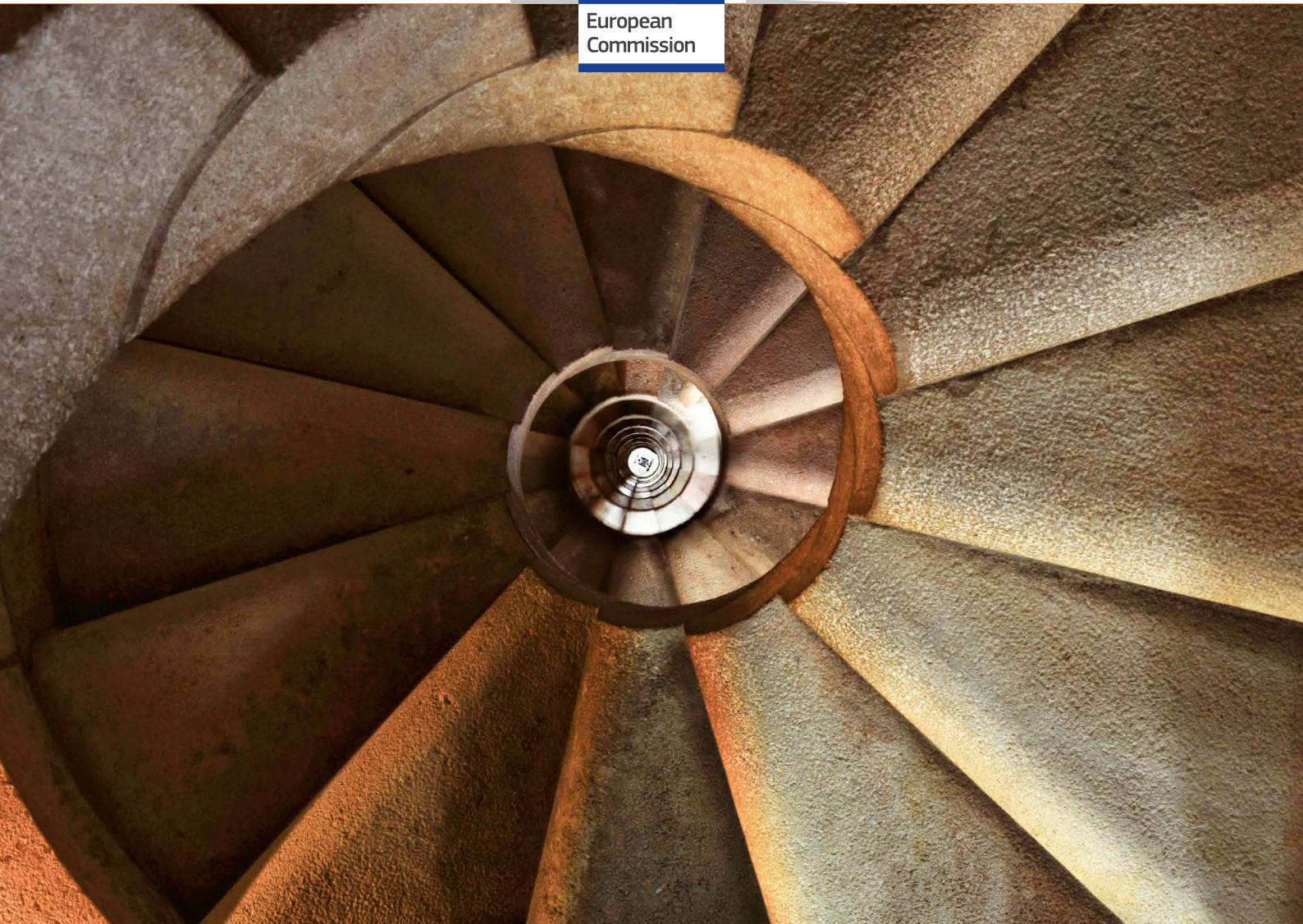




Moving towards a circular economy with **EMAS**

Best practices to implement
circular economy strategies
(with case study examples)



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Imprint

European Commission

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Foreword

In December 2015, the EU adopted an ambitious Circular Economy Package, including an Action Plan, to stimulate Europe’s transition to a circular economy. The specific objectives of the Package are to boost the EU’s global competitiveness, foster sustainable economic growth and generate new jobs. To do so, the plan suggested making better use of EMAS and the EU Ecolabel.

From the recent Fitness check conducted on the EMAS Regulation (an assessment of its relevance and efficiency), it is clear that EMAS represents an opportunity not only to deliver on environmental objectives, but also to support economic objectives. Organisations that participate in EMAS can boost their financial performance and competitiveness by increasing their resource efficiency. The Fitness Check concluded that: “If widely used and appropriately implemented, EMAS and the Ecolabel could drive innovation and deliver real market change.”

The EU has made the circular economy a priority, and EMAS can be used to achieve this goal. This report sets out to highlight the contribution of EMAS organisations to the circular economy, and to encourage other organisations to innovate in this area.

Kestutis Sadauskas
Director for Circular Economy
and Green Growth

Introduction

An urgent need to increase resource efficiency

Resource use is steadily increasing at the global level. The United Nations Environment Programme (UNEP) estimates that the amount of material extracted and used — including ores, minerals, fossil fuels and biomass — increased eightfold throughout the 20th century to exceed 80 billion tonnes in 2015. Projections highlight that a growing population with rising average wealth could push material extraction up to 183 billion tonnes per year by 2050.¹ In 2011, each person in the EU was consuming 16 tonnes of material annually, of which six tonnes were wasted and half went to landfill.² On average, Europeans are consuming resources at twice the speed the planet can renew them.³

At the same time, resources are becoming scarcer and more expensive and their extraction and consumption has significant environmental impacts. For example, according to the United Nations Food and Agriculture Organisation (FAO), about 25 % of all land is highly degraded or degrading quickly.⁴

Using resources efficiently is therefore the focus of an increasing number of policies, which are acknowledging the need to improve economic resilience and human well-being. The EU’s Seventh Environment Action Programme (7th EAP) aims to “stimulate the transition to a green economy and to strive towards an absolute decoupling of economic growth and environmental degradation” and to put Europe on the path to the 2050 vision of: “Living well, within the limits of our planet”.⁵

Increasing resource efficiency also represents opportunities for the EU. It has been estimated that:

- Reducing the total material requirement of the EU economy by 17 % to 24 % could boost GDP by up to 3.3 % and create 1.4 to 2.8 million jobs⁶;
- By using resources more efficiently, business could benefit from savings in the range € 245–604 billion per annum, representing between 3 % and 8 % of their annual turnover;
- This would entail a reduction of 2–4 % of total annual greenhouse gas emissions in the EU.⁷

1 UNEP (2016) Resource Efficiency: Potential and Economic Implications: www.resourcepanel.org/file/312/download?token=gM4QyNY1

2 EU (2011) Roadmap to a resource efficient Europe: www.eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011DC0571&from=EN

3 EEB (2017) Measuring and Monitoring Resource Efficiency Factsheet: www.eeb.org/publications/81/circular-economy/1267/measuring-and-monitoring-resource-efficiency-factsheets.pdf

4 FAO (2011) The State Of The World’s Land And Water Resources For Food And Agriculture: www.fao.org/docrep/017/i1688e/i1688e.pdf

5 EEA (2016) Environmental indicator report 2016, in support to the monitoring of the 7th Environment Action Programme: www.eea.europa.eu/publications/environmental-indicator-report-2016

6 Gws (2012) Macroeconomic modelling of sustainable development and the links between the economy and the environment: www.gws-os.com/discussionpapers/gws-researchreport12-1.pdf

7 AMEC (2013) The opportunities to business of improving resource efficiency: www.ec.europa.eu/environment/enveco/resource_efficiency/pdf/report_opportunities.pdf

The circular economy
“designs out” waste

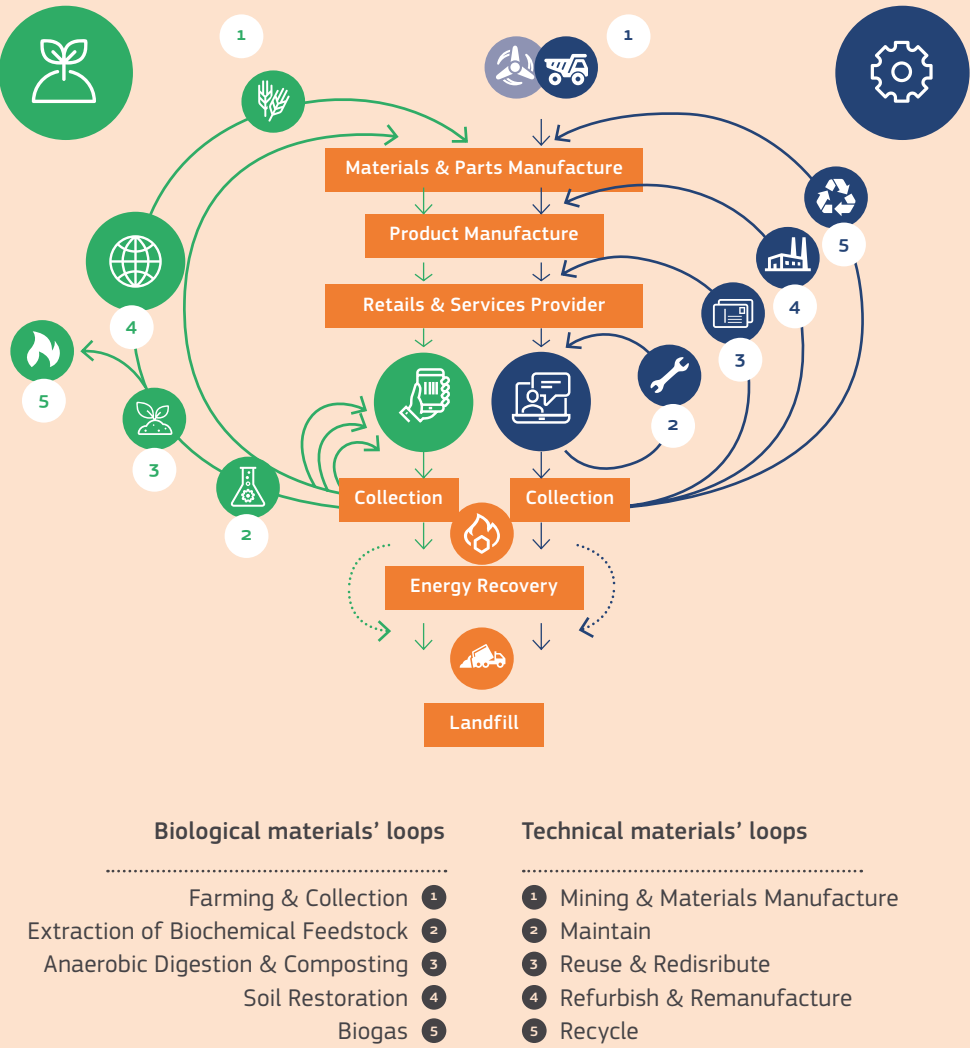
The need to use resources more efficiently calls for a change in the traditional development of our current economic model, which dates from the Industrial Revolution. Our model is based on the linear approach of “take, make, consume, dispose”. This model relies on highly available and cheap resources, which, with those resources disappearing quickly, is no longer valid. A circular economy keeps the value of products, materials and resources in the economy for as long as possible and eliminates waste. The EU’s communication “Towards a circular economy: A zero waste programme for Europe”⁸ provides concrete examples of the impact a circular economy can have: These examples are listed in the box on the right.

Such actions have been implemented by EMAS registered organisations.

- Reducing the quantity of materials required to deliver a particular service (lightweighting)
- Lengthening products’ useful life (durability)
- Reducing the use of energy and materials in production and use phases (efficiency)
- Reducing the use of materials that are hazardous or difficult to recycle in products and production processes (substitution)
- Creating markets for secondary raw materials (recyclates) materials (based on standards, public procurement, etc.)
- Designing products that are easier to maintain, repair, upgrade, remanufacture or recycle (eco-design)
- Developing the necessary services for consumers in this regard (maintenance/repair services, etc.)
- Incentivising and supporting waste reduction and high-quality separation by consumers
- Incentivising separation collection systems that minimise the costs of recycling and reuse
- Facilitating the clustering of activities to prevent by-products from becoming wastes (industrial symbiosis)
- Encouraging wider and better consumer choice through renting, lending or sharing services as an alternative to owning products, while safeguarding consumer interests (in terms of costs, protection, information, contract terms, insurance aspects, etc.)

