



# SUSTAINABILITY REPORT

5<sup>TH</sup> EDITION



## A BRIEF SUMMARY OF THE NONWOVENS AND RELATED INDUSTRIES



Estimated turnover for the European production of nonwoven roll goods. The turnover of the entire nonwovens and related industries, including conversion into hygiene, medical, wipes, filtration, automotive, construction and other applications is a multiple of this number.



**250+**  
MEMBERS

**27,000**

**Jobs in nonwovens and related industries in Greater Europe**

**2.5**

**MILLIONS OF TONNES**

Nonwovens produced in Greater Europe<sup>5</sup>

**50%**

of companies have quantitative sustainability goals<sup>1</sup>



of companies communicate transparently about sustainability<sup>4</sup>



**69%** by website  
**61%** by sustainability reporting  
**59%** by product claims  
**39%** by ecolabeling  
**24%** by participation in rankings



**90%** of companies regularly engage with stakeholders on sustainability<sup>4</sup>

**66%**  
of companies have partnerships for sustainability<sup>2</sup>



of companies have targets for energy intensity reduction<sup>3</sup>

**7.4**

**Average score (1 – 10) of our members' awareness in terms of sustainability**

1. 2017 survey (42 answers)
2. 2017 survey (35 answers)
3. 2017 survey (30 answers)
4. 2017 survey (49 answers)
5. Greater Europe: Western, Central and Eastern Europe, Turkey and the C.I.S. countries (Commonwealth of Independent States and regroup of former Soviet Union countries)

# EXECUTIVE SUMMARY

**With this 5<sup>th</sup> Sustainability Report EDANA has adopted a new approach using the GRI Standards as a guideline.**

\_\_\_\_\_ We are further building on our previous work published in 2015, which extensively described the social, environmental and economic benefits of our industry throughout all application areas and the entire value chain. Firstly, we enhanced the mapping criteria of the impacts - regardless of these being positive or negative – our industry has on stakeholders, society and the environment. Secondly, and in order to achieve the impact mapping, we conducted a variety of surveys resulting in a full-spectrum sustainability representation of the nonwovens and related products industry. Thirdly, we connected with our stakeholders in order to have their feedback and vision on what sustainability means for our sector. Finally, all those elements combined led us to a renewed EDANA Sustainability Vision.

Throughout the report, you will find key sustainability figures of the nonwovens industry brought to life with several illustrations of best practices. The report gives further insight into the seminars, symposia, surveys, Working Groups and specialist committee meetings that support the promotion of sustainability in our

industry – in addition to engagements with governments and continuous dialogue with relevant third-party organizations.

## **EDANA'S definition of Sustainability in brief**

We understand sustainability as the responsibility to mitigate negative and create positive environmental, social and/or economic impacts caused by the activities of the nonwovens industry in close dialogue and partnership with our stakeholders. In practical terms, for our sector, sustainability refers to the promotion of a sustainable supply chain, eco-efficient operations, building trust to customers, consumers and stakeholders and developing waste and circular economy solutions. EDANA's role is to facilitate interaction and join efforts towards a common industry goal on sustainability in line with the United Nations' Sustainable Development Goals (SDG's).

## **Opportunities and limitations of this report**

The report offers an overview of the sector's performance and ambitions in sustainable development. It

demonstrates the real commitment of the sector to improve its positive contribution to society while minimizing negative side-effects from its activities. Moreover, it presents numerous examples of good practice, demonstrating the sector's dynamics and its engagement toward sustainable development. EDANA monitors and promotes these initiatives within the sector.

The diversity of EDANA's members and industrial processes within the value chain, as well as the variety of products from the nonwoven industry, limits the possibility of establishing common SMART KPI's. Nevertheless, EDANA has invested in developing a common framework for the industry, known as *EDANA Vision 2030*.



**MARTIN RAPP**

Chairman of the Board of Governors at EDANA



**PIERRE WIERTZ**

General Manager of EDANA

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# FOREWORD

EDANA continues its efforts to guide the nonwovens and related industries towards sustainability. This sustainability report shows the many results of the commitment of our industry to sustainability. We are proud to see how sustainable practices drive innovation in creating new products and solutions towards the many challenges we face. As representatives of the entire value chain, we consider it our duty to connect and support all our members. In the context of creating a joint effort, we are also proud to announce that EDANA has developed a new Sustainability Vision towards 2030. With these renewed outlooks, we seek to align our industry's goals and perspectives concerning sustainability. We see it as a driving force for industry innovation, collective progress and increased positive impact on society.

In 2015, the UN Member States adopted the 2030 Agenda for Sustainable Development. This offers a blueprint for making the positive impact to which our industry aspires. The Sustainable Development Goals (SDG) are global challenges and we find ourselves at an undeniable tipping point. To support and endorse our contribution, EDANA linked the Sustainability Vision 2030 with the industry's most significant SDGs.

EDANA would like to reach out to our industry with an urgent request to act, together, in the spirit of the SDGs. Only so will we overcome our industry's and society's most imminent challenge. By recognizing the global challenges, we can initiate the next steps in transitioning towards a fully sustainable industry. It is a proud choice we can make together with confidence as the quality, capability and versatility of our industry's product applications are bound to lead to success.

Nonwovens play a major part in so many daily lives, be it in personal hygiene, medical healthcare, transportation, food production, water purification or even road construction. EDANA and its members are relentlessly working to find today's solutions for the challenges of tomorrow.



# SUSTAINABILITY REPORT

5<sup>TH</sup> EDITION



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## ABOUT EDANA

### The international association serving the nonwovens and related industries

Today EDANA unifies the diversified interests of over 250 member companies from 36 countries in a unique vertically integrated structure along the supply chain. Based in Brussels, EDANA reflects and caters to the changing dynamics and priorities of the nonwovens industry, acting as the voice representing and actively promoting the common interests of nonwovens and their related industries throughout the world, with a particular focus on Europe, Middle East and Africa.

 Consult full member list

Megatrends such as globalisation and innovation are creating an unparalleled shift in global economics and thus in our environment. The world is becoming a global village with sustainability as its major concern. Over time, manufacturers of nonwovens and related products have addressed this concern through production efficiencies, significantly reducing energy demand and production waste by optimizing production processes.

The responsibility and importance of the industry's (future) engagements towards sustainability must not, in any way, be underestimated. A closer look at our daily lives shows that nonwovens are everywhere: in the tea bag in your mug, the air filters in your car, and even in the roads you used this morning. Innovative and versatile, nonwovens can be engineered to possess—or better still, combine—a surprising array of properties. As such, they truly are the fabric of the future.

Accordingly, it is only natural that EDANA, as the international “voice of nonwovens”, should keep looking ahead to identify the trends and insights that will shape our industry towards a sustainable future.

#### Our mission & vision

Our role is to provide our members with a comprehensive range of services and the information and data necessary to enhance their industry goals and performance. EDANA provides the nonwovens and related industries with vital issue management, advisory, stakeholder engagement, educational, networking, and information-sharing services. We aim at creating an environment that is beneficial for innovation and sustainable and profitable growth for the industry.

#### EDANA's governance structure

EDANA has established two levels of groups to implement the Board-driven strategy in supporting the nonwovens and related industries:

- **Steering Groups** which implement EDANA strategy and set the direction for work in their areas. They have a horizontal function, and are responsible for informing the Board of Governors about projects and activities within their remit.

- **Working Groups** which carry out specific projects or activities to implement short and mid-term objectives, as confirmed by the Steering Groups. Working Groups are only established where there is a clear and valid reason, supported by member companies and subject-matter experts.

 Read more on these different groups, their roles and responsibilities, and participating member companies. Consult the EDANA organigram and composition, role and nominating procedure of the highest governance body.

#### EDANA's sustainability efforts

EDANA ensures the integration of sustainability within its operating structure through three main channels: the Sustainability Charter, Working Groups and the integration of sustainability during symposia and conferences.

#### EDANA Sustainability Charter

The EDANA Sustainability Charter is a voluntary charter specifying on the one hand the engagements EDANA commits to in order to be a driver for sustainability within our industry, and on the other hand the principles EDANA's member companies are encouraged to apply in order to fully engage in sustainable development. This charter has recently been updated in line with the new Sustainability Vision.

 Consult the EDANA Sustainability Charter.

### Sustainability in Steering and Working Groups

While all Working Groups have links to sustainability, two Working Groups in particular have sustainability at their core. These are the Sustainability WG, and the Circular Economy WG.

Both Working Groups consist of member companies of EDANA, providing strategic guidance to EDANA on both sustainability and environmental matters as they relate to nonwovens and related products, and on all activities related to waste from single-use absorbent hygiene products.

### Sustainability in conferences

During our conferences and symposia (OUTLOOK™, the International Nonwovens Symposium (INS), the Nonwovens Innovation Academy (NIA), FILTRES™ and INDEX™), EDANA ensures sustainability is systematically integrated and prominent in the programmes. Some practical examples are listed below.

- **OUTLOOK™** 2018 was our most successful edition yet with more than 500 delegates from across the value chain. The conference examined market outlook, new product developments, performance and safety testing and sustainability initiatives. The conference included an extensive session on Building Trust, discussing the different sustainability challenges within the sector. Other regional OUTLOOK™ conferences are organized around the world.
- During **INS** 2018, key stakeholders discussed a variety of topics such as the “Industry 4.0”; challenges and opportunities to biodegradability, bio-based materials and recycling.
- The 2018 **NIA** gathered 100 R&D and innovation managers, product developers, researchers and stu-

dents, all part of the broader nonwovens community. They shared knowledge through 5 sessions, each linked to sustainability and positive value creation.

- Every three years, EDANA organises the **INDEX™** exhibition, the largest global meeting place for the nonwovens supply chain and their customers, during which a selection of excelling companies is presented with an **INDEX™ Award**. The awards are issued in seven different categories, two of which relate directly to sustainability: Sustainable process or management practice and Sustainable product. The 2017 winners are, respectively, Suominen Corporation with their “Blind Hiring Recruitment Process” and Hassan Group with “Self Sufficient Relief Tents”. For more information about the INDEX™ Awards and the exhibition, please visit our website.

 Find information on all upcoming EDANA events.

### Our industry's challenges and opportunities

Improving on sustainability requires a better understanding of how sustainability challenges may impact our members' businesses and how new opportunities may arise. With our members' input, we listed the most recurrent challenges and opportunities as follows:

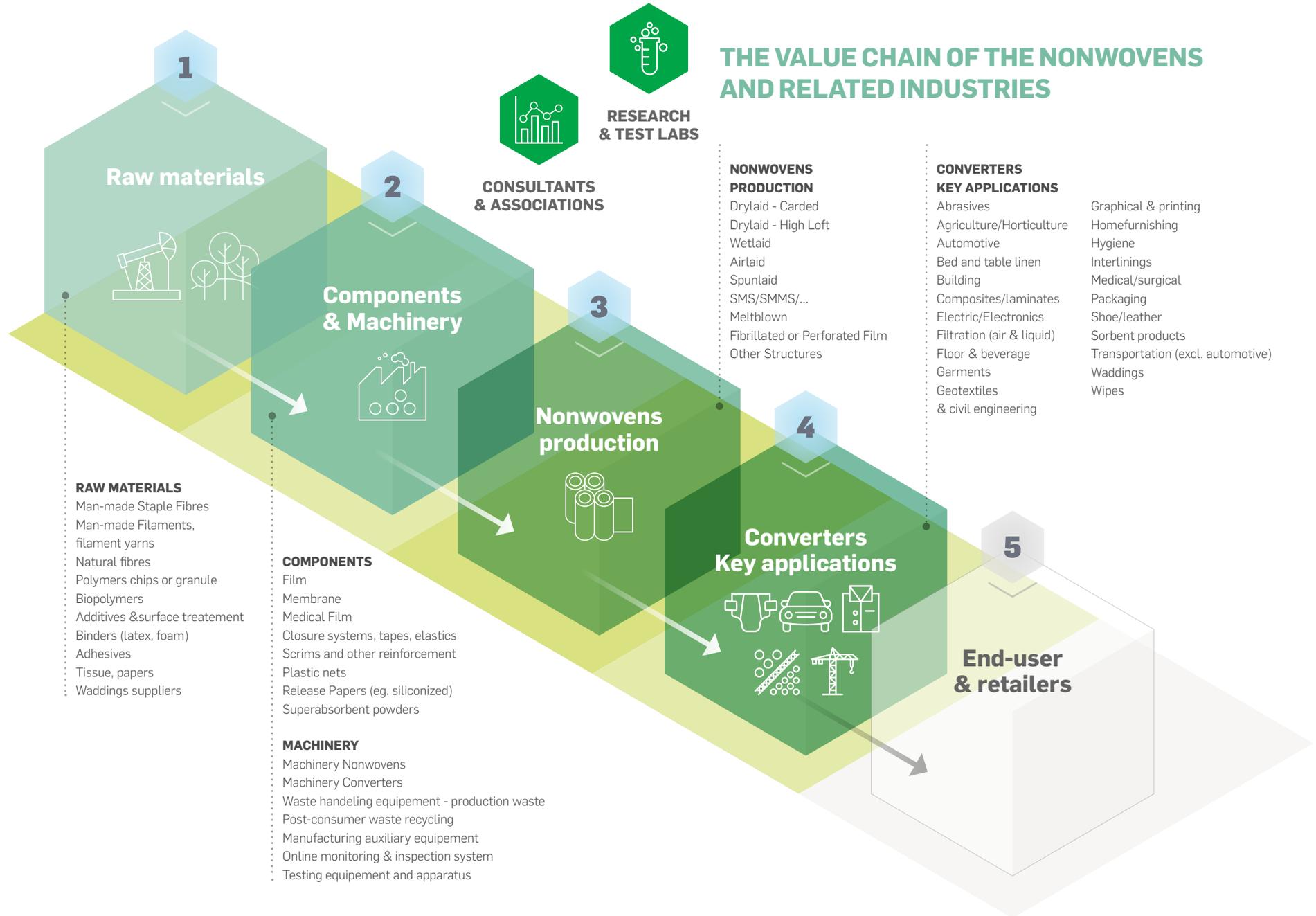
#### Challenges

- Ensuring consistent growth while reducing our negative environmental and societal impact.
- Improving the end-of-life and recycling properties of our products to eradicate waste and transition towards a circular economy.
- Increasing transparency, communication and engagement throughout our value chain to facilitate the implementation of sustainability across our industry.

