

Sustainability Affects All of Us

ADVA Optical Networking Sustainability Report 2015



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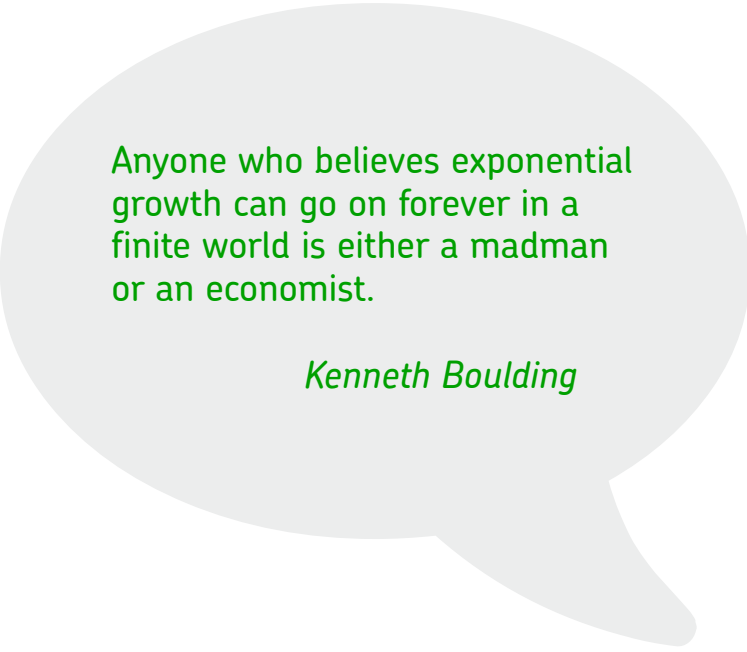
Sustainability and Why We Care About It

At ADVA Optical Networking, we take holistic sustainability seriously. We have adopted a mindset of The Triple Bottom Line – planet, people, profit – to support sustainable growth worldwide. Sustainability in our world means protecting the environment, enriching our people and growing our businesses. We take responsibility for creating sustainability with our business practices, through the actions of our employees, in relationships with our vendors and partners and in the products and solutions we design for customers.

Our drive for sustainability is not a recent development. Since our beginnings in the 1990s, we've focused on our impact on employees, communities, suppliers and the environment. Back then, the latter primarily meant carbon-dioxide emissions. A couple of years ago, ADVA Optical Networking adopted a broader, holistic view of sustainability – because it better fits our large customers' requirements.

Meanwhile, consistent sustainability performance is getting more and more important, not only for people and the planet, but also for sustainable business. Our customers want us to demonstrate this every day. They have their sustainability goals, driven by their investors, their legislation, or set by themselves, and these help them to define and improve their branding. So our focus on doing better in the different areas of sustainability also helps our key stakeholders. And since our joint brandings are at stake, we cannot simply pretend to be sustainable by greenwashing our performance.

Our commitment to sustainability also opens the way to several cost-reduction mechanisms as we move further towards a true circular economy. With that in mind, we are working with customers to reduce surplus inventories, implement just-in-time delivery and take back product for reuse, repurpose or recycle with the intention to conserve natural resources and reduce emissions.



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

Kenneth Boulding

CEO Statement G4-1

Sustainable social and environmental practices are important to ADVA Optical Networking because they support enduring success for our business, community and planet and help maintain healthy quality of life well into our future.

We take a holistic Triple Bottom Line approach to protect our planet, support our people and increase our profits. From a product and solution standpoint we're always innovating – creating better, smaller and more efficient products that help our customers reduce their carbon footprint.

When you consider the vast communications industry landscape, it might seem impossible that one company can make a difference. We're doing just that. We have developed formal carbon footprint and environmental impact parameters that drive new product design efforts to deliver exceptional benefits at the lowest cost to the planet and its natural resources. We're working more sustainably and so are our customers.

It's ingrained in our nature as a company to do more with less and we recycle wherever possible. This helps ADVA Optical Networking compete and win against industry titans on a daily basis. In 2015, we were honored for these efforts by being awarded the first QuEST Forum Most-Improved Sustainability Award.

To be clear, this is not entirely altruistic. We focus intently on increasing revenues and building profits. Like many corporations, we want dramatic and enduring business success. Sustainable practices are the most cost-effective path to greater profitability.

I take full responsibility for driving ADVA Optical Networking forward with a focus on true benefit for planet, people and profit. We will be diligent with our resources. We will come to work each day as an energized and empowered team that understands business success is not just about making the best technology.



We design, produce and sell the best technology and our solutions are transforming the communications industry. However, we know our true leadership potential is realized by taking extra steps along the way to ensure our business success is enduring as is the success of our people and our natural world.

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

A handwritten signature in black ink, appearing to read 'Brian Protiva'. The signature is stylized and fluid.

Brian Protiva
Chief Executive Officer

About This Report G4-18; G4-19; G4-32

This report is based on the Global Reporting Initiative (GRI) in accordance with the Global Reporting Initiative fourth generation of guidelines (G4) at a core level.

Report Boundaries

2015 is the fifth period reported for. Our first GRI Index summary report for 2011 was published in March 2013. In 2015, the first stand-alone Sustainability Report (for 2014) was published.

The actual report at hand covers the period from January 1, 2015, to December 31, 2015.

It contains data relating to ADVA Optical Networking SE plus 15 wholly-owned subsidiaries (referred to, collectively, in this report as "we", "us", "our", "company", "ADVA Optical Networking", or "group companies"). For the complete list, please refer to our [Annual Report 2015, page 113](#).

Report Format

As part of our commitment to reduce our carbon footprint, our Sustainability Report and our previous GRI indexes are available as electronic copies in PDF format only.

Report Content

This report mainly focuses on the corporate-responsibility issues that are of greatest importance to our stakeholders and that have major influence on our business success. The different areas in particular of sustainability are structured following the QuEST Forum Sustainability model (described in the chapter Holistic View on Sustainability).

The corporate-responsibility section of our website presents additional general information on our sustainability programs, provides access to specific policies and includes an index that points readers toward relevant GRI indicators. It can be found [here](#).

Identified Material Aspects

In 2015, a Materiality Analysis has been done, in an attempt to rank the different aspects of sustainability according to the QuEST Forum model. Details can be found in the chapter Stakeholder Engagement. Differences (according to both, stakeholders' expectations and the internal/external analysis) can be identified between the individual segments, but in general, all segments rank in the upper right (i.e., relevant) half plane of the analysis diagram. Therefore, we report relevant aspects of all segments. More detailed or refined analysis is still due, therefore, we cannot provide any further prioritization for this report.

About ADVA Optical Networking

At ADVA Optical Networking we're creating new opportunities for tomorrow's networks, a new vision for a connected world. Our intelligent and open telecommunications hardware and software solutions have been deployed by several hundred service providers and thousands of enterprises, helping them drive their networks forward.

Our Company Key Facts

- Employees
1,524 worldwide as of December 31, 2015
- Quality Commitment
ADVA Optical Networking is TL 9000 and ISO 14001 certified.
- Public Listing
Stock listed as ADV in the Prime Standard segment at Frankfurt Stock Exchange and a member of the TecDAX®.

You can find out more about ADVA Optical Networking [here](#).

Corporate Ethics and Compliance G4-56; G4-SO4

Integrity and ethical decision making are central requirements for the sustainable success of ADVA Optical Networking. The group recognizes its responsibility to comply with national and international laws, regulations, internal policies and ethical standards – otherwise known as compliance.

In order to ensure observance of all applicable laws and regulations, ADVA Optical Networking has actively adopted a code of conduct and a range of group-wide policies which govern the group's business operations and are mandatory for all employees to follow. Training on the code has been conducted in all major sites and all employees have acknowledged their compliance.

The code is an extension of the group's core values, and employees are encouraged to report suspected incidents of non-compliance and to seek support when they have questions or suggestions. An external ombudsman (this role is currently covered by Frank Fischer, tax lawyer and former member of ADVA Optical Networking's supervisory board) and an externally operated ethics and compliance helpline enable confidential and anonymous reporting. Enforcement of compliance with all applicable laws and regulations and deriving internal policies is coordinated by ADVA Optical Networking's chief compliance officer who reports to the chief executive officer and the supervisory board.

You can find out more about our Corporate Ethics and Compliance [here](#).