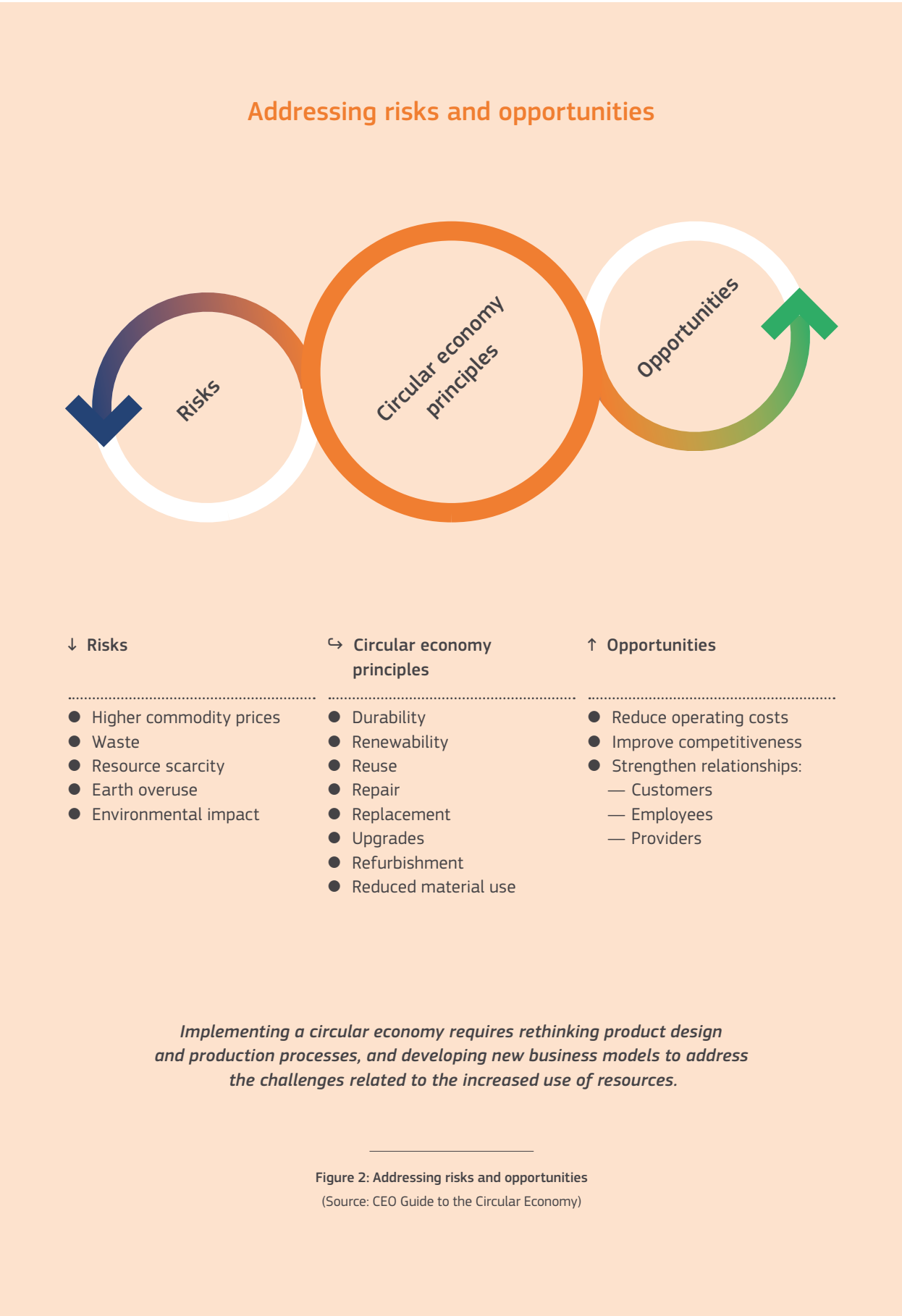
8 EU (2014) Towards a circular economy: A zero waste programme for Europe: www.eur-lex.europa.eu/resource.html?uri=cellar:50edd1fd-01ec-11e4-831f-01aa75ed71a1.0001.01/DOC_1&format=PDF

Outline of the circular economy



In a circular economy, materials — either biological or technical — are used in loops, and the environmental impact of products and services is minimised along the value chain.

Figure 1: Outline of the circular economy
(Source: CEO Guide to the Circular Economy, adapted from the Ellen MacArthur Foundation)



EMAS and the circular economy

The EU Eco-Management and Audit Scheme (EMAS) is a premium management instrument developed by the European Commission to aid companies and other organisations in evaluating, reporting on, and improving their environmental performance. Organisations that have implemented EMAS have already taken an important first step towards achieving a circular economy by monitoring their processes and constantly reducing their impact on the environment. Their knowledge of resource consumption and environmental impact enables them to implement measures that optimise the use of their resources in line with circular economy principles.

EMAS has an important role to play in helping Europe’s public and private organisations unlock the potential of the circular economy and in helping Europe use its resources more efficiently.

1.

It is a tool to measure resource efficiency:

In accordance with the statement “what gets measured, gets managed”, EMAS organisations must assess all their environmental impacts and report on six core indicators: energy efficiency, material efficiency, water, waste, biodiversity and emissions. This provides them with all the data necessary to take action to increase resource efficiency. At the same time, because organisations monitor a variety of impacts (not only material consumption and waste production), they can make sure that any action taken to prevent waste does not have a negative impact on other steps in the value chain (for example, impacting GHG emissions or land use).

Empirical data shows that EMAS registrations often result in significant reductions in material and energy consumption. This reduction is particularly evident in resource-intensive sectors, thus proving the ability of EMAS as a tool to achieve greater resource efficiency.



Figure 3: Five reasons to use EMAS in the transition to a circular economy

2.

EMAS Indicators also have additional benefits. Because they have to be publicly reported (see reason No 5), they allow for comparison of the environmental performance of various organisations and enable public authorities to assess the progress towards a circular economy. The reported data is also presented in relative units (e.g. waste produced per final unit produced), making it easier to assess efficiency and gaps in potential performance. Organisations can compare their achievements with the “best practices” and “benchmarks of excellence” described in the Sectoral Reference Documents (SRDs)⁹, developed to enable certain sectors to track their progress. They are therefore always encouraged to improve their indicators, which is the second reason for joining EMAS.

2.

It ensures continuous improvement, which fosters innovation:

When an organisation registers with EMAS, it often focuses initially on reducing the impact of its processes. But EMAS also requires organisations to evaluate and continuously reduce the environmental impact of their services and products. Organisations that have been registered with EMAS for some years can therefore find themselves supporting radical and groundbreaking innovation in their search for improvements. Innovation in the design of products and services delivered is at the very heart of a circular economy.

3.

It requires the involvement of employees:

Moving to a circular model requires a significant change in practices, which is only possible through employee involvement. Organisations need to rethink the way they work. In EMAS, top-level management and employees have to all be involved from the very first step of the process in order to ensure that the best ideas can emerge and be implemented.

9 Sectoral Reference Documents are developed by the Joint Research Centre of the European Commission: www.ec.europa.eu/environment/emas/emas_publications/sectoral_reference_documents_en.htm

4.

It keeps companies a step ahead on legislation and stakeholders’ needs:

EMAS pushes organisations to ensure legal compliance and improve their ability to anticipate upcoming legislation, including measures on the circular economy. The recently updated EMAS Annexes also require them to identify opportunities and risks associated with the needs of their stakeholders, including their customers. EMAS organisations therefore have a thorough knowledge of their legal obligations and the needs of their stakeholders, enabling them to adopt circular economy strategies with more ease.

5.

It provides all stakeholders, including authorities, with transparent information:

The environmental statement that EMAS organisations must produce annually is an opportunity not only to think about resource consumption within the organisation, but also at a local and regional level. Authorities can use these environmental statements to gather information on resource consumption and waste produced by organisations in their region. The report can also lead to new business opportunities. For example, other businesses in the area could use the waste produced by the organisation as a resource. These partnership opportunities can be identified through the information provided in the environmental statement. Furthermore, public authorities and other stakeholders can rely on the information from the environmental statements in their decision-making, knowing that the facts and figures have been verified and validated by an independent, accredited third party. As no such certification scheme currently exists for circular economy practices, EMAS can provide a rare guarantee of credible environmental information.

Best examples from EMAS organisations

The EMAS Awards 2017, held on 8 May in Valletta, Malta, rewarded EMAS organisations who are leading the transition to a circular economy. The awards recognised organisations that have implemented particularly ambitious and innovative initiatives in the following areas:

- Procuring and sourcing sustainable services/products
- Optimising the yield of resources
- Improving the design of products and processes
- Minimising waste (e.g. through recycling, remanufacturing or industrial symbiosis)

Applications were collected by the Member States from December 2016 to February 2017 and analysed by a jury of circular economy experts. A total of 20 EMAS organisations were nominated in the following categories:¹⁰

- Small and Medium Private Organisations
- Large Private Organisations
- Public Organisations

The EMAS Awards therefore provided an opportunity to identify “best-example” organisations and gather feedback on best practices to implement a circular economy in these types of organisations.

Moving forward

With this report, the European Commission would like to highlight the performance of these organisations and to help more organisations move forward by providing examples and recommendations on how to implement circular economy strategies. As indicated previously, resource efficiency and a circular economy are urgently needed, but organisations do not necessarily know where to begin.

10 The list of nominees and winners is available on the EMAS website: www.ec.europa.eu/environment/emas/emas_for_you/emas_awards/emas_awards_2017_en.htm

This report has therefore been designed first and foremost for EMAS organisations that want to participate in the circular economy and for other organisations that would like to use EMAS in their circular economy strategy. However, it is also targeted at authorities that are eager to make their economic region more circular by highlighting how EMAS can contribute to their objectives, thus calling for more support for EMAS. Other stakeholders can also find food for thought in this report, as the circular economy is a concept that requires synergies and resource exchange at the local level and therefore presents many opportunities for all stakeholders to collaborate.

The report is therefore specifically aimed at:

- Raising general awareness of the need to use resources more efficiently
- Providing inspiration to companies and organisations eager to implement circular economy actions
- Helping companies and organisations get started by providing concrete recommendations
- Informing organisations and regulators on how EMAS can be used to reach these objectives

With these aims in mind, interviews were carried out with the winners of the EMAS Awards as well as with other best-example companies. These interviews were supplemented by a review of the literature on best practices in the circular economy.

The first part of the report describes five “best practices” that organisations should keep in mind when starting to implement circular strategies within their organisation. These best practices are illustrated by examples from EMAS organisations. These examples are not exhaustive, but aim to provide guidance and ideas. In the second part, the report presents case studies of the EMAS Awards winners and highlights the key lessons to be learned from these examples. These case studies provide a more detailed insight into how circular economy principles can be applied by different types of organisations (SMEs, large organisations or public organisations). Finally, the report summarises the opportunities for all stakeholders to apply circular economy strategies.

