



GUIDELINES ON **Environmental** **Product Information** **in E-Commerce**



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Contents

1 Introduction	6
2 Product information in transition	7
2.1 The importance of environmental product information	7
2.2 Platforms for environmental product information	7
2.3 Types of environmental product information	8
2.4 Examples of environmental product labelling	9
2.5 Examples of other product-specific environmental claims	10
3 Action options for platforms and other actors	14
3.1 Manufacturers and product data services as sources of information	14
3.2 Search engines, price comparison and product review portals	14
3.3 Online shops, from universal to specialised	15
3.4 Online marketplaces and auction platforms	15
3.5 Classified ad platforms, buying services and rental marketplaces	16
3.6 Marketing on social networks	16
3.7 Information services provided by certifiers	16
4 Principles of good environmental product information in e-commerce and online	17
4.1 Accuracy, objectivity and clarity	17
4.2 Relevance to decision-making	17
4.3 Effectiveness, comprehensibility and usefulness	18
4.4 Appropriate selection and design of product information	18
4.5 Focus on the user and on dialogue	18
4.6 Equality and verifiability	19
4.7. Quality assurance and currency	19
5 Guidelines for environmental product information	20
5.1 Content guidelines	20
5.2 Format and layout guidelines	21
6 Appendix: Tools and concepts – Good practice examples	22
6.1 Environmental information in product names	22
6.2 Information in product descriptions	22
6.3 Product data sheet information	22
6.4 Explanation of environmental features and background information	22
6.5 Graphic design options	23
6.6 Supply chain transparency	23
6.7 Theme shops and rubrics	23
6.8 Filters and search tools	23
6.9 Product recommendation management	24
6.10 Customer product reviews	24
6.11 User-generated product databases	24
6.12 Data organisation for marketing channels	25
7 References	26
8 List of figures	26

1 Introduction

Currently, when consumers want information about products, they often conduct research online, regardless of whether their purchase is made online or in a shop. Consumers use the internet to look up information about product features, prices, alternative products, environmental characteristics, test results, reviews of the seller, manufacturing conditions, delivery options and availability.

Over a short period, digital media has drastically changed the information search and the kind of information on offer. In the wake of these new options for sharing information, conventional sources of information have become less important.

It remains to be seen whether the information of today is better, more current, superior in quality, easier to understand or more credible. The dynamism of this change, which also affects environmental product information, has no end in sight as new formats and types of product information continue to establish themselves.

Product information can be found online in a variety of places, including manufacturer websites, search engines, online communities and marketplaces, online shops, product test aggregators and non-commercial consumer sites. People search for information on these sites continuously, and claims about products are constantly amended, expanded, updated, assessed, illustrated, summarised and deleted.

Nonetheless, it must be noted that online platforms often omit or provide inadequate environmental product information. When this type of information is used in an inadequate or misleading way, it can also give an inaccurate or sugar-coated impression of the environmental impacts of products and services.

The German government's Sustainable Development Strategy, its National Programme for Sustainable Consumption and the UN Sustainable Development Goals all attach great importance to product information. These policies, which distribute accountability among all relevant stakeholders, make an important contribution because they

promote purchase decisions based on environmental criteria and enable and empower consumers to take responsible action.

It is therefore vital that the content and design of environmental product information fulfils sustainability and good consumer information requirements at a high standard, thereby also promoting transparency. Businesses are responsible for making appropriate product information available; stakeholders in government and civil society have the task of formulating and monitoring quality standards.

This brochure is intended to contribute to these aims by:

- ▶ formulating principles and quality criteria for credible environmental product information, with a special focus on digital media,
- ▶ sensitising retailers, industry and service providers to the significance of environmental product information in e-commerce,
- ▶ providing an overview of options, tools and good practice examples.



2 Product information in transition

2.1 The importance of environmental product information

Environmental information sheds light on the environmentally relevant characteristics of products (both goods and services) across individual or multiple phases of the product life cycle. It describes the environmental impacts of production, distribution, use, disposal and component parts, enabling product comparison based on environmental qualities.

This kind of information can influence consumer choices, product portfolios and product development, thereby having an environmental impact. It also supports product transparency and sensitises consumers to environmental aspects. Product information is therefore an important prerequisite for more sustainable consumption.

Independent environmental labels such as the Blue Angel or the Fairtrade label, which, according to an environmental awareness study („Umweltbewusstsein in Deutschland“), were recognised by 92 % and 76 % of respondents respectively, set an important precedent and have a notable effect on purchasing behaviour.

Environmental product information draws attention to manufacturers and retailers committed to providing environmentally friendly goods and services both online and off, for instance in shops, search engines or online marketplaces. Providing this type of information gives businesses an opportunity to boost their credibility, document their accountability, contribute to environmental protection and improve their customer information services. Finally, it also

allows businesses to address the information needs of consumers, wholesale customers, the public and the spheres of retail, marketing and the supply chain.

2.2 Platforms for environmental product information

Product research is increasingly being conducted using digital media, regardless of where the final purchase is made. Internet-supported commerce is characterised by the emergence of diverse and, to some extent, new platform types. These include online shops, price comparison sites, online marketplaces, shopping communities, manufacturer outlets, product test aggregators and independent consumer portals. These platforms have various tasks and each handles product information in its own way. Although online sales in Germany was at first strongly linked to catalogue-based mail-order companies, the digitisation of product sales now encompasses the entire retail landscape. Customer contact is increasingly initiated online, with many businesses using multiple sales channels.

In this changed world of retail, new environments for competition have opened up and the contenders are seeking the upper hand with various forms of product information:

- On the one hand, brick-and-mortar retailers with goods on display in their shops compete for customers who have already gathered information online (ropo: research online, purchase offline).

Table 01

Recognition and influence of the Blue Angel label over time (figures in percent)

	2004	2006	2008	2010	2012	2014
I am familiar with the Blue Angel label.	83	79	80	76	79	92
Yes, the label influences my purchase decision.	49	38	38	39	43	37

Source: Ministry for Environment, Nature Conservation and Nuclear Safety (BMU) (publisher) 2015: „Umweltbewusstsein in Deutschland“, 2014, p. 58, <https://www.umweltbundesamt.de/publikationen/umweltbewusstsein-in-deutschland-2014>.