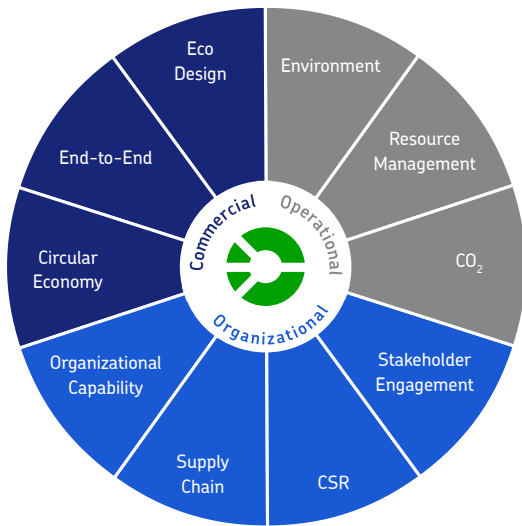


Holistic View of Sustainability

The area of sustainability splits into several aspects, which are also covered by the Triple Bottom Line – planet, people, and profit. Consequently, the traditional focus on corporate social responsibility addresses only a part of a broader sustainability understanding and needs to be complemented by a more holistic view. ADVA Optical Networking adopted such a view over the course of the last three years.

A total of more than 250 documents and standards describe the various aspects of sustainability, including various ISO standards. These sustainability standards and documents are partially complementing or overlapping, and altogether too complex for practical everyday use. This necessitates a common umbrella model which covers all relevant sustainability aspects. The aim of this model is not to replace all other standards but to give a guideline as to what the most relevant aspects to be followed are.

QuEST Forum, the standardization body who developed telecommunications' version of the Quality-Management standard ISO9001, TL9000, developed such a model. It is shown in the figure below. The model is also used by large network operators (for vendor assessment) and in the Sustainability Initiative of QuEST Forum, where it is used for (anonymous) self-assessment and comparison.



The sustainability model used in QuEST Forum G4-14

The model covers 10 sustainability segments and is basically split into three superordinate segments. These three super-segments are referred to as Operational, Organizational, and Commercial.

The **Operational** super-segment covers aspects which are mainly related to the (production) sites of the reporting company. Details are defined in the three segments Environmental Compliance, Resource Management, and CO₂ and Ozone (depletion).

For the *Environmental Compliance* segment, tracking against a credible standard is necessary, e.g., ISO14001. Relevant areas to be tracked are air emissions, discharge to water, and waste going to landfill.

In the *Resource Management* segment, strategies and measures for improving energy and water efficiency are to be demonstrated. This includes strategies and plans that lead to an increasing amount of renewable resources, with respect to raw material and energy (electricity). It also covers reduction of waste disposal.

The *CO₂ and Ozone-depletion* segment covers tracking of the *product and organization* CO₂ footprint as well as strategies for its reduction. This covers the Greenhouse Gas Protocol's (GHG) Scope 1 to Scope 3.

The **Organizational** super-segment contains the aspects of Stakeholder Engagement, Corporate Social Responsibility (CSR), Supply Chain Management (SCM), and Organizational Capability and Engagement.

Aspects relevant for *Stakeholder Engagement* are the identification of key stakeholders and sustainability issues. This includes engaging the stakeholders on issues identified by a *materiality analysis*.

Relevant groups of stakeholders for ADVA Optical Networking include shareholders, customers (i.e., network

operators), (components) suppliers, logistics partners, communities, employees, and associations and alliances.

The *CSR* segment covers the reporting entity's engagement regarding its employees and also within its communities. This includes compliance with relevant standards, e.g., the EICC Code of Conduct. Aspects to be considered include (but are not limited to) staff turnover, staff satisfaction, and accidents and illness records. This also includes supply-chain CSR audits.

Supply-Chain Management includes regular communication with suppliers on all aspects of sustainability. This also means setting of related targets, including verification by audits. This is increasingly important since in the recent past, many components suppliers moved into countries with potentially less-developed CSR rules.

Organizational Capability and Engagement refers to structural capabilities of the reporting entity (e.g., existence of sustainability-related responsibilities and competences) as well as to the existence of a coherent sustainability strategy which is regularly communicated internally and externally by senior management.

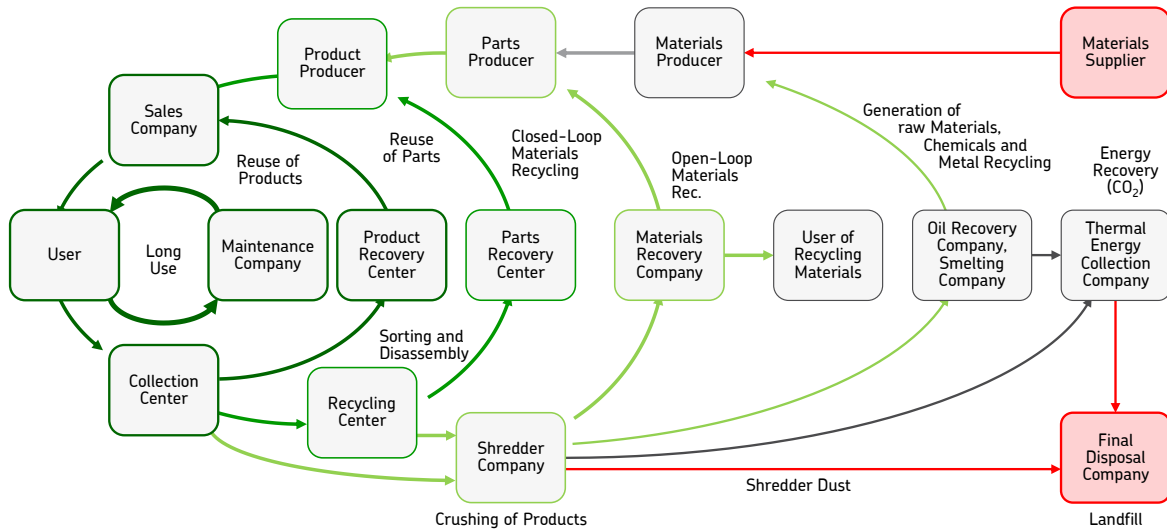
The **Commercial** super-segment includes the aspects of (product) Eco Design, End-to-End Logistics, and finally Circular Economy.

Eco Design covers, next to aspects like energy efficiency, the design for recycling, refurbishment and reuse. This has to be supported by Life-Cycle Analysis (LCA) of the majority of the product portfolio. Ideally, eco design is also linked to sustainable manufacturing, i.e., the aspects covered in the Operational super-segment.

End-to-End Logistics cover those aspects which are neither covered in eco product design nor in the Operational super-segment. This includes CO₂ and other impacts from the end-to-end supply chain, logistics service providers and packaging, but also aspects like in-life/customer support, spares, reverse logistics etc. which also contribute to CO₂ and other negative environmental parameters.

The *Circular Economy (CE)* segment refers to a strategy and action plan, covering all relevant products, which ultimately lead to Circular-Economy business. This includes engaging the end customers in the related business models (e.g., leasing, take-back). Circular Economy aims at a drastic reduction of raw-material intake as well as of the resulting waste.

The basic idea of Circular Economy is *longevity*. This is shown in the figure below which originally was used by Ricoh in 1996. It can be described as the combination of *extended product lifetime*, *product second life* (refurbishment), *parts re-use*, and *optimized recycling*. Products, or relevant parts of them, are to be kept in closed-loop usage as long as possible. Whenever possible, the inner-



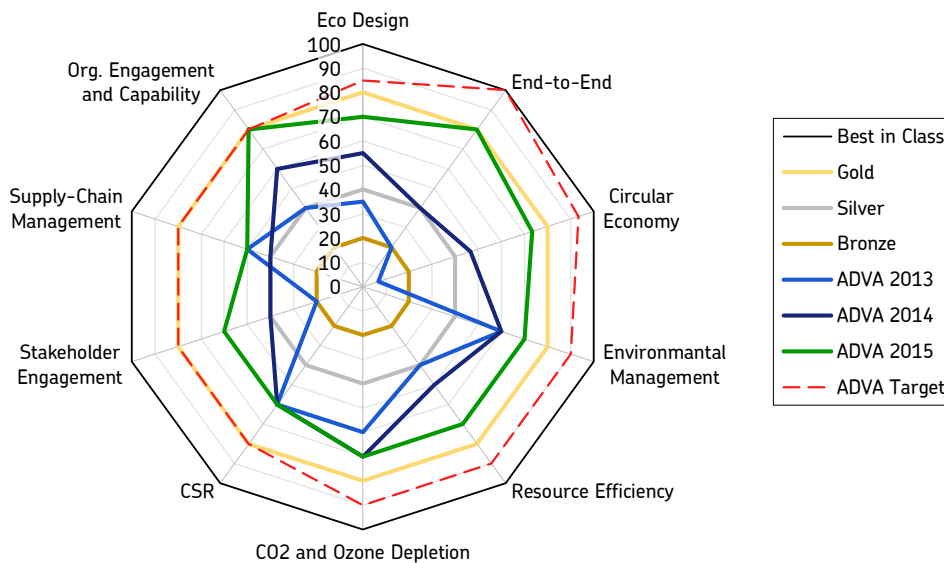
The Circular Economy Model

most loop shall be closed. Only a minimized portion of the original raw materials are to leave the closed loops to finally end in thermal energy recovery and ultimately as landfill.

