ADVA's local culture of compliance, erase any potential boundaries preventing 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 financial 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 should be material findings, corrective actions are taken.

Our CMS focuses at the avoidance of corruption and bribery. ADVA is confident that this target has been achieved for 2019. As of the time of this report, no confirmed incidents of bribery and corruption had taken place and **no such case had been brought forward** against the company.

Compliance management system

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

ADVA's values are the cornerstone of who we are. They translate into our Group Code of Conduct ("Code") that sets forth the ethical standards that every employee, manager, director and officer of the company (collectively "Employee/-s") needs to comply with. It is our target to train all employees regularly. Realization of this target makes use of a defined process and is supported by our HR department.

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")

Any employee is eventually responsible for his/her own actions. 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 more than 96% of all active employees. This included employees from newly acquired companies.

Moreover, several **compliance trainings** were conducted. The goal is to train our employees on this topic every 2-3 years. After more than 1000 employees in 2018, 70 employees got this training in 2019. Participation of employees is tracked and documented for all mandatory trainings.

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Business partner due diligence

Our commitment to compliance extends to our service providers and intermediaries ("business partners"). As we could be exposed to substantial legal as well as reputational risks in this area, a three-step approach ensures effective risk mitigation. First, risk-based due diligence is exercised for new business partners and periodically updated for existing business partners. In 2019, this led to no business relationships rejected for reasons of compliance risks (2018: 1). However, it led to the consideration of compliance requirements in the respective contracts. In general, frame contracts with robust compliance commitments are negotiated with all new business partners. Finally, risk-based monitoring allows further reduction of compliance risks.

ADVA's business partners provide a broad variety of different services. The risk of unethical behavior differs accordingly and may involve corruption, labor law violations, product compliance concerns or other unwanted conduct. In order to allow for a targeted and risk-based due diligence prior to entering into a business relationship, specific business partner categories and proportionate financial thresholds were defined. As for anti-corruption, relevant types of business partners in particular include the following:

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

During the reporting period, all in all 81 business partners were subject to ADVA's tool-based 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. Besides non-disclosure agreements (NDAs), no contractual relationship is entered without the prior closure of the required due diligence activities.

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

To ADVA Optical Networking SE, Martinsried/München

We have performed a limited assurance engagement on the separate non-financial group report pursuant to § (Article) 315b Abs. (paragraph) 3 HGB ("Handelsgesetzbuch": "German Commer-cial Code") of ADVA Optical Networking SE, Martinsried/München, (hereinafter the "Company") for the period from 1 January to 31 December 2019 (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 consid-ered 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 Quali-tätssicherungsstandard 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 2019 has not been prepared, in all material aspects, in accordance with §§ 315c in conjunction with 289c to 289e HGB.

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 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

* 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 assurance report.

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- 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 2019 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 re-sponsibility lies only with the Company. We do not assume any responsibility towards third parties.

München, 18 February 2020

PricewaterhouseCoopers GmbH
Wirtschaftsprüfungsgesellschaft

Hendrik Fink
Wirtschaftsprüfer
[German public auditor]

ppa. Nico Irrgang

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Part 3 – Sustainability reporting according to GRI

GRI social standards

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

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

G103-1, G103-2, G103-3

Material sustainability aspects fall into the area of corporate social responsibility (CSR). The related actions and achievements balance our sustainability strategy with its priority-1 carbon-emissions focus across the complete Triple Bottom Line.

In general, CSR includes aspects of social and employee matters and respect of human rights. In addition, certain human-rights aspects are described in the Ethics and compliance chapter hereinafter. Together, these cover substantial parts of the ILO Conventions.

We regularly re-evaluate the materiality rating, based on own analyses and relevant stakeholders' input, and change it if required. This is done at least once per year.

For identified relevant aspects, dedicated management approaches are defined and implemented. This includes definition and implementation of internal processes, assignment of responsibilities, definition of internal KPIs, and evaluation on a half-year basis. It also includes highest-governance responsibility by the CEO and CFO, respectively.

Unlike the environmental area (ISO 14001:2015, ISO 50001:2011), 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). This helps in identifying material aspects as well as assessing the related achievements and performance.

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 CSR aspects hold for the whole group. Unlike the areas of EMS and EnMS, there is no focus on or restriction to larger sites.

Information on employees

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

On December 31, 2019, ADVA had 1,903 employees, including 24 apprentices (prior year: 1,886 including 31 apprentices).