- More and stricter environmental regulations which the industry needs to be aware of.
- Addressing topical issues and building trust with the industry concerning topics like SUP (single use plastics) and hazardous substance contamination.

#### Opportunities

- Developing new sustainable product portfolios with reduced environmental impact for a growing market of conscious consumers who are increasingly aware and demanding.
- Participating in raising awareness and understanding of true versus deceiving product improvement features from an overall life cycle perspective, e.g. through the ongoing provision and spreading of EDANA guidelines on environmental claims.
- Innovating in new, more efficient technologies with improved resource use, increased recycling properties and beneficial capabilities for consumers.
- Enhancing relations and increasing communications with suppliers and customers and improving employee well-being to strengthen our market position.
- Further implementing sustainability within our corporations, increasing our positive societal and environmental impact to build a competitive edge.



## EDANA'S STAKEHOLDER DIALOGUE

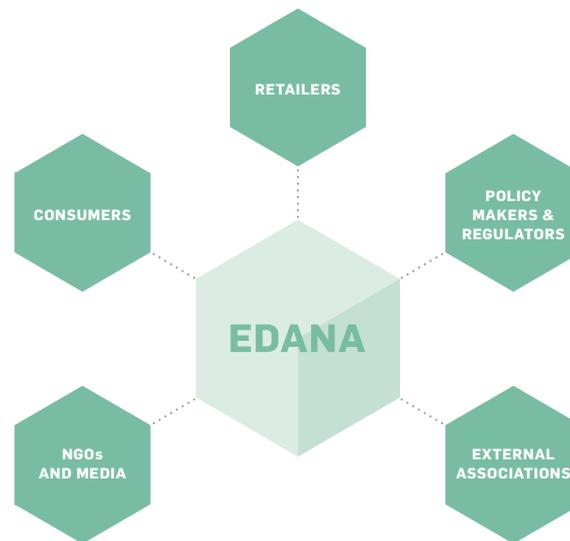
As the representative of the nonwovens and related industries, EDANA is able to make a significant difference towards key stakeholders (policy makers, NGOs, retailers, citizens...). Our members each have their own expertise and can make a significant contribution in the further integration and development of sustainability. EDANA finds itself in a unique position to provide added value and further support its member companies in their efforts by facilitating alignment on principles, definitions and visions related to sustainability. As a validation, we constantly engage with our stakeholders to ensure the correct emphasis is put on the right themes and to verify our goalsetting is sufficiently ambitious without outpacing our industry.

For the development and validation of our Vision 2030, we conducted a stakeholder dialogue representing all members of society.

### Determination of stakeholder groups

An extensive longlist of stakeholders was composed which served as a basis for the EDANA Sustainability Advisory Panel to make a selection of the most relevant stakeholders. In order to ensure a complete representation of society, the selection took into account the different stakeholder groups as defined by ISO 26000 guidelines (see figure).

About 30 stakeholders were contacted with regard to validate materiality and provide additional input to the EDANA Sustainability Vision 2030. A first series of 8 inputs were received and analysed.



### Stakeholder consultation

The consultation consisted of a questionnaire regarding the materiality items and the EDANA Sustainability Vision. Interested stakeholders were invited for a longer, more in depth interview to better understand expectations regarding sustainability and increase our mutual understanding to explore potential future partnerships.

### Results

In general, the EDANA Sustainability Vision was overall appreciated and received an average score "Good". Complementary feedback was made regarding some material topics, the Sustainability Vision and opportunities for the industry:

- More emphasis is expected on circular products with a strong commitment on closing the loop. Also, there is a need for new business models with more separate collection, material reuse and recycling.
- The stakeholders indicated that more research is required regarding the replacement of current primary materials by renewable, bio and recycled materials, while maintaining quality and functionality.
- The vision is ambitious but there was no link to a specific SDG or SDG target.

While on the one hand, the stakeholder consultation continues in order to have a wider set of stakeholders involved, the present feedback already provides valuable input to setup specific action plans and further enhance the industries' sustainability vision.

## MATERIALITY

The materiality represents the nonwoven and related industries' main sustainability impacts, from the perspective of EDANA. The identification and prioritization of the material topics was done in three phases.

First, the sustainability reports from member companies were analysed. This resulted in different topics which were subsequently categorized and clustered into 22 material topics. Secondly, EDANA's members were asked to rate these topics according to the importance for their company by means of a sustainabi-

lity survey. Finally, the results were compiled and used as input to be discussed in a Sustainability Advisory Panel, composed of sustainability experts from EDANA's members. This resulted in a final list of important sustainability topics to be addressed by EDANA. Based on this materiality analysis, the Sustainability Vision 2030 was developed by the EDANA Sustainability Advisory Panel.

This approach allowed to start the stakeholder consultation with high quality input with regard to the materiality as seen by EDANA's members. Stakeholders validated the material topics as represented in the Sustainability Vision 2030. Some stakeholders highlighted several additional or specific sustainability topics.

### MATERIAL TOPICS ACCORDING TO EDANA

(input to Sustainability Vision 2030)

Human rights compliance
Safe and good working conditions
Sustainable sourcing and material use
Responsible supply chain
Inclusive innovation
Energy
GHG Emissions
Waste
Customer health & safety
Transparent communication and labelling
Code of conduct compliance
Global regulation and ethical responsibility
Sustainable consumption
Product life cycle and end-of life
Product quality and design

### ADDITIONAL MATERIAL TOPICS ACCORDING TO THE EDANA STAKEHOLDER CONSULTATION

Natural resources
Value retention of products
Water stewardship
Sustainable forestry
Circular economy



### EDANA's contribution to the SDGs

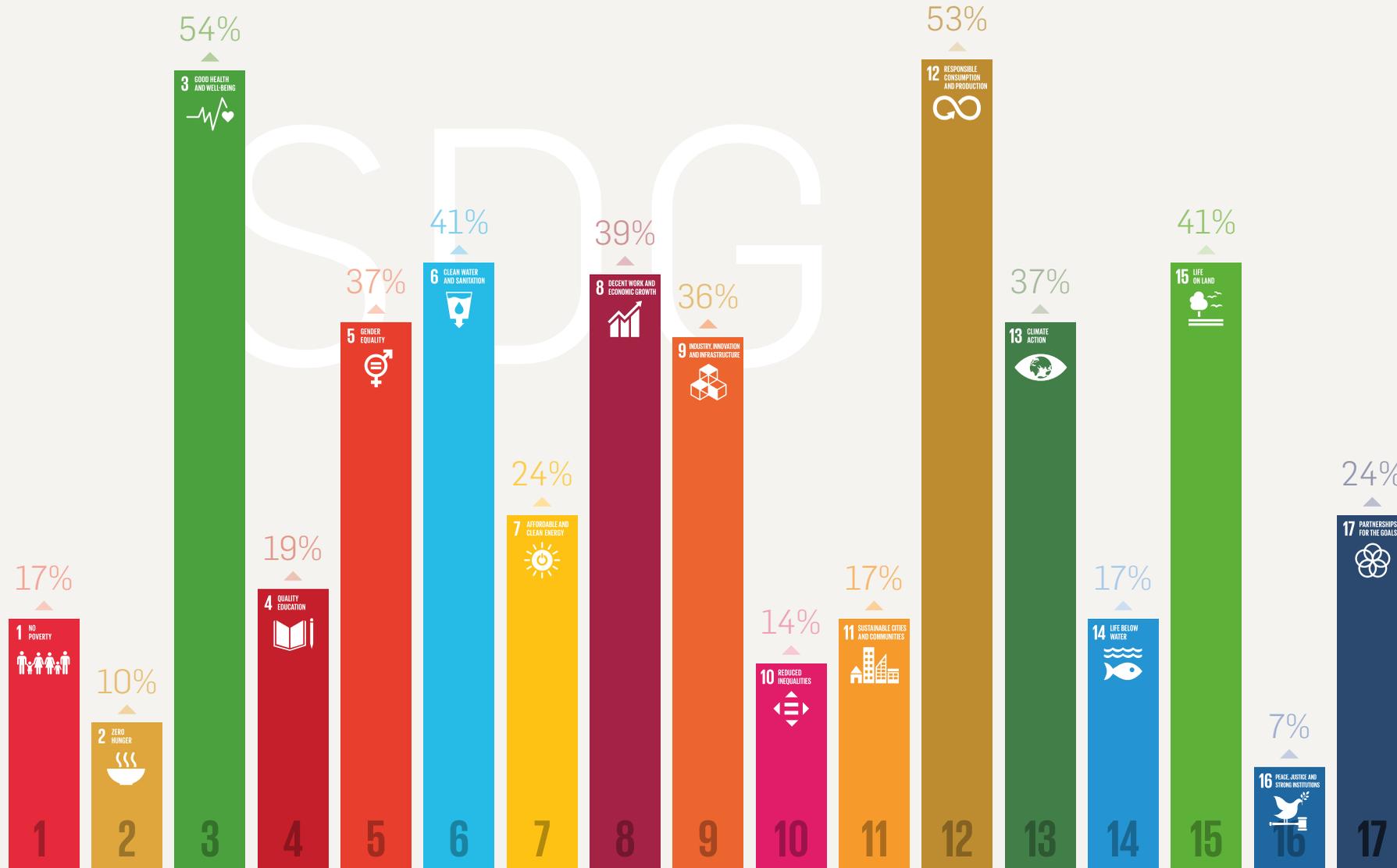
At the end of September 2015, 193 state and government leaders endorsed the Agenda 2030 for Sustainable Development during the United Nations Sustainable Development Summit in New York. The core of the agreement is a set of 17 Sustainable Development Goals (SDGs) to be met by 2030. The Agenda 2030 is not only ambitious but also border crossing, and calls on all actors to work together for a sustainable society: government, businesses, NGOs, civil society, citizens, etc.

The contributions by EDANA members towards the SDGs are as diversified as the industry itself. As a sector association, we play an important role in helping our members understand the importance of the goals as well as encouraging them to take action through sectorial and multi-industry collaborations.

EDANA's vision is clustered in four pillars each contributing, in a different degree, to several SDGs. Alignment with the Sustainable Development Goals has been done on the level of each pillar and each material topic. The corresponding SDG targets are indicated at the level of each pillar. Overall, we can see that the most important SDGs for EDANA are those related to Good health and well-being and Responsible consumption and production (SDGs 3 & 12). Other important SDG's relate to biodiversity (Life on land), Clean water and sanitation and Decent work & Economic growth (respectively SDGs 15, 6 and 8).

The relative importance of each SDG based on the survey conducted by EDANA among 65 members is shown in the SDG heat map.

SDG heat map, based on a survey among EDANA members



To which of the UN's 17 Sustainable Development Goals does your company and its products contribute? (65 respondents - 2018)

## ADDRESSING THE KEY SUSTAINABILITY TOPICS

**EDANA aims to be the driving force for sustainable products and processes in the nonwovens industry. The EDANA Vision seeks to improve our industry's entire value chain on four different key areas; promoting sustainable supply chains, creating eco-efficient product solutions, building trust with stakeholders and ensuring a responsible end-of-life.**

Following the two previous sustainability engagement surveys, we repeated this exercise in 2017, enabling us to observe trends over an extended period. The 55 respondents were spread across applications for nonwovens and related products. Overall, the survey is representative for EDANA's total membership, with companies from all parts of the value chain. Likewise, we performed a materiality survey (26 respondents) together with an SDG prioritizing study (65 respondents). In addition, a quantitative survey (35 respondents) with

sustainability-related indicators was held. The individual and combined results of these different surveys provide new insights on sustainability.

Sustainability awareness continues to increase. This shows that more and more companies realise the need to integrate sustainability further into their operations and products.

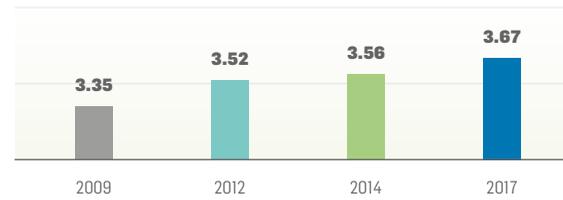
While the priority rating for the planet pillar is at the same level as before, the ratings for people and prosperity keep rising, resulting in a better overall balance between the pillars.

The main drivers for the consistent increase of sustainability is due to rising expectations by customers and consumers (see next chart).

The following chapters give insight in the sustainability performance of EDANA's membership. The material topics are structured according to the EDANA Sustainability Vision. Each topic will report on ambition, approach of the material topic and key performance indicators according to the GRI Standards and best practices.

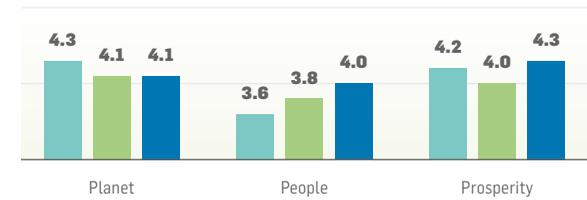
### How aware do you think your company is in terms of sustainability (1-5)?