Implementing a circular economy: Five steps or “best practices”

In EMAS, the environmental management system is implemented in four general steps — after having identified the most relevant environmental aspects of the organisation's activities, products and services:

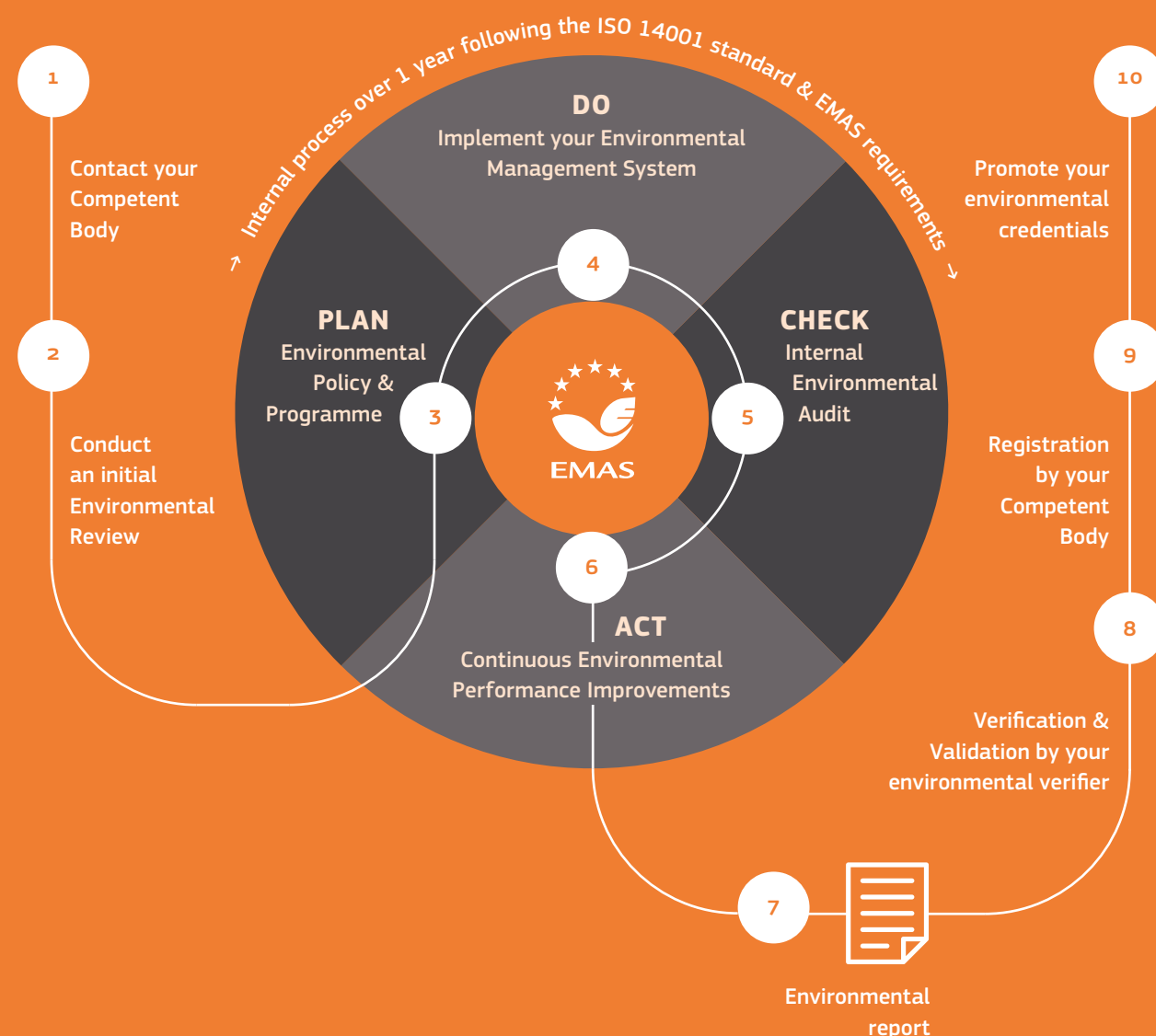


Figure 4: The EMAS “Plan-Do-Check-Act” approach

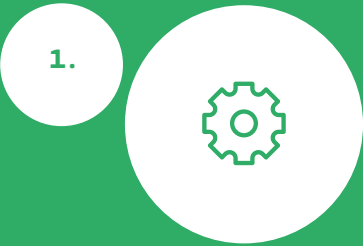
Overview of the best practices

Until recently, there were no such systematic methods to implement a circular economy in an organisation. However, the best practices mentioned in circular economy literature can be related to the steps of EMAS implementation (plan, control, improve, etc.), particularly as the common objective is to change the organisation's processes over the long term. Additionally, in May 2017 the British Standards Institution (BSI) developed standard BS 8001:2017 that provides a framework for organisations to adopt circular economy principles, thus “formalising” the implementation process.

For the purposes of this paper, we have selected five best practices that can be considered by any organisation wishing to implement circular economy practices. They were inspired by the work of the Ellen MacArthur Foundation, which developed a Circular Design Guide.¹¹



¹¹ www.circulardesignguide.com/methods



Identify potential material loops

When looking to increase an organisation’s resource efficiency, the first step is to identify the resources the organisation actually uses, the processes in which they are used, and how they can be reduced.

But the circular economy goes beyond resource efficiency (doing more with less), instead adopting a holistic perspective of an entire system in which resources are systematically restored and regenerated.¹² Material loops can be created at any stage of a product’s or service’s life cycle. Waste or by-products from one stage can be used as material for another. The recovery, reuse or recycling of energy, water, packaging, supplies, etc. in closed loops increase efficiency and cost-savings. In that sense, businesses have already been creating material loops for years while simply aiming for cost efficiency.

Bigger loops can also be implemented. The final product, for example, can be refurbished when it reaches its end-of-life, or the waste or by-products of one company could be used as material inputs by another. The challenge for companies in the circular economy is to match existing material waste streams with new applications, either in their own supply chains or within other companies’ supply chains.¹³

12 BS 8001:2017
13 www.greenbiz.com/article/defining-circular-economy-beyond-recycling-material-reuse

Examples from EMAS Organisations

Seacourt Ltd.

Several EMAS organisations have been particularly innovative in their approach to waste, seeing it as a resource to be used in loops. Seacourt Ltd, the 2017 EMAS Award winner in the category “Small and Medium Private Organisations”, was one of the world’s first printing companies to achieve “zero waste to landfill” (see case study on Seacourt, p. 18). The company systematically looks for reuse or recycling options for all waste produced. Paper and cardboard waste is re-pulped into paper and the company reuses its aluminium printing plates. Seacourt also sends food waste to wormeries that transform the waste into fertiliser, which is then offered to clients to grow chilli plants.



... see also case study on p. 32

Viessman

Another good example is Viessmann — the longest registered organisation in the European EMAS register having joined 22 years ago. The German company is an international producer of individual and industrial heating and cooling systems. Viessman eco-designs products: it uses recycled materials and marks each component so that it can be easily maintained and replaced. The company set up its own take-back system in 1995, inviting clients to bring back products at their end-of-life. More than 90 % of these returned products are recycled. As early as 1997, the company carried out a study on how to implement a circular economy. The project looked at the potential of re-using components, but found that the innovation cycles in the industry were unfortunately too short for reuse to be a viable option. By continuously improving its environmental performance, the company increased its productivity by 20 % (lean production), reduced its steel consumption per boiler by 30 %, and achieved a recycling rate above 99 % for all unavoidable waste.¹⁴

“We try to reduce material consumption all the time. It is natural from a resource and cost point of view. Our research and development focuses on reducing the weight of products, for example by looking at how we could reduce the thickness of tubes made of copper. This is also a great incentive for innovation.”

GUIDO SCHWAB
ENVIRONMENT REPRESENTATIVE
VIESSMANN

14 Speech of Mr. Greis, Chief Representative of Viessmann at the EMAS high level conference in November 2015: www.ec.europa.eu/environment/emas/pdf/pdf_and_images_HLC_Site/Speeches/Greis_plenary.pdf

Methods and tools available

Material flow analyses can help organisations visualise their processes' material flows and losses. The video "How to become a Green SME in a Circular Economy" (www.youtube.com/watch?v=V1Ts48xCI) explains how it works. Life cycle assessments (LCAs) are also tools to understand the life cycle of a product or service and highlight where material loops would be most beneficial. The Ellen MacArthur Foundation has developed circularity indicators to assess the extent by which a product or business can be considered circular. The methodology to calculate material circularity is available here: www.ellenmacarthurfoundation.org/programmes/insight/circularity-indicators.

In order to help companies identify where they can find opportunities to create material loops or improve material efficiency, a number of different software programs have emerged that assist with visualization of processes and the tracking of materials. Different components of material flow analysis include but are not limited to: diagramming the flow, maintaining and updating data on the material from sourcing to production, determining alternative flows that enhance material efficiency and promote circular economy.

Examples of software can be found here:

e!Sankey:

www.ifu.com/en/e-sankey

Sankey diagrams are a method of visualizing flows and help to create an understanding of an organisations value streams. Material flows can be created using e!Sankey.

Umberto:

www.ifu.com/en/umberto/lean-production/umberto-nxt-efficiency

More advanced Sankey diagram software exists, one example being Umberto's NXT Efficiency. Combining the inventory data of a production system with Sankey diagrams allows for easier balancing of material flow analysis, as the software assists the user in determining a range of possible models.

ecoinvent:

www.ecoinvent.org

Ecoinvent is a life cycle inventory database that assists companies in sourcing sustainable materials for their products. An important part of material flow analysis is understanding where the materials are coming from and determining their potential for recycle or reuse. As a database, ecoinvent does not conduct material flow analysis on its own. Instead, the database provides detail that other software programs like Umberto can utilise for material flow optimisation.

NISP, the National Industrial Symbiosis Program (www.nispnetwork.com), is a network aiming at creating industrial symbiosis opportunities in UK. This network has now also spread to France (www.pnsi.fr). Companies are invited to workshops to identify potential synergies: that is, opportunities for exchanging or sharing resources between businesses. Other networks may exist in other Member States. For example, in Germany, the Association of German Chambers of Commerce and Industry (DIHK) has developed a website for companies to trade waste: www.ihk-recyclingboerse.de. Interestingly, private marketplaces to exchange resources between organisations, also called barter, are also developing online (ex: B2B EN Trade, Excess Material Exchange, etc.)

Many case studies are available on these websites, but the following sources can also be consulted:

The Circular Economy Toolkit:

www.circulareconomytoolkit.org/index.html

2degrees, a collaborative platform:

www.2degreesnetwork.com

2.



Consider innovative business models

To become a true leader in the circular economy, a company may need to shake up its business model. Several types of innovative models already exist. The UK charity WRAP (Waste and Resources Action Programme) has identified the following examples:¹⁵

Product Service System (PPS): This model is based on the idea that users of a product don't necessarily need or want to own the product, but only need the function the product provides. Businesses can thus offer a service contract rather than selling the physical product. Examples include pay-per-copy models for printers and pay-per-kilometre-travelled truck tyres. The latter involves monthly billing that depends on the kilometres travelled by the company and includes maintenance services.

Dematerialised services: This model relies on providing a service that offers product benefits and where the "physical" product may not even exist (for example the on-demand delivery of music and film via the internet). However, the materials used to provide the service (service infrastructure) must be taken into account. infrastructure) must be taken into account.

Hire & Leasing: This model encourages the long-term hire and leasing of products and therefore promotes product durability. This model has been adopted by the EMAS registered organisation HR Björkmans Entrémattor AB. This company rents out floor mats, washes them using processes that enable water and energy savings (98% of water is reused), and then rents the mats out again.

Collaborative consumption: This model facilitates the rental of products between members of the public or between businesses (e.g. carsharing).

Incentivised return & reuse: This model encourages customers to return used items for an agreed value. Collected products are refurbished and sold for reuse on appropriate markets.

Long life: Products are designed to have a long life span with increased durability. The organisation communicates this added value to the customer and may, in some cases, offer free repairs for its products. This reinforces the company's image and reputation.

WRAP is involved in a project called "REBus – Developing Resource Efficient Business Models". The REBus project is funded by the EU Life+ programme and involves WRAP working with companies to test new business models.¹⁶ The project has found that expending such innovative business models across Europe could offer the potential to create 1.2 million to 3 million jobs, reduce equilibrium unemployment by around 250,000 to 520,000, generate € 114-324 billion in additional GVA, reduce raw material demand (excluding fossil fuels and energy carriers) by 70 Mt to 184 Mt, and reduce greenhouse gas emissions by 80 Mt CO₂eq to 154 Mt CO₂eq.¹⁷ To consider new business models that are more circular, organisations need to think in terms of the service for the user. Answering questions such as: "What are the needs you are trying to meet?" can start the process of identifying new ways to perform this service using fewer resources.

¹⁵ www.wrap.org.uk/resource-efficient-business-models/innovative-business-models

¹⁶ To learn more: www.rebus.eu.com/about-rebus

¹⁷ WRAP (2016) Extrapolating resource efficient business models across Europe: www.rebus.eu.com/wp-content/uploads/2017/07/Extrapolating-resource-efficient-business-models-across-Europe.pdf

Examples from EMAS Organisations

PMC Holding

PMC Holding is a group of five SMEs, which offer complete services to improve office spaces — from the design of new sustainable office spaces to removal services. The group received an honourable mention at the 2017 EMAS Awards. NNOF, the youngest company in the family, transforms existing furniture into new office equipment. NNOF already maintains, repairs and remanufactures furniture. Now it is considering becoming even more circular by leasing furniture instead of selling it. To take this step, NNOF partnered with a financial company that specialises in leasing, De Lage Landen, to identify if this new business model could be viable. NNOF asked De Lage Landen to calculate the best price for this service to satisfy clients and secure money flows and return on investments. According to Anne Lenaerts, sales and marketing director at NNOF, a partner that “thinks outside of the box” is key to achieving their goals.