On average, ADVA had 1,882 employees during 2019, down from 1,830 during 2018 (and not considering apprentices). Furthermore, at year-end 2019 and 2018, there were 21 and 39 external temporary employees as well as 35 and 24 internal fixed-term employees each working for the company, respectively.

In 2019, the voluntary turnover rate was at 4.6% and the total number of new hires was 200.

ADVA is continuously focused on balancing the male/female split in the overall workforce. Our **human resource information system** (HRIS) provides detailed reporting functionalities and helps us to ensure diversity and other aspects going forward.

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

ADVA global	2019	2018	2017
Males total	77.6%	78.4%	77.9%
Males in management	85.5%	87.6%	88.5%
Females total	22.4%	21.6%	22.1%
Females in management	14.2%	12.4%	11.5%

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Team leader	2019	2018	2017
No male	60.1%	60.1%	60.4%
No female	19.5%	19.0%	19.8%
No total	**79.7%**	**79.1%**	**80.2%**
Yes male	17.4%	18.3%	17.5%
Yes female	2.9%	2.6%	2.3%
Yes total	**20.3%**	**20.9%**	**19.8%**

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 as a company 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.

Our average employee age is between 30 and 50. The age distribution per gender is displayed in the following table.

Gender	Age group	2019	2018	2017
	<30 years	11.0%	10.8%	9.8%
Male	30-50 years	56.7%	57.6%	59.7%
	>50 years	32.3%	31.5%	30.6%
Male average		**44.0 years**	**43.8 years**	**43.8 years**
	<30 years	11.7%	11.3%	10.0%
Female	30-50 years	63.0%	61.8%	62.0%
	>50 years	25.3%	27.0%	28.0%
Female average		**42.3 years**	**42.7 years**	**42.3 years**

Next, the absolute numbers are listed in terms of gender and age.

Gender	Age group	2019	2018	2017
	<30 years	162	160	144
Male	30-50 years	837	852	881
	>50 years	477	466	451
Male total		**1,476**	**1,478**	**1,476**
	<30 years	50	46	42
Female	30-50 years	269	252	259
	>50 years	108	110	117
Female total		**427**	**408**	**408**
Employees total		**1,903**	**1,886**	**1,894**

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 was acknowledged in 2019 by the German women magazine BRIGITTE. 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.

The distribution of our employees across the different functions in the company is given in the following table.

Function	2019	2018	2017
Finance / Admin / IT	167	158	165
Operations	212	216	217
QM	19	20	22
R&D	941	958	963
Sales / Marketing / Services	540	503	500
Apprentices	24	31	27
Employees total (year-end)	1,903	1,886	1,894

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

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We employed people of approximately 48 nationalities across 36 company sites as of December 31, 2019.

The distribution of our employees, again 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)	2019	2018	2017
Germany*	510	500	499
Austria	2	3	3
Switzerland	42	40	46
Italy	14	13	12
Spain	2	2	2
France*	18	16	17
Poland	356	318	300
Finland	8	9	10
Sweden	4	3	4
United Kingdom*	113	107	110
Netherlands	3	2	2
South Africa	5	4	5
USA	415	437	461
Canada	14	12	-
Brazil	2	2	2
Australia	11	11	5
China	137	132	131
Hong Kong	3	3	4
Japan	7	7	8
India	73	86	89
Singapore	15	15	17
Malaysia	1	2	-
United Arab Emirates	1	1	1
Israel	123	130	139
Total*	**1,879**	**1,855**	**1,867**

*Without apprentices

Training and career development

G404-2

According to our employees' feedback in the ESS in 2015, training was the aspect that created highest discontent. Therefore, dedicated initiatives were started, and in 2018, we made this the relevant aspect under employee matters. In the recent years, the management approach started in 2015 led to improvements regarding our internal training program, and a new-hire orientation process, which formalizes respective trainings. As an indicator of the performance regarding this aspect, we use the ESS rating. In the 2019 ESS, the training aspect achieved improved rating.

ADVA's career development is an organized planning method used to match the company's needs with the career goals and interests of our employees. It is supported by regular involvements of employees, such as 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 that include training plans. It helps us to keep our employees informed and address employee satisfaction. The latter also supports a low employee turnover rate.

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.

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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 in order 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.

The ADVA University is regularly updated based on employees' feedback. It is complemented by a new-hire orientation process, which formalizes global, regional and functional new-hire orientation trainings.