Sustainability engagement questionnaire (49 answers – 2017)



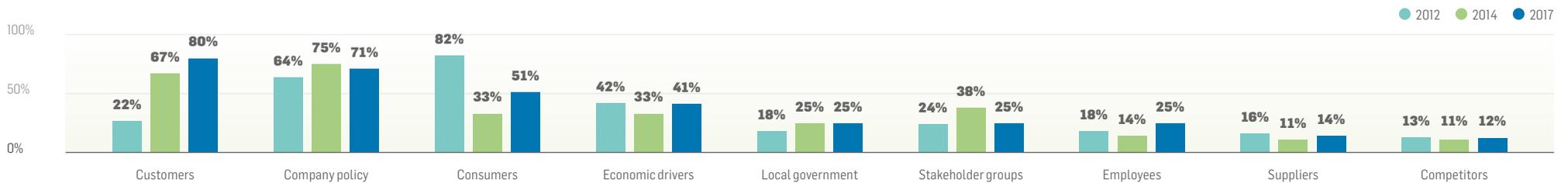
### Priority rating of sustainability pillars for the company

Sustainability engagement questionnaire (51 answers – 2017)



### What are the main drivers for your sustainability activity?

Sustainability engagement questionnaire (51 answers – 2017)



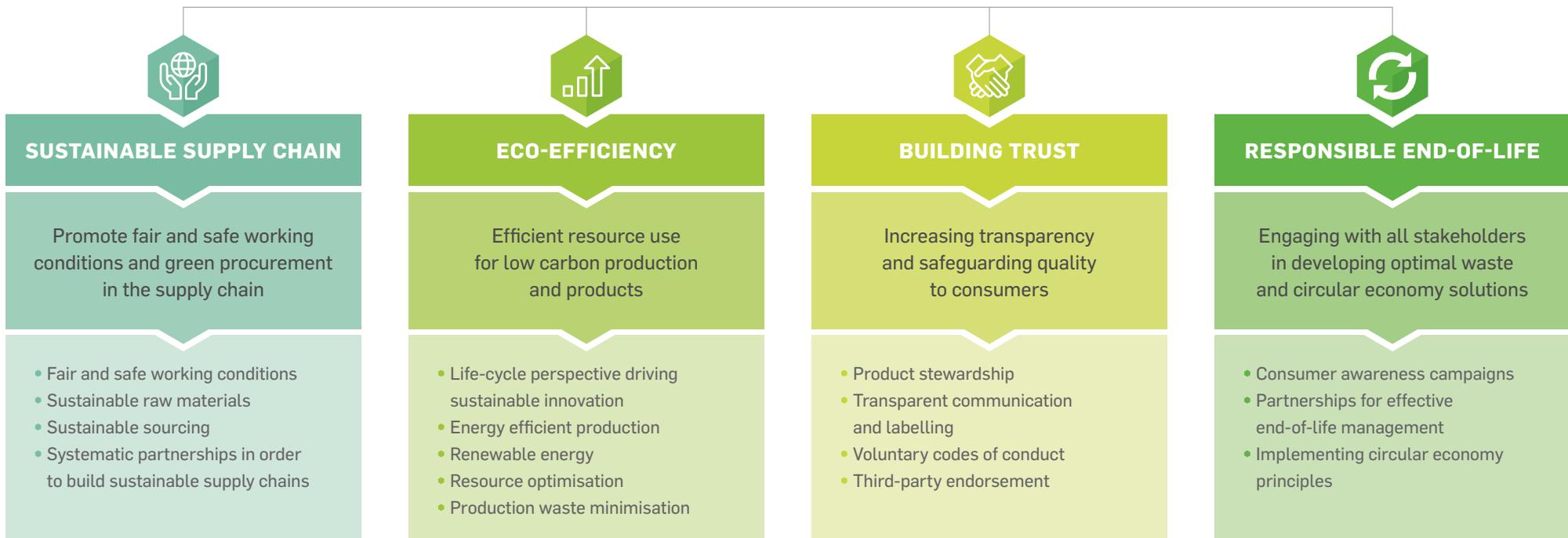


# EDANA SUSTAINABILITY VISION 2030

EDANA developed a new Sustainability Vision 2030, hereby giving clear insight into the priority topics on sustainability for our industry. The vision combines the most prominent materiality topics of the

materiality matrix with key SDGs for the industry. This results in four key areas clustering twelve materiality themes. Each key area is illustrated by a clear ambition.

The Vision aligns our industries' priorities and as such, allows to collectively head in the same direction. It should be interpreted as a guideline rather than a rule to help our members identify their priorities and further develop their own sustainability strategy.



# SUSTAINABLE SUPPLY CHAIN



## SUSTAINABLE SUPPLY CHAIN

Promote fair and safe working conditions and green procurement in the supply chain

- Fair and safe working conditions
- Sustainable raw materials
- Sustainable sourcing
- Systematic partnerships in order to build sustainable supply chains

### AMBITION

Promote fair and safe working conditions and green procurement in the supply chain

**As part of ongoing efforts to improve and enhance the sustainability of the supply chain, EDANA's members seek to increase green procurement as well as ensuring fair and safe working conditions. It takes into consideration human rights compliance, systematic partnerships and operational health and safety along the supply chain.**

**Most companies monitor these performances and are commonly required by others in the supply chain to do so. This is supported by suppliers' codes of conduct and different audit and certification approaches. Green procurement promotes business that reduces the impacts on natural resources and risks of hazardous chemical substances, and strengthens good relations within the entire supply chain.**

# SDG TARGETS

SPECIFIC SDG TARGETS OF THE RELEVANT SDG GOALS

<b>5.1</b>	End all forms of discrimination against all women and girls everywhere
<b>5.5</b>	Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life
<b>5.b</b>	Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women
<b>8.3</b>	Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services
<b>8.5</b>	By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value
<b>8.7</b>	Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms
<b>8.8</b>	Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment
<b>10.2</b>	By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status
<b>10.3</b>	Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard
<b>10.4</b>	Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality
<b>12.2</b>	By 2030, achieve the sustainable management and efficient use of natural resources
<b>17.16</b>	Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries



## Fair and safe working conditions

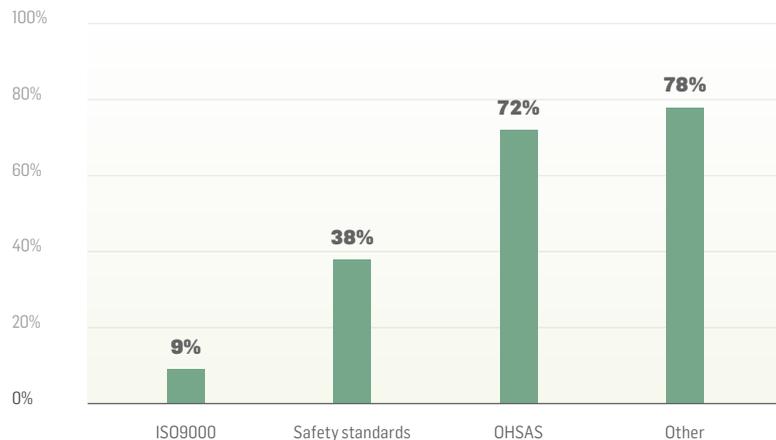
**Process safety and compliance to a fair and ethical working environment are of prime importance in the nonwovens supply chain. This is realised by means of effective process safety management systems and ethical compliance systems.**

Our members endeavour good working conditions through various practices, a large majority by complying to one or more quality or safety standards and management systems as displayed in the chart. Moreover, several members developed and endorsed a Code of Conduct on fair and safe labour standards. These codes include prescriptions on freedom of association, child labour, non-discrimination and harassment prevention and are often based on or in accordance to international human rights standards.

The EDANA members have consistently been improving their employees' health, safety and well-being alongside promoting fairness in the workspace. The average reduction in LTI (lost time injury) or LTIFR (lost time injury frequency rates) is 35%<sup>1</sup> and more for some companies. All our members aim to be injury free. Around 20% of our members have set goals on injury reduction and almost 10%<sup>2</sup> of our members can proudly call themselves an injury free workspace.

### Compliance to a quality or H&S standard or certification system

Sustainability survey (35 answers – 2018)

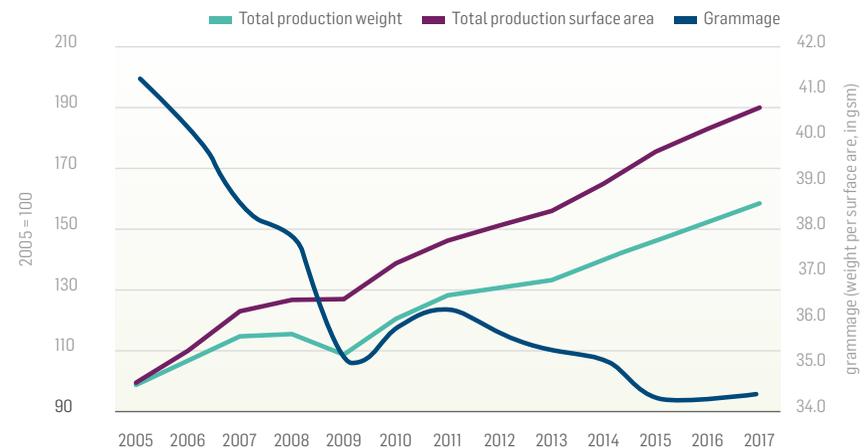


## Sustainable raw materials

**Raw materials form the basis of the industry's value chain. It goes without saying that the choice for sustainable raw materials<sup>3</sup> is a necessity in order to create and maintain a sustainable supply chain.**

Petroleum-based materials represent around 70% of the share of the industry raw materials use. Conversely, renewable-based raw materials account for around 30% of the used materials. Two major trends occur in order to make the use of raw materials more sustainable. We observe a decrease in weight of materials per unit production. This is important as around 85% of carbon emissions from a finished product come from the raw material production as opposed to extrusion, conversion and transportation. Since 2005, the nonwovens' average weight has been reduced by 7 gsm<sup>4</sup>.

### Evolution of production of nonwovens and products' weight



Although the number of square meters of nonwovens has increased dramatically over the last ten years, the tonnages have not followed the same path. Increasing innovations result in a continuous decrease of the average weight per square meter of nonwovens.

There is also a clear increase in the use of materials from a natural or recycled origin. In 2017, the consumption of fibres, polymers and binders by the nonwoven industry amounted to 2.8 million tonnes. About 20% originates from natural resources. This includes wood pulp (11%). An increasing number of cellulose-based fibres (such as viscose) are used (6%). Also, more and more bioplastics find their way to nonwoven applications. The most commonly used certification standards for renewable sourcing are the FSC® or PEFC™ standards. In addition, 12% of the total amount of raw materials used are of polyester recycled origin (rPET).

**Raw materials used in nonwovens**

**Renewable**

- 6% Viscose
- 11% Wood pulp
- 3% Other natural fibres/polymers

**Recycled**

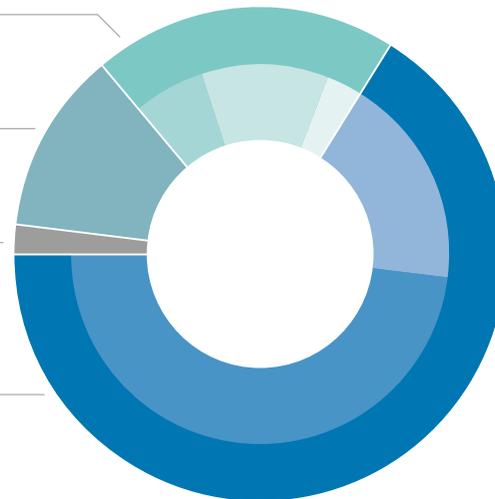
- 12% Polyester recycled

**Other materials**

- 2%

**Man-made of synthetic polymers**

- 18% Polyester virgin
- 48% Other man-made fibres/polymers (mainly polypropylene)



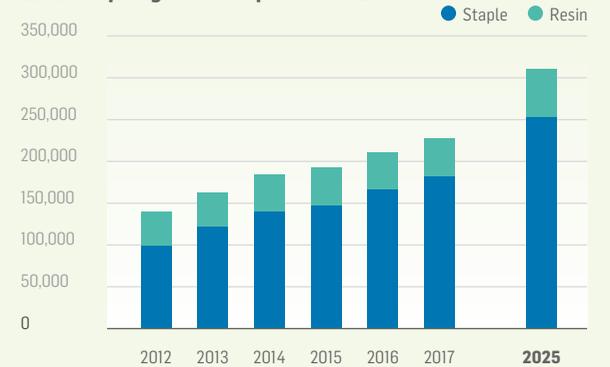
**EDANA'S INITIATIVES**

**EDANA's Pledge for uptake of rPET**

During the event "The EU Plastics Industries – Towards Circularity", EDANA announced it would join 13 other organizations which present yearly interim reports on voluntary commitments and pledges to adopt more circular business models. On behalf of the nonwoven producers amongst its membership, representing over 85% of the nonwoven production in the EU, EDANA issued a pledge to significantly increase the use of recycled PET (rPET) in nonwovens.

Currently over 200,000 metric tonnes of rPET are used in the production of nonwovens for applications in e.g. roofing products, automotive products or hygiene products. EDANA foresees, on behalf of the nonwoven manufacturers among its members, an uptake to more than 300,000 tonnes of rPET by 2025.

**EDANA's pledge for the uptake of rPET**



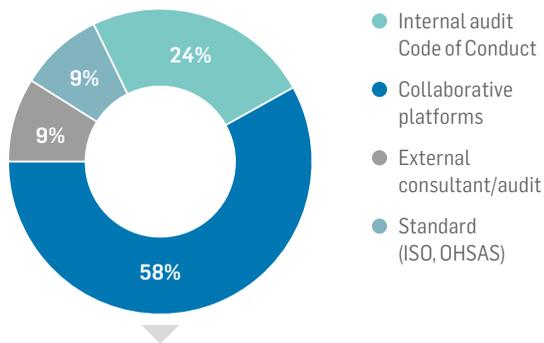
## Sustainable sourcing

**With raw materials being the building blocks for a sustainable supply chain, sustainable sourcing is the foundation upon which it is built. The integration of social, ethical and environmental factors in procurement is a necessity to meet today's stakeholder expectations.**

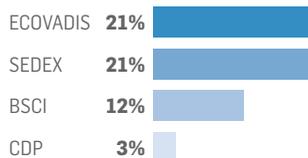
The sourcing of materials happens almost exclusively through suppliers and business partners. They are vital for any (manufacturing) organization. In order to have a value chain approach to sustainability, integration of sustainability in procurement processes is on the rise with our members.

### Audit mechanisms in supply chain

Sustainability survey (35 answers – 2018)



### Distribution of collaborative platforms



The demand for sustainable products continuously increases. In 2017, 65%<sup>5</sup> of our members used sustainability as a key element in the decision-making of raw material sourcing. In order to assess their suppliers and supply chain on sustainability, EDANA members use different audit mechanisms as shown in the chart. Collaborative platforms are most popular (58%), followed by internal auditors (24%). The popularity of platforms like EcoVadis® or Sedex® is mostly due to their transversal properties and capacities to be used throughout all industries, minimising the effort on the side of the supplier to provide information.