Therefore, a relevant loop closure in CE is provided by optimized recycling. The latter must aim at getting back close to 100% of all valuable material from waste electrical and electronic equipment (WEEE) in best available purity (also as close to 100% as possible). This avoids *downcycling* that only recovers poor-grade material. Such recycling must be supported by product eco design that in particular eases disassembly and avoids certain materials and material composites. These recycling capabilities must be complemented by business schemes that support the take-back of the related products, e.g., leasing models. Finally, logistics are required that optimize cost and CO₂ footprint (one of the end-to-end aspects).

The sustainability model described so far is used by QuEST Forum as well as by first large network operators. Therefore, in the past, ADVA Optical Networking has been assessed using this model regularly. The results of these assessments can be displayed in a radar chart with 10 related segments. The following figure shows the successive results that ADVA Optical Networking achieved in the three recent years, together with a target performance defined by one of our relevant customers.

From this figure, consistent improvement in almost all sustainability segments can be derived. This has been confirmed in September 2015 by the win of the first QuEST Forum Most Improved Sustainability Award. In the remainder of this report, we will provide detailed evidence of our sustainability work.



ADVA sustainability assessment results



Organizational

Investors, customers and communities are increasingly looking at corporate sustainability performance when making investment, employment and support decisions. They understand that sustainability leads to greater business endurance and longevity, and of course greater profits.

The Carbon Disclosure Project helps investors get a clear view on where participating companies are on the path to sustainability. We report regularly through the Carbon Disclosure Project and quality-oriented organizations like QuEST Forum. We want credit for the great work we do today to ensure enduring business success.

During 2015, ADVA Optical Networking increased and deepened engagement with important groups of shareholders. We believe strong and transparent relationships with our key people, whether they are important investors, staff engineers or leaders in the communities where we work, are vital to continued business growth and success.

Uli Dopfer, CFO, ADVA Optical Networking

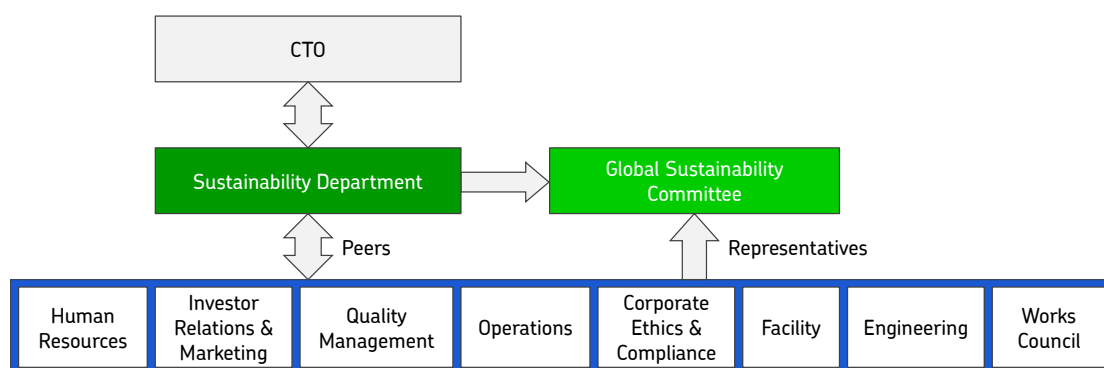


Organizational Capability

Effective June 1, 2015, ADVA Optical Networking changed its organization regarding the area of sustainability. A global sustainability team has been established that directly reports to the CTO. The team sets the ADVA Optical Networking sustainability strategy in close cooperation with the respective peers in other departments (HR, Legal, OPS, and R&D). It acts as primary point of contact (e.g., for CDP queries), coordinates activities and provides content in the form of collateral, dissemination (at conferences, etc.) and contributions to (research) projects. It also supports sustainability assessments and

reporting, and the related sections in tenders or requests for information.

In 2015, first training on the topic was given, and our strategy and related achievements appear regularly in presentations given by ADVA Optical Networking senior management (members of the board). The team also continued its participation in the QuEST Forum Sustainability Initiative. Also, a series of short videos were produced this year intended to promote various aspects of sustainability. The first of these videos can be found on our [website](#).



Sustainability Structure in ADVA Optical Networking SE

Mission

Sustainability has become a ubiquitous requirement worldwide. This is true for all our relevant stakeholders. Therefore, our sustainability strategy and actions must reflect the fact that we take responsibility regarding sustainability for all our stakeholders and their related requirements. This leads to a holistic sustainability approach, which then covers all relevant aspects of the *Triple Bottom Line* – planet, people, and profit – in order to maintain sustainable growth.

Environmentally, or regarding the planet, this is driven by global warming, ozone depletion, ecotoxicity and resource scarcity. It is reflected by actions targeting environmental compliance, resource efficiency, and carbon dioxide and ozone-depletion reduction.

In the people segment, the respective stakeholder groups must be considered regarding their most relevant sustainability requirements as well. This holds for our

Key Objectives	Activity Examples & Status	
Stay in constant dialogue with all stakeholders and let their collective voice guide our Sustainability efforts	<ul style="list-style-type: none"> Investor Relation Survey in preparation Part of the Quest Forum Sustainability Initiative BT bilateral discussion already started 	
Maintain impeccable standards for Sustainability of ADVA Optical Networking and the business partners we choose	<ul style="list-style-type: none"> Advanced Logistic Model Rollout in the UK Continuous Packaging Optimization 	
Optimize ADVA Optical Networking's use of resources and cut our CO ₂ footprint by 10% by 2017 *	<ul style="list-style-type: none"> Ongoing activity on Energy 	
Institutionalize normative references for product energy-efficiency rating that support our goal to be an industry leader	<ul style="list-style-type: none"> Ongoing 	
Set class-leading improvement targets (CO ₂ footprint of next-generation products)	<ul style="list-style-type: none"> Ongoing 	
Institutionalize DfR3 ** to maximize reuse and recycling potential of new products	<ul style="list-style-type: none"> Will be applied to all next HW projects 	

* Compared to 2013 ** Design for Reduce, Reuse, Recycling

employees, our customers, our shareholders and investors as well as for our logistics partners, our suppliers and, last but not least, our communities. This is the area that traditionally has been served under the term corporate social responsibility. Under the more holistic view, this is now complemented by sustainability-related supply-chain management and stakeholder engagement.

Finally, profit itself ought to be sustainable. This leads to the renunciation of the linear take-make-use-dispose economy and a change toward the concept of circular economy, including the preparation of its larger-scale implementation. Here, new or complementing business models like leasing or take-back are considered. In turn, such business models have to be supported by optimized product designs, logistics, and manufacturing. That's where our holistic view on sustainability comes full circle.