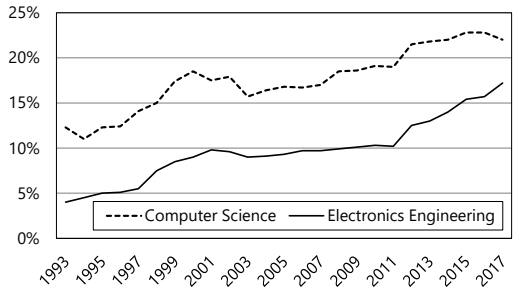
Next to the technical (in-house) trainings, the actual ADVA University offering includes courses in the areas of languages, professional & communication skills, customer service, leadership and management, safety, social media and marketing, sales and negotiation, interpersonal skills, teamwork, time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

In 2019, 4,037 employees attended trainings. The duration per training was between 30 minutes and a full week (5 days).

Girls' Day 2019

G405-1, G413-1

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



Women in engineering studies in Germany

The diagram displays the percentage of women in electronics engineering and computer science in Germany – based on data from the Federal Statistical Office from 2017. The data for other regions, e.g., UK, does not differ significantly. The ratio of women in engineering and computer science is barely 25%. Consequently, it is difficult to achieve gender parity in our technical departments (which covers the majority 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. Just as we have in previous years, we did this in 2019, supporting the Girls' Day in Germany.

In March 2019, some 100,000 girls attended the Girls' Day all over Germany. Following our practice of the previous years, ADVA supported this initiative at our sites in Meiningen and Munich, giving first hands-on insight into the world of an international ICT company.

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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, much of its approach and content is followed already. This was improved in 2019 significantly. Responsibility for this aspect was shifted to the Facility department, which includes highest-governance responsibility by the CFO. Further improvements comprised the generation of a more consistent set of process documents. Internal evaluation of this work is (continued to be) done twice a year. In addition, significant aspects like compliance with national preventive fire protection is audited externally on a regular basis (typically yearly).

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.

The program consists of several benefits. These 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 are described in the next chapter.

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 trainings are 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
- ESD (Electrostatic Discharge)
- 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.

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Description	Region		
G403-1, G403-2, G403-3	**Europe**	**Americas**	**APAC**
A. The level at which each formal joint management-worker health and safety committee typically operates within the organization. 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.	A. Site level (all major sites, small branch offices may not have such committees, in accordance with local legal requirements) B. 90%	A. Site level B. 100%	A. Site level (Emergency Response Committee in Shenzhen) B. 100%
A. Types of injury, injury rate (IR), occupational disease rate (ODR), lost day rate (LDR), absentee rate (AR), and work-related fatalities, for all employees, with a breakdown by region and gender. B. Types of injury, injury rate (IR), and work-related fatalities, for all workers (excluding employees) whose work, or workplace, is controlled by the organization, with a breakdown by region and gender. C. The system of rules applied in recording and reporting accident statistics.	A. For UK: 1 Non-serious accidents (female) 10 lost days 0 fatalities For Germany: Number of occupational accidents – 11 Number of commuting accidents – 9 8 male, 12 female 32 lost days For rest of Europe: 0 occurrences. B. – C. For rest of Europe: Accidents are reported to a first aider and then logged in the Accident Book For Germany: In addition to the report to the first aiders, worse accidents are reported to HR to fill 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.	A. 3 slips/falls 5 lost days B. 0 fatalities, 2 slips/falls C. Accidents are logged in OSHA report and filed according	A. 0 occurrences in 2019
Workers with high incidence or high risk of diseases related to their occupation	None	None	None

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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.

In 2019, and following a proposal submitted earlier, we implemented charging stations for e-mobility at our site in Munich. Over time, this will also support our SBTi Scope-1 target.

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.

Volunteering takes on many forms. An overview on the numbers and types of events of our volunteer programs is given in the following table.

Distribution and type of events in 2019

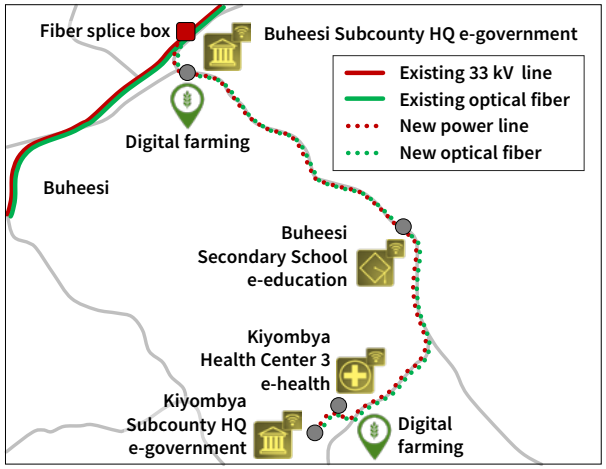
Events per region		
46 in Europe	10 in Americas	10 in APAC
Type of events		
37 donations and collections	14 runs and walks	15 sponsorships and awareness

Buheesi E-/FTTV project

G413-1

The Electricity & Fiber To The Village (E-/FTTV) project aims to find sustainable solutions for Uganda´s energy-access challenge. It will make a significant contribution to the local Buheesi subcounty infrastructure.