- On the other, mail-order retail companies use cheap prices to compete for customers who have already gathered information in the shops; this is sometimes referred to as „showrooming“.
- In addition, some online retailers deliberately invest very little in product information, in order to undercut the prices of retailers offering comprehensive informational material, a related phenomenon known as „shoprooming“.

Price and product comparison engines are especially important because of the comprehensive information they provide – content is king – and continually update, competing to have the most useful content. These platforms create an unprecedented level of market transparency and make it easy to compare products, also based on environmental characteristics. This has made comparison sites into a point of decision for many people.

Consumer portals run by public or civil society stakeholders are also especially important. Due to their independence and lack of commercial interests, these portals place a sharp focus on environment and sustainability-related product information. The German-language portal *siegelklarheit.de* identifies credible environmental labels; another, *Umweltbewusst leben*, is a consumer guide created by the German Environment Agency (UBA) and is similar to the guide to sustainable consumer alternatives, *nachhaltiger-warenkorb.de*. The aim of the site *codecheck.info* is to improve transparency with regard to ingredients and substances in many consumer goods. The site *ecotopten.de* provides specific product recommendations, also via an app for smartphones. The Blue Angel website, *blauer-engel.de*, provides detailed profiles on certified products.

These innovative portals and online shops make clear that there is enormous untapped potential in digital media for better product information, consumer-oriented service and dialogue with retailers and manufacturers.

2.3 Types of environmental product information

The brochure *Environmental information for products and services: requirements – instruments – examples*, a joint publication of the Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and the Federation of German Industries (BDI), describes the current types of environmental product information and standards. The brochure also cites many examples of trustworthy environmental labels and declarations, building on international frameworks, and provides an overview of the information types and standards.

Product information regarding the environment, sustainability and human rights can overlap, which makes a clear separation of terms difficult. The ISO 26000 guidelines on social responsibility, the Social Accountability International standard SA 8000, and various schemes for corporate social responsibility (CSR) reporting such as the Global Reporting Initiative (GRI) and the German Sustainability Code (*Deutsche Nachhaltigkeitskodex*, DNK) all focus on social aspects and social responsibility.

The ISO 14000 series of standards and especially ISO 14020 are particularly important for product-specific environmental information. These standards provide key rules for developing and using this kind of information.

- Standard DIN EN ISO 14024 contains rules for Type I environmental labelling. This type of labelling highlights a special environmental quality, requires third-party verification, has high credibility, is intended for private and commercial consumers and is relevant for public procurement. Examples of this kind of labelling include the Blue Angel label, the EU Ecolabel, the FSC label, the PEFC certification and the MSC label.
- Standard DIN EN ISO 14021 contains rules for Type II environmental labels and declarations. This type of labelling often focusses on a single environmental aspect but can also be used to convey complex information. As voluntary declarations, these claims are the sole responsibility of the manufacturer and are primarily aimed

Figure 01

Examples of environmental labelling for consumer goods



Sources: Blue Angel and EU Ecolabel

at consumers. Examples include claims like „decreased water consumption“, „100 % recycled“ or „biodegradable“.

- Standard DIN EN ISO 14025 contains rules for Type III declarations based on life cycle assessments (LCA) that provide comprehensive quantified, verified information that does not evaluate environmental impacts and requires independent verification by a third party. These declarations are intended for use by manufacturers, industry and retailers and are less relevant to consumers. This standard is often used in the construction sector.

Prior to the adoption of the ISO 14020 series of standards, other environmental product labelling programmes existed that now do not strictly conform to the system of the ISO standards. These labelling schemes include, for example, the Bio-Siegel for organic products, Energy Star and bluesign®. There are also additional labels that make environmental claims, for instance energy efficiency labelling or labelling in accordance with the German Hazardous Substances Ordinance.

2.4 Examples of environmental product labelling

Environmental labels in accordance with the ISO standard for Type I labelling – or labelling in line with a similar scheme – have an evaluative character and, due to the relevance of their claims, are

frequently used in advertising directed toward final customers. Labelling schemes that are particularly important for consumers are outlined below.

2.4.1 Blue Angel

In 1978, the Blue Angel ecolabel was the first environmental label in the world and is a well-known example of Type I environmental labelling. It sets requirements supporting the environment, health and consumer protection. Recipients of the label are especially environmentally friendly, from a holistic perspective, and also meet high standards with regard to labour, health and fitness for use. Currently, there are over 12,000 products certified with the Blue Angel in 120 product categories sold by 1,500 businesses in the areas of home and living, electrical appliances, construction, energy and heat, garden, recreation and office supplies. Additional information is available at www.blauer-engel.de.

2.4.2 EU Ecolabel

The EU Ecolabel is awarded to products for everyday use. The structure and procedure of the labelling scheme is similar to that of the Blue Angel. Currently, 32 product and services groups can apply for the „euroflower“ – the emblem of the EU Ecolabel. These groups include, for example, paints and varnishes, televisions, textiles, shower gels, shampoos, body soaps, shoes, clothing and dishwashing detergents, all-purpose cleaners, sanitary cleaners, floor coverings and tourist accommodations. Additional information is available at www.eu-ecolabel.eu.

2.4.3 FSC and PEFC

The Forest Stewardship Council (FSC®) labels and the Programme for the Endorsement of Forest Certification (PEFC™) scheme are both used to identify wood products such as windows, furniture and paper sourced from sustainably managed forests. Both of these international organisations are non-governmental and have the goal of guaranteeing environmentally sound, socially responsible and economically sustainable forest management. The FSC® was established by environmental organisations, the timber industry, the forestry sector and indigenous people's organisations in 1993; PEFC™ was founded in 1999 by forest owners and representatives of the timber industry. Additional information is available at ic.fsc.org and www.pefc.org.

2.4.4 bluesign®

The bluesign® system is used to certify end products in the textile industry and can also be used for textile articles at various stages of processing, for example thread, intermediate goods, finished fabrics, accessories, and for textile auxiliary agents and dyes. Under the framework of its certification system, the owner and administrator of the label, bluesign technologies AG, works with manufacturers at all levels of the textile production chain including the manufacturers of chemicals used in textile processing. The aim of this network is to reduce environmental impacts along the entire textile production chain and optimise worker safety and consumer protection. Additional information is available at www.bluesign.com.