Stakeholder Engagement G4-25; G4-26; G4-27

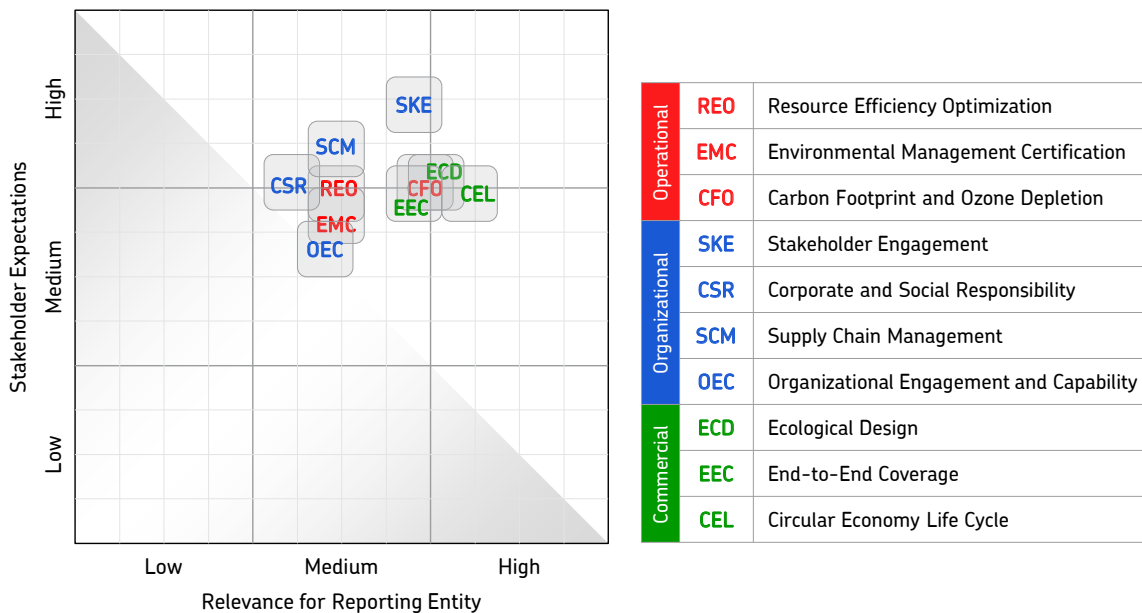
Stakeholder engagement is relevant in the sustainability context in that it helps with identifying stakeholders' expectations and updating focus on sustainability-related activities. As such, it is necessary as one of the main input sources for the sustainability materiality analysis. Relevant action areas identified in a materiality analysis in turn can find their way onto a sustainability-balanced scorecard. The scorecard acts as a high-level tool and evidence (since it contains KPIs) for the main sustainability work identified.

A materiality analysis is typically displayed in a two-dimensional diagram. The ordinate axis displays the stakeholders' expectations with regard to sustainability performance, strategy, etc. of the reporting entity. These expectations must be derived from suitable engagement. For our analysis, we considered shareholders, customers, suppliers, logistics partners, communities, employees, and associations and alliances (e.g., QuEST Forum).

The x-coordinate of the materiality analysis summarizes two aspects, an external (or environmental) analysis, plus an internal (or business) analysis. The external analysis considers aspects like legislation, governmental funding, technical needs, developments and innovations, competition, media perception, and economics (e.g., exchange rates, etc.). The internal analysis covers the reporting entity's strengths and weaknesses (e.g., regarding competence, resources available, marketing strategy, and business opportunities and challenges).

The resulting materiality analysis, derived in 2015, is shown below.

From the materiality analysis, one can derive that all sectors of the sustainability model are located in the upper-right half plane. Particular interest is attributed to stakeholder engagement, supply-chain management, eco design, and the elements of the commercial superordinate segment, refer to the QuEST Forum model explained earlier.



Sustainability materiality analysis 2015



Customer Satisfaction Update/Results 2015 G4-PR5

	2015	2014	2013	2012
Overall	41%	40%	21%	29%
1/8 Technology & Innovation	20%	8%	-5%	0%
2/8 Product Quality & Reliability	24%	20%	11%	16%
3/8 Fault Correction	32%	34%	4%	19%
4/8 Proposals	59%	63%	34%	36%
5/8 Order Management	59%	69%	45%	55%
6/8 Shipping & Invoicing	57%	63%	34%	49%
7/8 Project, Program, Account Management	62%	64%	43%	64%
8/8 Technical Services	44%	47%	30%	36%

The Net Promoter Score is obtained by asking customers a single question on a 0 to 10 rating scale: "How likely is it that you would recommend our company to a friend or colleague?" Based on their responses, customers are categorized into one of three groups: promoters (9–10 rating), passives (7–8 rating), and detractors (0–6 rating). The percentage of detractors is then subtracted from the percentage of promoters to obtain a Net Promoter Score.

Sustainability Supply Chain Management G4-EN32; G4-LA15; G4-HR4; G4-HR5; G4-HR6

Sustainability-related supply-chain management requires close cooperation with suppliers, as one relevant example for stakeholder engagement. In order to assess compliance with the Supplier Code of Conduct, which is based on the EICC Code of Conduct, ADVA Optical Networking has implemented a supplier assessment process intended to uncover risks and address them. This process consists of a supplier survey that documents compliance on every aspect of the company's supplier code of conduct, a risk assessment performed by the company, and finally on-site supplier audits.

Telling Our Suppliers

Our suppliers know our expectations from the outset. We clearly document these in our Supplier Code of Conduct that is based on EICC standards.

Asking Our Suppliers

We want to know our suppliers have a sustainability program. That's why we ask for explicit details and updates on how they are building a sustainable future.

Scoring Our Supplier

We score the supplier against our own code of conduct. This ensures we understand the supplier's approach to labor practices, health & safety, the environment and other key areas.

Ranking Our Supplier

We rank suppliers according to risk and develop a regional risk dimension. This provides a detailed risk picture across our entire supply base.

Working With Our Suppliers

We have implemented supplier CR audits, ensuring our suppliers are meeting our requirements, and those of our customers. We are not there yet to follow this process with each and every of our suppliers, but we are constantly working on improving this.

Our audits ensure we are constantly engaged with our suppliers, helping them to move forward and remain within our Supplier Code of Conduct.

Currently, we are complementing the SCM/CSR (audit) process by several sustainability aspects beyond risk and CSR, according to the QuEST Forum model and its assessment tool. This will also complement our audits by the possibility of supplier self-assessments.

Conflict Minerals

Conflict resources are natural resources extracted in a conflict zone and sold to perpetuate the fighting. The most commonly mined conflict minerals are cassiterite (for tin), wolframite (for tungsten), coltan (for tantalum), and gold ore, which are extracted from Eastern Congo.

The Dodd-Frank Wall Street Reform and Consumer Protection Act requires companies to verify and disclose their sources of cassiterite, wolframite, and tantalum. In addition, the US Securities and Exchange Commission (SEC) issued the Conflict Mineral Law. It asks for independent third party supply chain traceability audits and reporting of audit information to the public and SEC.



ADVA Optical Networking follows these US requirements and audits its suppliers accordingly. We have requested information from all of our component suppliers with regard to their compliance. The majority of them answered, mostly positively. Some replies are still open, and some of our suppliers did not yet have the information. In total, we were able to successfully assess approximately 50% of our suppliers. Therefore, this is ongoing work.

ODS

Ozone-depleting substances (ODSs, consisting of Class I ODS, such as chlorofluorocarbon (CFCs), and Class II ODS, such as hydrochlorofluorocarbon (HCFCs)) are critical due to their ozone-depleting and global-warming potentials. In general, most of them can be replaced by less critical substances, but some of them are still in use (e.g., in cooling sprays). In order to fully eliminate the use of ODSs throughout the supply chain, the respective awareness must be created, and ODSs be tracked. We have successfully started this process, considering both our own sites and our suppliers. Like similar engagement processes – conflict minerals, REACH, RoHS – we’ve already had positive feedback, but completion of this is ongoing work.

Business Continuity Management Based on ISO22301

Typically, it is the customers requesting their suppliers to provide and maintain a fully integrated business continuity management system (BCMS) process in compliance with the ISO 22301 standard. In our case, this request came from British Telecom asking it to go for such a certification within the context of their sustainability program.

After a short evaluation phase and feasibility study also considering the financial and organizational benefits for the company, the management decided to go ahead with the project, which was then kicked-off in January 2015. The project goal was to develop and establish a BCMS at their three distribution center locations in York (UK), Meiningen (EU/APAC) and Atlanta (US).

The fact that we had implemented a risk management system based on ISO 31000 (not certified yet) was easing the efforts for identifying the risk areas relevant to BCMS. Consequently, we were able to complete the project in only nine months. In October 2015, ADVA Optical Networking SE passed the initial certification audits with zero major/minor deviations.

With this expansion of its certification portfolio (TL9000/ISO9001 – QMS, ISO14001 – EMS, ISO22301 – BCMS, and in progress: ISO50001 – Energy Management), ADVA Optical Networking SE has significantly increased the satisfaction of one of its most important customer. As a consequence, BT named ADVA Optical Networking SE as the “best supplier of the year” with a silver ranking in its sustainability program.