PMC Holding is strongly involved in networking to identify new ideas and gain support, which includes participating in workshops organised by the Dutch government to foster the development of circular services. The Dutch government has been supporting companies through “green deals”, which allow them to test new solutions.¹⁹ The company also collaborates with the Ellen MacArthur Foundation and developed Plan C, the Circular Economy Hub in Flanders. Ms. Lenaerts encourages organisations trying to follow a similar path to investigate the options available in their Member States for helping organisations test new business models.

IDEMA Sport

Another EMAS registered organisation exploring a new business model is IDEMA Sport, a Belgian company offering sports equipment to municipalities, schools, sports clubs and businesses. The company has been EMAS registered since 2012; part of its product range is made from recycled materials. In 2017, IDEMA Sport joined Club EFC — a programme on functional economy funded by the Wallonia region. In this programme, eight companies will receive coaching to identify how they can transform part of their turnover into a model based on functional economy. Instead of selling equipment for sports facilities, IDEMA could give its clients access to these facilities, ensuring its equipment is well-maintained and lasts longer. The service to the client could be improved, as they could offer new equipment to test from time to time and establish a lasting relationship with the client. At the same time, this new model could help them distinguish themselves from competitors and allow them to develop reverse logistics for reuse.



18 To learn more about greendeals: www.greendeals.nl/english/green-deal-approach

Methods and tools available

Switching to another business model is ambitious and takes time. Many sources, including the Ellen MacArthur Foundation, recommend the use of the Business Model Canvas, developed by Osterwalder & Pigneur, to help organisations think about their business model.

This tool is available online at: www.ellenmacarthurfoundation.org/assets/design/Business_Model_Canvas_Final.pdf

In addition, the ResilieNtWEB toolkit offers a whole set of stand-alone tools to identify new business models or consolidate an existing idea: www.resilientweb.eu/en/tools/resilience-toolkit

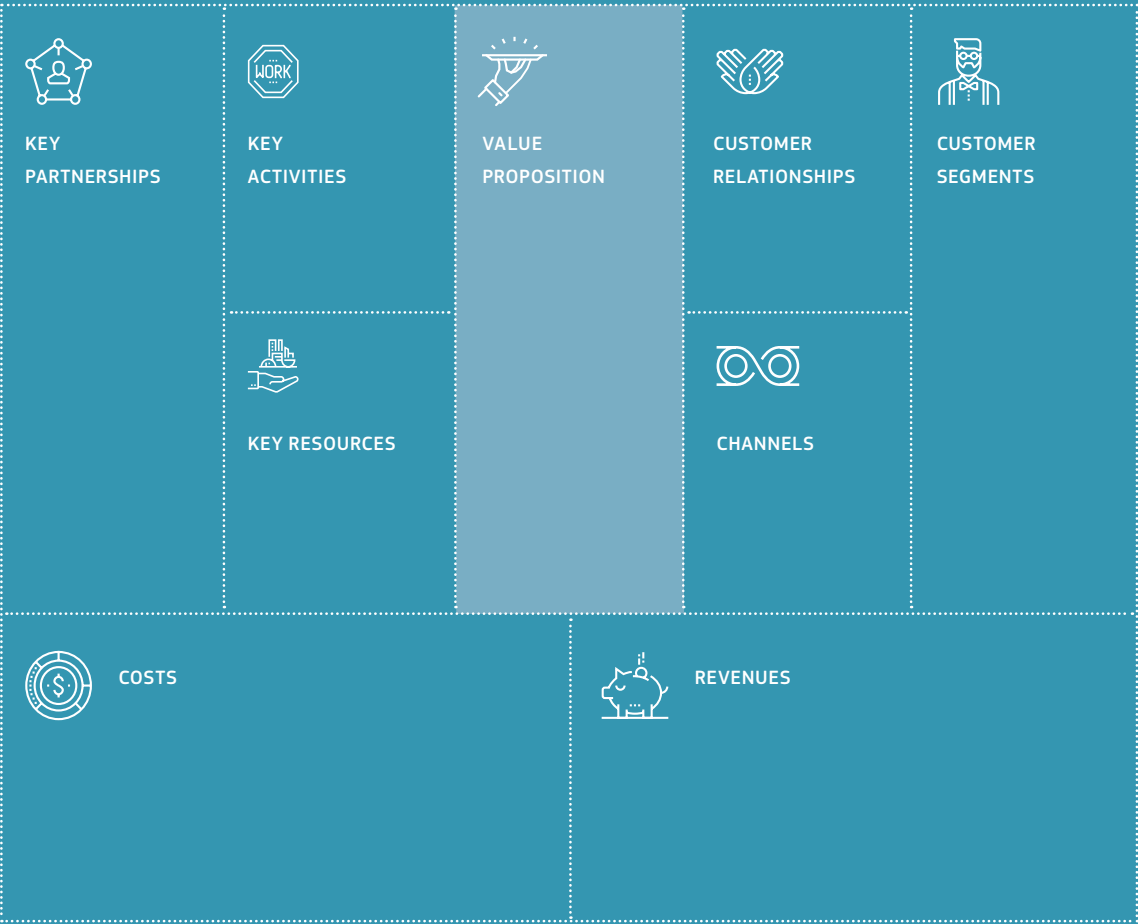


Figure 5: Worksheet: Business Model Canvas



Involve employees and other stakeholders

Achieving a circular economy requires deep changes within an organisation and can thus only occur with employee involvement. Companies need to establish a way of collecting ideas and ensuring they are implemented afterwards.

Such involvement not only gives rise to new, innovative ideas, but also boosts employee morale. Taking this step can be as easy as establishing a system for collecting employees' suggestions or setting up joint working groups. The more challenging aspect is then addressing and implementing the suggestions received. Involving employees requires creating the right environment, which occurs when businesses facilitate collaboration across different departments by breaking down internal barriers.¹⁹ Giving employees freedom by setting aside time for interdepartmental brainstorming creates the necessary space for the development of new approaches to tackle problems that may be inhibiting the transition to a circular economy.

However, a circular economy requires the participation of many actors beyond the organisations themselves. The general public and key stakeholders — including policy-makers, NGOs and entrepreneurs — must all participate in an open and informed dialogue to ensure economic decision-making moves from a linear to circular model.²⁰

¹⁹ Kingfisher (2014): The Business Opportunity of Closed Loop Innovation

www.kingfisher.com/sustainability/files/downloads/kingfisher_closed_loop_innovation.pdf

²⁰ BioSTEP (2017) Creating Networks for the Transition to a Bio-based and Circular Economy:

www.bio-step.eu/fileadmin/BioSTEP/Bio_documents/BioSTEP_Policy_Paper_final.pdf

Examples from EMAS Organisations

Eberswalde University for Sustainable Development

The Eberswalde University for Sustainable Development (HNE Eberswalde) won the 2017 EMAS Award in the category "Public Organisation" for its ability to raise sustainability awareness and commitment among a variety of stakeholders (see case study on p. 27). The jury praised in particular HNE Eberswalde's mission of training young people to work in the future circular economy and its approach of leading by example.

To gather input from its staff, the university developed an online survey of all university members to explore the potential for optimisation of resource use and management of real estate and buildings. According to Kerstin Kräusche, environmental management representative at HNE Eberswalde: "Active employee involvement means valuing and appreciating the experiences, knowledge and ideas that lie within every organisation's staff and letting them be a part of the transition process. It also means respecting the concerns that this transition process may cause and to openly and continuously communicate with employees and stakeholders."



... see also case study on p. 46

Lee Strand

Another example of employee involvement comes from Lee Strand, an Irish milk producer that has been EMAS registered since 2000 and was nominated for an EMAS Award in 2014. The company implemented a variety of measures to reduce energy use (designing the plant to maximise the use of daylight, increasing insulation through polystyrene panels, building thermal ice during the night to use night-saver electricity, restructuring delivery routes to reduce the fuel consumption of trucks, etc.), waste (reducing process waste on filling machines to < 1 % compared to the industry norm of 4-6 %, food waste sent to anaerobic digestion, etc.) and water (fitting of trigger valve to hoses, recovering condensate from the pasteurisers, attaching plate heat exchangers to the boiler feed tank, etc.).

According to Jerry Dwyer, milk operations manager at Lee Strand, the company has reduced the number of production days from six to five. This step was only possible with the involvement of employees to achieve greater efficiency. Lee Strand believes a company should consider investing in expensive technology only after fully optimising the systems already in place. The company has an open-door policy and organises staff meetings. Lee Strand uses posters, a TV screen in the canteen, and the employee notice board to communicate progress on environmental indicators and objectives to its employees.

The company also collaborates with stakeholders other than employees. It recently established a partnership with Food Share — a local charity that comes every week to collect products with a shelf life too short to go to distribution. Lee Strand also works closely with schools in the region, organising competitions and hosting school visits. Visits are also organised for retail customers, farmers and community groups. Lee Strand distributes school homework diaries to all primary school students in its distribution area. The dairy is an excellent medium for promoting awareness of EMAS and sustainable practices. In the future, the dairy will be used even more for this purpose. Finally, the company is actively encouraging its milk suppliers to take part in sustainability programmes. Currently, all Lee Strand farmers are participating in The Bord Bia Sustainable Dairy Assurance Scheme, which demonstrates that milk is produced sustainably under an accredited scheme.

Methods and tools available

EMAS can be a useful tool for ensuring the inclusion of employees, as EMAS already requires registered organisations to involve employees in their environmental management system. Examples of organisations that have benefitted from their employees’ involvement can be found on the EMAS website: www.ec.europa.eu/environment/emas/emas_for_you/premium_benefits_through_emas/increased_employee_involvement_en.htm.

ADEME, the French environmental agency, has also developed a guide to help regions implement circular economy strategies. Municipalities may use the guide (available only in French) to identify ways to mobilise stakeholders throughout their region: www.economiecirculaire.org/library/h/guide-methodologique-du-developpement-des-strategies-regionales-deconomie-circulaire-en-france.html

The EU funded project BioSTEP also aims to engage citizens and various stakeholder groups in discussions about the future development of “Europe’s bioeconomy”. The project released a policy paper on “Creating Networks for the Transition to a Bio-based and Circular Economy”, in which it recommends the use of a variety of instruments for stakeholder and public engagement, including:

- Change agents” and “bioeconomy ambassadors”. These people can talk directly to a variety of stakeholders about the objectives of a circular economy in their own environment, increasing the effectiveness of the message.
- Competitions on selected themes
- Thematic events at schools and tailored learning materials. Young people can also be reached effectively via “cool” smartphone apps and games.
- Exhibitions or pop-up stores with bio-based products as a means to explain the abstract concept of the bioeconomy and circular economy to the general public
- Online platforms and consultations
- Thematic workshops, e.g. on waste management / recycling
- “Living labs” at the regional level to foster interactive communication among entrepreneurs, scientists, policy-makers and citizenswaste reduction and high-quality separation by consumers ²¹

21 BioSTEP (2017) Creating Networks for the Transition to a Bio-based and Circular Economy: www.bio-step.eu/fileadmin/BioSTEP/Bio_documents/BioSTEP_Policy_Paper_final.pdf



Develop a message

The Ellen MacArthur Foundation suggests creating a narrative or a story around a product or service explaining how it relates to circularity. This story will ultimately encourage loyalty from customers and stakeholders.

The white paper "Communicating the Circle" of Go Circular, an online platform for circular economy dialogue, recommends showcasing the real-life benefits of a circular economy through a company’s narrative. Real-life examples and practical applications of how a product or service fits into the circular economy resonates the most with stakeholders and can be backed up with facts or figures if necessary. ²² Furthermore, Go Circular stresses that business narratives should operate on multiple levels to reach the widest audience possible; presenting only facts and practical examples is not enough to convince stakeholders to buy into circular economy values. The circular economy is inherently about cooperation among different people in different sectors of society, and there are therefore many stories to be told about the individuals who enable such cooperation. Integrating educational information on the circular economy into creative stories about individuals can further enhance a company’s narrative by elaborating on the personal values of the enablers.