The E-/FTTV concept is based on a simultaneous rollout of fiber for broadband access with the power grid to rural areas. The ICT part makes use of ADVA´s network function virtualization technology and infrastructure sharing to reduce cost.



Partners include the Ugandan Ministry of Energy and Mineral Development, the Rural Electrification Agency, the National Information Technology Authority Uganda (NITA-U), and the Uganda Communication Commission´s Rural Community Development Fund. Further support is drawn from the Strategic Partnership for Digital Africa.

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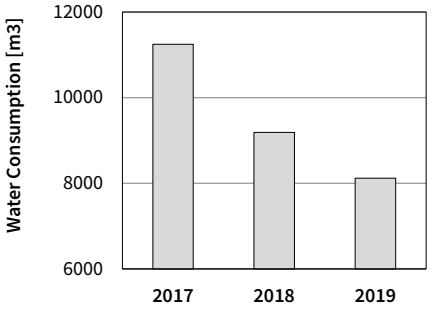
GRI environmental standards

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

Environmental compliance

ADVA runs an ISO 14001:2015 Environmental Management System (EMS). The latest surveillance audit in Q4/2019 revealed some minor deviations only. Corresponding corrective actions have already been carried out.

Material aspects in the EMS context have been described in the chapter Sustainability strategy in Part 1 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, discharges to water or significant emissions of NOx, SOx and other particles into the air. The water consumption of the group is shown in the following diagram.



Water consumption over the last three years

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 2019, the consumption of hazardous substances at our sites in Meiningen, Gdynia and Neuchâtel was 685 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, 24 g of Cesium 133 were purchased for further use in atomic clocks.

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

Waste and water amount and GWP 2019 (2018)

Waste disposal	**Weight [t]**	**GWP [tCO_2e]**
Cardboard	114.1	2.4 (2018: 2.5)
Waste incineration	94.5	2.0 (2018: 2.1)
Plastic	12.8	0.3 (2018: 0.3)
E-scrap	22.4	0.5 (2018: 0.4)
Water consumption	**Volume [m3]**	**GWP [tCO2e]**
Water	8,119	2.8 (2018: 3.2)

Two relevant EMS targets relate to lifecycle assessment (LCA), as described under Portfolio lifecycle assessment in Part 1 of the report. These are ≥90% portfolio coverage and highest confidence of the LCA results. Both targets were achieved in 2019.

Resource efficiency

G302-1, G302-4

As pointed out in the ADVA impact and (ISO) context chapter, the most relevant resources aspect for the group refers to the energy consumed. For the vast majority, this relates to purchased electricity. This particular area is covered by our ISO 50001:2011 Energy Management System (EnMS) and related activities and also by the Scope-2 target within our SBTi commitment.

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 following two diagrams present the developments of energy consumption (Scope 1, natural gas, plus Scope 2, purchased electricity) over the last three years, and the mix of renewable (RE) vs. non-renewable (Non-RE) energy over the same period, as per our electricity providers and data from regional grids.

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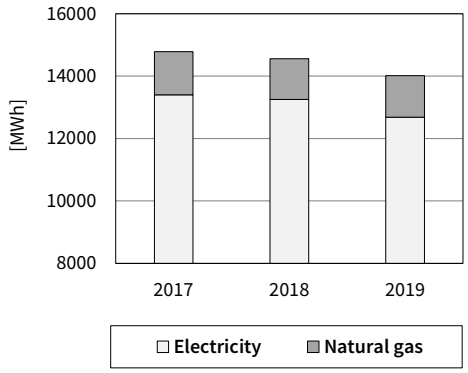
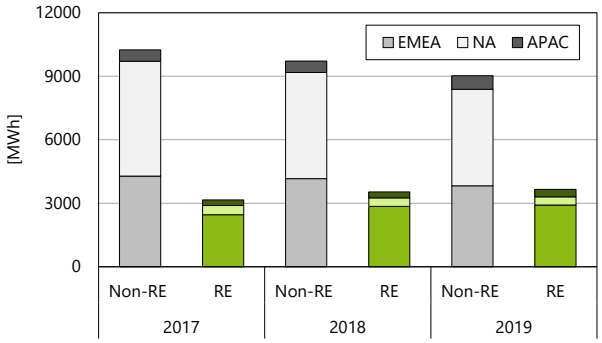


Energy consumption over the last three years



Consumption of renewable and non-renewable energy over the last three years

In 2017 and 2018, and following major acquisitions (Overture 2016, MRV 2017), no energy-consumption reductions were achieved. Next to company growth associated with these acquisitions, this is attributed to the fact that the related new sites were not yet integrated in the ISO 50001:2011 or similar activities. In 2019, electricity-consumption reductions in the order of 5% were achieved.