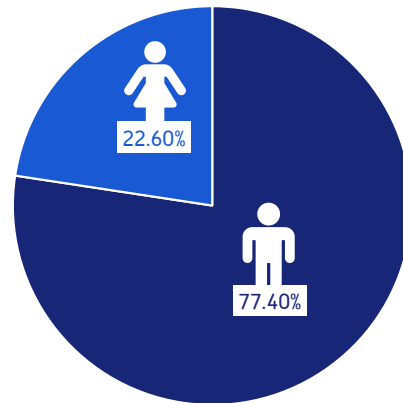
CSR G4-LA1; G4-LA12

Employees Statistics

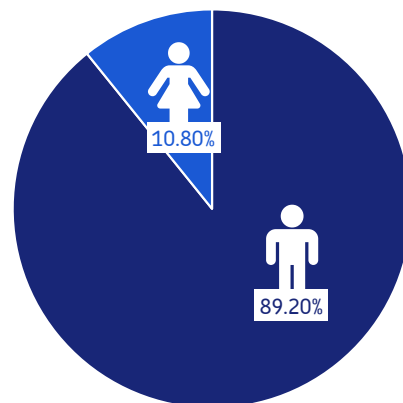
ADVA Optical Networking is an equal opportunity employer and has an on-going commitment to the creation of a workplace free of discrimination and harassment. The company recruits, hires, trains and promotes individuals on all job levels without regard to race, religion, ancestry, sexual orientation, marital status, national origin, age, gender and physical or mental disability.

ADVA Optical Networking is committed to a fair and equitable workplace where everyone is a respected and valued member of the team. The company’s core values (teamwork, accountability and motivation) and leadership principles (integrity/honesty, decisiveness and respect) guide employees and managers in all business activities.

Females / Males
in ADVA Optical Networking Globally



Females / Males in Management
at ADVA Optical Networking Globally





On December 31, 2015, ADVA Optical Networking had 1,524 employees, including 16 apprentices (previous year: 1,491, including 17 apprentices).

On average, ADVA Optical Networking had 1,491 employees during 2015, up from 1,463 during 2014. Furthermore, there were 22 and 17 temporary employees working for ADVA Optical Networking at year-end 2015 and 2014, respectively. During 2015, the increase in employees largely relates to the group's expansion in Poland and to the acquisition of Time4 Systems Oy in Espoo, Finland in July 2015 and the acquisition of a development team from FiSEC GmbH in Meiningen, Germany, in December 2015.

Employees per country (on December 31)	2015	2014	Change
Germany (including apprentices)	500	496	+4
USA	309	309	-
Poland	271	248	+23
China	137	139	-2
United Kingdom	108	102	+6
Israel	58	58	-
Switzerland	56	58	-2
France	16	17	-1
India	14	14	-
Singapore	12	11	+1
Other countries	43	39	+4
Total employees	1,524	1,491	+33

Employees Satisfaction Survey (ESS)

In 2005, we started our first employee survey. Since 2010, we have been conducting it on a yearly basis.

We use many ways to communicate with each other like breakfast & lunch meetings and townhall meetings with the Vorstand, to give and collect feedback from employees in order to work more efficiently.

Why are we doing this?

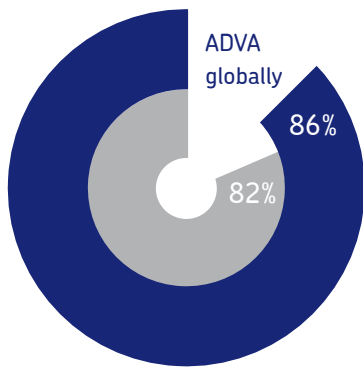
1. We want to offer our employees a platform to express opinions and views.
2. A worldwide employee survey helps us to receive ideas and proposals to further encourage our workforce's high levels of commitment.
3. The survey provides a basis to talk about things that employees think have gone well and things that could be improved. Our staff feedback helps us to continue to drive improvement and to further improve teamwork both locally and globally.

The most important questions we asked ourselves when we discussed the concept of this survey were:

- How do our employees see ADVA Optical Networking?
- Are our processes (e.g., our methods of communicating or our personal development programs), good enough?
- Do we work as efficiently as possible in our multi-site, multi-country structure?
- What about the leadership culture at ADVA Optical Networking?
- What about our core values?

Which topics will be addressed?

- Work place conditions
- Work content
- Employee development
- Compensation
- Innovation/responsibility/initiative
- Customer orientation
- Cooperation within the teams
- Cooperation within ADVA Optical Networking
- Leadership
- Information flow and communication
- Company culture
- General view/outlook



Response rate ADVA globally in comparison to the Global High Performance Companies (GHPC)

The overall participation rate was at 86% – a remarkable outcome! Within APAC 91%, North America 90% and EMEA/LA 84% of employees participated.

The very high participation rate enables us to paint a clear picture of our company’s condition worldwide – and to react accordingly, taking our strengths and weaknesses into account.

High- and lower-performing areas were identified in the ESS, with regard to departments, management level, and specific functions and services, respectively. As a consequence, four global key initiatives were instantiated to analyze and improve any issues in the lower-performing areas:

- COO Area
- Senior Directors group
- Training & Development
- Sustainable Engagement

Each initiative is led by C-level management. Results regarding analysis or improvements are reported company-wide.

Trainee and Education/Study Program

G4-LA9

At its main production and development facility in Meiningen, Germany, ADVA Optical Networking currently provides 17 apprenticeship positions, which lead to professions as electronic technicians for devices and systems and as office management assistants. In Meiningen, Germany, the company is among the most recognized apprenticeship providers for industrial electronics professions in its region. In addition, ADVA Optical Networking offers an active university student trainee program in Germany that provides on-the-job work experience to students pursuing degrees.

Global Idea Bank Update

During 2015 the Global Idea Bank received a total of 115 new ideas, 32 (27%) of these have already been implemented and a further 21 (18%) are in progress. In addition to the Global Idea Bank, we also plan to initiate the *Global Sustainability Challenge*.

Health & Safety

G4-LA2

We support a flexible, diverse, and casual work environment, which stimulates change and motivates our highly efficient people. We have designed our *work and life program* around our people because we know that they will spend the majority of their life at work.

The program comprises several categories, including, among others, health benefits, time-off offerings, and training & development. More detailed aspects of these categories include (but aren’t limited to) the following selection:

Health Benefits

- Medical care (PPO/HSA plans)
- Prescription or mail-order drug plans
- Dental and vision care
- Flexible spending (medical and dependent care) and FSA debit card
- Employee assistance program
- Short-term and long-term disability
- Fitness center or stay-fit discount program

Other On-site Services & Programs

- CPR and first aid training and certification
- First aid and CPR Certified emergency team
- Automatic external defibrillator
- Massage therapy



Benefits Beyond The Basics

- Tuition reimbursement
- Educational assistance
- Employee referral program
- Relocation assistance
- Food/snacks
- Discounted beverages

Time Off

- Holiday pay
- Sick pay program
- Family and parenting benefits
- Family medical leave
- Parental/Maternity Leave
- Adoption leave
- Jury duty leave
- Bereavement leave
- Election day/voting flexibility
- Military leave

Company Events

- Group off-sites
- Team building activities
- Summer picnic
- Sports activities
- Holiday party
- Halloween party/costume contest

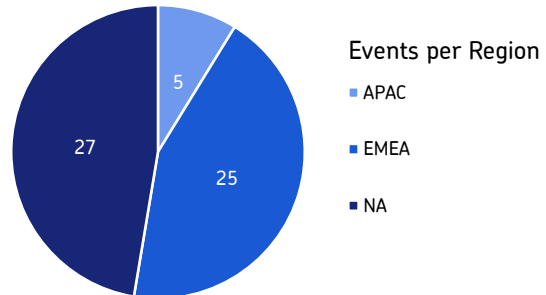
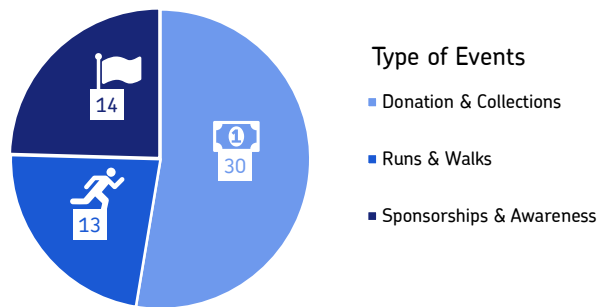
Training & Development

- ADVA University
- Toolbox and tailored training
- Technical training
- Management training program (MTP)

Social Engagement/Volunteerism G4-S01

ADVA Optical Networking employee can join our volunteer teams and help others and/or volunteer their time to work on behalf of others for a particular cause. Our volunteer programs help not only promote good quality of life, but they also allow our volunteers to develop their own skills, meet others, make contacts and have fun.