22 Perella (2015) Communicating The Circle – Are circular economy communication strategies starting to connect? www.gocircular.com/uploads/5/0/6/3/50632287/communicating_the_circle.pdf

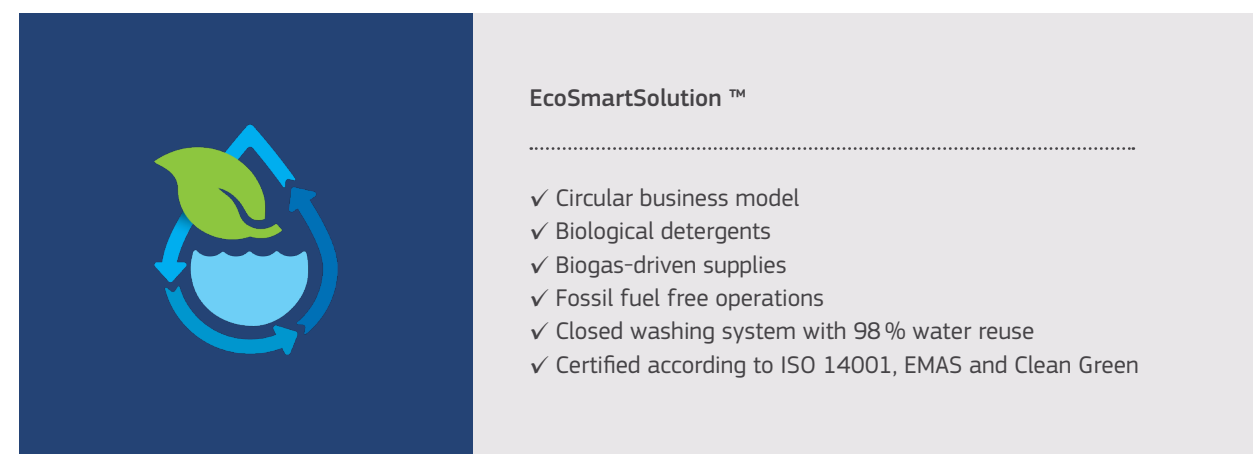
Examples from EMAS Organisations

HR Björkmans Entrémattor

One company that has been successful in promoting itself as circular is also the winner of the 2014 EMAS Awards in the category “Small Private Organisations”. HR Björkmans Entrémattor has been EMAS registered since 1999. The company is a pioneer in the field of floor mat rental and has also developed an innovative washing system (low washing temperatures, use of bio detergent, a water reuse rate of up to 98 %). Since the company rents mats instead of selling them, it has an interest in long-lasting products. According to Rasmus Peterson, the company’s marketing coordinator, HR Björkmans Entrémattor “did not invent the business model, as mat renting existed before, but companies offered a wider product range. We chose to develop only mat renting to have a focus, and to do it better than others. We look for strong, quality products.” Because of this model, the company became circular in nature without even knowing it. HR Björkmans developed its environmental policy before the concept started to gain popularity, demonstrating that a circular model can be attractive for businesses even when it is not their primary intention. HR Björkmans Entrémattor is a good example of a company strong on marketing, having developed an image to market its eco-business to employees, customers and suppliers. The company branded its image the “eco-smart solution” and developed the following symbol:

According to Rasmus Peterson, this symbol makes the company’s service easier for consumers and other stakeholders to understand. Not all customers are environmentally aware and it is a significant part of the sales team’s pitch to sell this premise of being an eco-friendly partner to consumers. In addition, the company started a project with the Swedish university RISE Viktoria to calculate the circularity of its products (some mats have been in use for more than 10 years). A total of 22 partners are taking part in the project “Measuring circularity as a means to promote resource productivity”. HR Björkmans Entrémattor will use these indicators to implement improvements, compare itself to other businesses and further communicate with its partners. The company is notably trying to influence its suppliers, for instance by asking them to offer mats made from recycled PET.

HR Björkmans Entrémattor has been successful in creating a narrative around its business model and sustainability strategy. According to the company, building loops is essential for a future in which resources are becoming scarcer: “People who can reuse resources will be more successful than companies that mine resources. It also enables companies to keep control of their products.”



Methods and tools available

The methods used for employee involvement can also help to build the organisation’s narrative, as a company story often originates from the values of the organisation and its employees.

The following sources offer valuable insight into particularly powerful narratives:

www.engageforsuccess.org/hints-tips-creating-and-communicating-your-strategic-narrative
www.hbr.org/2016/03/how-to-build-a-strategic-narrative
www.stevedenning.com/slides/masteringbusinessnarrative-final-oct2-05.pdf

The Ellen MacArthur Foundation recommends starting from the brand promise and developed a Brand template to guide organisations. Organisations can use this template to clarify their brand promise, their customers’ values, the benefits of circular economy that can drive emotional responses from their customers, and therefore the best way to reinforce their brand with the right message.

This tool is available online at:
www.ellenmacarthurfoundation.org/assets/design/Brand_promise_Final.pdf

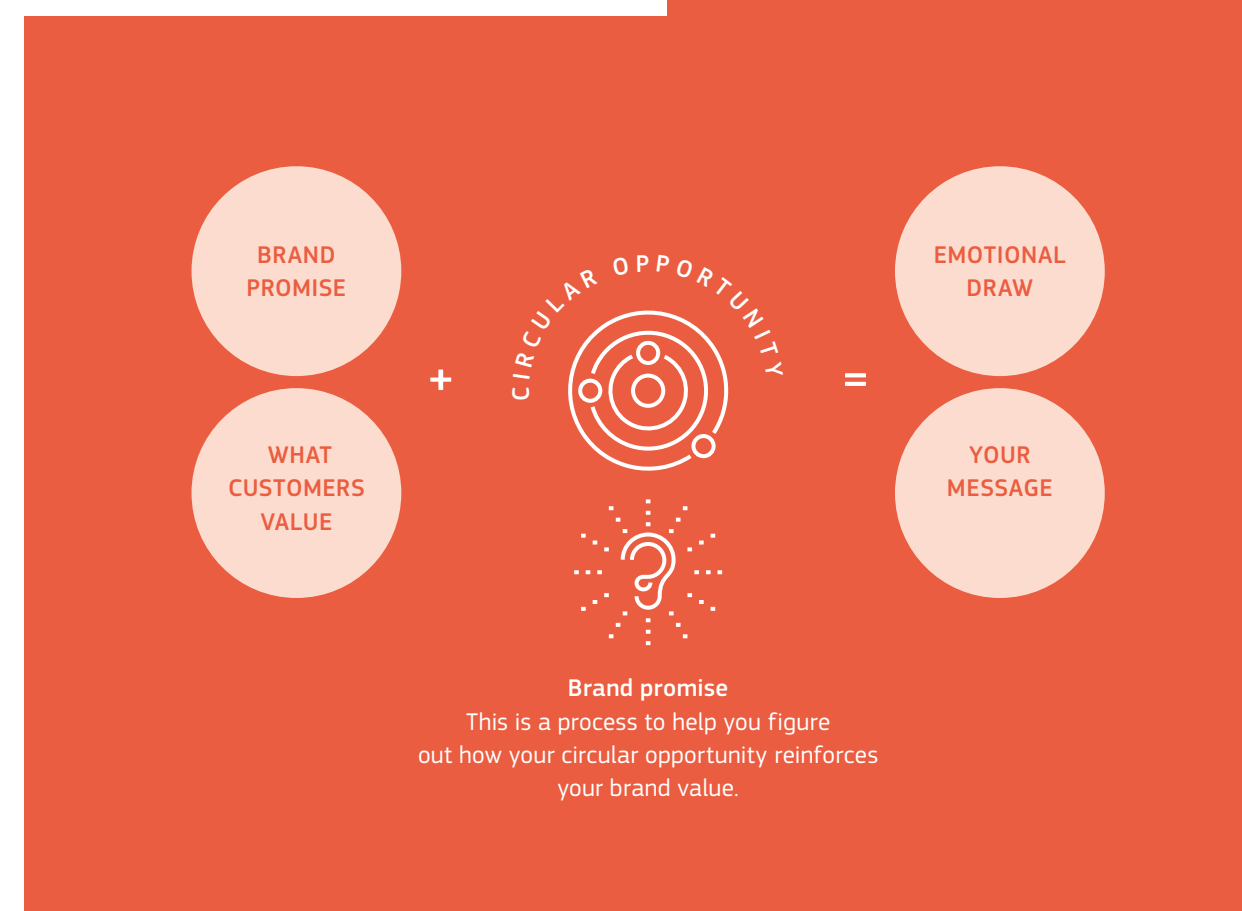
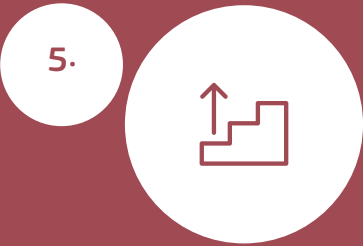


Figure 6: Defining a narrative using the brand template of the Ellen MacArthur Foundation



Test, learn and improve

Moving from a linear business model to a circular one is, in itself, not a linear process, but rather a commitment to an ongoing cycle of exploration and improvement. Companies may have to make many adjustments along the way to achieve their set objectives.

Implementing a circular economy strategy therefore requires spending time on research and benchmarking innovative solutions before deciding to implement them. The testing phase is also important for clarifying ideas and gauging if they will work long-term in practice. Equally important is the time taken afterwards to analyse the impact of new processes by collecting feedback from various stakeholders and to search for new areas for improvement. The company thus closes the loop by addressing new problems discovered in the feedback round. In this way, organisations apply the same circular process to designing their strategies — a process that the Ellen MacArthur Foundation calls “learning loops”.

Examples from EMAS Organisations

WIEGEL Verwaltung GmbH & Co KG

Several EMAS organisations have begun implementing such learning loops. WIEGEL Verwaltung GmbH & Co KG is a family business specialising in hot-dip galvanising and powder coating. The company received an honourable mention as a nominee at the 2017 EMAS Awards. To increase its resource efficiency, WIEGEL looked at all of its processes individually and developed a tailor-made approach to improve each and every one of them. To consolidate this process, the company actively used the input of stakeholders, including its suppliers and recycling partners, to determine which strategies would be feasible and which would require adjustment. Through trying different approaches and improving them over time, WIEGEL has been able to achieve impressive results. In many of its processes, the company created closed material loops. Overall, it reduced the proportion of hazardous waste for disposal from 70 % to 3 % across its 26 EMAS registered sites. The company also realised that testing, learning and improving means identifying which approaches are not practical at the current time and, consequently, deciding not to pursue them further.

PMC Holding

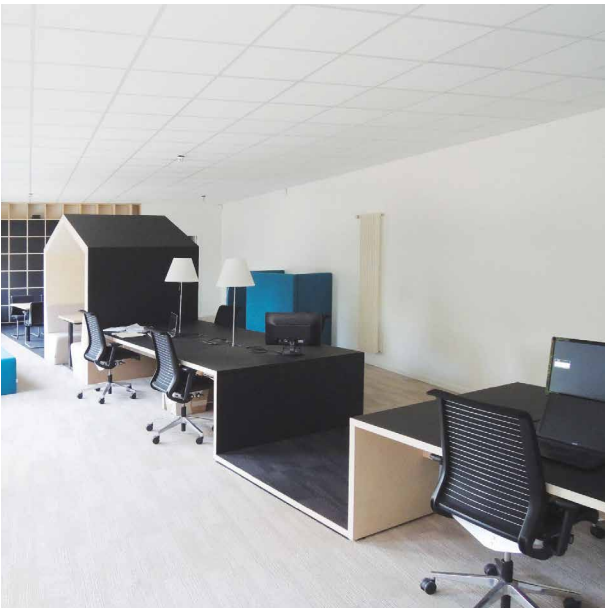
PMC Holding has also begun learning in loops. Five years ago, the company calculated its carbon footprint, which turned out to be an “eye-opening” process. By analysing its impacts, PMC Holding realised that it had a lot of potential to become more sustainable. The company was producing high amounts of waste and therefore decided to give furniture a second or third life. The company took one year to develop its strategy and then six more months to test new remanufacturing processes.

The result of this testing was NNOF. During the testing phase, the company collaborated with six of its clients. According to Anne Lenaerts of NNOF, the collaboration was a key factor in the success of the new strategy: “It is very important to have partners who let you try and learn through experience what the possibilities are — and who let you make mistakes.” The company’s experience has taught them the following best practices: start by assessing your environmental impacts, take sufficient time to review your strategy, and find partners you can trust.

“

“Sometimes measures are not economically feasible due to various internal and external reasons. However, those measures may be put aside for later as they may become feasible once the internal and external conditions change”.