For the ADVA sites not affected by acquisitions in the last years, the EnMS target of 1.5% energy-consumption reduction per year was (over-) achieved. This holds for the large sites (i.e., those with impact) which are considered in the EnMS.

RoHS, REACh, Conflict minerals

Regarding the restriction of hazardous substances (RoHS), all products of the group are fully compliant with the Directive 2011/65/EU. This is ensured by respective engagement with the related components suppliers and contract manufacturers. In addition, we also file the RoHS exemption in our internal databases. This allows fast identification and reaction in cases where certain specific exemptions expire.

Registration, evaluation, authorization and restriction of chemicals (REACh) is required according to Regulation (EC) No 1907/2006. The regulation applies to manufacturers or importers of substances, if respective substances amount exceeds 1 t/a. Since the group neither manufactures nor imports such amount of substances, it does not fall under the registration and authorization obligations of the regulation. Instead, the group collects the data on the substance composition (material declarations) of the components it uses. Further actions would become necessary in cases where any substances used in any of these components were moved from the REACh candidates list into Annex XIV of the REACh Regulation. In such cases, the respective substances become subject to authorization and should be replaced.

Due to the high number of components and the slow and often incomplete feedback, the composition of substances is known for slightly less than 50% of all components the group is using. As stated in Part 2, we now intend to increase this significantly in order to even better prepare for any future changes in REACh regulations.

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). Similar to the REACh efforts, total supply-chain coverage is ~50%, caused by incomplete or missing answers. We intend to also improve this coverage, but so far, no KPI has been defined to this respect.

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Carbon emissions (Scope 1-3)

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

The complete ADVA GHG inventory, including all Scope 3 emissions for 2019, is summarized in the following table.

ADVA GHG inventory for 2019 (2018)

	Source/category	Consumption 2019	GWP 2019 [tCO_2e]	GWP 2018 [tCO_2e]
	Natural gas	1,360 MWh	269	260
	Owned transport	5,558,269 km	871	951
Scope 1		**Total Scope 1**	**1,140**	**1,211**
	Purchased electricity*	12,767 MWh	5,369	5,800
Scope 2		**Total Scope 1 plus Scope 2**	**6,509**	**7,011**
	Capital goods	14,215 kEUR	5,265	4,286
	Purchased goods			
	Production-related		40,532	35,792
	Non-production-related (other than paper)	1,861 kEUR	421	353
	Purchased paper	10.8 t	7.9	8.2
	Transmission and distribution losses	667 MWh	284	297
	Transportation and distribution			
	ISRound	20,715,943 t·km	9,353	9,341
	Outbound	3,472,375 t·km	3,568	3,912
	Waste disposal			
	Cardboard	114.1 t	2.4	2.5
	Plastic	12.8 t	0.3	0.3
	Waste incineration	94.5 t	2.0	2.1
	E-scrap	22.4 t	0.5	0.4
	Business travel			
	By air	17,646,839 (p)km	2,179	2,815
	By car	454,559 km	96.2	96.1
	By train	150,000 (p)km	0.7	0.7
	Employee commuting		2,900	2,900
	Use of sold products	656 GWh	242,639	218,004
	End-of-life treatment of sold products		333	294
Scope 3		**Total Scope 3**	**307,584**	**278,105**

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

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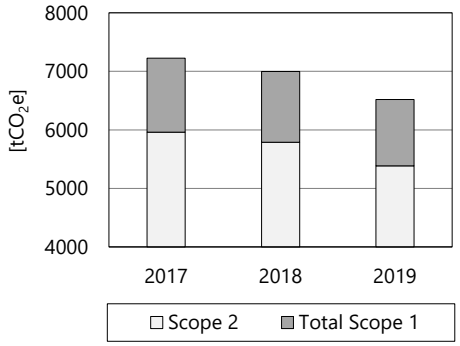
ADVA reports all GHGP categories that are relevant for the group. GHG emissions are reported on the basis of operational control, and Scope-2 data is location-based.