Volunteering takes on many forms and is performed by a wide range of people. Our volunteers serve on an “as-needed” basis, such as in response to natural disaster, marathons or runs for the cure of illnesses, and the needs of our communities.





Operational

Our customers are in a difficult place. They must invest to build new and different carrier-class network environments that can support massive and ever-growing demand for greater bandwidth, faster data speeds and dynamic service changes. At the same time, end consumers want to pay less for these services.

This major innovation and transformation must take place in a world that is passionate about saving our planet. ADVA Optical Networking is designing the innovative network solutions our customers need to transform their networks but that's not enough to be successful in today's marketplace. Our customers and their end customers are demanding better performance that is also sustainable.

That's why we constantly improve energy efficiency and reduce the footprint of our products. That's why we document and report our sustainability actions and why we seek third-party accreditation. When our service provider customers purchase ADVA Optical Networking products, they do so with confidence that we're making every effort to protect our planet, support our people and grow our business successfully.

Mikko Lavanti, CSSO, ADVA Optical Networking



Reducing Carbon Footprint

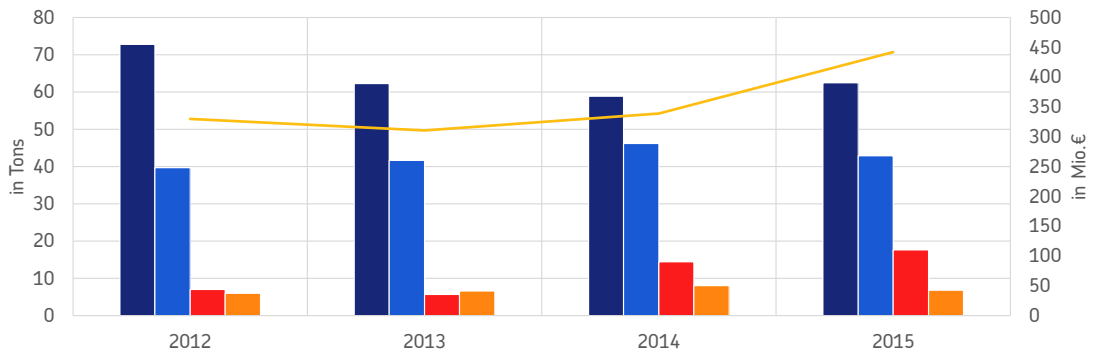


Environmental Compliance G4-EN23; G4-EN31

Apart from running office buildings, the group does not produce any dedicated air emissions or discharges to water. Therefore, relevant performance under environmental compliance relates to waste production and treatment. Waste production and landfill disposal over time is shown in the following diagram. Note that plastics, cardboard and e-waste (WEEE) all go into respective recycling.

ADVA Optical Networking is also re-audited against ISO14001:2009 on a yearly basis at all major sites. These audits are conducted by Quality Austria. In the last three years, zero non-compliances resulted.

Global Waste Disposal
 Cardboard
 Waste to Landfill
 E-Scrap
 Plastic
 Revenue

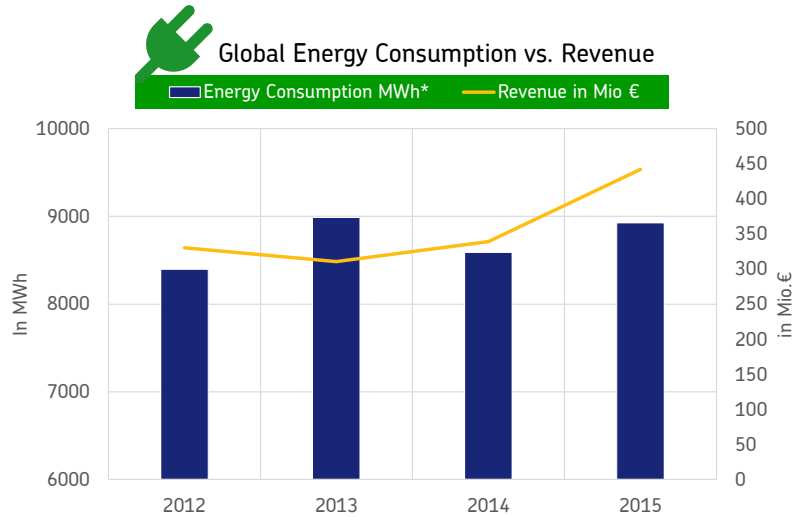


Development of global waste disposal



Resource Management G4-EN3; G4-EN6

The group makes efforts to reduce energy and water consumption globally, despite company growth. Metering is constantly improved to identify electricity consumers. However, efficiency improvements are also limited sometimes, especially for buildings that are not owned by the group. The following diagrams present the developments of energy consumption and water usage over recent years. Note that the parameters displayed (electricity, natural gas) are normalized against the group's yearly revenue.



* includes Electricity and Natural Gas Consumption

Development of global energy consumption

CO₂ and Ozone Depletion G4-EN7; G4-EN15, G4-EN16, G4-EN17

Over recent years, the group has steadily improved its tracking with regard to contributions to CO₂ emissions. In 2015, the group tracked, and was able to report, most contributions that fall into the GHG protocol's Scopes 1 to 3. For several CO₂ contributions, consistent data cannot yet be reported. The group is planning to improve this for the next report.

2015	Source	Units	Consumption	Units	CO ₂ e
Scope 1 (direct emissions)	Natural gas**	kWh	778223	tons CO ₂ e	140
	Owned transport (ADVA Car Fleet)	km	3111884	tons CO ₂ e	464
	Total scope 1			tons CO ₂ e	604
Scope 2 (indirect emissions)	Purchased** electricity	kWh	8148507	tons CO ₂ e	4403
	Total scope 2**		8148507	tons CO ₂ e	4403
Scope 3 (other indirect emissions)	Business travel				
	By air	miles	13633603	tons CO ₂ e	2851
	By car	miles	280508	tons CO ₂ e	112
	By train	pkm	158969	tons CO ₂ e	1
	Employee commuting	no valid data available (planned for future reporting)			
	Product & services	GWh	-95	tons CO ₂ e	65000
	Transportation & logistic	tons	2181	tons CO ₂ e	5600
	Purchased paper	tons	6,7	tons CO ₂ e	6
	Waste disposal*				
	Cardboard	tons	62	tons CO ₂ e	1
Waste to landfill	tons	43	tons CO ₂ e	6,20	
E-scrap	tons	18	tons CO ₂ e	0,20	
Plastic	tons	7	tons CO ₂ e	0,06	
Total scope 3			130	tons CO ₂ e	73577
Total all scopes				ktons CO₂e	79

* Tons of waste produced

** Consumption of ADVA own facilities and leased facilities

Development of global sites CO₂ footprint



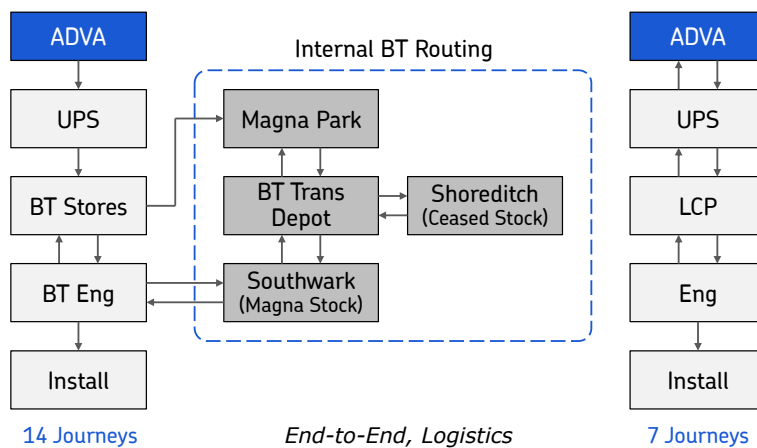
Commercial

When it comes to sustainability, ADVA Optical Networking is a global leader for the telecommunications industry. Years ago we began designing each new generation of products to be significantly more energy efficient than the generation they replaced. Our products continue to be among the most efficient in the industry today and we will continue to design for sustainability.