## Systematic partnerships in order to build sustainable supply chains

**Facilitating and sustaining partnerships is inherently linked to the core business of EDANA. True sustainability within the supply chain can only be reached through open communication and sustainable partnerships with all actors.**

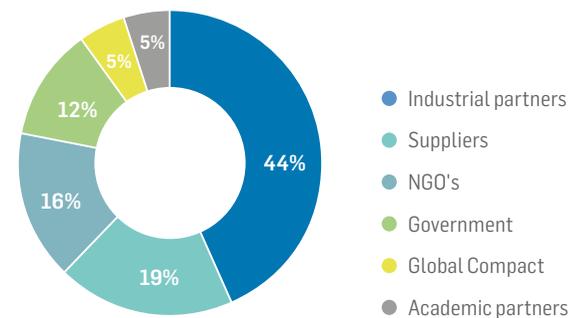
Over the years EDANA has enabled the creation of numerous partnerships and networks between industry members, suppliers, governments and other trade associations. As the representative of the nonwovens

and related industries, EDANA continues to play a key role in initiating conversation and exchange between different actors within different industries. The yearly conferences and symposia are a prime example of this. EDANA thereby creates a network of suppliers and business partners researching and developing specialist equipment and materials, which in turn contribute to more practical know-how, more advanced technologies and better end-products.

As partnerships are a prerequisite for sustainability, our efforts and the willingness of our members has resulted in a more sustainable supply chain. 66%<sup>6</sup> of our members indicate they established partnerships solely for the improvement of their sustainability. The chart below demonstrates the proportion of these partnerships for sustainability. 44% of these partnerships are between industrial actors and about 20% with suppliers.

### Type of partnership for sustainability

Sustainability survey (35 answers – 2018)





## EDANA'S INITIATIVES

### EU Ecolabel for absorbent hygiene products (AHP)

EDANA and many of its members (producers and key suppliers throughout the value chain) were actively involved in the stakeholder consultation and subsequent discussions for the development of criteria for this new EU Ecolabel. These criteria are valid until 2022 and will be subject to a revision in 2021. While the EU Ecolabel is voluntary, these criteria have a potentially significant impact as they are often taken as a reference by retailers and public procurers, who tend to favour products that carry the label or demand that products comply with the EU Ecolabel requirements. Several baby diapers proudly carry the EU Ecolabel, demonstrating their environmental progress.



## MEMBER INITIATIVES

### Fair and safe working conditions

#### SUOMINEN

Suominen, a nonwoven manufacturer, has taken a behaviour-based approach to its internal safety work. The safety program kept rolling on for the fifth year in 2018. The program covers all the Suominen employees, both working at production sites and office premises. The program emphasizes the individual's responsibility in occupational safety and focuses on influencing the attitude and motivation of individuals. The program is implemented through safety walks, where a trained employee walks through the premises identifying both safe and unsafe behaviours and conditions and then engages in an open discussion with the employees. In 2018, the Behaviour-Based Safety program was complemented by virtual safety walks for non-operational employees. The focus is to help everyone understand the importance of safe behaviour and how these principles can be incorporated into the daily lives of all employees. In 2018, more than 25,000 safety walks were performed globally. Altogether 4,792 unsafe actions or conditions were identified that need to be rectified, resulting in more than 3,000 hours of work entirely dedicated to safety walks and improving occupational safety.

#### BERRY GLOBAL, INC.

Berry Global, Inc. – is a global leader in films, packaging, and nonwovens. Its mission of Always Advancing to Protect What's Important drives the company's commitment to building a more sustainable future. The company takes advantage of the benefits of plastics to lightweight products and decreasing greenhouse gas emissions while also emphasizing recyclability and the use of recycled content. The number one priority and core value at Berry Global is the safety of employees and contractors. Because of continuous improvements of safety practices and procedures, the employees at Berry have reduced the incident rate to 1.2; far below the industry average of 3.9. Specific safety initiatives include Behaviour-Based Safety (BBS) training, 'red card' alerts, near miss reporting, and the creation of site safety councils that represent every department and shift.

Performance at all Berry locations around the globe, is measured against the highest safety standards in the industry and is consistent with Occupational Safety & Health Administration (OSHA) guidelines. The company's Bengaluru site in India celebrated the 10-years safety milestone in October 2018, achieving five million hours without a recordable incident.

## Sustainable raw materials

### ONTEX

A sustainable supply chain is one of the main areas in Ontex' sustainability strategy. Ontex ensures that all products are made in a responsible manner and thus sources all raw materials ethically. Besides safeguarding a responsible supply chain, Ontex also focusses on developing ways to reduce the need for raw materials. In 2017, the amount of renewable raw materials used in the products was 48% using mainly pulp-based materials. See more information on Ontex' sustainability performance.

### FREUDENBERG

Freudenberg recycles 7 million PET bottles every day and processes the purified recyclate into nonwovens. The inexorable growth of megacities reflects the rapid pace of urbanization. It is an important driver for development and poverty reduction but concrete and glass are displacing green areas which are vital for healthy living. An innovative idea for environmental and climate protection is the greening of buildings. Waterproof bitumen membranes form the basis for permanent greening and ensure that moisture, substrate and roots stay safely where they belong, outside the building. Freudenberg Performance Materials serve as a carrier material for bituminous membranes and they are a glass-fibre-reinforced polyester nonwoven made from recycled PET bottles.

### CORMAN

CORMAN developed and launched its brand "Organ(y)c" few years ago, being among the first EDANA manufacturers to adopt a fully GOTS (Global Organic Textile Standard) certified production process and Organic Certified product. An innovation that has anticipated the global request by consumers for even more sustainable and natural products.

CORMAN's process allows only the use 100% certified organic cotton, in compliance with the GOTS regulation, which is recognised as being the most important standard for sustainable textile production. Only natural fibres from organic farming, such as the organic cotton, used for the production of the topsheet and the core of CORMAN's pads, are allowed by this standard. Strict environmental and social criteria are applied and certified at all levels of the production, from the harvesting of natural fibres to the subsequent manufacturing phases, up to labelling of the finished product.

To address the concerns on the end-of-life and to reduce the waste, CORMAN has adopted an innovative biopolymer to be used as a backsheet. It assures the same performance as traditional PP but has a lower impact on the environment, being made using corn-starch instead of mineral oil and being biodegradable and even compostable.

The product packaging is made using recycled cardboard.

## Sustainable sourcing

### AHLSTROM-MUNKSJÖ

Ahlstrom-Munksjö is a Finland-based fibre manufacturer, supplying innovative and sustainable solutions to customers worldwide. In May 2017, it achieved the top rating from EcoVadis, a collaborative platform that provides sustainability assessment and rating for global supply chain players. Ahlstrom-Munksjö is in the top 1% of suppliers assessed in the field of Corporate Social Responsibility. EcoVadis assesses four sustainability dimensions: environment, labour practices, fair business practices and sustainable procurement.

Numerous newly developed fibre-materials show that Ahlstrom-Munksjö is driving the development and use of sustainable fibre materials above-average. In early 2018, the company partnered with a tea bag producer and a food retailer in an effort to introduce heat-sealed tea bags that eliminate the use of plastics. This collaboration aims to produce and sell products that utilize nonwovens made from polylactic acid (PLA), a biopolymer usually made of corn starch. Ahlstrom-Munksjö has developed a technology called The Fiber+, which replaces the traditional plastic with PLA. The material is renewable, biodegradable and fully compostable.

## LENZING AG

Lenzing AG, market leader in the production of wood based cellulose fibres, collaborates with numerous suppliers worldwide. The company aspires to promote an environmentally and socially just supply chain. On January 2017, Lenzing introduced its Supplier Code of Conduct in which the company stipulates its expectations with regard to health and safety at work, labour and human rights, environmental protection, compliance, ethics and management practices in the supply chain. Additionally, in 2016 Lenzing invited all suppliers to complete the EcoVadis survey in order to evaluate their sustainability performance. The company aims at assessing the sustainability performance of 80% of “most relevant suppliers” by 2022. Lenzing itself was rated by EcoVadis and achieved “Gold status” with 67/100 points.

Lenzing is recognized as a leader by Canopy for its sustainable procurement practices of wood and innovation on new technologies for alternative cellulose materials, such as the LENZING™ Web Technology to promote more sustainable raw material in the nonwovens industry.

Lenzing strives to improve the state of industry by taking a leading role and supporting initiatives and organizations such as EDANA, Make Fashion Circular, WRI Apparel guidance project, Sustainable Apparel Coalition, Canopy and Zero Discharge of Hazardous chemicals (ZDHC).

## GLATFELTER

As early as 2012, Glatfelter achieved the Rainforest Alliance (RFA) certification for the first abaca farming community. Abaca is a key raw fibre used for the manufacture of products like tea and coffee filter paper. This crop provides livelihood to more than 100,000 farmers and their families and is grown on marginal land in the Philippines. Abaca cultivation does not require intensive fertilization, insecticides, pesticides or artificial irrigation.

Over the last several years, Glatfelter, together with the German GIZ, have rolled out the certification scheme to other abaca growing regions in the Philippines. At the same time, Glatfelter initiated the cultivation of abaca in Costa Rica, and since 2018, the company and the GIZ have been working on the RFA certification of the first abaca farming communities in this region.

With the certification and systematic partnership for sustainable supply chains of this key raw material, Glatfelter improved the welfare of smallholder farmers in rural areas, established good agricultural practices, and contributed to the protection of the biodiversity in the growing regions. The learnings and experiences gathered in the two countries are being mutually shared to the benefit of the abaca farmers and their families.

## NATUREWORKS

NatureWorks is a company offering a broad portfolio of renewably sourced polymers that can be used in products from coffee capsules and appliances to tea bags and 3D printing filament. Since the Ingeo biopolymers are made from annually renewable resources, NatureWorks made the commitment that 100% of the agricultural feedstocks will be certified as environmentally and socially sustainable by the International Sustainability & Carbon Certification System (ISCC PLUS). This commitment was also announced by the Ellen MacArthur Foundation in the New Plastics Economy Global Commitment.

The ISCC PLUS certified crops are grown within 50 miles of the NatureWorks Blair production facility and are produced in line with the following principles:

1. Protect highly biodiverse and high carbon stock areas.
2. Implement best agricultural practices for the use of fertilizers and pesticides, irrigation, tillage, soil management, and the protection of the surrounding environment.
3. Promote safe working conditions.
4. Comply with human, labour, and land rights.
5. Comply with laws and international treaties.
6. Implement good management practices and continuous improvement.

ISCC PLUS is an independent third-party sustainability certification system developed in a multi-stakeholder initiative. Site specific audits and certificates ensure full traceability and chain of custody.

## Systematic partnerships in order to build sustainable supply chains

### CLARIANT

Sustainability is a core element of Clariant's business strategy and extends to all of its business activities. With the EcoTain® brand, Clariant offers the market a clear signal that products and solutions have outstanding sustainability advantages, do not compromise on performance, and benefit customers, the value chain, and society as a whole.

EcoTain® is the only chemical company brand that supports the customers and the value chain in making sound decisions on sustainability, and that drives actions and collaborations with a tangible impact on people, planet and performance. Each product carrying the EcoTain® label has undergone a systematic, in-depth screening process using 36 criteria, which consider the overall product life cycle. The criteria are forward looking, developed and tested with customers, NGOs and other stakeholder groups. Only exceptional products that significantly exceed market standards, with a best-in-class performance in one or several of the 36 criteria, are awarded the EcoTain® label by the corporate EcoTain® panel that scrutinizes each application.

EcoTain® reaches across all dimensions of EDANA's sustainability vision, as it takes into account sustainability aspects across the entire life cycle and across all dimensions of sustainability for the evaluation of products and solutions. In addition, EcoTain® is an important element of Clariant's efforts for building trust and communicating transparently with our customers and aims to enhance collaboration with our value chain. Systematic partnerships in order to build sustainable supply chains

### STORA ENSO

Stora Enso is a global provider of renewable solutions in packaging, biomaterials, wooden constructions and paper. Since 1999 Stora Enso has been a member of Forest Stewardship Council® (FSC®), a third-party traceability system, and has been working together with the FSC® to advance the principles of responsible forest management. In December 2018, Stora Enso and FSC® signed an international partnership agreement establishing a strategic collaboration to increase the FSC® certification. The agreement focuses on including small- and medium-sized private forest owners in the Nordics, Baltics, and across Europe to increase the FSC® certified wood supply. The work undertaken within the partnership will make FSC® certification more accessible, simpler to implement and easier to promote across the value chains. This cooperation is part of Stora Enso's policy on Wood and Fibre Sourcing, and Land Management. In 2017, the share of certified wood in its total wood supply was 85%.

**KIMBERLY CLARK**

In 2018, after a three-year drought, Cape Town, South Africa became the first major city to come within days of running out of water. Not only did this pose a threat to the Kimberly Clark Epping Diaper Mill located in Cape Town, but more worryingly, it posed a serious threat to the lives and welfare of all those living in the Western Cape. As 'Day-Zero' approached, the mill answered by introducing a variety of water saving initiatives, reducing water usage by more than 50%.

Innovatively, the mill recognized that they needed to go beyond the factory fence and really engage with local communities, government agencies and NGO's to drive action on sustainable water use.

The resulting output was a Kimberly-Clark led stakeholder workshop in Cape Town that introduced WaterLOUPE (an innovative tool Kimberly-Clark developed with Dutch research group Deltares) and the development of a water scarcity risk dashboard that could be utilized to scientifically model potential solutions.

Cape Town was able to avoid "Day Zero" but the threat remains. Local engagement and WaterLOUPE is working to drive collective action for sustainable water stewardship in Cape Town and other water-stressed regions of the world.

**VALMET**

In 2018, Valmet started the roll-out of a new global sustainability engagement program for selected key suppliers. Valmet has around 100 key suppliers, of which 28 are identified as possible sources of potential sustainability risks for Valmet. The country of origin and the purchasing category are the basis for assessing the potential sustainability risks related to the key suppliers. Through key supplier sustainability engagement program, Valmet will support these suppliers in taking the first most critical steps to develop sustainability in their operations.

The elements of the program reflect the core requirements of Valmet's Sustainable Supply Chain Policy: ethical business practices and compliance, human and labor rights, occupational health and safety and environmental management. The sustainability engagement development is integrated as a vital part in Valmet's supplier relationship management program. The main idea of this program is to ensure a two-way interaction between Valmet and its suppliers and thus promote innovativeness and renewal.

The program includes trainings for key suppliers and provides a material library to support these suppliers in their sustainability work. As part of the program, individual targets and KPIs for each participating supplier are set and followed up.