We do consider the relevant GHG other than CO_2.

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.



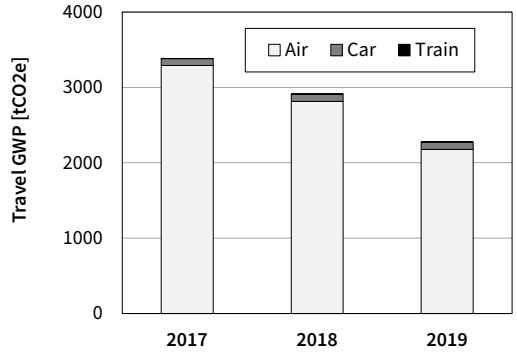
Scope-1/2 emissions development over the last three years

Transport is 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. For both Scope-3 contributions, however, the group runs several emissions-reductions initiatives. These include

- Yearly bike-to-work campaign. This is a joint effort together with one of the large health insurance companies in Germany. It encourages our employees to use bicycles for commuting more frequently. In 2019, this campaign reduced our commuting-related emissions by almost 3 tCO_2e in Germany. Similar campaigns ran in the UK and the US as well.
- Home-office arrangement. This is a permanent arrangement which allows – and encourages – employees, where applicable, to make use of the home-office option. On average, this saved almost 10% commuting for the complete group.
- Grant for local public-transport tickets. This is available at certain ADVA sites. It helps encouraging the employees to make use of local public transport (and thus stabilizes/ increases the respective fraction of commuting mode).
- 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, however, the exact amount of reduction cannot yet be calculated.

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

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End-to-end delivery

G305-3

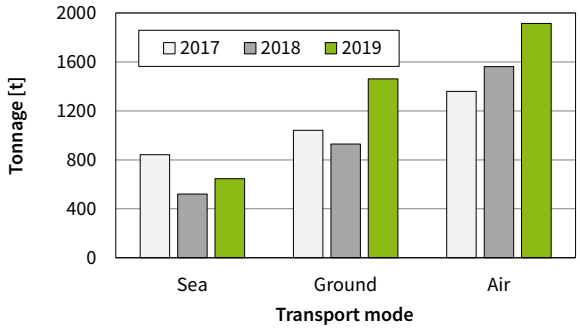
This chapter contains relevant environmental aspects from the perspective of both, the end-to-end value chain as well as the products' complete lifecycle. These have an impact on carbon emissions and resource efficiency.

According to the TIA model, the main aspects in this segment are transport distances, modes and emissions, and packaging.

Transport mode and emissions

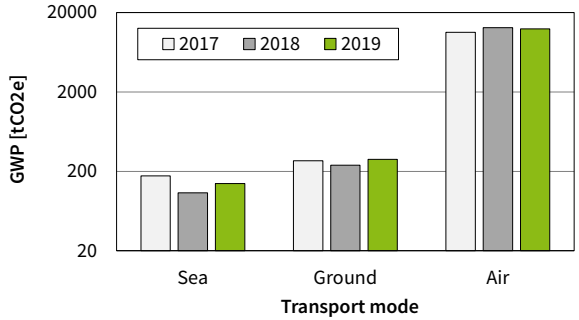
Transport – inbound plus outbound – is the main contributor to the end-to-end delivery segment and to total GWP, as seen from the previous GHG inventory. In 2018, the group continued its efforts to reduce its transport-related environmental impact, i.e., reduce where possible air freight. These attempts are still limited by large customers' requirements for short delivery times.

The freight-split development over the last three years is displayed in the following diagram. Note that scale is linear here.



Development of transport modes over time

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



Transport-related GWP

The underlying transportation emission factors are listed below.

Global transportation emissions factors

Emissions factors 2019 [kgCO2e/(t·km)]		
See freight	**Land freight**	**Air freight**
0.0113	0.5137	1.1122

Next to the freight modes listed above, we investigated the new connections between China and Europe via the Trans-Siberian railway. In 2019, this did not (yet) lead to reportable results.

Packaging optimization

G305-3

The other area of consistent improvements in logistics relates to the packaging of our products. This optimization addresses cost and GHG reductions and avoidance or reduction of certain materials. The latter refers to foam and plastics. These materials, however, cannot be fully avoided when it comes to packaging optics.

Over time, our packaging has been optimized with regard to its form factor, its re-usability and the amount of renewable materials (namely, cardboard replacing foam and plastics where possible). The form factor has been adopted in order to fit standard pallets size most efficiently.