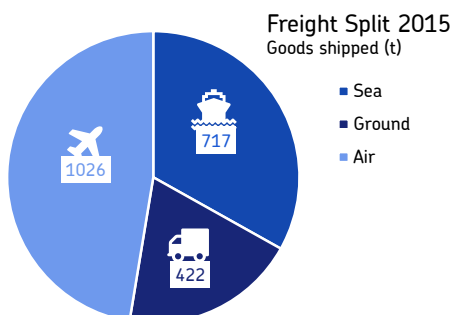
ADVA Optical Networking will continue paving the way to solutions with minimized emissions impact and environmental footprint. To validate and report our efforts, we maintain accreditation through ISO14001 and ISO22301, support the Carbon Disclosure Project and are preparing for ISO50001.

We're broadening our eco design process by addressing the full product lifecycle and embracing the cradle-to-cradle philosophy that includes designing for resource efficiency and long life. In addition, we're working with customers on recycling, reusing or repurposing solutions at the end of their initial productivity. It's challenging and exciting to help create a low-waste world and well worth the effort.

Christoph Glingener, CTO, ADVA Optical Networking



Logistics are a main contributor to the end-to-end segment. In 2015, the group continued its efforts to reduce its transport-related environmental impact (i.e., reduce where possible air freight). All goods transported are checked for alternative methods, be it sea freight or ground transport (trucks, railway). The freight split for 2015 is shown in the following diagram.



Split of freight into main transport modes

Logistics become more important the more products have to be delivered independently from each other, that is, without being bundled for transport. In outbound logistics, which are often ground-based, this leads to additional truck rolls. In January 2015, we won the British Telecom Better Future’s Supplier Forum Award for the 2014 Game Changing Challenge. The winning proposal is all about optimizing logistics such that truck rolls, associated CO₂, time and consequently cost are saved. The logistics scheme can also be used for reverse logistics, allowing quick take-back of products, thus enabling increased repair and refurbishment rates. It can hence be seen as an enabler of later circular economy models. It can, of course, be implemented for other customers and/or in other areas as well.

Since we were awarded, we have been working closely with a number of BT Openreach teams to trial our process and have achieved significant success. We have come to a point where the operational people we are working with are unable to affect or influence the changes at the appropriate level required to drive the



process forward. Despite three working trials and two secured agreements by the BT Change Board to introduce the model.

The logistics model is still in its introductory phase. Over the course of 2015, almost 2000 orders were delivered. Substantial amounts of cost and time were saved in this introductory phase. Once fully ramped up nationwide for the main customer, CO₂ saving, compared to older, less efficient logistics is in the range of 0.5 ktCO₂ per year. Extrapolation to other customers and countries leads to respective higher savings.

Further trials are ongoing. More data will be reported once available.

Another area of consistent sustainable improvement work in logistics relates to the packaging the group uses.

In 2015, we further optimized our packaging in several respects. The combined effects again translate to sav-

ings in CO₂ and cost. Packaging is optimized regarding form factor, in order to fit standard pallets size most efficiently. Then, we try to constantly increase the portion of renewable materials in packaging, by replacing foam and plastics where possible. This, however, is not always possible due to the requirements that certain optics components have. Finally, we introduced reusable packaging for the majority of products. Since after several use cycles, the packaging does not look brand-new anymore, we attach, when necessary, a sticker, which explains the look. The sticker is shown here:



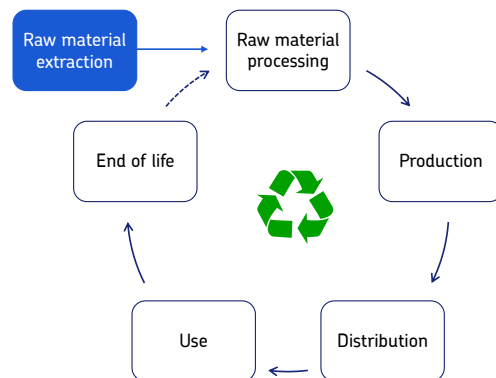
Sticker on ADVA re-usable packaging

Eco Design G4-EN7



Product Eco Design is important in that it helps reduce the environmental footprint of our products.

This footprint is calculated by life-cycle analysis (LCA), which considers all relevant aspects of a product throughout its entire life (i.e., from extraction of raw materials via production and distribution to its use and finally end of life, reuse or recycling). This scope is shown in the following figure:

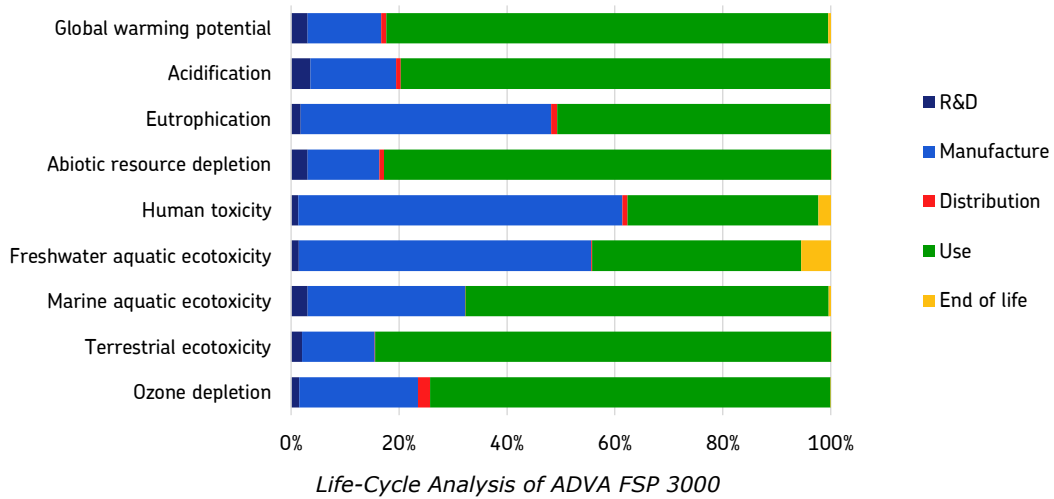


Life-Cycle Analysis scope



The first LCA of relevant ADVA Optical Networking products date back a couple of years. Since then, we know (and this is confirmed by external, independent parties) that for several environmental-impact factors – most notably CO₂ and ozone depletion – the use phase caters for the majority of the products’ environmental footprint.

This result is exemplified in the following LCA result. This analysis has been done for a typical configuration of our FSP 3000 product, an amplified multi-channel DWDM transport system. It shows that CO₂, ozone depletion, several toxicity aspects and abiotic resource depletion are dominated by the products’ use phase.



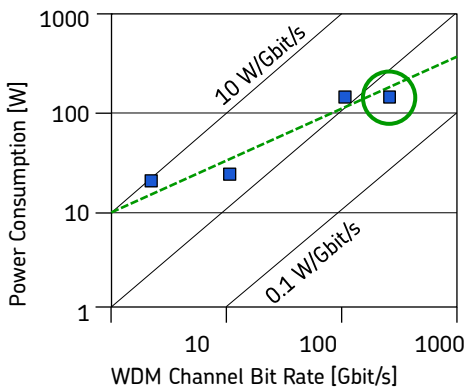
G4-EN7

The dominance of the use phase is mainly related to the energy consumption of the products. It holds as long as the related electricity is not yet fully based on (carbon-neutral) renewables. The reason for the dominance is the long lifetime that our products in most cases already have. In many installations, our products work for more than 10 years, supporting several generations of client equipment.

The figure shows per-transport-channel-card energy consumption in dependence of the bit rate. Since bit rate progressed over time, the x-axis also shows the time axis. First WDM channel cards started, years ago, with almost 10W/Gbit/s transported. They increased, with our latest transport generation, to less than 0.5W/Gbit/s. At the current time, this is best practice in energy efficiency in WDM transport.

The use-phase dominance to date is the main guideline for our eco-design focus. Since use-phase energy consumption is the main environmental-impact driver, we are constantly reducing the energy consumption of our products to the best achievable extent. The resulting development over time is demonstrated in the following figure.

Meanwhile, the eco-design focus has been broadened. In 2015, we started complementing the energy-efficient designs by considerations that reduce raw-material intake over time and help in the recycling of the related products. This was supported by recycling-yield analysis of the first ADVA Optical Networking product lines. The broadened eco-design scope will ultimately support circular economy concepts.