2.4.5 Global Organic Textile Standard (GOTS)

The Global Organic Textile Standard (GOTS) is the acknowledged worldwide textile processing standard for organic fibres. The standard defines environmental requirements along the entire textile production chain at a high level and sets out social criteria. For quality assurance, independent certification takes place along the entire textile supply chain. The standard was revised in 2014 to create reliable, transparent criteria that take into account stringent environmental and social requirements and ensure the standard is applicable and verifiable globally. Additional information is available at www.global-standard.org.

2.4.6 Energy Star

Computers and printers account for a significant share of electricity use in private households and offices. Because of this, the US Environmental Protection Agency (EPA) created Energy Star, a voluntary labelling scheme, in 1992, primarily with the purpose of reducing device energy consumption whilst in stand-by mode. Today, Energy Star includes household appliances as well as office equipment. Additional information is available at www.eu-energystar.org.

2.4.7 Bio-Siegel

The Bio-Siegel was established in 2001 as a government seal for labelling organic food products. Only producers and manufacturers that comply with the provisions of the EU regulation on organic farming (the Eco-Regulation) and undergo prescribed controls are permitted to label their products with this seal.

The aim is to ensure market transparency and, above all, to provide guidance for consumers in purchasing groceries.

Since 1 July 2010, all packaged organic foods have been required to carry the new EU organic logo. The EU seal is an obligatory label that must be included on all organic food products. The voluntary German Bio-Siegel may still be used in addition to the EU seal. Additional information is available at www.oekolandbau.de/en/.

2.5 Examples of other product-specific environmental claims

For years, environmental claims have been made in advertising, public relations material, technical information sheets, on packaging and online. The credibility and usefulness of these claims depends on their reliability. Standard DIN EN ISO 14021 supports product sellers in this regard by establishing a useful format for environmental labelling and environmental declarations referred to as Type II labelling in the ISO system.

Unreliable or deceptive environmental claims can have negative effects on the market, leading to, for example, barriers to trade or unfair competition. This is why environmental claims in accordance with standard DIN EN ISO 14020 should be accurate and verifiable. Standard DIN EN ISO 14021 supplements the more general standard DIN EN ISO 14020, adding procedure rules and clear requirements for commonly used terms. One main guiding principle is the avoidance of ambiguous claims. Terms such as „safe for the environment“, „environmentally friendly“, „green“, „zero emission“ or „ozone-safe“ have unclear meanings and can create a variety of expectations. Marketing should not use ambiguous claims indicating that a product is good for the environment.

In Germany, the Act Against Unfair Competition (*Gesetz gegen den unlauteren Wettbewerb*, UWG) lays down the legal framework for environmental claims. The key principle of both the UWG and the ISO 14000 series of standards is to prohibit misleading claims.

A number of environmental claims are used particularly frequently in marketing and in business-to-business communication. The standard DIN EN ISO 14021

Environmental claims in case law

Under the UWG, advertising must contain accurate information that consumers can rely on for guidance.

It must not be misleading. According to recent case law, there is no case for misrepresentation if the facts of the matter are general knowledge and therefore self-evident.

Decision on the percentage of recycled paper in a product

The Federal Court of Justice (BGH) ruled that the attention-grabbing headline „toilet tissue made from recycled paper“ was misleading because the product actually only contained about 80 % recovered paper. Furthermore, the misrepresentation was not cleared up by additional small-print text (BGH, Ref. I ZR 238/87).

Decision on fence varnish

An advertisement implied that the product in question was completely free of environmentally harmful substances although it did contain such substances. The advertisement was considered misleading due to the stringent requirement that advertising be informative (BGH, Ref. I ZR 38/89).

Decision on tumble dryer

A product name similar to „Biodry“ for a tumble dryer (in German: „Biotroc“) was found to be misleading advertising. The product name creates a consumer expectation that cannot be met, i. e. that the dryer has an unreservedly positive effect on the environment in every respect (Higher Regional Court Berlin, 5th Civil Division, Ref. 5 U 362/94).

Decision on green electricity

A decision by the Hamburg regional court established a new consumer guideline for defining misleading claims. The standard assumes a reasonably well-informed, observant and sensible member of the public. This average consumer would not understand the terms „clean electricity“ or „green electricity“ in a literal sense; therefore such claims are not misleading (Ref. 315 O 773/99 and 406 O 198/99).

establishes guidelines for the use of selected terms and defines how they should be used. These terms include compostable, degradable, recyclable, reduced energy consumption, reusable, sustainable and carbon neutral.

Additional useful tips can be found, in German, in GS1 Germany's guideline *Nachhaltigkeit von Produkten richtig bewerben* (The right way to advertise product sustainability). The examples below show how to put the ISO standard into action.

2.5.1 CE marking

A CE mark must be affixed to products, which, due to their type or nature, are subject to one or more EU directives before they can be placed on the market or initially put into operation in EU and EFTA countries (excluding Switzerland). This applies to a number of product groups, such as construction products, electrical appliances and toys; however, the mark may only be affixed to products for which it is mandatory. The CE mark is not a label indicating testing. It is an administrative mark that indicates that a product can be traded freely as a labelled manufactured good within the European single market.

Examples – environmental claims in accordance with DIN EN ISO 14021

Reduced water consumption:

According to DIN EN ISO 14021, product-specific claims about reduced water consumption – for example, in washing machines or detachable showerheads – must be based on evidence and comply with the ISO standard requirements for comparative claims. The basis for calculating reduction is water consumption during product use.

Recycled content:

The ISO standard makes it clear that recycled content refers to the proportion, by mass, of recycled material in a product or packaging. Product values may not be combined with packaging values.

Degradable:

Claims about degradability refer to the ability of a chemical structure to change, leading to the decomposition of a product or material. In accordance with standard DIN EN ISO 14021, degradability claims must contain details regarding the test method, the percentage of degradation and test duration. In Germany, the term „degradable“ is commonly used only in combination with the method and type of decomposition – for example biodegradable.