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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).

GGeSI (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.

IPCC (Intergovernmental Panel on Climate Change)

The IPCC is the international body for assessing the science related to climate change. The IPCC was set up in 1988 by the World Meteorological Organization (WMO) and United Nations Environment Program (UNEP) to provide policymakers with regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation.

ISO 14001:2015

A standard developed and published by the International Organization for Standardization (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 22301:2012

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

ISO 50001:2011

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.

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N

NFV (Network Functions Virtualization)

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

O

OSI (Open Systems Interconnection) stack / model

The OSI model is a conceptual model that characterizes and standardizes the communication functions of an ICT system without regard to its underlying internal structure and technology, aiming at interoperability of diverse systems. Originally, the model partitioned ICT systems into seven abstraction layers. The model is a product of the Open Systems Interconnection 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/.

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:R6.1/R5.6

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 9001:2015.

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 wheelie bin.

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Corporate information

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Corporate headquarters

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P.R. 518054 China

t +86 755 8621 7400

ADVA Optical Networking on the web

More information about ADVA Optical Networking, 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 Optical Networking website and can be downloaded at https://www.adva.com/en/about-us/sustainability.

GRI content index

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	GRI	Disclosure	Reference	Comments
GRI 102: General disclosures				
	Organizational profile			
102	102-1	Name of the organization		ADVA Optical Networking SE
	102-2	Activities, brands, products, and services	6f, 17f	For further information: https://www.adva.com/
	102-3	Location of headquarters	5, 56	
	102-4	Location of operations	5	
	102-5	Ownership and legal form		ADVA Optical Networking SE is a European stock corporation (“Societas Europaea”)
	102-6	Markets served	SR19: 16, 17 AR19: 24, 42	
	102-7	Scale of the organization	SR19: 5, 42ff AR19: 42	More than 580,000 modules and systems were shipped in 2019
	102-8	Information on employees and other workers	42ff	
	102-9	Supply chain	SR19: 36, 37 AR19: 31f	In 2019, ADVA had a globally dispersed supplier base, with a center in China. Total number of relevant suppliers, ranging from components suppliers to contract manufacturers is in the range of 80. This also includes logistics suppliers.
	102-10	Significant changes to the organization and its supply chain		No significant changes
	102-11	Precautionary Principle or approach	11f, 19, 22f	
	102-12	External initiatives	11, 34	
	102-13	Membership of associations	15	
	Strategy			
102	102-14	Statement from senior decision-maker	3	
	102-15	Key impacts, risks, and opportunities	SR19: 19ff, 24f, 26 AR19: 57ff	
	Ethics and integrity			
102	102-16	Values, principles, standards, and norms of behavior	35	
	102-17	Mechanisms for advice and concerns about ethics	38	
	Governance			
102	102-18	Governance structure	SR19: 8,9 AR19: 13ff	
	102-19	Delegating authority	8,9	
	102-20	Executive-level responsibility for economic, environmental, and social topics	8,9	
	102-21	Consulting stakeholders on economic, environmental, and social topics	8, 11, 14	
	102-22	Composition of the highest governance body and its committees	AR19: 13ff	

	GRI	Disclosure	Reference	Comments
102	102-23	Chair of the highest governance body	AR19: 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, 9, 11	
	102-30	Effectiveness of risk management processes	SR19: 8 AR19: 57ff	
	102-31	Review of economic, environmental, and social topics	8, 10, 11	
	102-32	Highest governance body's role in sustainability reporting	8, 9	
	102-33	Communicating critical concerns	8	
	102-34	Nature and total number of critical concerns	SR19: 8, 19 AR19: 57ff	
	102-35	Remuneration policies	AR19: 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 2019 was 9.6 (2018: 8.6).
	102-39	Percentage increase in annual total compensation ratio		The percentage increase was 11.6% (compare 102-38 for 2019 and 2018)
	Stakeholder engagement			
102	102-40	List of stakeholder groups	11, 14	
	102-41	Collective bargaining agreements		0%
	102-42	Identifying and selecting stakeholders	11, 14	
	102-43	Approach to stakeholder engagement	11, 14, 15	
	102-44	Key topics and concerns raised	14, 15, 22f	
	Reporting practice			
102	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	16	
	102-47	List of material topics	22ff	
	102-48	Restatements of information		Scope-1/2 data is not normalized to value added (GEVA[Q]) anymore
	102-49	Changes in reporting	16	Validated non-financial report acc. to HAR now as Part 2 of this Sustainability Report
	102-50	Reporting period	16	From January 1, 2019 to December 31, 2019