1. Sustainability survey (28 answers - 2018)
2. Sustainability survey (30 answers - 2018)
3. A substance which is sourced without harm to the environment or society and whose production is supported indefinitely by nature, which means, a resource is used up at the same speed that it is renewed by the earth. As such a tree can be both depending on the sourcing methods and regeneration period.
4. GSM : Grams per Square Meter
5. Sustainability Engagement Questionnaire (51 answers - 2017)
6. Sustainability Survey (35 answers - 2018)



**READ MORE** EDANA MEMBER INITIATIVES

# ECO-EFFICIENCY



## ECO-EFFICIENCY

Efficient resource use  
for low carbon production  
and products

- Life-cycle perspective driving sustainable innovation
- Energy efficient production
- Renewable energy
- Resource optimisation
- Production waste minimisation

## AMBITION

Efficient resource  
use for low  
carbon production  
and products

**Climate change is one of the most significant challenges we are facing today. The societal challenge for mitigating climate change is induced by an exploding energy demand and increasing global consumption. There is a direct link between the quantity of raw materials used and carbon emissions. The importance and urgency for low carbon production and the efficient use of resources is thus seen as a top priority and opportunity by the majority of our members.**



# SDG TARGETS

SPECIFIC SDG TARGETS OF THE RELEVANT SDG GOALS

<b>7.2</b>	By 2030, increase substantially the share of renewable energy in the global energy mix
<b>7.3</b>	By 2030, double the global rate of improvement in energy efficiency
<b>8.4</b>	Improve progressively, through 2030, global resource efficiency in consumption and production and endeavor to decouple economic growth from environmental degradation, in accordance with the 10 Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead
<b>9.4</b>	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
<b>12.2</b>	By 2030, achieve the sustainable management and efficient use of natural resources
<b>12.5</b>	By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
<b>13.2</b>	Integrate climate change measures into national policies, strategies and planning
<b>15.2</b>	By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally
<b>15.a</b>	Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems



## Life cycle perspective driving sustainable innovation

**By making life cycle assessment (LCA) part of the development of sustainable new products, our members aim at reducing the potential environmental burden and impacts caused by their products.**

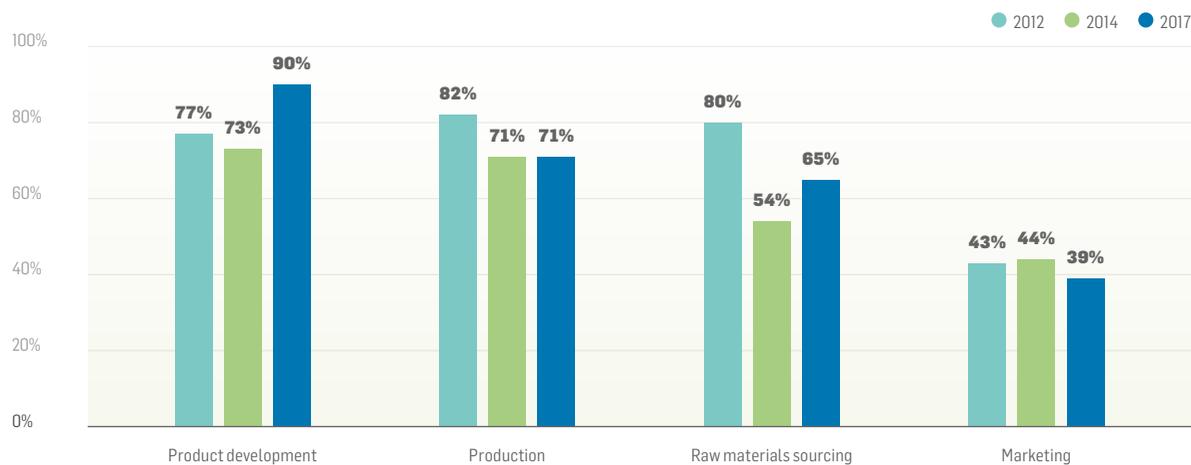
EDANA and its members have been pioneers in life cycle assessments since 1992. We strive to continuously improve the environmental performances by analysing the environmental impacts associated with a product system from the acquisition of raw material through production, transport, use, end-of-life treatment, recycling and disposal. Assessing these impacts for a product's entire life cycle is crucial to improve the eco-efficiency profile of our products.

The 'lifecycle thinking' stimulates our members in reviewing and developing new industrial processes, materials or concepts and to effectively (re)design their products for a lesser impact on the environment. The results of our consistent efforts are clearly reflected in the chart below. Product development has become the leading field in which sustainability considerations are a key part of decision-making. This is the case for 90% of our members.

In addition, EDANA encourages its members to equally pay attention to the health and safety features of their products. These commonly used and widespread products should in every way enhance the life quality, comfort, health and hygiene of their users. This is one of the reasons why our members are strongly engaged in consistently improving product safety.

### In which field are sustainability considerations a key part of decision-making?

Sustainability engagement questionnaire (51 answers – 2017)



## EDANA'S INITIATIVES

### Platform for 20 years of LCA's

The first EDANA Life Cycle Assessment (LCA) project started in June 1993, with 66 member companies participating. The single-use diaper was chosen as reference for the project since it involved most of the EDANA members at the various stages of the value chain. Since then, EDANA has been actively involved in various initiatives which are described in the report: "20 years of Life Cycle Assessments". Meanwhile, EDANA has moved on, conducting many studies ranging from raw material LCA's to finished product LCA's: from spunbond nonwovens, to superabsorbent polymers, baby and industrial wipes and screening of gowns and drapes. Together these form a solid database, enabling the industry to assess overall environmental progress and benchmark the performance of their own products and processes. Moreover, EDANA manages several Product Category Rules, which define the development of LCA's of specific product categories.



## EDANA'S INITIATIVES

### LCA Lifetime Achievement Award

EDANA honours the exceptional achievements and efforts of LCA experts with the EDANA LCA Lifetime Achievement Award. EDANA was pleased to recognise the achievements and efforts of Michael Hauschild with the EDANA LCA Lifetime Achievement Award in May 2018. The award was presented at the 28th annual conference of SETAC, the Society of Environmental Toxicology and Chemistry.

The award was granted in recognition of Michael's 25-year body of work in the field of Life Cycle Assessment (LCA) at the Technical University of Denmark (DTU). Michael made lasting contributions in the areas of ecotoxicity in LCA, the assessment of the social sustainability dimension in a life cycle perspective and, more recently, the introduction of an absolute sustainability perspective into LCA.

## Energy efficient production

**Our members aspire to continuously decrease energy consumption of products and materials through an efficient in-process energy use.**

The sector endeavours to improve its energy efficiency and lower its environmental footprint by continuously assessing its production methods and resource use. Our members' approach for the optimization of energy consumption comprises a wide angle of affordable and less affordable measures in both processes and utilities to reduce their energy use. Energy efficiency has multiple motivators as the environmental perspectives are often combined with financial perspectives. As such, 63%<sup>1</sup> of our members have targets to reduce their energy intensity with an average of 2%<sup>2</sup> reduction per year.

## Renewable energy

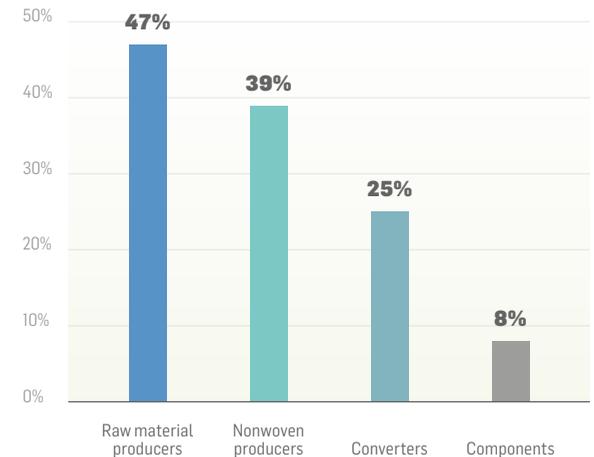
**Our members are engaged in shifting towards the consumption of renewable energy for their production and resource use.**

EDANA's ambition for a low-carbon production automatically sets the tone concerning the consumption of renewable energy. The sector is engaged in reducing its energy footprint by switching to renewables such as wind, solar or hydro. 70%<sup>3</sup> of nonwovens industry companies purchase renewable energy to complement their global needs. The average proportion of renewable

electricity consumed by our members is 31%<sup>4</sup>. There is a significant difference between different actors in the supply chain, as seen in the chart below. The largest proportion of the overall energy consumption lies upstream, due to energy intensive processes of raw material producers and converters. Our industry's biggest consumers use the largest proportion of renewable electricity.

### Average proportion of renewable electricity consumed

Sustainability survey (35 answers – 2018)



These activities also help reducing carbon emissions and contribute to the emission targets set by our members. 58%<sup>5</sup> sets yearly targets to reduce their carbon footprint with an average yearly reduction target of 3.3%<sup>6</sup>.

## Resource optimisation

**EDANA encourages members to optimize their resources through increased efficiency and different usage for better products while reducing environmental impacts.**

There is a continuous effort across all product categories to find sustainable solutions for eco-efficient resource use. By simplified processes using new innovative materials and in closed-loop systems, our members can reduce raw material use and fully utilize the needed resources.

The development of new, more sustainable materials combined with more efficient resource use reduces the environmental impact significantly. This includes the use of bioplastics and other renewable materials (eg. cellulose-based fibres) in hygiene products. Another example comes from our geotextiles industry. Innovations lead to the replacement of gravel used in road construction, allowing our members to drastically reduce the weight and amount of materials used while delivering increased performances.

## Production waste minimisation

**Through efficient resource use, the amelioration of production processes and the valorisation of residual by-products, our members are reducing their production waste to a minimum.**

The optimal use of resources and raw materials during processing often results in less waste and more reuse or recycling. Many companies also develop and promote production processes that use less raw materials. The raw material efficiency<sup>7</sup> (fibres, polymers and binders) was 92% in 2017, which has been a stable performance over the last decade.

The sector also makes continuous efforts to improve its production efficiency. By improving or changing their processes our members are able to reduce or even eliminate by-products, edge trims or off-cuts. This makes a great difference in waste production. Moreover, our members continuously seek to reuse and recycle by-products or convert them back into useful energy when recycling is not possible. EDANA members seek to divert their manufacturing and post-consumer waste solutions from landfill and waste valorisation by incineration to higher value beneficial uses like recycling and upcycling. Also, in recent years, we have seen a positive trend in waste reduction by our members.



### EDANA'S INITIATIVES

#### Multi-stakeholder cooperation with OVAM (Public Waste Agency of Flanders)

In Flanders (Belgium), an ambitious waste management plan 2016-2022 has been agreed upon. This plan aims at reducing the residual fraction of household waste. As part of this effort, a collective disposable diaper plan is in development with all actors of the supply chain. This aims, among other things, to deal with; raising awareness, waste management, eco-design and reuse. In 2017 EDANA, together with COMEOS, Go4Circle, Centexbel and OVAM signed a commitment to work together on a collective plan for disposable diapers. This plan applies for a period of 5 years. The cooperation between all partners in the chain aims at closing the disposable diapers materials cycle.



## EDANA'S INITIATIVES

### EDANA's Platform for best practices

Our members have access to a platform where they communicate their efforts on sustainability and share best practices. By sharing, for example, new weight reduction methods or increased performance processes our members actively share useful information. Waste is a global challenge and has become a big focus area for our members in recent years. The participation in this platform facilitated dialogue and increased effective waste management practices. EDANA witnesses continuous efforts to reduce production waste and post-consumer waste through the reduction of weight to the products, while maintaining or increasing their performance. Weight reduction has its limits, however, and EDANA, together with its members, explores other possibilities such as the use of alternative biodegradable raw materials, compostable materials and increased recycling.



## MEMBER INITIATIVES

### Life cycle perspective driving sustainable innovation

#### ESSITY

Essity, a Sweden-based personal care company, works to continuously improve the environmental footprint of its products and services. By integrating life cycle assessments (LCA) into product innovation, Essity can monitor the environmental profile of its products and use less resources while at the same time maximizing the value. All LCAs conducted by Essity are verified by IVL, Swedish Environmental Research Institute. One of the 12 products where an LCA was conducted, is the TENA Lady sanitary towel. Essity achieved a reduction of the carbon footprint by one third between 2008 and 2017. Thanks to microPROTEX™, one of Essity's latest innovations, the new generation of TENA Lady sanitary towel is 20% thinner than the previous generation. The new microPROTEX™ technology compresses ultra-absorbent materials to create a thinner pad that rapidly draws moisture away from the skin. The new product needs less material and thus reduces its carbon footprint by 15%.

#### WELLMAN INTERNATIONAL

Wellman International has been pioneering recycling technologies and practices for almost 50 years. As the leading European producer of recycled polyester staple fibre and recycled PET material, sustainability is inherent in the company's culture. All raw materials, production processes and products are fully traceable, accredited, and validated in an independent, published life cycle assessment study. Each year, Wellman save 4.2 billion plastic bottles from landfill, which equates to 310 Mio kgs of Co2 Emissions and 1.4 Mio barrels of oil saved. Wellman International recycled fibre is also GRS accredited (Global Recycle Standard) – providing absolute assurance for its customers, that Wellman is truly sustainable, having evolved from a rich heritage of commitment and dedication to sustainability. And the quest continues, as the company is constantly evolving its products and innovating the processes for a sustainable future. Wellman aims to use its combined power of innovation, industry, policy and people to educate the world and its global stakeholders on reducing waste and pollution. The company works with all stakeholders in the supply chain to influence the design of plastics to optimise the potential for recycling and opportunity for multiple use.

## JOHNSON & JOHNSON

Johnson & Johnson developed the Earthwards® framework to address the environmental and social impacts of its products, and to engage development teams in designing innovative and more sustainable solutions across products' life cycles, from formulation to manufacturing, to product use and end-of-life. The Earthwards® approach targets improvement in seven key areas: materials, packaging, energy, waste, water, social impacts and innovation. If a product achieves at least three significant improvements across the seven impact areas, a Board of internal and external experts determines whether the product warrants Earthwards® recognition. The program is validated by annual third-party audits and all Earthwards® products are required to complete an annual review to maintain recognition. As of March 2019, 94 consumer products have been awarded Earthwards® recognitions.

o.b.® Original™ Normal tampons, manufactured in Wuppertal, Germany, are one of the examples of recently recognized products. The improvements in lifecycle impacts span from sourcing to manufacturing footprint (focus on energy and water):

- Since 2017, tampons use Oeko-Tex® certified materials
- The CO2 emissions have been reduced by 50% compared to global industry standards by using a new specialty hygiene viscose type (data reference MSI)
- Eutrophication and water scarcity have been significantly improved for the new fibre supplier compared to global industry standards (MSI)

In addition, it is worth noting that Johnson & Johnson's main o.b. manufacturing site (Wuppertal) uses 100% energy from renewable source (hydro power). The o.b. primary packaging (above 8 units) is at least 75% recycled paper, the rest is from renewable sources and printed using a minimum of 40% vegetable-based inks.