CURD BLANK
EMAS REPRESENTATIVE
WIEGEL



Methods and tools available

NNOF is also highly involved in networking and testifies that a lot of new ideas are directly brought to them by interested parties: “People try to think with us — they ask us if we know such or such a material. We thus always have new materials to test, for example the production of furniture from mycelium (a fungus). It is a process that never stops. The fact that we are a pioneer gives us a step up and motivates us.” The company would also like to encourage other companies to adopt a similar approach: “Participating in conferences is interesting but sometimes frustrating. We see companies who want to do things but just keep talking about it and considering; they should just go for it!” At the same time, NNOF recognises the importance of planning: “To implement a circular economy strategy, someone needs to take the time to reanalyse the existing organisation. It has to be someone who knows the company and clients very well, so that they can identify where circular economy steps can be taken.” Companies should also consider the “mental added value”:

“

“If you can turn the company in the right direction and find a business model that offers value to society, the self-reward is important. You need to see your company as a leader, not only to give your company new perspectives but also because it provides a very good feeling to offer new services to clients”.

ANNE LENAERTS

SALES & MARKETING DIRECTOR
NNOF

EMAS is a particularly strong partner in this continuous improvement process. EMAS organisations commit to decrease their environmental impact over the long term and therefore must begin to innovate once they have implemented the most obvious resource-efficiency actions.

In summary ...

On the journey to a circular economy, a few questions may help an organisation to set ambitious strategies:

	Yes	No
Identify potential material loops Do I know exactly which resources my organisation is using? Can I reduce my resource consumption? Can I find ways to make better use of them, through recovery, reuse, refurbishment or recycling? In other words, can I create more material loops in my organisation and beyond? Have I considered the entire life cycle of my products or services, to optimise resource and eliminate waste through the whole value chain? Can I optimise my resource consumption with other partners? Can I make use of other organisations' by-products or waste or trade the ones I have?	● ● ● ● ● ●	● ● ● ● ● ●
Consider innovative business models Have I identified which service my product or service is providing for its users? Could I provide the same service while increasing my resource efficiency, for example through a new business model such as leasing? Could I partner with other organisations to test a new business model? Is there any support available in my region?	● ● ● ● ●	● ● ● ● ●
Involve employees and other stakeholders Have I put in place processes to involve my employees? Does my organisation provide the right environment for idea generation? Can I involve other stakeholders in my circular economy strategy?	● ● ● ●	● ● ● ●
Develop a message Have I defined my value proposition? Can I effectively communicate to my stakeholders how it fits into a circular economy? Have I identified innovative ways to share my story with them?	● ● ● ●	● ● ● ●
Test, learn and improve Have I identified new ways to improve my resource efficiency? Can I test my ideas in real conditions and with my partners? Have I implemented processes to collect feedback?	● ● ● ●	● ● ● ●

Circular economy in practice: Three case studies

The case studies below use the examples of the 2017 EMAS Awards winners to illustrate in more detail the measures organisations can put in place to become more circular.



Overview of the case studies

The aim of the previous section was to provide guidance on how organisations can implement a circular economy strategy by describing potential steps and highlighting examples of EMAS organisations that have followed some of them effectively. The objective of this section is to highlight the diversity of circular economy initiatives that can be put in place.

Circular economy measures can focus on very different aspects of business (procurement, product design, waste management, etc.) and be adopted by many different types of organisations. These case studies can thus provide inspiration for circular economy measures in all types of organisations, regardless of sector or size.



The circular economy in SMEs



Seacourt Ltd
Planet Postive Printing

Seacourt Ltd is one of the world's leading environmental printing companies. Since 2009, it has brought zero waste to landfill. With 20 employees, the organisation works with suppliers and clients to fulfil its mission of being a "net positive" business.

The circular economy in large private organisations



Martin's Hotels
Tomorrow Needs Today

With 350 employees, the Belgian hotel chain Martin's Hotels demonstrates circular economy principles on a larger scale. Martin's Hotels has achieved significant cost and material savings through its purchasing and waste management policies.

The circular economy in public organisations



HNE Eberswalde
Hochschule für nachhaltige Entwicklung Eberswalde

The Eberswalde University for Sustainable Development campus is a model of sustainability — from the energy it uses to the catering in its cafeterias. Built on the idea of teaching sustainable development to its students, the university has gone further by fully integrating circular economy practices into its courses and research projects.



6.

The circular economy in SMEs

Small and medium-sized enterprises (SMEs) represent 99.8 % of all businesses in the EU (companies with fewer than 250 employees, an annual turnover of less than €50 million or a balance sheet of less than €43 million euro).²³

Currently, in 2017, 77 % of EMAS registered organisations are SMEs. These enterprises can face significant challenges when trying to implement a circular economy strategy (lack of finance to invest in innovations, lack of control over production processes, lack of skills, etc.). On the other hand, they have much more flexibility than large companies when it comes to transforming their organisation and can apply a business model that follows their values more easily.²⁴

A survey of more than 10,000 SMEs carried out by the European Commission in 2016 showed that almost three quarters of companies (73 %) have already undertaken some circular economy related activity, with the most common being minimising waste by recycling, reusing, or selling it to another company (55 %), or re-planning energy use to reduce consumption (38 %).²⁵

The potential of SMEs to drive the development of a circular economy is therefore immense. The example below shows the concrete actions of one SME registered with EMAS.

²³ Eurostat (2016) Annual Report on European SMEs 2015/2016:

www.ec.europa.eu/jrc/sites/jrcsh/files/annual_report_-_eu_smes_2015-16.pdf

²⁴ Rizos and al. (2015) The Circular Economy: Barriers and Opportunities for SME:

www.researchgate.net/profile/Vasileios_Rizos/publication/283121970_The_Circular_Economy_Barriers_and_Opportunities_for_SMEs/links/562badae08aef25a2441ca90/The-Circular-Economy-Barriers-and-Opportunities-for-SMEs.pdf

²⁵ European Commission (2016): Flash Eurobarometer 441 - European SMEs and the Circular Economy:

www.ec.europa.eu/environment/green-growth/docs/fl_441_sum_en.pdf



seacourt
Planet Postive Printing

Naturally Responsible Printing

Seacourt Ltd is a family-owned printing company located in Oxford, United Kingdom. Founded in 1946, Seacourt’s product portfolio includes leaflets, brochures and catalogues as well as display boards, pull-up banners and exhibition panels. The company has around 20 staff members, many of whom have been with the company for more than 10 years. Seacourt made an early commitment to reduce the environmental impact of its activities as much as possible. In 1999, it was one of the first printing firms in the UK to achieve EMAS registration. Since then, Seacourt has been awarded numerous environmental awards, including three Queen’s Awards for Enterprise. The Queen’s Awards for Enterprise are presented by the Queen of the United Kingdom and are given to UK businesses for their outstanding achievements in various categories. Seacourt won the award in the category “Sustainable development” in 2007, 2011 and 2016. In 2017, Seacourt won the EMAS Award in the category “Small and Medium Private Organisations”.

Circular economy initiatives

Seacourt has implemented circular economy initiatives that address different stages of the life cycle. In 2009, the company stopped sending waste to landfill entirely. Instead, all the materials that Seacourt uses during its production process either flow into the final product or are supplied to other companies for reuse or recycling. The company uses 100% renewable energy and is carbon positive.

To further reduce the environmental impacts of its operation, the company examined its entire production process and, in cooperation with a printing press manufacturer and an ink manufacturer, developed a new printing process called LightTouch. The new printing process uses a waterless printing press and an LED drying solution, offering many environmental advantages over the previous printing process. These advantages include the elimination of water and a drastic reduction in the use of chemicals.

In addition, the company decided to focus on going beyond minimising their impact and to create a business that has a positive impact on society. They developed the vision of a “net positive business”. They measured and took responsibility for the carbon impact of their entire business — including their supply chain and their employees’ commutes — and then added an extra 10% just to be sure they were net positive. They achieved this by investing in a restorative programme for a community in the Amazon basin rainforest in Brazil.



Figure 7: Key figures about Seacourt



Examples of circular economy initiatives implemented at Seacourt Ltd

- **Procurement and sourcing of sustainable services / products:**
 - Procurement of materials that are either fully recycled or recyclable and biodegradable. For example, 70 % of paper used at Seacourt comes from recycled stock.
 - Replacement of conventional light bulbs with LED light bulbs that have a 25-year life span
- **Optimising the yield of resources:**
 - Production of liquid fertiliser from food and other organic waste by the company’s own wormeries. Together with plant seeds and compost, the fertilisers are delivered to customers who can use them to grow their own plants.
- **Improving the design of products and processes:**
 - Development of the LightTouch printing process (waterless & LED UV printing)
 - Introduction of new software that reduces the amount of ink needed to print images without changing the finished look of the image. This is achieved by reducing the cyan, magenta and yellow in the image and replacing these colours with black. On average, this software reduces the amount of ink on a sheet by 23 %.
- **Minimising waste:**
 - Implementation of “zero-waste-to-landfill” production in 2009; 100 % of the company’s materials either go into the finished products or are recycled: paper and cardboard are re-pulped into paper, printing plates in aluminium are reused, and plastic components are sorted and recycled.
 - Collection and recycling of customers’ old stock when delivering new print products (reverse logistic)
 - Provision of damaged printing blankets to a company that uses those materials to produce handbags and wallets (up-cycling)

“

“Our vision is to be a restorative company. To that end we worked on our ‘net positive’ programme, which enables our clients to be making a positive impact on the environment and society with every single job we print for them.”

GARETH DINNAGE

MANAGING DIRECTOR, SEACOURT LTD



seacourt
Planet Postive Printing

Methods and tools

Seacourt has made use of both ISO 14001 and EMAS since 1999, which, over the course of nearly 20 years, has ensured it now has a near-zero environmental impact — the factory has already achieved carbon neutrality.

It has now developed its own methodology to go beyond carbon neutral, with the objective of becoming a “net positive business”. It worked with an environment specialist, Empathy Sustainability, to measure the carbon footprint of its entire supply chain. Wanting to take responsibility for its suppliers, the company surveyed them and visited their factories over the course of eight months, collecting information on their annual mileage, energy mix, production outputs, etc. The methodology was checked with independent sustainability experts to test its metrics and methodologies and will soon be accredited by a third party. Seacourt also decided to include specific metrics such as the emissions from the transport of employees to work — which is not always taken into account – and to offset its emissions by a further 10% to ensure it is carbon positive.

According to Gareth Dinnage: “It was sometimes difficult to get the information from suppliers. By communicating our vision, explaining that we wanted to take full responsibility for the impacts of our entire activities, we were however able to convince suppliers. Once we explained that we wanted to have a business which actually benefits the environment and society for being in existence, they were fully on board.”

Impact

Through its initiatives, Seacourt has achieved impressive results both environmentally and economically. The company has saved over five million litres of water using its innovative printing process compared to a conventional printing process, and reduced its volatile organic compound emissions by over 98.5%. It also saves 857 litres of ink each year compared to its previous printing process.

Its new net positive project allows them to go beyond carbon neutral to achieve other positive social impacts. Through the work it supports in Brazil, deforested land is restored and the local population can harvest a new crop and earn revenue. The project is supervised by the NGO Climate Care, currently supporting 50 people with the aim of increasing this to 150 people.

Seacourt’s leadership role in environmental performance among British printing firms contributed to its economic success. The print industry in the UK has shrunk dramatically over the last decade. Under these conditions, Seacourt’s environmental commitment helped them to differentiate themselves and create a unique added value for their customers. Seacourt achieves a pre-tax profit of 8.9%, compared to the print industry average of 2.9%. And this year it is growing in excess of 10%.

The role of EMAS

According to Gareth Dinnage, managing director at Seacourt, EMAS has been central to all that his company has achieved over its almost 20 years of environmental commitment. EMAS helped Seacourt to systematically measure, assess and improve its resource consumption and waste production and set objectives for future improvement. This saw the company hit its “zero-waste-to-landfill” target.

EMAS helped them structure their processes, understand the metrics, determine where they have an impact, and establish a way to reduce that impact. EMAS is also essential for ensuring the trust and confidence of their customers.



Key lessons learned:

- Frontrunners in circular economy practices can increase their competitiveness by differentiating themselves from competitors.
- Developing a vision (e.g. being a “restorative” business) ensures new innovation opportunities are always being sought out. According to Seacourt, it is important to have a clear vision and to stick to it by also understanding the bigger picture and the steps needed to achieve it.
- Organisations can collaborate with their suppliers and customers to make sure they also reduce their impact. Such collaboration means raising awareness of renewable energy and waste prevention and encouraging suppliers and customers to understand their environmental impact while suggesting solutions.
- Looking at the whole life cycle of products and services helps optimise resources (by-products can be reused in the production process; food waste can be transformed and offered to clients to grow plants, etc.)