[Q]Glossar: *Page 54*

	GRI	Disclosure	Reference	Comments
102	102-51	Date of most recent report	16	Last report, Sustainability report 2018, was published in April 2019
	102-52	Reporting cycle	16	Annual
	102-53	Contact point for questions regarding the report	5	
	102-54	Claims of reporting in accordance with the GRI Standards	16	This report has been prepared in accordance with the GRI Standards: Comprehensive
	102-55	GRI content index	57ff	
	102-56	External assurance	16	
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 Business overview and Risk report in AR19
	201-1	Direct economic value generated and distributed	AR19: 43	
	201-2	Financial implications and other risks and opportunities due to climate change	SR19: 19f AR19: 57	
	201-3	Defined benefit plan obligations and other retirement plans		Does not apply. ADVA Optical Networking has no defined retirement program.
	201-4	Financial assistance received from government	AR19: 99, 116	
	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	11ff, 22f, 38	
	205-1	Operations assessed for risks related to corruption	AR19: 57	All significant operations are regularly assessed.
	205-2	Communication and training about anti-corruption policies and procedures	38	
	205-3	Confirmed incidents of corruption and actions taken		No confirmed incidents of corruption have occurred in 2019.
	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	22f, 38	
	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	38	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				
	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	10, 11f, 22f, 28	
	302-1	Energy consumption within the organization	49f, 51f	
	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	49f	
	302-5	Reductions in energy requirements of products and services	32, 51	

	GRI	Disclosure	Reference	Comments
	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	10, 11f, 22f, 28	
300	305-1	Direct (Scope 1) GHG emissions	28f, 51f	
300	305-2	Energy indirect (Scope 2) GHG emissions	28f, 51f	
300	305-3	Other indirect (Scope 3) GHG emissions	28f, 51f, 53	
300	305-4	GHG emissions intensity		ADVA shows absolute energy consumption, see GRI102
300	305-5	Reduction of GHG emissions	28f, 51f	
300	305-6	Emissions of ozone-depleting substances (ODS)	49	None
300	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	49	
	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	11f, 22f, 28	
300	306-1	Water discharge by quality and destination	49	
300	306-2	Waste by type and disposal method	49	
300	306-3	Significant spills	49	None
300	306-4	Transport of hazardous waste	49	
300	306-5	Water bodies affected by water discharges and/or runoff	49	None
	Environmental Compliance			
300	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	11f, 22f, 28	
300	307-1	Non-compliance with environmental laws and regulations	49	
	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	37	
300	308-1	New suppliers that were screened using environmental criteria	14, 37	
300	308-2	Negative environmental impacts in the supply chain and actions taken		No specific occurrences

	GRI	Disclosure	Reference	Comments
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	11f, 42	
400	401-1	New employee hires and employee turnover	42	This is not tracked by gender and age group.
400	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	46	Note some of these benefits are also available to temporary or part-time employees.
400	401-3	Parental leave		40 employees took parental leave. 18 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	11f, 42	
400	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	11f, 42	
400	403-1	Workers representation in formal joint management-worker health and safety committees	46f	
400	403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	46f	
400	403-3	Workers with high incidence or high risk of diseases related to their occupation	46f	
400	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	42	
400	404-1	Average hours of training per year per employee	45	This is not tracked by gender and employee category.
400	404-2	Programs for upgrading employee skills and transition assistance programs	44f	
400	404-3	Percentage of employees receiving regular performance and career development reviews		100%
	Diversity and equal opportunity			
400	103-1, -2, -3	Explanation of the material topic and its boundary; the management approach and its components; evaluation of the management approach	11f, 42	
400	405-1	Diversity of governance bodies and employees	42	
400	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	22f, 42	
400	406-1	Incidents of discrimination and corrective actions taken		No incidents

	GRI	Disclosure	Reference	Comments
	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	42	
400	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	37	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	42	
400	408-1	Operations and suppliers at significant risk for incidents of child labor	37	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	42	
400	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	37	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	22f	
400	413-1	Operations with local community engagement, impact assessments, and development programs	45, 48	
400	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	22f, 36	
400	414-1	New suppliers that were screened using social criteria	37	
400	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.
	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	38	
400	415-1	Political contributions	38	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.
400	416-1	Assessment of the health and safety impacts of product and service categories		
400	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services		None

	GRI	Disclosure	Reference	Comments
	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	22f	
400	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data		In 2019, 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	38	
400	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.

SR19 : Sustainability report 2019

AR19 : Annual report 2019