## ARION

Arion offers Swash® products, disposable nonwovens soaked in special washing lotions, which are used to bathe bedridden patients. An independent research institute has performed a life cycle analysis (LCA) for Swash® compared to the traditional bed bath with water and soap. The LCA takes into account everything from the production of raw materials to the development of the product and the management of waste. The results of the LCA show that the ecological impact of Swash® is 74% lower than the traditional bed bath.

More specifically, based on a quantity of 100,000 bed baths, Swash® is shown to save 25,455,890 litres of water (more than 10 Olympic swimming pools!) and to lead to a significant carbon and energy reduction. Although the LCA shows several opportunities for additional improvement of the ecological impact of Swash®, the results also shed another light on the sustainability of nonwovens, which turns out to be far better than the public opinion.

## Energy-efficient production

### H.B. FULLER

H.B. Fuller is a global adhesives provider focusing on adhesives, sealants and other specialty chemical products. The production site in Surabaya, Indonesia, which focuses on the production of feminine hygiene products, achieved the LEED Gold®-level certification in June 2017. The LEED®, or Leadership in Energy and Environmental Design, is the most widely used green building rating system in the world and provides a framework to create efficient, healthy and cost-saving buildings. At the 30,000 square-metre manufacturing facility, which is designed for disposable hygiene products, great emphasis was put on water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, innovation, and design. Sustainability aspects were considered right from the start of the facility with the selection of a location where construction would have minimal impact on natural habitats and species. The site development plans also included for example pollution prevention measures and use of building materials that contained recycled content or were regionally sourced. Furthermore, innovative technologies allow 100% onsite treatment of wastewater. Heating, ventilation, air conditioning, refrigeration and fire suppression systems were also considered and have been carefully selected to minimize or eliminate emissions.

### REIFENHÄUSER REICOFIL

Reifenhäuser Reicofil is a Germany-based machine supplier with a history of 15 years. In April 2017, the machine supplier presented a new line generation for the production of spunbond technology and meltblown technology. The RF5 machine generation ventures into the world of digitalization and intelligent production, thus enhancing productivity and quality and combining a higher output. Some of the highlights of RF5 technology are the significant reduction of failures within the nonwovens, its increased productivity and its energy efficiency. In comparison with the previous RF4 line, the RF5 machine reduces the hard pieces by up to 90%, therefore reducing waste and resources. The output increases by up to 35% because the line speed reaches a new peak value of 1,200 meters per minute, whereas the energy consumption reduces by 15% in comparison to RF4. With the new RF5, Reifenhäuser Reicofil sets new standards in the production of spunbond, meltblown and composite nonwovens.

### FIBERTEX PERSONAL CARE

For the past many years, all Fibertex Personal Care sites in Denmark, Germany and Malaysia have paid close attention to their energy consumption.

The factory sites in Denmark and Germany are now certified to the ISO50001 Energy Management standard and that has truly raised their focus on reducing energy consumption. In addition, the Aalborg factory has completed a three-year energy-efficiency agreement (2015–18) with the Danish Energy Agency that commits the company to complete identified energy-saving projects with less than a five-year payback time. Fibertex Personal Care recently entered into a new agreement with the Energy Agency running from 2018 to 2021.

The company worked on the following specific projects worldwide in 2018: insulating processing equipment, replacing suction blowers, optimising cooling systems, replacing lighting, replacing thermostats (district heating) and identifying very large power consumers in its processes.

Fibertex Personal Care has set a target for energy optimisation for the period 2016–2020, producing annual energy savings of 5,000 MWh. By the end of 2018, the company had achieved an energy reduction of 2,600 MWh per year at its factory sites.

## Renewable energy

### BERRY

Berry's operational sustainability goal is to minimize the environmental footprint and conserve natural resources and reduce energy and water consumption.

Berry's Cuijk (Netherlands) plant sources electricity from a local company that produces electricity from regionally-sourced biomass, such as residuals from forests and parks. This is considered to be 100% renewable power, saving an impressive 8 million m<sup>3</sup> of natural gas per year and leading to an 80% reduction in gas consumption, which will in turn increase efficiency by 25%.

### ONTEX

Today, there is a general agreement that our planet's climate is changing and that greenhouse gas emissions from human activities are one of the main causes. Recognition of the widespread impact of climate change has led to the Paris Agreement on climate change and pave the way towards a low-carbon future.

Ontex, believes that climate change may have long-term direct and indirect implications for its business and supply chain. The company's aim is to have carbon neu-

tral operations by 2030 and has set ambitious targets along the way. Over the last 5 years, a 35% reduction has been achieved of the carbon emissions. All the European sites are powered by 100% green electricity. Two main solar panel projects at the company's European sites and further investigation into green technologies will reinforce the carbon reduction programme.

## Production waste minimization

### STFI

STFI developed the project Recy-Carb, a qualified value chain for recycled carbon fibres (rCF) was established. The idea was to use waste material of the composite manufactures in a second life in their own products.

In the chosen approach, waste materials were initially collected by the industrial partners. The amount of carbon fibre reinforced plastics was processed via pyrolysis in order to recover the carbon fibres. Furthermore, textile waste materials were reprocessed directly by using cutting and tearing technology.

The obtained rCF were processed as 100% raw material and in blends with thermoplastic staple fibres by airlay and carding principle combined with needle-punching or stitch-bonding technology.

The further processing of the developed nonwovens into composite materials took place with standard market procedures. In addition to classical pressing methods, the RTM method and the autoclave technology using prepregs were also utilized.

The possible fields of application were shown by the demonstrators created during the project. Interesting applications were found for rCF nonwoven prepregs in combination with carbon woven structures. This was demonstrated in an automotive rear spoiler with exposed carbon optics. A couch of a CAT-Scan with layers of rCF nonwovens instead of woven structures demonstrates applications in the medical sector.

### NICE-PAK INTERNATIONAL

Wet wipes manufacturer, Nice-Pak International, employs nearly 950 people, producing 678 million units at three production sites located in Flint and Wigan, UK, and in Magdeburg, Germany. Next to focus areas comprising customers, products, employment and community, its 2020 vision for its operations is to improve its energy, carbon, effluent and waste efficiency and maintaining zero landfill. Nice-Pak International targets an improvement of waste efficiency by 20%. In 2017, Nice-Pak International achieved its goal of zero waste to landfill by sending 38% of its waste to recycling and 62% of waste used for energy recovery through incineration.

## Resource optimization

### LENZING AG

Lenzing AG drives research and development in the sustainability performance of flushable and biodegradable fibres at the core of a circular economy. Lenzing uses LCA to integrate sustainability in day-to-day decision-making of functions such as in R&D, procurement, operations and updates of its fibres in regular basis. Lenzing is a signatory to UN fashion dialogue and in the process of setting a Science Based Target (SBT) to address climate change. With its VEOCEL™ branded lyocell fibres for example, Lenzing has significantly improved the way in which fibres are produced. The closed-loop production recovers 99% solvents and process water. This economically profitable manufacturing process received the European Award for the Environment from the European Commission in the category “The Technology Award for Sustainable Development”. VEOCEL™ fibres enforce the sustainable use of natural resources as the fibres are made of 100% wood, a renewable and natural material which also comes from certified and controlled forests and plantations. The biological disintegration performance of VEOCEL™ Lyocell fibres with Eco Disperse technology have been proven by the fourth edition of the INDA/EDANA Guidelines for Assessing the Flushability of Disposable Nonwoven Products issued in May 2018. Lenzing has taken a proactive approach and laid the foundation for fully biodegradable and flushable wet wipes.

### BASF

Plastics do have proven benefits during their use phase – for example preservation of food loss, lightweight construction of vehicles and building insulation. Plastic waste, however, and in particular plastic waste in the context of marine littering, is a major global challenge. There is also increasing regulatory pressure regarding recycling quota and recyclability on the one hand and strong commitments of our customers towards increasing the share of recycled material in their offerings on the other hand. Solving these challenges requires innovation and joint efforts globally across the value chain. BASF will contribute to tackling this.

Since mechanical recycling is limited because of an increase of residues in the material in each cycle, a team across BASF has taken up this challenge and developed the ChemCycling project. With chemical recycling, fossil resources for chemical production can be replaced with recycled material from plastic waste. How does it work? Plastic waste will be transformed into a pyrolysis oil or a gas using thermochemical processes.

- .....
1. Sustainability Survey (30 answers – 2018)
  2. Sustainability Survey (20 answers – 2018)
  3. Sustainability Survey (29 answers – 2018)
  4. Sustainability Survey (29 answers – 2018)

### REIFENHÄUSER REICOFIL

Since its first line generation, Reifenhäuser Reicofil is continuously working on enhancing the eco-efficiency of the nonwovens industry by supplying the appropriate technology. New line generations have always been developed with the objective to enable a further reduction of the fabric weight while keeping excellent properties. As a result of this effort minimal basis weights have continuously decreased. So has the need for raw material.

A specific example:

The material need for the production of a diaper top sheet has been reduced by more than 40 percent – from 22 to just 12g/m<sup>2</sup> without any compromise regarding quality. The absolute minimal weight has reached 8g/m<sup>2</sup> by today – enabling even more savings. Achieving the same product properties with less raw material does not only result in cost savings for the producers but in better CO<sup>2</sup> footprints of the end products and an immense overall waste reduction in the first instance. This becomes especially obvious when considering that most of the produced nonwovens are processed to disposables in hygiene and medical applications.

- .....
5. Sustainability Survey (19 answers – 2018)
  6. Sustainability Survey (33 answers – 2018)
  7. raw material efficiency: The amount of raw material consumed compared to amount of produced materials



[READ MORE EDANA MEMBER INITIATIVES](#)

# BUILDING TRUST



## BUILDING TRUST

Increasing transparency and safeguarding quality to consumers

- Product stewardship
- Transparent communication and labelling
- Voluntary codes of conduct
- Third-party endorsement

### AMBITION

Increasing transparency and safeguarding quality to consumers

**As the international association for the nonwovens and related industries, it goes without saying that EDANA's 40 years of serving and supporting the industry would not have been possible without trust. Given the wide array of sustainability**

**challenges, building trust between consumers and our industry remains very important. It involves profound product stewardship and involvement of third parties who can endorse our sustainability course as independent parties. Building trust through increased transparency and by safeguarding quality to consumers is crucial in maintaining and improving strong relations between all actors of the industry.**

# SDG TARGETS

SPECIFIC SDG TARGETS  
OF THE RELEVANT SDG GOALS

<b>12.7</b>	Promote public procurement practices that are sustainable, in accordance with national policies and priorities
<b>12.8</b>	By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature



## Product stewardship

**Our members take responsibility towards their products by minimizing their negative societal and environmental impact and safeguarding the consumer health and safety.**

The industry continuously seeks creative and innovative solutions to address the pressure on the environment, natural resources depletion and the health and well-being of citizens. The principle that our products must be safe for consumers, employees, and the environment is paramount within our industry. It is essential to maintain high standards for product safety and quality. It is particularly important to focus on responsible chemical use, including reducing or eliminating hazardous chemicals wherever possible.

The rising environmental consumer awareness further stimulates our members to consider all impacts of their products: health and safety of consumers, societal consequences and the environmental effects throughout all stages of the products' life cycle, including end-of-life management.

## Transparent communication and labelling

**In order to build trust and reach a sustainable industry, our members ensure transparent and open communication and labelling.**

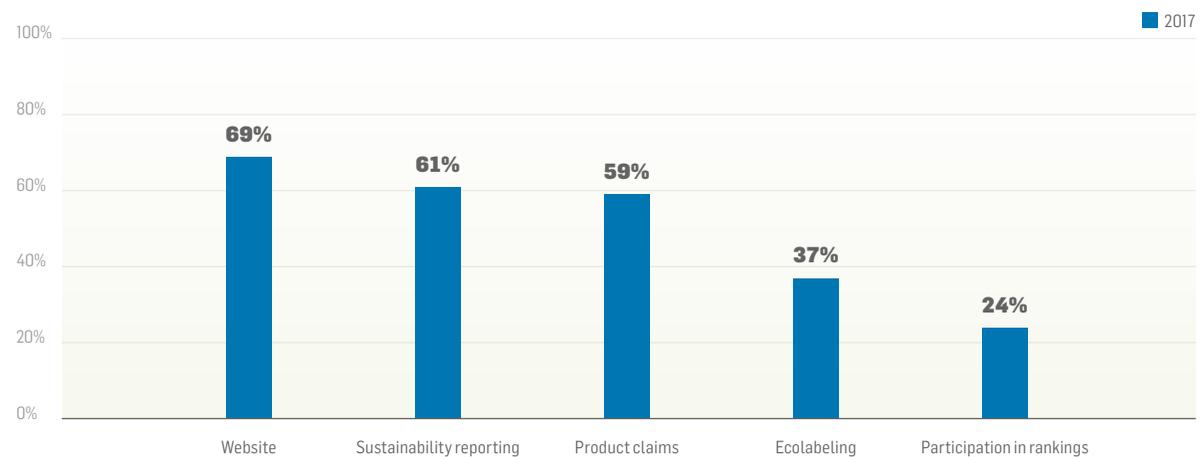
Sustainability and transparency go hand in hand. Information requests from partners (e.g. on product composition and provenance), consumers, end users, investors, NGOs, regulators and the general public are steadily increasing. EDANA promotes transparency by disclosing the industry's sustainability performances on a regular basis, engaging with a wide range of internal and external stakeholders. Transparency is key to sustainability and can strengthen the CSR efforts of our members. We therefore strongly encourage our members to communicate on their sustainability performances.

89%<sup>1</sup> of our members communicate on their sustainability performance. This is mostly done through their website (69%) and sustainability reporting (61%) as seen in the chart below. The large majority of sustainability reports (90%) includes quantitative results and future commitments. Several members of EDANA actively use the Environmental Product Declarations (EPD) to communicate on the environmental impact of their products.

Besides the transparent communication on the sustainability impact of business operations, clear labelling on product packaging is equally important. The objective is to provide people with the information they need to make informed choices while continually improving the product portfolio with the performance and preferences they are looking for. Our members are clearly aware of the importance of good labelling as about 60% use product sustainability claims to inform consumers.