This covers, for example, minimum requirements for energy-related products under the Eco-Design Directive and can also include the provision of environmental information. The CE mark also confirms that the conformity assessment has been carried out in compliance with all applicable rules and that an appointed, notified or accredited body has monitored the production process. Additional information is available at ec.europa.eu/growth/single-market/ce-marking/index_en.htm.

2.5.2 Energy efficiency labelling

Electric appliances such as refrigerators and freezers, washing machines and televisions sold in the European Union must carry a label providing information about their energy efficiency class, energy consumption and other specific details. The European Union has established a uniform, Europe-wide framework for assigning efficiency classes. The key legislation here is Directive 2010/30/EU on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products, referred to as the Energy Labelling Directive.

The directive applies to all products relevant to energy consumption. This includes not only household appliances, but also products for commercial use (e.g. ovens for commercial kitchens) and products that do not themselves use energy but have a clear impact on energy consumption (e.g. insulating windows).

A standardised energy consumption label is in place throughout the EU. In addition to the energy efficiency classification, the label also provides information about the annual energy consumption of the appliance and additional product-specific information (for example on the water consumption and spin cycles of washing machines). A colour-coded efficiency scale makes product energy consumption visible and makes it easy for consumers to select energy efficient products.

Product-specific EU regulations are enacted based on the directive. These European Commission regulations enter directly into force in the EU member countries and are obligatory for manufacturers, retailers and importers in the EU.

The directive is currently being revised to ensure the effectiveness of energy consumption labelling in future. The revision aims, in particular, to guarantee the validity and transparency of the labels for consumers down the line, since many products have already reached the highest efficiency class (A+++). Additional information is available at netzwerke.bam.de/Netzwerke/Navigation/EN/Ecodesign/ecodesign.html.

2.5.3 Fairtrade (FLO certificate)

Fairtrade Deutschland e. V. is working hard to improve living and working conditions in developing countries. Products with the independently certified Fairtrade seal guarantee prices that ensure a liveable income for small family farms and better working conditions for wage labourers on plantations, flower farms and tea gardens.

The certification is based on social criteria. Many products carrying this label are also certified organic or were produced in the countries of origin in compliance with strict environmental or worker safety standards. Additional information is available in German at www.fairtrade-deutschland.de.



3 Action options for platforms and other actors

Environmental product information has been scarce online and is often inadequate. Businesses can contribute in a variety of ways to improving the availability and effectiveness of environmental information in order to meet customer needs for information and guidance.

3.1 Manufacturers and product data services as sources of information

Before consumers encounter environmental product information online, the product information must be produced behind the scenes, made available and processed. Manufacturers and providers of product data and management systems (data catalogues, databases, classification systems) serve shops, marketplaces and portals where millions of consumer goods are sold. These companies support the transparency of product characteristics and comparability of items.

Selected providers of product data and management systems

BMEcat CNeT DCI eCl@ss Eurobau
IceCat ITScope PBSeasy

Action approaches: Manufacturers and data providers can improve the integration of environmental information in their product data services (data structure, research and illustration, mandatory environmental information fields) and can more actively distribute and market this information, thus supporting the flow of environmental data all the way to the point of sale. These actors can include other types of information in addition to Type I product information and can address the specific needs of national markets. They can also place environmental information higher up on lists of features.

By actively marketing environmental information, these companies can create a broad data flow, motivating manufacturers to supply environmental information and retailers to display more informa-

tion. Suppliers and data providers could work with certifiers to support data collection on and publication of certified products with item-specific accuracy.

3.2 Search engines, price comparison and product review portals

A universal search engine regularly scours the contents of the worldwide web and produces relevant hits based on a consumer's individual query on its user interface (i. e. the list of results). These results include links and, in some cases, paid advertisements related to the query, which are displayed in an area reserved for advertising.

Price comparison and product search portals make it possible to search the product data of cooperating online shops. Users can find current offers, some with detailed descriptions, by applying search criteria or by browsing through categories. Some portal operators set content, technical and legal specifications that shops must meet before their products can be included. Product data is sometimes electronically transmitted to the portals by shops or their marketing agencies; product data is then published on the portal for a fee.

Selected price comparison portals

billiger.de geizhals.de Google Shopping
guenstiger.de idealo.de mercateo.de
preis.de yopi.de

Some product portals obtain information directly from manufacturers. Some of these sites provide additional product information (test results, shop reviews, data sheets) from other sources (product data providers, product testers, consumer protection agencies), supplementing the data provided by sellers. In some cases, the public can create their own product and retailer reviews and reports.

Action approaches: Search engines, price comparison and product review portals can improve a range of information services by including environmental

information in their product profiles, data sheets, illustrations, search criteria, categories, feature filters, etc. and by presenting this information visibly. These platforms could also make an active commitment to procuring environmental information, for example in their own research, by requesting this type of information from participating retailers or from direct and indirect data sources (manufacturers, certifiers, data providers, affiliated agencies).

3.3 Online shops, from universal to specialised

People often visit online shops directly, without visiting other websites, in particular if they have already had positive experiences with the site in question or if it is well known. Among these sellers, there are universal or full-line businesses with an extensive range of items for sale, specialised niche retailers and some that only carry a single manufacturer's line. Visitors can find products on offer by using the site's search function, browsing through categories or clicking on advertisements placed by the site operator. The specific shop or site is responsible for the quality of its product information. Shops compile product information for their inventory using various basic methods, which can include electronic exchange of data with manufacturers in accordance with specifications from the purchasing department, use of data sets from product data providers or buying syndicates, manual transcription of data from supplier catalogues or links to operating instructions, manuals or product videos. In addition, many online shops allow customers to submit product reviews that are often displayed in close proximity to the product. Finally, consumers are often able to contact the seller to request additional product information, sometimes via direct chat in real time.

Well-known online shops in Germany

Amazon Alternate Bonprix Conrad Electronic
Cyberport Digitalo Home24 H&M Karstadt
Mediamarkt Mytoys.de Notebooksbilliger.de
Otto-Gruppe redcoon.de Saturn Tchibo
Thomann Weltbild Zalando

Action approaches: The first action called for is a stocktake of existing performance in terms of environmental information and guidance. Using this as a baseline, online shop operators can review existing product data sets for environmental claims, keeping an eye out for certifications and labels, and display relevant environmental information on or near the product, ideally with visual emphasis on and linked explanations of environmental features. Potential additional measures include creating themed shops, employing filters and sorting tools, or even prioritising environmentally sound products in search and recommendation rankings or integrating them into customer dialogue tools.