Development of ADVA WDM energy efficiency

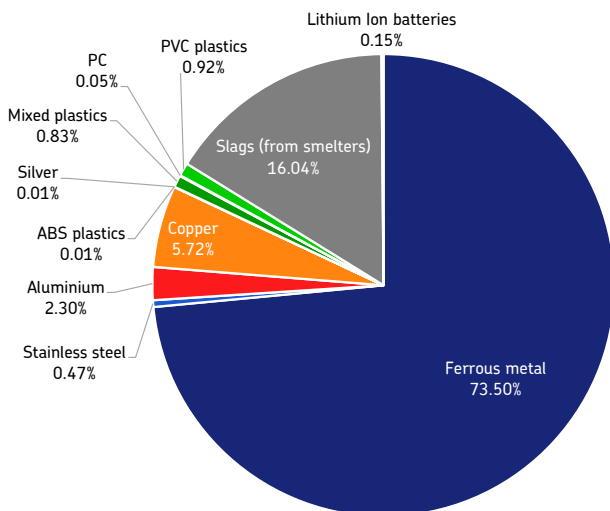


Circular Economy



Circular Economy has already been explained earlier in the context of the QuEST Forum sustainability model. The concept is necessary to reduce, over time, the amount of raw material and energy that is associated with any products and services. The main savings are projected to result from extended lifetime, the concept of re-use, second life or refurbishment (instead of purchasing new products and disposing the old ones), and finally optimized recycling. The latter ought to avoid downcycling by recovering close to 100% of all precious materials in best-achievable quality or purity. This obviously needs to be supported by eco design as explained earlier.

The following figure shows an example of a recycling analysis that we conducted in 2015 on one of our product lines, the FSP 150CP. The analysis revealed the



Recycling analysis ADVA FSP 150

amount of recoverable material. It also showed that, due to the recovery, reverse logistics cost can be compensated.

Circular economy is inherently based on business models that support keeping products in closed loops. This includes leasing and take-back. As described earlier, this needs to be supported by eco design regarding re-use and recycling. It also needs to be supported by logistics which are optimized regarding CO₂ footprint and cost.

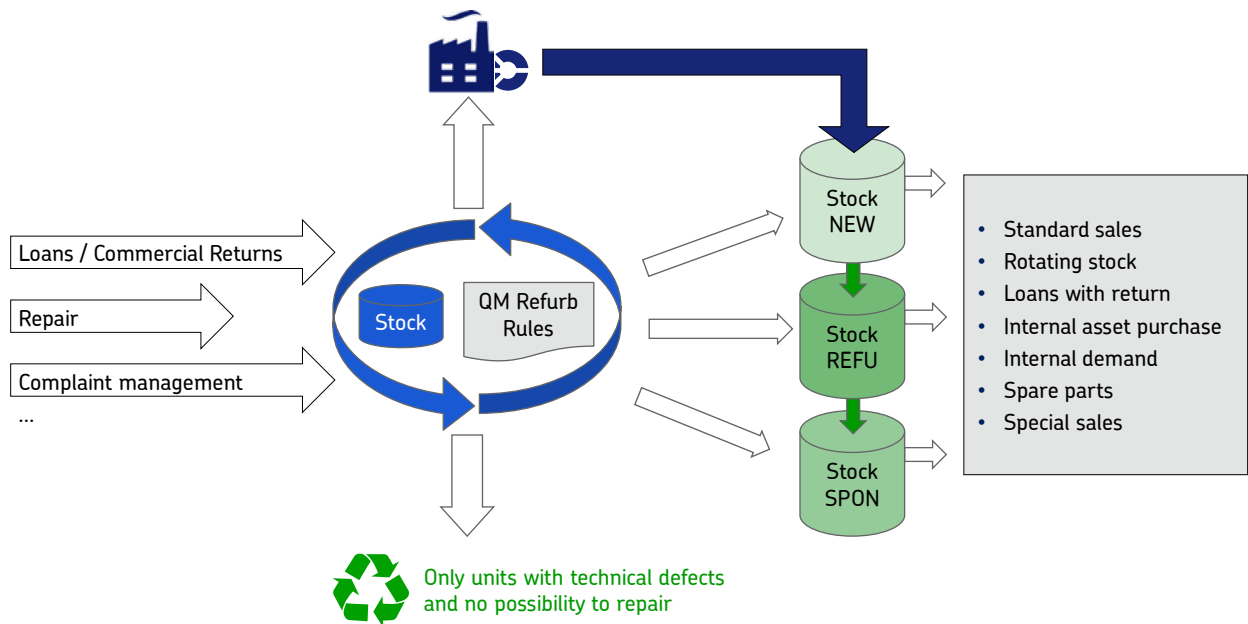
In the last two years, the eco-design scope of our products has been extended to also cover design for recycling. Likewise, we have developed and implemented logistics models which can save significant amounts of CO₂, time, and cost. Therefore, relevant building blocks for circular-economy business are available. In the same period, we also implemented first examples of take-back of products, including potential recycling. These include (but are not restricted to):

- FSP 150CP which get stranded at the central distribution hub of one of our large customers. We are taking them back, wiping them clean and refurbishing them for future use.
- Residential-gateway routers which, in certain applications of a large customer of ours, are automatically issued together with our equipment. In some cases, the end customer does not need them. In these cases, we recycle them on behalf of our customer.



Together with these application-specific refurbishment/recycling cases, we also implemented a refurbishment/2nd-life/parts reuse/recycling process for equipment sent back to our site in Meiningen. Reasons for equipment being sent back are, together with a process overview, shown in the following chart. All equipment is being analyzed for potential parts reuse and refurbishment. If this is not given, it is being recycled. Depending on the degree of reuse potential, the components or systems get into respective stocks for new, refurbished (REFU) or spare-parts-only (SPON) equipment.

The process obviously resembles a significant part of the circular-economy diagram shown earlier. Since all equipment sent back, including modular parts where applicable, are analyzed for reuse, the process ensures that reuse is extended to the maximum and that scrap going to recycling or even landfill is minimized.



Take-back, repair and recycling process at Meiningen site

Glossary/Appendix

CWDM (Coarse Wavelength Division Multiplexing)

CWDM is a standardized technology that uses up to 18 different wavelengths for data transmission over a single fiber. It uses a coarse wavelength grid of 20nm spacing, enabling simple optical components technology. This makes CWDM systems cost-effective, but also limits their total capacity.

DWDM (Dense Wavelength Division Multiplexing)

DWDM is a standardized technology that is based on a dense wavelength grid, which requires high-precision optical components. Typically, up to 192 wavelengths spaced at 50GHz are used for data transmission over a single fiber, thus maximizing the bandwidth per fiber.

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.

FSP (Fiber Service Platform)

The Fiber Service Platform is ADVA Optical Networking's comprehensive product portfolio that provides carriers and enterprises with innovative connectivity solutions for access, metro and long-haul networks.

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.

ICT Ecology Guideline Council

The ICT Ecology Guideline Council is composed of the five Japanese industry organizations: Telecommunications Carriers Association, Telecom Services Association, Japan Internet Providers Association, Communications and Information Network Association of Japan and ASPaaS-Cloud Consortium. The object of the council is to take further industry-wide measures to prevent global warming by creating, disseminating and promoting the *Ecology Guideline for the ICT Industry*.

ISO 14001

A standard developed and published by the International Organization for Standardization. This standard defines, establishes and maintains an environmental management system for the manufacturing and service industries.

ISO 50001

The ISO 50001 is a worldwide standard of the International Organization for Standardization (ISO), which is to support organizations and companies build a systematic energy management.

ISO 22301

This International Standard specifies requirements for setting up and managing an effective business continuity management system (BCMS).

QuEST Forum

A global association of companies dedicated to impacting the quality and sustainability of products and services in the ICT industry.

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 production and processing of electronic devices and components.

TEER (Telecommunications Energy Efficiency Rating)

TEER is a guideline to measure/calculate the energy efficiency (or energy consumption) of telecommunications equipment at a given functionality (e.g., throughput). Relevant standards and guidelines are Ecology Guideline for the ICT Industry, the ATIS-0600015 series or ECEC1.2.

WEEE (Waste Electrical and Electronic Equipment)

A directive issued by the European Union regarding the return and recycling of electrical and electronic equipment waste.

Corporate Information G4-5

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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.advaoptical.com.

The PDF file of this sustainability report, as well the previous GRI Summary reports are located on the ADVA Optical Networking website and can be downloaded at <http://www.advaoptical.com/en/about-us/corporate-responsibility.aspx>.