### How EDANA's members communicate on sustainability?

Sustainability engagement questionnaire (49 answers – 2017)



## Voluntary codes of conduct

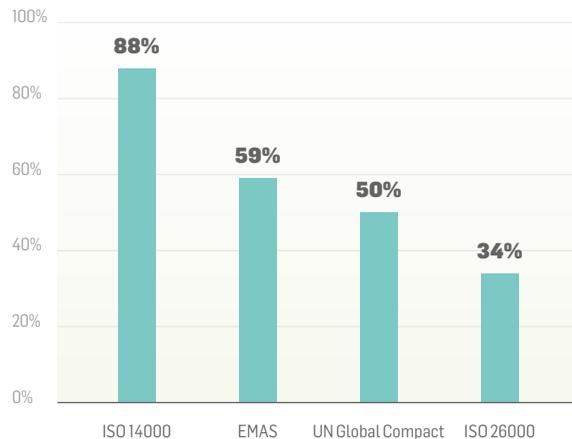
**By endorsing voluntary codes of conduct, our industry complements legislation and adds additional social or environmental value to its products.**

Our sustainable engagements imply minimizing direct and indirect negative impacts from our activities. The sector is engaged to comply with all relevant regulations, technical standards, regulatory prescriptions and safety guidelines regarding the environmental protection, human rights, working conditions and ethical corporate governance.

By endorsing voluntary codes of conduct, our industry complements legal frameworks that ensure product safety. This stimulates our members to further develop safety evaluation programs, systematically monitor product use and take into account consumer concerns.

### EDANA members endorsing voluntary codes of conduct

Sustainability survey (35 answers – 2018)



## Third-party endorsement

**Through third-party endorsement, our members seek to demonstrate and validate their commitments on sustainability.**

EDANA believes that external independent verification is a powerful way of building trust and increasing transparency towards consumers. It demonstrates our members' national and international response to stakeholders' concerns and compliance on product standards and regulations. This increases credibility and acceptance with retailers, consumers and regulators.

Our members consider third-party endorsement as a vital piece in their operations. Alongside our members' efforts in transparent labelling and communication, EDANA seeks to further engage its members towards sustainable processes, better supply chain management and operating procedures. Besides meeting general safety standards (38%), OSHAS (72%) or ISO50001 (38%) our members comply with different sustainability standards and certification systems. 50% of respondents comply with UN Global Compact and 34% follow the ISO26000 Guidelines on social responsibility.



## EDANA'S INITIATIVES

### INDA/EDANA guidelines for flushability

In May 2018, EDANA launched the INDA/EDANA Guidelines for Assessing the Flushability of Disposable Nonwoven Products. We wish to help our wipe manufacturers in the assessment of their products' flush capabilities for wastewater streams, ensuring wipes pass agreed standards on flushability and dispersion.

The guidelines are coupled with an industry Code of Practice on labelling, aimed at informing consumers on how to dispose of the products correctly, solving the issue at the source. This initiative pre-empts on proposed EU directives in this area. EDANA plans to uphold these guideline supporting initiatives concerning responsible product stewardship.

### EDANA Code of Practice on communication



To help consumers and communities reduce the burden to their wastewater infrastructure, INDA and EDANA are introducing the updated Code of Practice: Communicating Appropriate Disposal Pathways for Nonwoven Wipes to Protect Wastewater Systems, Second Edition, 2017. This is an update to our strict guidelines for the labelling of non-flushable wipes and for assessing the flushability of disposable nonwoven wipes.



### EDANA Environmental Claim Guidelines

The EDANA Environmental Claim Guidelines demonstrate our industry's commitment to apply the

highest standards of responsibility and represent good business practice. It recognises the importance of responsible advertising and marketing on products as an essential way of informing customers and consumers about the characteristics and qualities of their products. As such, our member companies commit to ensure environmental claims:

- comply with all relevant regulatory frameworks;
- are sincere, truthful and not vague or misleading;
- allow customers and consumers to make informed choices;
- promote fair competition;
- aim to prevent claims that may be unfair or misleading.

### Self-regulation and guideline development

EDANA supports and drives its members' activities in the area of self-regulation, which includes the development of position papers and test methods, the promotion of dialogue between geographic locations and regulatory bodies, and a focus on the social, economic and environmental sustainability of our industry.

For example, the absorbent hygiene products sector has developed voluntary Exposure Based Risk Assessment guidelines for various hygiene products and a Safety and Regulatory Guidance. Various sector groups have developed common positions on regulatory and safety-relevant topics which are available to EDANA member companies. EDANA has also published a Guide to the Biocidal Products Regulation (BPR).



## MEMBER INITIATIVES

### Product stewardship

#### P&G

P&G's diaper brand Pampers started in January 2019 with the separate collection of diapers for recycling in a pilot in Amsterdam. The program was announced publicly and to the press, and highlighted the partnership of Pampers, AEB (local Waste Operator), TerraCycle and FaterSMART who joined forces to collect diaper waste with innovative "smart bins" for recycling, facilitated by the Municipality of Amsterdam. It is a globally first of its kind collection pilot.

The initiative engaged 200 families in 3 neighbourhoods of Amsterdam and included placing 9 "smart bins" in front of day care centres and of drugstores. It received positive acceptance by the participating families, as well as high media attention since the pilot is collecting used baby diapers – all diaper brands – for recycling to create secondary raw materials and give used diapers a new life.

### INTERNATIONAL PAPER

International Paper's entire business depends upon the sustainability of forests. International Paper is a global leader in responsible forest stewardship, ensuring healthy and productive forest ecosystems for generations to come.

International Paper's flagship conservation program with National Fish and Wildlife Foundation, known as Forestland Stewards, is one of the most effective U.S.-based public-private forest conservation collaborations. The partnership supports projects to restore native forests, strengthen important fish and wildlife populations, and protect watersheds — while at the same time promoting and supporting working forests in ten states across the southern United States.

Since 2013, NFWF and International Paper have invested more than \$15 million in projects through the Forestland Stewards partnership. These investments are leveraging more than \$36 million in matching funds, for a total conservation investment of more than \$51 million. These projects, once fully implemented, will establish and enhance more than 400,000 acres of native forest and wildlife habitat, improve more than 445 miles of stream habitat, and engage nearly 15,000 private landowners through outreach and technical assistance to implement forest stewardship practices. Forestland Stewards received the PR Daily's 2017 Corporate Social Responsibility Award in the 'Corporate-Community or Nonprofit Partnership' category for Forestland Stewards.

### TOSAMA

With more than 90 years' experience in the production of sanitary and hygiene products, Tosama operates according to a publicly available environmental policy since 2017. The environmental policy has been formulated with the involvement of key stakeholders and expresses a precautionary approach on consumer health. The company runs its site in compliance with the ISO 14001 and ISO 9001 standards. Their products are certified by numerous product labels such as Nordic Swan, Oeko-Tex®, GOTS and PEFC®.

## Third party endorsement

### GLATFELTER

Glatfelter is a global supplier of specialty papers and engineered materials, operating at 14 different locations worldwide. Dedicated to responsible forest management, Glatfelter states in its environmental policy that the company is "practicing sustainable forestry on company-owned lands as well as encouraging landowners we work with to manage their lands in a sustainable way." Conforming to this policy, Glatfelter has earned third-party endorsement for its natural resources made of wood. At its North American and European sites, Glatfelter has achieved the chain-of-custody forest certification Forest Stewardship Council (FSC®). Also, at its U.S. facilities Glatfelter has achieved the Sustainable Forestry Initiative (SFI®) and the Programme for the Endorsement of Forest Certification (PEFC). Further efforts to produce sustainable paper products, Glatfelter works on using alternative fibers like abaca and develops recycled paper made from post-consumer waste.

### NÖLKEN HYGIENE PRODUCTS

Nölken Hygiene Products is a medium-sized family company specialized in the production of personal hygiene products, especially wet wipes. In September 2016, the company was honoured with the Responsible Care award for its efforts in the development of sustainable products and the awareness raising on sustainability and product responsibility in traineeships. The project was designed to introduce

trainees to the subject of sustainability. The result was a wet wipe for babies that is produced under exemplary sustainable conditions. The new Babyline®- Green wet wipe protects and cares for sensitive baby skin of the baby with all-natural raw materials from certified organic farms. The nonwoven is fully made of viscose based on pulp of European origin and of local wood species. The formulation is made of 97% natural ingredients with aloe vera from organic farming. Furthermore, the product packaging is made of recyclable material consisting of 50% post-industrial recycled material and the printing ink is made of 90% renewable resources from a local supplier.

## Transparent communication and labelling

### FIBERTEX PERSONAL CARE

Fibertex Personal Care demonstrates its corporate responsibility by the way in which it treats its employees, and as an international company, Fibertex Personal Care is aware of its responsibilities towards business partners, the people it interacts with and the communities in which it runs its business. Fibertex Personal Care endeavours to operate a transparent business and to maintain a high degree of integrity and ethical conduct. We combat all forms of corruption, including bribery and facilitation payments.

Fibertex Personal Care updated its code of conduct in 2018. Further to updating the formal code of conduct, the company decided to prepare a brochure that summarises the salient points of the policies of which all employees should be particularly aware. The updated policies on human rights, anti-corruption and business ethics take a predominant role in the new brochure. The updated code of conduct is being distributed to all employees and to Fibertex Personal Care's stakeholders in the form of a small brochure which is entitled: 'Code of Conduct – in Practice'.

The brochure will be distributed to all employees and will also be available in electronic form at our websites. It contains two main sections:

1. The code of conduct is divided into seven issues, on which the company takes an active position, and also provides practical examples of how to comply with the code on these issues: human rights, competition legislation, bribery, facilitation payments, confidential information, gifts and conflicts of interest.
2. Other policies' contains the group's principal policies, which cover: quality, environment and energy, health and safety, IT, social media and data protection.

### ESSITY

Essity is a leading global hygiene and health company dedicated to improving people's lives through its products and solutions. Sustainability is deeply rooted in the business model. It concentrates on responsible sourcing, resource-efficient production, sustainable solutions and circularity and after-use, thus aiming at contributing to the SDGs.

Essity's approach to human rights is based on the United Nation's Guiding Principles on Business and Human Rights (UNGP). Together with BSR, a non-profit organization, Essity developed and implemented a human rights due diligence process in 2014, in which it regulates and manages its actual and potential impacts on human rights. In 2016, new training programs on human rights were established to help Essity's various units identify any areas at risk of human rights violations. In the previous year, seven workshops on human rights were carried out in three countries in Latin America with a total of 94 participants. Subsequently, action plans were in place for all risk areas identified, of which 72% have been completed to date.

- .....
1. Sustainability engagement questionnaire (49 answers – 2017)



[READ MORE](#) EDANA MEMBER INITIATIVES

# RESPONSIBLE END-OF-LIFE



## RESPONSIBLE END-OF-LIFE

Engaging with all stakeholders in developing optimal waste and circular economy solutions

- Consumer awareness campaigns
- Partnerships for effective end-of-life management
- Implementing circular economy principles

### AMBITION

Engaging with all stakeholders in developing optimal waste and circular economy solutions

**Responsible end-of-life is considered the remaining biggest sustainability challenge by our members. The large share of single-use products in our industry hampers the development of circular loop systems and minimal waste processes. EDANA is conscious that first the waste disposal methods, and secondly the recycling or reuse of products are important challenges to increase responsible end-of-life and to build a more sustainable industry.**

**EDANA believes multilevel interactions with stakeholders will enable our members to transform this main challenge into a key opportunity. The industry's product responsibility must expand beyond the point of sale. By carefully designing every product and adding after-life value, our industry evolves towards a role of circular economy actor.**

# SDG TARGETS

SPECIFIC SDG TARGETS OF THE RELEVANT SDG GOALS

<b>9.5</b>	Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending
<b>11.6</b>	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
<b>12.4</b>	12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment
<b>12.8</b>	By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature
<b>14.1</b>	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution
<b>14.3</b>	Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels
<b>15.1</b>	By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements



## Consumer awareness campaigns

Through continuous consumer interaction and education, our members seek to steer behaviour towards a sustainable end-of-life for industry products.

EDANA considers consumer awareness campaigns as an essential part of providing relevant product information on hygiene and health and safety. It is our industry's responsibility to clearly inform consumers on possible environmental and social impacts of goods and services. The aim is to ensure products are used correctly to minimize unintended social or environmental effects and ensure optimal user quality and value. Through these awareness campaigns we help consumers and communities to anticipate risks related to inappropriate application and seek to improve end-of-life waste management.

## Partnerships for effective end-of-life management

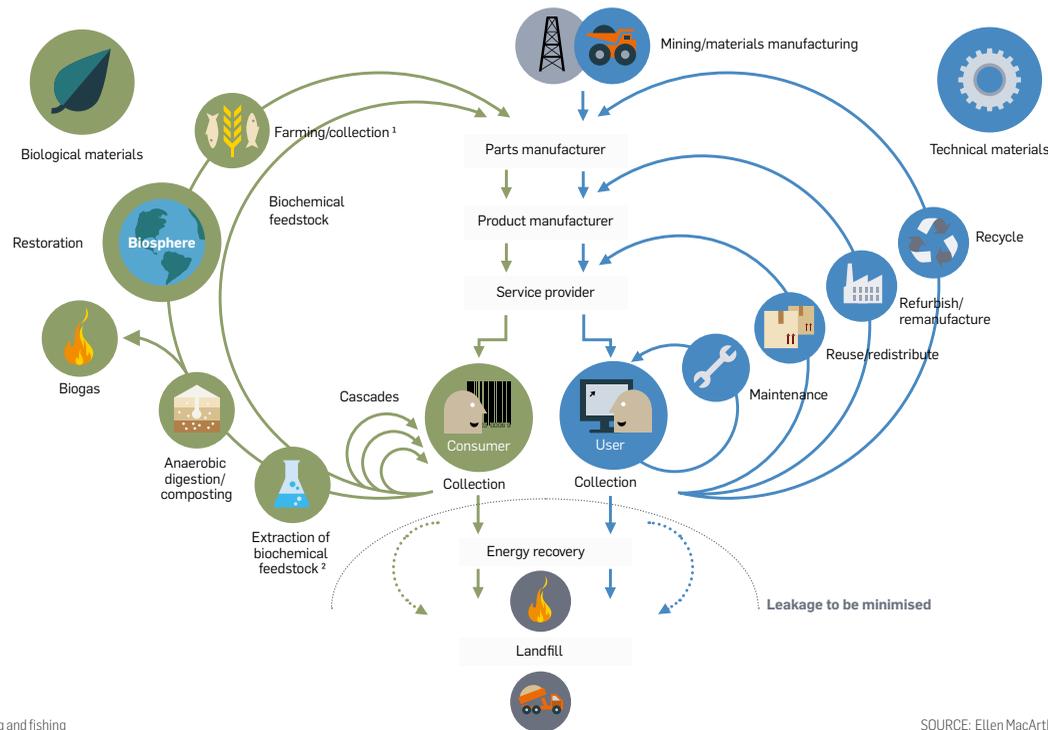
Together we create solutions for responsible handling, efficient production and post-consumer waste disposal, thereby increasing the uptake of circular raw materials in our value chain.