Online shops (or other platform types described below) with incomplete environmental information could request more comprehensive information from their suppliers/group purchasing organisations, for example, with regard to the specifications for product data. They could also acquire information from certifiers. Another option would be to link up with other sellers and work together to improve conditions (standards for product descriptions provided by manufacturers/suppliers, classification systems, interfaces, etc.).

3.4 Online marketplaces and auction platforms

After search engines, large commerce and auction platforms are often the second most frequently visited sites during search and decision-making processes. These sites are online marketplaces that provide a sales infrastructure and, in some cases, various options for coordinated or individual transaction processing to numerous sellers for a fee; sometimes the marketplace operator also sells products on the platform. In addition to commercial sellers, private individuals often use auction platforms, primarily to sell used goods.

Selected online marketplaces and auction platforms

allyouneed.com amazon.de atalanda.de
dawanda.de ebay.de fairmondo.de
hitmeister.de hood.de mercateo.de rakuten.de

Buyers can initiate searches, browse through categories or view recommendations generated by the platform to find products for sale, usually offered by multiple sellers. Sellers must comply with product information requirements set by the platforms. In some cases these requirements are detailed and stringent, but there are also some platforms with more liberal specifications and requirements (product features, data formats).

Action approaches: The action options here are similar to those for online shops. Marketplaces can also prompt their sellers to provide specific environmental information.

3.5 Classified ad platforms, buying services and rental marketplaces

Online classified ad platforms carry advertisements for used goods, new goods and services placed by private and commercial sellers. On these sites, the advertiser/seller determines the information provided. Usually there are no requirements for product information beyond general legal provisions. Consumers can contact sellers to request additional product information. Rental marketplaces offer temporary use of a product as an alternative to purchase. The content specifications and contact options for rental marketplaces are similar to those found on classified ad platforms. Buying services (in particular for electronic products) also have similar policies.

Selected classified ad marketplaces, buying services and rental marketplaces

abebooks.de ebay-kleinanzeigen.de
erento.de rebuy.de miet24.de momox.de
wirkaufens.de zoxs.de

Action approaches: Some actions that could be pursued include creating environmental or eco-friendly categories, providing examples showing how to include environmental product information and optimising search functions.

3.6 Marketing on social networks

Social networks created for cultivating personal contacts are now also home to shops and manufacturers, who make their presence known with advertising for products and brands, for example targeted advertising (ads and sponsored stories) including deep links to businesses. Users do not typically navigate these networks as shoppers, but the urge to buy can be triggered by user recommendations or advertising and users may seek out discussions about products.

Action approaches: Social networks are important for individual consumer behaviour. It would therefore be advisable for sellers, certifiers and manufacturers of green products to develop strategies to open these platforms up for environmental product information and guidance.

3.7 Information services provided by certifiers

Most environmental labelling schemes are voluntary labels granted by various institutes, associations and independent testing authorities. These organisations document seller applications for products and product groups and whether sellers have received certifications. Depending on their records, they can provide the public with product or even item-specific data.

Action approaches: Certifiers have a role to play in ensuring that the public recognises, both at product-level and broadly, which items receive their environmental or sustainability certification and what the criteria for certification are. They can also improve their requirements for the online and e-commerce presence of these products. Certifiers can also intervene on behalf of their users by advocating the active publication of certifications and adjusting their terms of use in line with optimal transparency requirements. Because there is no guarantee that certifications actually reach consumers and buyers via the various information chains, certifiers can help by providing publicly accessible product databases searchable by item number. In addition, certifiers can consider optimising their marketing plans and communication formats for the internet. They can also ensure legal certainty by providing information about the terms of use of the certification.

4 Principles of good environmental product information in e-commerce and online

High quality environmental product information is accurate, verifiable, relevant for decision-making, effective and targeted. International standards and guidelines (in particular the ISO 14000 series of standards, the UN Sustainable Development Goals and UN Guidelines for Reliable Sustainability Information for Consumers) and various European and national frameworks set out rules for communication about environmental features. In Germany, the Act Against Unfair Competition (UWG) and trademark law are particularly important. Product information in line with these rules must contain accurate information that guides consumers by describing environmental benefits clearly and precisely. Misleading claims are prohibited and trivial, frivolous or cryptic claims are to be avoided.

4.1 Accuracy, objectivity and clarity

Veracity is a mandatory prerequisite for producing and publishing environmental product information. In line with Principle 1 of standard DIN EN ISO 14020, environmental product information must be factually correct, precise, free from contradictions and up-to-date. For example, expired certifications and old product test results may not be included. Misleading or ambiguous terms and false information that could be misinterpreted are to be avoided.

Where information is condensed, the abridgement or summary should not give rise to erroneous claims. A sound approach, e.g. use of credible labels and standards, optionally with linked explanations, should be taken when simplification is necessary. It should be easy to differentiate between facts and promotional claims. In addition, environmental claims should be verifiable, thereby also increasing acceptance and credibility.

4.2 Relevance to decision-making

The aim of these guidelines is to support consumers in making purchase decisions. This goal imposes certain requirements on the selection and processing

Examples of environmental claims

Inappropriate/frivolous:

The label „CFC-free“ on pipe insulation or insecticides is inappropriate.

Such labelling gives the impression that this is a special product feature, but CFC compounds are generally prohibited in these products.

Precision:

The „free from ...“ claim is only appropriate when the level of the specified substance is no higher than that which would be found as an acknowledged trace contaminant or natural background levels.

Clarity:

The recycled content of a product is raised from 10 % to 15 %. Claiming a 50 % increase could be misleading, although it is mathematically correct. A quick read might suggest that the recycled content is now 60 % (10 % as the starting content, plus an increase of 50 percentage points).