Best practices applied:

- Identify potential material loops
- Involve employees and other stakeholders
- Develop a message (being a restorative company)
- Test, learn and improve



“Remember there is no ‘silver bullet’, just many incremental steps — every action taken will take you closer to your goal. We prove that it is possible to turn a dirty, resource-intensive industry into a net positive one.”

GARETH DINNAGE
MANAGING DIRECTOR
SEACOURT LTD



7.

The circular economy in large private organisations

In the EU in 2014, 44,245 companies were classified as large organisations (more than 250 employees), representing 0.2 % of enterprises in the non-financial business economy. In total, these organisations employ 44 million persons, providing 33 % of employment in the EU by non-financial enterprises.²⁶

Large organisations may be required to comply with more environmental regulations: laws on Corporate Social Responsibility (CSR) reporting, CO₂ emissions trading schemes, etc. The circular economy may, therefore, represent an opportunity for large organisations to stay one step ahead of their obligations. Their individual impact is significant and they have the financial and technological capacity to invest in new solutions. Many companies are aware of this potential – notably the members of the Circular Economy 100 programme created by the Ellen MacArthur Foundation. The example of Martin's Hotels illustrates the benefits of the circular economy for larger companies.

²⁶ Eurostat (2015) Business economy – size class analysis:

www.ec.europa.eu/eurostat/statistics-explained/index.php/Archive:Business_economy_-_size_class_analysis



Martin's Hotels
Tomorrow Needs Today

From hops to hotels

It all began back in 1909 when John V. Batthiany Martin, a 23-year-old British brewmaster, started importing the famous Irish stout “Guinness” to Antwerp in Belgium, before creating his own beer: Martin's Pale Ale. Twenty-five years later, he signed an exclusive licence with Schweppes and settled on the shores of a lake in Genval, in what would soon come to be known as Castle Schweppes. In 1980, John Charles Martin, a third-generation Martin, took over the management of the family business and came up with the idea — visionary at the time — of converting Castle Schweppes into a five-star hotel. This is how the Martin's Hotels hotel group was born.

Today, Martin's Hotels is a family-owned group that owns and operates hotels and handles all the group's centralised activities and services (centralised sales services, accounting, finance, IT, personnel management, legal services, etc.). The group has 350 staff members who operate nine hotels in Belgium and one in France. Each of the 10 hotels is unique and aims to maintain Belgium's cultural heritage. The hotels have been EMAS registered since 2012. EMAS is embedded in Martin's Hotels' sustainable development project: “Tomorrow Needs Today”. Martin's Hotels' ambition is to grow by acting for the benefit of future generations, while taking care of their guests, ensuring the well-being of their staff, supporting humanitarians and social causes, and preserving their property assets and the environment.

Circular economy initiatives

In particular, Martin's Hotels applies the circular economy model to its purchasing and waste disposal methods and as part of the renovations it undertakes at its various locations. Since the implementation of its environmental management system in 2012, the company has established a sustainable purchasing policy, a supplier's code of conduct, and has set purchasing and waste targets.

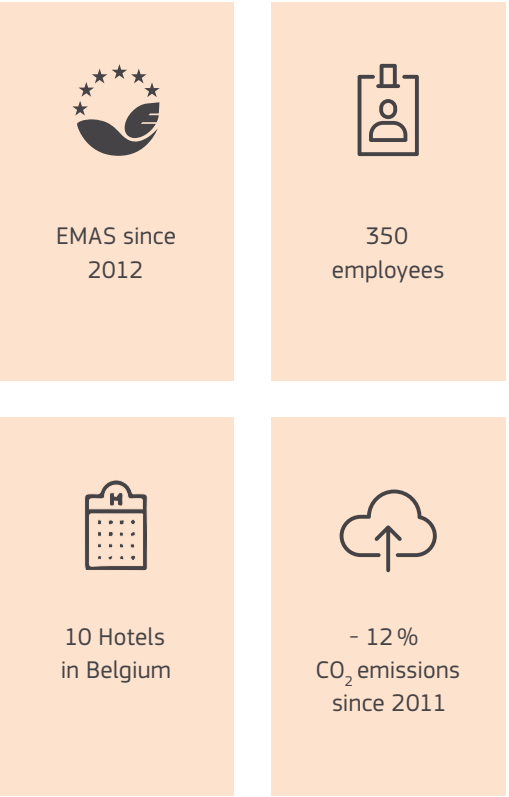


Figure 8: Key figures about Martin's Hotels



Examples of circular economy initiatives implemented by Martin's Hotels

- **Procurement and sourcing of sustainable services:**
 - Implementation of a sustainable purchasing policy, taking into account environmental performance and costs throughout the life cycle of goods and services acquired, including planning, purchasing, use and recycling at the end-of-life. Martin's Hotels continually analyses the total cost of ownership (TCO).
 - Leasing of reusable and recyclable "cradle-to-cradle" carpet tiles. These tiles make it possible to replace the necessary pieces rather than the entire carpets.
 - Leasing or loan-for-use-contracts for the following equipment:
 - Fitness equipment
 - Company cars
 - IT equipment
 - Coffee machines in rooms, seminars, restaurants and bars
 - Water fountains
 - Linen
 - A code of conduct that Martin's Hotels requires suppliers to adopt. It also shows preference for suppliers with a lower impact on the environment. The code of conduct and order forms to suppliers include contractual clauses that encourage them to take back their waste and packaging.

- **Procurement and sourcing of sustainable products:**
 - Local purchases: Martin's Hotels worked with its main food supplier to investigate local alternatives for more than 5,000 products. The goal is to favour the purchase of locally sourced food and water, i.e. bought within a radius of no more than 300 kilometres. Currently, 75 % of the group's food and water purchases meet this criterion.





Martin's Hotels
Tomorrow Needs Today

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“Using EMAS is an opportunity for us to set up clear monitoring structures and procedures to improve our environmental performance. It requires staff participation and encourages us to keep abreast of new technologies and legislation, allowing us to be at the cutting edge. We also improved our communication with the public and authorities.”

GAËLLE MOURLON BEERNAERT
SUSTAINABILITY PROJECT COORDINATOR OF MARTIN'S HOTELS



● Improving the design of products and processes:

- Use of circular economy principles for the renovation plans of all rooms including the bed linen, lighting, air conditioning, furniture and carpet tiles (preference for eco-labelled products, renting, etc.)
- Energy-efficiency measures implemented in all hotels (lighting systems, new heating systems, etc.)
- A contract with Edenred, a company that facilitates financial transactions, which allows guests to pay for their overnight stays with eco-vouchers, their meals with e-meal vouchers, and encourages the staff's transition from paper meal vouchers to e-meal vouchers
- Maintenance of an Enterprise Resource Planning (ERP) system to manage purchase orders, delivery slips and invoices electronically to limit the use of paper

● Minimising waste:

- Elimination of plastic bottles and cups in all hotels and conference centres
- 67 % of cleaning products are refillable, eco-labelled or are used in concentrated doses.
- Limitation of single-use products in hotel rooms
- Pilot project for sorting organic waste in three of the 10 hotels. The company sorts other waste streams (e.g. glass, plastic, batteries, waste oils, cartridges, metal, wood) and disposes of them separately.
- Donation of end-of-life furniture and unused bedding to a number of associations
- Recovery of used soap to make new soap for staff members
- Reuse of old furniture to create shelves and the restoration of antique furniture

Reduced environmental impact since 2011

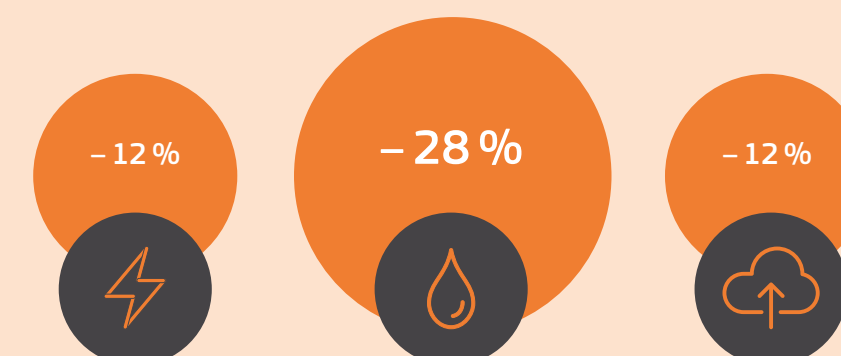


Figure 9: Reduced energy & water consumption, reduced CO₂ emissions since 2011

Methods and tools

To set up EMAS (structure, documentation) and its monitoring system, the hotel group appointed an EMAS CORE committee. The committee is composed of persons chosen in the context of their duties and based on the following skill sets:

- Knowledge of the operations
- Legal
- Technical
- Financial and analytical
- Control of the purchasing process
- Communication and marketing

For the implementation of the system (annual analysis, action plan, daily monitoring), Martin's Hotels has assigned an environmental manager to each operation and administrative site. Together they form the EMAS EXTENDED committee, which, along with the operations managers, oversees the proper functioning and improvement of the system.

Impact

The company has successfully decreased its environmental impact while increasing its occupancy. It has reduced its energy consumption by 12 % since 2011, its water consumption by 28 % and its CO₂ emissions by 12 % (all indicators expressed per occupancy unit).²⁷

The company experiences better relationships with its clients, suppliers and the public. It acts as a spokesperson at various conferences related to environmental leadership. It also organises awareness-raising activities in partnership with municipal administrations. In 2015 and 2016, Martin's Hotels organised a "Martin's Run" in partnership with the municipalities of La Hulpe and Rixensart on the theme of the environment.

²⁷ Martin's Hotels environmental statement 2016:

www.martinshotels.report/declaration-environnementale-2017/index.html



Martin's Hotels
Tomorrow Needs Today

The role of EMAS

EMAS has helped Martin's Hotels to realise that all its staff members had to be involved in "greening" the hotel activities on a daily basis. Regular training is provided to refresh the knowledge and involvement of staff members. The company also addresses various environmental issues with the staff, in particular during recruitment, monthly checks and annual audits. The company also uses targeted bulletins, an "ideas box" and an e-mail address for contacting the Select Committee directly with any environmental questions or suggestions. Each staff member has received individual identity cards that include environmental good practices.

EMAS also helped the company to achieve other certifications like the Green Key and the Brussels Ecodynamic label.

Martin's Hotels' staff is not the only stakeholder that the company involves. Even if the hotel group has no direct influence on the behaviour of its guests, it nonetheless encourages them to reduce their environmental impact during their stay at the hotel. Martin's Hotels reaches out to its guests through a number of different actions:

- **"Eco Bon" programme**
Here, guests are encouraged to reduce their environmental impact during their stay through five simple gestures:
 1. Ask for a slight refreshment of the room instead of a complete cleaning
 2. Ask for the non-daily replacement of towels
 3. Manage their power consumption in a responsible manner (light, heating, air conditioning) and sort their waste
 4. Choose an "EcoetBon" dish and / or beverage in one of the bars or three restaurants of the Martin's Hotels group
 5. Manage their trip / transportation responsibly

By signing up for this programme and adopting these measures, the customer will be rewarded with Eco Bons which can be exchanged for gift vouchers.

- **"Carbon Zero" programme**
The CO₂ emissions generated by all Martin's Hotels residential seminars are offset thanks to the creation of clean energy projects in emerging and developing countries (such as waste collection and biogas production in Tanzania).



Key lessons learned:

- Implementing a sustainable purchasing policy taking into account the total cost of ownership and environmental impacts throughout the life cycle of the product or service is a way to move towards a circular economy.
- Leasing or loan-for-use contracts have other benefits (maintenance guarantees, possibility of testing innovative products, long-term relationship with the supplier, etc.).
- Rewards such as Eco Bons for guests or "environmental identity cards" for employees are actions which, by their simplicity, can contribute to the adoption of eco-friendly gestures.
- It is important to involve employees on a regular basis: training, monthly quick checks, targeted bulletins, achieving employee commitment over the long term.
- For Martin's Hotels, it is essential to involve staff at different levels from the very early stages, to involve suppliers and create long-term partnerships, and to communicate on performance in a clear and coherent way.