"True sustainability within the supply chain can only be reached through open communication and sustainable partnerships with all actors", as stated in the first pillar, equally applies for effective end-of-life management.

Our industry focuses on synergies and partnerships across the value chain. 66% of our members have established partnerships specifically for sustainability to improve waste management, create closed-loops processes and innovate on circular systems. These improvements can occur both in the biological (green) and industrial (blue) cycle.

The chart illustrates the continuous flow of biological (green) and technical (blue) materials through the 'value circle'. It also shows that within the circular economy there are different possible routes, each with different levels of performance and efficiency. On the biological cycle this ranges from bio-based<sup>1</sup> to biodegradable<sup>2</sup> and compostable<sup>3</sup>. The technological cycle ranges from maintenance to recycling.

The circular economy – an industrial system that is restorative by design



1. Hunting and fishing  
2. Can take both post-harvest and post-consumer waste as an input

SOURCE: Ellen MacArthur Foundation  
Adapted from the Cradle to Cradle Design Protocol by Braungart & McDonough

## Implementing circular economy principles

**EDANA stimulates innovation on circular design, material use and regeneration of natural systems by transitioning our industry towards a circular economy.**

In the European Union (EU), it is estimated that absorbent hygiene products (baby diapers, feminine care and incontinence products) represent between 1.5% and 6.3% of municipal solid waste depending on the degree of sorting and recycling achieved at national or regional level. Encouraging the development of more sustainable products, increasing recyclability or biodegradability of products and packaging are key areas of innovation for our industry to develop a circular society.

Looking beyond the current industrial models of take-make-dispose, we aim to gradually evolve towards a circular economy. With new design innovations, our members expand their market opportunities while moving away from the linear model of consumption. This circular model is displayed in blue on the chart of the previous chapter "Partnerships for effective end-of-life management".

Circular economy innovation for EDANA is about changing the way business can be done and challenging traditional practices for a better industry. In order to do so, EDANA keeps an eye open on the bigger picture and the key trends in exciting technical innovations. The topic of circular economy is systematically integrated through our various symposiums and conferences.



### EDANA'S INITIATIVES

#### FIHA project in India

The Feminine and Infant Hygiene Association of India (FIHA), locally representing converters of sanitary products now runs an awareness campaign to improve the disposal of sanitary waste. FIHA has identified cities across India where an awareness campaign will be piloted to study the impact of segregating sanitary waste from household waste. In order to capture the consumer behaviour, first a baseline survey was conducted whereby numerous households, rag-pickers, garbage collecting organizations and NGOs were questioned and surveyed. FIHA will also facilitate focus group discussions in order to identify existing waste management practices, challenges faced by waste collectors, and identify solutions to challenges faced by the waste collectors. Subsequent to the baseline survey FIHA will undertake the awareness campaign to inculcate the right behaviours for usage and disposal of sanitary products. This will include using various channels ranging from door to door campaigns, posters, market kiosks, advertisements etc. This campaign will also help promote the solution for segregation of sanitary waste i.e. distribution of a large red dot sticker that should be stuck to the used and wrapped up sanitary napkin and diaper. This is crucial for rag pickers to easily identify sanitary waste.

#### Circular economy in conferences

Circular economy was a prominent topic during EDANA's OUTLOOK™ 2018 in Dubrovnik (Croatia). The keynote speech by Werner Bosmans, coordinating the Plastics Strategy within DG Environment of the European Commission, explained in full the EU circular economy strategy, followed by insights from different key industry players.

Moreover, EDANA is a proud silver sponsor of this year's Dornbirn Global Fiber Congress in Austria. This year's theme of Recycling and the Circular Economy is of particular interest. The circular economy and its implications – better designs, reduced use of raw materials, development of new technologies, recycling, upcycling, system thinking – are high on the agenda of the nonwovens value chains for producers, converters and suppliers alike.

### Diaper Cycle Project (2016, The Netherlands)

EDANA participated as a stakeholder in the Diaper Cycle Project. It is part of our larger long-term project with NVRD (royal association for waste- and purification management). More than 50 participants were invited to join this Dutch initiative. The aim was to jointly build a vision and formulate objectives for the entire supply chain of diapers. A brief set of guidelines range from clever product design through better separation and collection. Through this type of initiatives, EDANA shares its expertise for a more sustainable supply chain and simultaneously enriches itself with new visions and practices for its members regarding sustainability.

### The Aller River Pilot Project (South Africa)

EDANA meets the expectations of The South African Department of Environmental Affairs through collaboration with Kloof Conservancy (NPO), eThekweni Water and Sanitation (EWS) and eThekweni Municipality Education Departments of Durban Solid Waste (DSW) in The Aller River Pilot Project. This project aims to protect biodiversity and empower communities to ensure a better future and preserve rivers. The targeted challenges are sewage overflows, litter, chemical pollution and invasive alien plants.



With a sub-project focused on mitigating littering of diapers in informal settlements, Kloof Conservancy was successful in simultaneously tackling the issue through different angles. On the one hand, Kloof Conservancy (NPO) stimulated an effective cooperation between eThekweni Water and Sanitation (EWS) and officials from Durban Solid Waste (DSW). Wheelie-bins were placed at strategic points at Community Ablution Blocks, where the Caretakers collected and carried the disposable diapers to approved DSW Collection points for onward disposal to landfill. On the other hand, consumers are informed on the environmental impacts of incorrect disposal and on how to correctly dispose of diapers and other consumables. Thanks to this project, more than 3.5 tons of diapers, which would have otherwise most likely been dumped in the local river, were successfully collected and processed. This work deserves to be further supported and implemented in other regions!



## MEMBER INITIATIVES

### Partnerships for effective end-of-life management

#### UNICHARM

Japan-based Unicharm has invented a disposable diaper recycling program in order to reduce the overall environmental impact. A rising demand for baby and adult diapers will ultimately lead to an increase in environmental impacts, especially in waste and CO2 emissions. The program was launched in 2015 and applies a unique ionization process to low-grade pulp that is extracted from used disposable diapers. Starting in May 2016, Unicharm has been carrying out verification testing of this recycling system in collaboration with local government authorities and waste collection firms in Shibushi City, Kagoshima Prefecture. The verification testing in Shibushi City has shown that the recycling program can achieve a reduction in greenhouse gas emissions of 84% in comparison to landfill disposal and a reduction of 69% in comparison with incineration disposal. Furthermore, Unicharm has made advancements by generating electricity from the diaper recycling process.

### INTERNATIONAL PAPER

In 2018, International Paper joined on as new funding partners of The Recycling Partnership, a rapidly growing national nonprofit that leverages corporate investment to transform recycling for good in hundreds of communities across the United States. By supporting The Recycling Partnership, International Paper along with 34 other companies are helping create more circular economy jobs, more material recovery and stronger, more equitable communities. International Paper understands that collaboration is essential for building stronger solutions to environmental and community concerns, including recycling.

The Recycling Partnership's goal is to help every family in the United States recycle and recycle well, so that the country can double its current recycling rate and capture 22 million more tons of recyclables per year, avoid 50 million metric tons of greenhouse gas annually, and save \$250 million in contamination costs every year.

In just four years, The Recycling Partnership has leveraged \$29 million in infrastructure to support 640 communities and counting to improve access to recycling and increase quality of recyclables. The growing groundswell of support from partners like International Paper shows that leading companies, across and within industries, want to invest in recycling solutions that create positive environmental, economic and social change.

## Consumer awareness campaigns

### KIMBERLY-CLARK

142 consumer product companies have joined forces in order to reduce landfill waste in the UK and the USA. Amongst the member-companies, Kimberly-Clark started an initiative in order to help consumers recycle more types of material. The programs, On-Pack Recycling Label (OPRL) in the UK and How2Recycle™ in the United States, both provide simple, consistent recycling messages for product packaging. Both initiatives include regular consumer education campaigns to raise awareness. In the UK, the OPRL is now widely recognized by consumers, with 7 in 10 recognizing the label.

### THE ALLIANCE TO END PLASTIC WASTE

Unmanaged plastic waste in the environment, especially the oceans, is a serious global challenge that calls for immediate action and strong leadership across the value chain. In January 2019, an alliance of 28 global companies of the plastics and consumer goods industries have therefore found the new global Alliance to End Plastic Waste and have committed to invest \$1.5 billion over the next five years. The cross value-chain Alliance, of which Procter & Gamble, BASF, Berry Global, Clariant, Covestro, Henkel and ExxonMobil are EDANA members, aims to develop and scale solutions to minimize plastic waste in the environment.

By collaborating with other initiatives, organizations, cities, academic institutions and intergovernmental organizations, the Alliance projects focus on enabling a circular economy to minimize and manage plastic waste in the environment. The Alliance strategy comprises four pillars:

- Infrastructure development to collect and manage waste and increase recycling;
- Innovation to advance and scale new technologies that make recycling and recovering plastics easier and create value from all post-use plastics; and,
- Education and engagement of governments, businesses, and communities to mobilize action;
- Clean-up of concentrated areas of plastic waste already in the environment, particularly the major conduits of waste.

The Alliance actively supports the initiative Renew Oceans, a localized investment and engagement project focused on high leakage rivers. With biofence technology the initiative will start to collect plastic flowing down major rivers, starting with the Ganges river in India, diverting it from entering the oceans. Renew Oceans' approach also engages local communities and promote consumer education.

## Circular economy innovation

### FATER S.P.A.

In cooperation with the waste company Contarina S.p.A., Fater S.p.A. opened its used absorbent products recycling process in October 2017. This project has earned recognition as “Circular Economy Champion” by the European Commission because absorbent hygiene waste is no longer disposed of in landfill but is 100% recycled to raw materials.

The goal of the plant is to transform used absorbent products into high quality secondary raw materials. 10,000 tonnes of waste can be treated and turned into valuable components annually. One tonne of used absorbent products is converted into 150 kg of cellulose, 75 kg of plastics and 75 kg of super absorbing polymers. During the process, the used products are first stored, then sterilized and odour-neutralized, then pre-separated into main constituents and dried. In the final process, the components are mechanically separated in rotating cylinders.

### IVL WELLMAN INTERNATIONAL

DEJA™ is a branded industry and consumer awareness initiative from IVL Wellman International in support of a circular economy. The purpose of DEJA™ is to assist the identification of fibre and packaging products, which contain, or are made wholly from 100% post-consumer recycled plastic (rPET, polyethylene terephthalate) and to empower the consumer to make an informed and responsible purchase choice.

Plastic Products which are designed efficiently, can be fully recycled and remade into a multitude of products and applications, which in turn can be recycled. DEJA™ products are ‘remade to be made again’. A key objective of the DEJA™ programme is to engage with all stakeholders in the value chain in a structured approach of education, innovation and circularity. Education in respect of communicating the value of plastic as a resource to Government, OEM’s and the consumer and advocating responsible management. Innovation is critical in terms of product design and optimising recycling potential, in effect encouraging designing for recycling. Circularity optimises the potential to ‘close the loop’ through collaboration and design partnerships.

### AS NONWOVENS AKINAL

Increased demand for environmentally conscious wipes encouraged AS Nonwovens Akinal to develop the Bioflush® wet toilet tissue. It is made of 100% natural resources and can decompose in nature and disperse in the water. Bioflush® is tested for flushability and biodegradability according to the INDA and EDANA flushability guidelines. AS Nonwovens Akinal communicates the product features with transparency and integrity and has released a videoclip to raise awareness on the challenges of non-flushable wipes.

1. Bio-based materials: a product wholly or partly derived from biomass. Biomass is material of biological origin, excluding material embedded in geological formations and/or fossilized
2. Biodegradable materials: materials that can be broken down by microorganisms (bacteria or fungi) into water, naturally occurring gases like carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>) and biomass (e.g. growth of the microorganism population) depending strongly on the environmental conditions: temperature, presence of microorganisms, presence of oxygen and water.
3. Compostable materials: materials that break down at composting conditions. Industrial composting conditions require elevated temperature (55-60°C) combined with a high relative humidity and the presence of oxygen. These optimal conditions are unnatural compared to everyday biodegradation conditions in soil, in surface water or marine water.



[READ MORE EDANA MEMBER INITIATIVES](#)



# CONCLUSION

## GIL STEVENS

External Relations & Sustainability Director

**“This sustainability report demonstrates the engagement of our members towards sustainability through many commitments and innovations.”**

An increased awareness among consumers and customers raises the expectations on the industry to become more sustainable. The launch of the Sustainable Development Goals (SDGs) in 2015 only amplifies this path. Sustainability is a complex challenge given the wide array of relevant topics on the people, planet, prosperity and partnership pillars. It is therefore important to contextualise and keep focus in order to create real impact. EDANA has taken up this challenge in developing a new sustainability vision giving clear insight into what matters for the nonwovens and related industries.

Four pillars and twelve material topics draw the outlines of sustainability encompassing our total value chain. While the vision towards the future is clear, we are proud of what has been achieved so far. This sustainability report demonstrates the engagement of our members towards sustainability through many commitments and innovations. We feel privileged to be the spokesperson for a widespread communication of these best practices for the whole sector to learn and grow on sustainability. We are also grateful for the many stakeholders who are, in the spirit of the SDGs, real partners from whom

we can learn. Engaging with these many stakeholders will remain important, both in order to understand their concerns and visions and pass them onto our industry, and to provide answers and insight on how our sector evolves and responds to societal challenges. Some of these challenges are complex and require the sustained joint effort and involvement of all partners and stakeholders.

We strongly believe our industry has the potential to be a key player in a sustainable transition towards 2030. We consider this challenge also to be an opportunity and commit to this transition, in the spirit of and while further developing our contribution towards the SDGs.

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**Reporting standards compliance**  
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