Unambiguous:

Environmental symbols that are based on well-known environmental labels are against the standard. Consumers could be misled by mistaking these symbols for the official labels.

of environmental information. Businesses provide consumers with key – in contrast to trivial – environmental product information. It must be clear whether a claim relates to a particular product, a component or perhaps only to the packaging. The „greenness“ of a product (good or service) should not be exaggerated

using claims about trivial environmental benefits. Relevant information helps consumers compare the environmental aspects of products, allowing them to evaluate and incorporate such aspects in their choices. Under Principle 5 of the above-mentioned ISO standard, all phases of the product life cycle, including use and disposal, should be considered when developing environmental claims.

Additional pertinent information is used accordingly. Practical aids and references (glossaries, wikis, data sheets, instructions for use, test results, etc.) can serve as background information to help with more in-depth decision-making processes.

Relevant environmental information supports buyers in weighing the consequences of product alternatives (for example choosing paper products made of recovered paper versus fresh fibre).

4.3 Effectiveness, comprehensibility and usefulness

Commercial, public sector and private consumers stand at the centre of informational and guidance efforts. In order to provide these groups with environmental product information and guidance, information must be designed so that its message can be understood immediately and fully. By doing so, businesses support the effective impact of environmental product information. Ideally, environmental information is highly visible and can be easily accessed by everyone.

Important environmental information is prominently featured and highlighted, rather than being hidden at the end of a text, in small or faint print or behind multiple layers of links. The information is structured and presented to make product comparison easier, in particular by making environmental benefits recognisable at a glance. The use of symbols is advisable.

Labels and terms are explained on the spot, in particular in product descriptions, wherever a reasonably well-informed consumer might require. The overall design allows for quick comprehension and recognition, in particular by making use of graphic elements and bold text. The media presentation of environmental product information is set up

so that ingrained cognitive biases can come into play in their use. This is in line with the accessibility and comprehensibility principles of the ISO 14020 standard.

4.4 Appropriate selection and design of product information

Product information design as practised today has its origin in analogue media and often fails to incorporate the special features of new media. Today's requirements for the design and publication of environmental product information should be updated for the digital era.

This is why environmental product information in e-commerce and online is tailored for the specific functionality and framework of new media and takes into account the features of a range of end-user devices (e.g. heavier use of symbols for smaller displays, situation-appropriate language for mobile users).

The type, scope and layout of environmental information should be appropriate to the potential decision situation and adjusted for the particular circumstances of the target group or the actual decision situation where possible.

4.5 Focus on the user and on dialogue

The diverse range of people researching and making decisions online necessitates targeted communication with a rigorous focus on users.

Businesses therefore make efforts to gather specific knowledge about their target group, also with regard to the environment, and consider the group's relevant prior knowledge (about the product, environmental impacts, action options, etc.) and typical media habits in the design and presentation of environmental information (differentiated, for example, based on customer profile, geographical data or time). The target group's prior knowledge, general knowledge base and specific informational needs are also addressed by varying the level of detail.

Product information provided by businesses addresses the assumed informational interests of the consumers (e. g. the presence of a recognised seal or certification with stringent standards). It reflects relevant, current environmental information that is clearly important for evaluating the product and its environmental impacts (e. g. information about energy consumption).

In addition, space should be created for effective and in some cases new formats for dialogue among consumers, sellers and manufacturers (e. g. queries about ecological aspects in product reviews). This enables the flow of consumer experience and feedback to reach suppliers and manufacturers, supporting the development of sustainable products and services.

4.6 Equality and verifiability

Businesses treat environmental and sustainability information as vital components of their product information systems, attaching equal importance to environmental information and to information related to other product features (i. e. environmental information is not pushed to the bottom of the product page by descriptions of functions – it coexists at the top information and decision level).

Under the ISO 14020 standard, claims about environmental aspects of a product are based on methodologies that can be verified and traced back to their source; the originator of the information must be clearly identified.

4.7. Quality assurance and currency

Communicating and presenting environmental product information is a service to customers and reflects social responsibility. When environmental product information is catalogued and disseminated, it should reflect the current state of the art in product data management. The way a business handles environmental product information and consumer guidance should follow the principles and criteria for high quality environmental information outlined above.

Businesses have the responsibility of ensuring the quality and currency of environmental product information. To this end, they can develop goals and plans for environmental information, marshal resources for implementation and periodically review compliance with the goals.

5 Guidelines for environmental product information

5.1 Content guidelines

Basic requirements for the content of environmental product information:

- ▶ Fulfil all applicable legal requirements for product information (for example, requirements of the Act Against Unfair Competition, energy consumption labelling, the German textile fibre ordinance, CE marking, trademark law, etc.)
 - ▶ Systematically and continuously communicate basic environmental information to consumers
 - ▶ Publicise environmental labels, for example ISO Type I labels such as the Blue Angel or the EU Ecolabel or similar certifications
 - ▶ Publicise other environmental characteristics and benefits, ideally in accordance with or modelled closely on the ISO standards for Type II or Type III information (e. g. claims such as „biodegradable“ or the presentation of environmental product explanations)
 - ▶ Communicate general environmental information related to the product life cycle (instructions on use, operation and disposal)
- ▶ Systematically explain the benefits of an environmental product feature in an appropriate format (e. g. use texts that were also submitted for environmental labels – such as the Blue Angel -on the environmental benefits of a product or similar explanations) and references to further information (e. g. linked or in a glossary).

Beyond this, businesses should provide additional in-depth information and support consumers in choosing more sustainable products. Further information can include:

- ▶ Comprehensive environmental product information, including relevant test results, description of the value chain or origin of the product, and information about production sites and CSR measures taken in manufacture and trade
- ▶ Information on correct use and extension of product lifespan (e. g. through maintenance, care, repair)
- ▶ Detailed, comprehensive information on the environmental impacts of the product group generally, in order to create more transparency
- ▶ Use of navigation elements on websites that improve the comprehensibility of content



- ▶ Information that enables consumers to evaluate the level of the environmental standards set by certification schemes and to properly assess other environmental claims
- ▶ References to methods used to verify environmental claims

5.2 Format and layout guidelines

There are a variety of tools, formats and practices available for the design and presentation of environmental information. The requirements include:

- ▶ Comply with the applicable standards and conventions (accessibility, plain language, non-discriminatory language)
- ▶ Announce features in text, possibly even in an item name (e. g. energy-saving lightbulb), but in particular in the product description (e. g. „100 % recycled paper“), ideally with prominent placement on the product detail page
- ▶ Highlight environmental features using textual and graphic elements and credible labelling (Blue Angel, Bio-Siegel, Energy Star, FSC, etc., in a legible font size and, for example, with magnification or a pop-up info box on mouse-over) also with prominent placement
- ▶ Support the identification of environmentally sound products, in particular, the use of precision search functions (for example the search keyword „organic“ only returns hits for organic products), without referring to other unrelated environmental search terms; users browsing environmental categories should only see items that belong in those categories
- ▶ Explain environmental labels and environmental characteristics, ideally in close proximity to product information (for instance in a glossary or with a link to the certifier's page or to a label portal like *siegelklarheit.de*, etc.)
- ▶ Identify particularly sustainable products on offer on a website, search engine, etc. with an interface that is reliable, comprehensive and as intuitive as possible – in particular by using advertising or graphic emphasis and explanation of environmental benefits
- ▶ Create themed environmental shops (e. g. green office supply or sustainable back-to-school)
- ▶ Use the spectrum of technical tools in addition to the basic options described above – for example, give environmental products a clear systematic presence in the site's search tool, develop and use environmental search filters and other supports in search processes (keyword autocomplete, synonyms, etc.)
- ▶ Use language targeted to consumer groups, for example through environmental optimisation of recommendation engines that highlight green product alternatives using algorithms
- ▶ Ensure implementation of environmental information and educational material on mobile devices and during the development of new presentation formats (mobile versions of the online shop and apps integrate environmental information with specific graphic designs)
- ▶ Use additional customer service components, including interactive and consumer dialogue elements, from wikis and glossaries to search engine optimisation and search engine marketing
- ▶ Use web analytics tools to monitor the impact and optimisation of informational and educational plans and methods (impact of logos, analysis of visits to explanatory pages)

Currently, many e-commerce businesses are already setting good practice examples and paving the way for these to become a general standard. Additional, advanced and more differentiated practices that go beyond the conventional capacities of print media could build on this baseline. Some companies have already discovered that straight-forward environmental information about products in combination with progressive promotion of sustainable consumption is possible and good for business.

6 Appendix: Tools and concepts – Good practice examples

In the real world, we encounter a broad range of information and guidance materials related to aspects of sustainability, from simple information to graphic guides. This shows that it is possible to implement the principles and guidelines in this brochure.

6.1 Environmental information in product names

In certain product categories, environmental information is part of the product name, for example, organic food products in Germany often have the word „Bio“ in the name or the abbreviation k. b. A. (i. e. controlled organic cultivation). In other categories, the abbreviation of a certification might be included as an addendum to the product name, for example, FSC or an energy efficiency class (EEC A). In addition to certifications, product names also often include information about features such as recycling characteristics. Information in product names provides immediate, verifiable information about certifications or other environmental facts.

This information is not necessarily self-explanatory (for example in the case of abbreviations like k. b. A.), nor can it always be understood in relation to an environmental standard. The prominent position

of such information in the product name, however, emphasises the environmental feature or an ecolabel, which has the potential to send a message.

6.2 Information in product descriptions

Alternatively or in addition to environmental information in the product name, this kind of information is included in the product description where available. Environmental features can be described in detail in the product description. It is also possible to add links to explanations or glossaries to this text. The common practice is to simply indicate certifications or ecolabels, sometimes in combination with further information or images. There is no guarantee that this type of information is understandable for laypeople. It does not communicate impartial, verifiable facts and does not generally lend itself to sending purchase signals. The information impact depends, among other things, on the clarity and comprehensibility of the claim, its placement, the amount of additional product information and other factors (such as font size or style).

6.3 Product data sheet information

Additional environmental information is often made available on a download or publication page. These pages directly publicise documents such as technical data sheets or offer links where users can download them from manufacturer websites. Product data sheets can also sometimes be found in the fine print on the product page or in pop-ups.

6.4 Explanation of environmental features and background information

Explanations of certification schemes and environmental features provide consumers with more comprehensive information that goes beyond a simple list of attributes. This kind of information makes it possible to better understand, evaluate and verify a claim and supports its credibility. Brief,

Figure 02

Highlighting an environmental feature in a product name



Prominently featuring the environment in the product name helps consumers quickly recognise environmental benefits. For instance, recycled paper can be presented with environmental features or certifications such as „100 % recycled paper“ or the Blue Angel ecolabel in the product name.

simple and more readable texts (attributes highlighted as keywords or in a bullet point list) and more comprehensive, complex texts (analysis of claims and classification) are the two types of texts encountered here. Generally, the claims made in explanations are product-specific; sometimes they can be related to the business as a whole.

Explanations are generally found in product descriptions, glossaries, links to other websites, pop-ups or documents for download. The use of links allows the publication of relatively comprehensive, in principle unlimited and up-to-date content and background information, unconstrained by the conventional physical limits of print media. The placement and design of explanations and background information affects the amount of attention they garner.

6.5 Graphic design options

Graphic elements are perfect for visually emphasizing certain aspects of a product, for instance an environmental feature, and for catching the eye of the consumer. They can strongly influence perception and intention to purchase in consumers with the right mind-set. Environmental labelling schemes typically use their own logos to visually communicate their message, sometimes using a combination of text and images. Recognition strengthens their impact. In addition to labels, other environmental features can be graphically represented. Brand symbols incorporating both text and images have the advantage that the text and image are „read“ simultaneously.

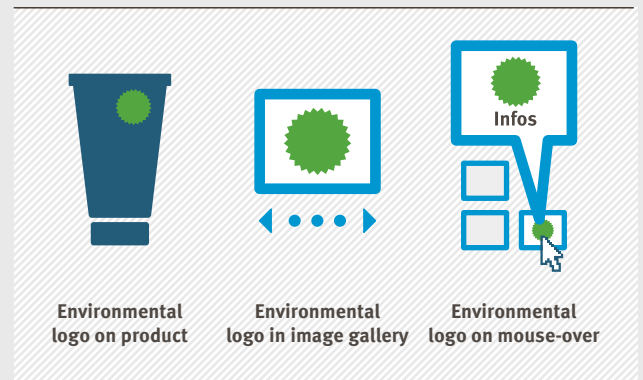
The placement and proximity of the symbol to the product on offer influence the effectiveness of product logos or graphics that emphasise a particular feature. Logos can be used as links leading to further information.

6.6 Supply chain transparency

The complex consideration of sustainability along the various stages of the supply chain or product life cycle, which are important for evaluating a product, can be depicted in images. Well-known examples can be found in the textiles, fair trade and food product sectors.

Figure 03

Visually highlighting environmental features



Visually highlighting an environmental feature and drawing attention to it can be achieved by clearly placing the logo on the product or by including the logo in the product image gallery and using a mouse-over to magnify the logo and provide further information.

6.7 Theme shops and rubrics

Theme shops within larger online shops or marketplaces present product groups, thematically curated and displayed, in a separate area. Such pages draw the visitor's attention to a commercially selected group of products, put together based on certain features, for example environmental features such as energy savings, eco-fashion or fair trade. This also achieves graphic emphasis and separation of these products from the rest of the product range. The products in the theme shop gain their own unique web presence due to the dedicated page within the larger platform.

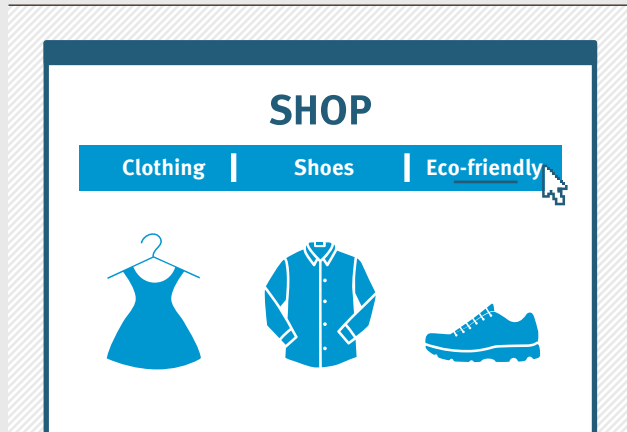
Designated product rubrics and categories, for instance, solar products or organic foods, also lend emphasis, sometimes without using special graphic or visual highlighting. Giving these products their own web presence in a theme shop or an environmental rubric makes it easier for consumers to orient themselves by connecting relevant features to the products on display.

6.8 Filters and search tools

In large product inventories, technical tools help consumers find products that meet certain criteria, including environmental criteria. Filters and sorting tools contain specific, predetermined sustainability filter criteria (such as „organic“, „A+“, „Blue Angel“ or „FSC“). Filter options are frequently found in the sidebar or at the top of the page. Sometimes these options are automatically available, sometimes

Figure 04

Environmental theme shops for various product groups



Bringing together sustainable products in a theme shop (e.g. eco-fashion, organic foods, Blue Angel) or under an environmental heading makes it easier for consumers to identify them.

they are part of an interface for advanced searching based on various criteria. In addition, some shops and portals make it easier to limit search results by using autocomplete keywords. To date, filters and search tools have tended to focus on a few prominent environmental characteristics, but they could be used for all environmental characteristics.

6.9 Product recommendation management

Many shop systems generate automatic product recommendations. Recommendations are based on observation of customer behaviour (search keywords, sites visited, previous purchases, etc.) gathered via cookies or extrapolated based on common shop navigation patterns. The aim is to address the customer with recommendations that are as effective as possible in netting sales. It is often observed that high performance recommendation tools increase the likelihood that environmental products are purchased.

Recommendations are created in shop systems by recommendation engines (algorithms) that can be configured to target specific outcomes. It is possible to adjust these engines to target sustainability criteria, so that site visitors are presented with more sustainable product alternatives when they conduct a general search for a conventional product.

Figure 05

Use of filters and search tools



Filters and search tools help consumers find products that meet specific criteria, including environmental criteria.

6.10 Customer product reviews

Various shop systems, marketplaces and price comparison portals allow consumers to post product reviews and experiences after purchase. This creates information about product characteristics, suitability and sometimes even manufacturing conditions which is, in principle, also relevant to the environment. Reviews can be free form (composed in a text field), structured around pre-determined criteria (customer satisfaction, performance, suitability, user-friendliness, design, etc.) or a combination of the two.

These reviews can make product selection easier because people tend to trust the reviews of other customers strongly. Even product reviews critical of a product can be advantageous because they help prevent bad choices, disappointment and returns, increase trust in the shop itself and enable the shop operator to manage the quality of his or her procurement. The amount of environmental information available increases when consumers freely formulate reviews that consider environmental features or if shops specifically ask about these features (in cases where pre-determined criteria are provided).

6.11 User-generated product databases

New forms of product transparency are emerging thanks to product databases that have been developed independently of manufacturers and sellers

and are freely searchable for product information (for example, *codecheck.info*, WeGreen). These databases have come into being because users „feed“ the database with product information they have gathered independently, for example, on ingredients, origin and evaluation of a product, or add to already existing information, following particular rules and formatting schemes. These databases are based in part on information from manufacturers and links enabled by standardised item numbers and barcodes. Sometimes these databases are used while on the move and conducting in-store product research, sometimes for stationary computer-based research. In addition, there are product databases supported by trade and manufacturers, which consumers can use to search for information about product features and origins (e. g. Fairtrade Germany's product database *bio-mit-gesicht.de*).

6.12 Data organisation for marketing channels

It is possible and much easier to use information about quality and environmental characteristics in the many online marketing and communications

channels provided the information is clear. Concrete specification of this information in its own structures (for example in a specific data field for ecolabels) helps with this. Data providers and advertising networks still rarely provide specific data fields for environmental and sustainability information.

Figure 06

Option for checking ingredients and component substances on the go



New forms of product transparency are emerging thanks to product databases developed independently of manufacturers and sellers; these are freely accessible databases that can be searched for product information.

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8 List of figures

Figure 01: Examples of environmental labelling for consumer goods	9
Figure 02: Highlighting an environmental feature in a product name	22
Figure 03: Visually highlighting environmental features	23
Figure 04: Environmental theme shops for various product groups	24
Figure 05: Use of filters and search tools	24
Figure 06: Option for checking ingredients and component substances on the go	25



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