Best practices applied:



- Identify potential material loops



- Involve employees and other stakeholders



- Develop a message (Tomorrow Needs Today" sustainability development project)



- Test, learn and improve



8.

The circular economy in public organisations

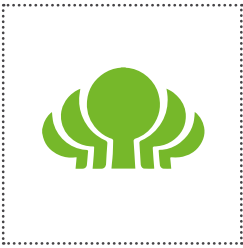
The public administration sector alone (not including other not-for-profit public organisations) is made up of over 90,000 organisations throughout Europe.²⁸ This sector is a major employer within the EU-27, accounting for over 55 million employees (25 % of the total labour force).

At first sight, public organisations do not appear to have the highest potential for implementing circular economy practices for the simple reason that the majority offer a service and thus have low rates of material consumption. Offices typically produce less waste than other sectors (e.g. manufacturing). However, a typical worker in the service sector still produces 120-140 kg waste per year (ADEME, 2012), revealing significant potential for reducing this waste and increasing recycling rates.

Achieving a circular economy can thus be a focus for public organisations, too. Notably, public administrations should lead by example and could have a potentially high indirect impact by setting policies coherent with circular economy practices. They can implement circular economy measures in their offices through waste reduction, but also work on other less obvious areas, such as employee commutes or the organisation of sustainable events. The public administration sector alone (not including other not-for-profit public organisations) is made up of over 90,000 organisations throughout Europe. This sector is a major employer within the EU-27, accounting for over 55 million employees (25 % of the total labour force). Public administrations therefore have a high influence on collective and individual behaviour, which can be changed to follow more circular economy principles.

The case study below illustrates how a public entity can commit to the circular economy.

²⁸ JRC (2015) Final Draft - JRC report on Best Environmental Management Practice in the Public Administration Sector: www.ec.europa.eu/jrc/en/science-update/best-environmental-management-practices-sustainable-agriculture-expo-milano-2015



HNE Eberswalde
Hochschule für nachhaltige
Entwicklung Eberswalde

Teaching sustainability
by example

The Eberswalde University for Sustainable Development (HNE Eberswalde) is a university of applied sciences located in Eberswalde, Germany. The institution was founded in 1830 as a higher forestry institute. Since the resumption of its research and teaching activities in 1992, the university, which currently has nearly 2,100 students and 270 employees, has been focusing on sustainability in key areas such as renewable energies, regional management, sustainable tourism, nature conservation, forestry, eco-farming, adaptation to climate change, and sustainable economic development. The university has been EMAS registered since 2010 and was awarded the European EMAS Award for its exemplary environmental management in both 2010 and 2017.

Circular economy
initiatives

As part of its sustainability strategy, HNE Eberswalde has implemented a wide range of initiatives. For example, the university uses 100 % renewable energy (solar panels, wood pellets from forests near Eberswalde to produce heat), purchases food from regional producers, and supports projects aimed at climate protection.

The table on next page highlights the initiatives that are particularly interesting from a circular economy perspective (i.e. aimed at decreasing the use of resources).

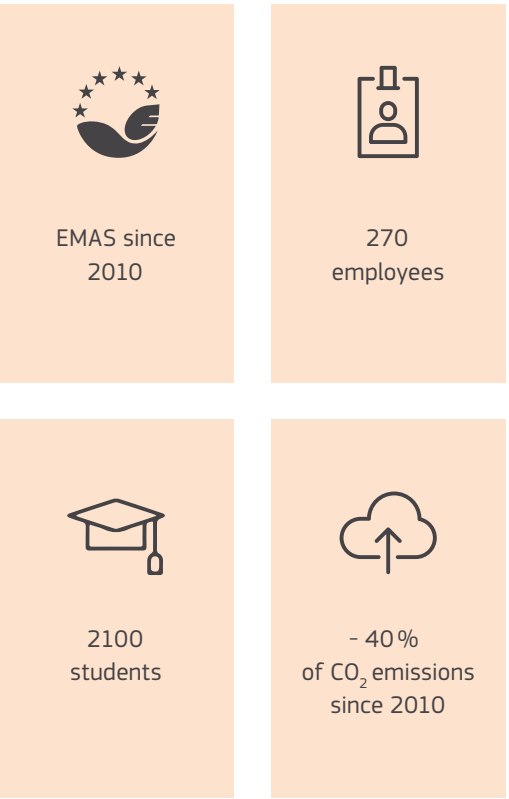


Figure 10: Key figures about HNE Eberswalde



Examples of circular economy initiatives
implemented by HNE Eberswalde

- **Procurement and sourcing of sustainable services / products:**
 - Since 2009, exclusive use of recycled paper both for internal use and publications
 - Introduction of a green procurement guideline stating that products made from recycled materials are to be prioritised in the procurement process as well as products that are long-lasting, economical or reusable, refillable, low-emission and solvent-free
- **Optimising the yield of resources:**
 - Publication of a checklist for employees with concrete tips on how to organise their events in a resource-efficient way
 - Separate waste collection throughout the entire university site and campus
- **Improving the design of products and processes:**
 - Digitalisation of administrative processes as far as possible, for example through online and telephone conferences or e-learning programmes
 - Various study programmes and research projects focus on circular economy topics. Examples include "Packaging-Free Supermarket" or "Wood e-Bike". The university is also researching a system to replace aluminium with native wood as the material for its solar panel stands.
- **Minimising waste:**
 - Exclusive use of reusable dishes, reusable bottles and fabric table tops; avoidance of portion packaging
 - Donation of left-over food from events to students
 - Informs employees and students about waste prevention and waste recycling on a regular basis. The university integrates this information, for instance, into the first semester brochure that students receive when starting their studies at HNE Eberswalde.
 - Possibility for employees and students to offer second-hand products and carsharing via the university's website
 - Operation of a "gift box" on the campus where employees and students can deposit and acquire products (clothes, books, etc.) free of charge
 - Replacement of disposable coffee cups in the university's canteen and on the university campus with reusable coffee cups made from by-products in the printing paper manufacturing process. This concept might soon be expanded to bars and restaurants in the university's home town of Eberswalde.
 - Donation of old computers, computer hardware and mobile phones to social enterprises for further usage



HNE Eberswalde
Hochschule für nachhaltige
Entwicklung Eberswalde

Impact

Since 2010, HNE Eberswalde has managed to decrease its total emissions by 40 %. This achievement is the result of a combination of many different measures implemented by the university, several which were circular economy measures. The university subsequently implemented the concept of sufficiency, which aims to limit the consumption of resources. This concept in particular led to a decrease in both the university’s waste generation as well as its emissions output. Sufficiency, or reduction, encourages organisations and individuals to try to reduce their resource consumption by determining which products or services they can live without.

Methods and tools

In order to initiate these measures, HNE Eberswalde has made use of different tools and methods — most importantly the EMAS easy and eco-mapping methods. The EMAS easy method is a comprehensive methodology for SMEs that aims to help with the implementation of EMAS. The eco-mapping method helps to identify the environmental impacts of an organisation — including waste production and resource inefficiencies — using geographical representation.

HNE Eberswalde has adapted these tools and methods to its individual needs as a university. For instance, the university used the eco-mapping method in 2008 to analyse all its rooms with a trained team of employees. Every two years, it repeats this environmental analysis in selected rooms (representativeness of the sample is ensured by selecting rooms from different campuses, different types of rooms, different levels of refurbishment, etc.). The eco-mapping process also includes data on safety aspects such as fire safety. The results are combined with the results of an online survey of students and employees regarding their perception of the environmental situation at the university. It then develops a to-do list, discussed and implemented according to priority with the respective responsible persons. By combining different methods, HNE Eberswalde gains a comprehensive view of the environmental situation at the university and the optimisation potentials.

The role of EMAS

With EMAS, HNE Eberswalde was first able to systematically determine and assess all of its environmental impacts, including waste production. The university’s first environmental review was the starting point for a sophisticated environmental controlling system, which, today, tracks its resource efficiency over time. Through careful monitoring of its resource use, the university has reduced its carbon emissions and become carbon neutral. Unavoidable emissions are offset by a Kenyan rainforest project, initiated and supervised by HNE Eberswalde graduates.

In many cases, the requirements of the EMAS Regulation inspired HNE Eberswalde to reduce its environmental impact. For instance, several years ago the university put up posters on its campus stating: “HNE Eberswalde uses 100 % recycled paper ... And YOU?”. The poster presented the resource savings that the university was able to achieve by switching from fresh paper to recycled paper and encouraged employees and students to do the same in their private lives. The starting point for this initiative was the EMAS principle of employee involvement. HNE Eberswalde also conducts regular online surveys among employees and students to assess the effectiveness of the university’s measures and allow them to provide suggestions to further improve its resource efficiency.

EMAS helped HNE Eberswalde collect strong data, involve students and teachers, and develop a mentality for resource efficiency. These achievements, in turn, contributed to the development of circular economy measures.



Key lessons learned:

- It is important that partners of the organisation (e.g. students, teachers) feel an ownership for the strategy and pass it along to suppliers when, for example, organising events. The use of checklists is recommended, as they are easy to adopt and effective.
- Purchasing processes can be formalised to consider the entire life cycle of a product or service before the selection.
- Waste prevention actions (using reusable dishes, donating food waste, donating electronic equipment) can result in significant waste savings without any cost.
- Collaborative actions (carsharing or setting up a gift box) can also reinforce social interactions
- An organisation can make the best use of its capacity to influence others. HNE Eberswalde trains its students to consider sustainability and the town of Eberswalde has adopted some of its initiatives (e.g. reusable coffee cups made from by-products in the printing paper manufacturing process).



Best practices applied:

- Identify potential material loops
- Involve employees and other stakeholders
- Develop a message (an exemplary university teaching sustainability)
- Test, learn and improve



“Don’t think that small measures won’t make a change. Every step that increases your organisation’s resource efficiency is a step towards closed material cycles and the ideal of a circular economy.”

KERSTIN KRÄUSCHE
ENVIRONMENTAL MANAGEMENT
REPRESENTATIVE, HNE EBERSWALDE

Recommendations for EMAS organisations

The five best practices and the examples of EMAS organisations can be used to review the implementation of EMAS and insert more “circularity” into environmental management systems. Circular economy principles can be considered at different stages of EMAS implementation:²⁹



During the initial environmental review:

Identify how resources are used by the organisation

The first step on the road to EMAS is the identification of the most significant direct and indirect environmental aspects related to the organisation’s activities. The organisation must examine in detail the impacts of its activities in terms of consumption of raw materials and energy and production of waste and emissions. This is therefore the moment to identify how resources are used by the organisation. Here, material flow analysis matrixes can be used and the organisation can work on identifying its current and potential material loops (see best practice No 1). In addition, since the revision of the EMAS Annexes in August 2017, EMAS organisations must now assess the significance of their environmental impacts from a life cycle perspective. The assessment of resources used should therefore be conducted using the same approach.

Level of contribution of its different partners

As part of the environmental review, the organisation can thus identify which of its actions can already be considered as contributing to a circular economy and the level of contribution of its different partners.

Risks and opportunities related to the circular economy

The updated annexes also require EMAS organisations to identify risks and opportunities associated with their environmental management system. Here, they can work particularly on risks and opportunities related to the circular economy (vulnerability to some resources, potential synergies with local stakeholders, expected added value for customers, potential collaborations with interested parties/partners, etc.).

These steps, however, are just examples of how organisations can undertake the environmental review from a circular economy perspective.

29 For more information about how EMAS works, consult the EMAS website:
www.ec.europa.eu/environment/emas/join_emas/how_does_it_work_step0_en.htm



During the definition of its environmental policy and programme:

Consider innovative business models

At this stage, the organisation defines its objectives and can set specific circular economy targets. It can benchmark its performance with the best practices of the sector to set ambitious targets and develop an action plan to reach them. The examples in this report can be used for inspiration and the organisation can also consult, for example, the Sectoral Reference Documents or other environmental statements from EMAS organisations. It is at this stage that the organisation may consider innovative business models (see best practice No 2). After thoroughly reviewing its processes, it can indeed think about a vision for the future. This vision can be used to elaborate a narrative for its circular economy strategy that can be reviewed later (see best practice No 4).



When implementing its environmental management system:

The next step is to put in place the measures to reach the defined objectives. Here, employee involvement is particularly important. But organisations can go further than this minimum EMAS requirement by involving other stakeholders and setting collaborative actions, such as projects of industrial symbiosis (see best practice No 3).



When reviewing the system and aiming at continuous improvement:

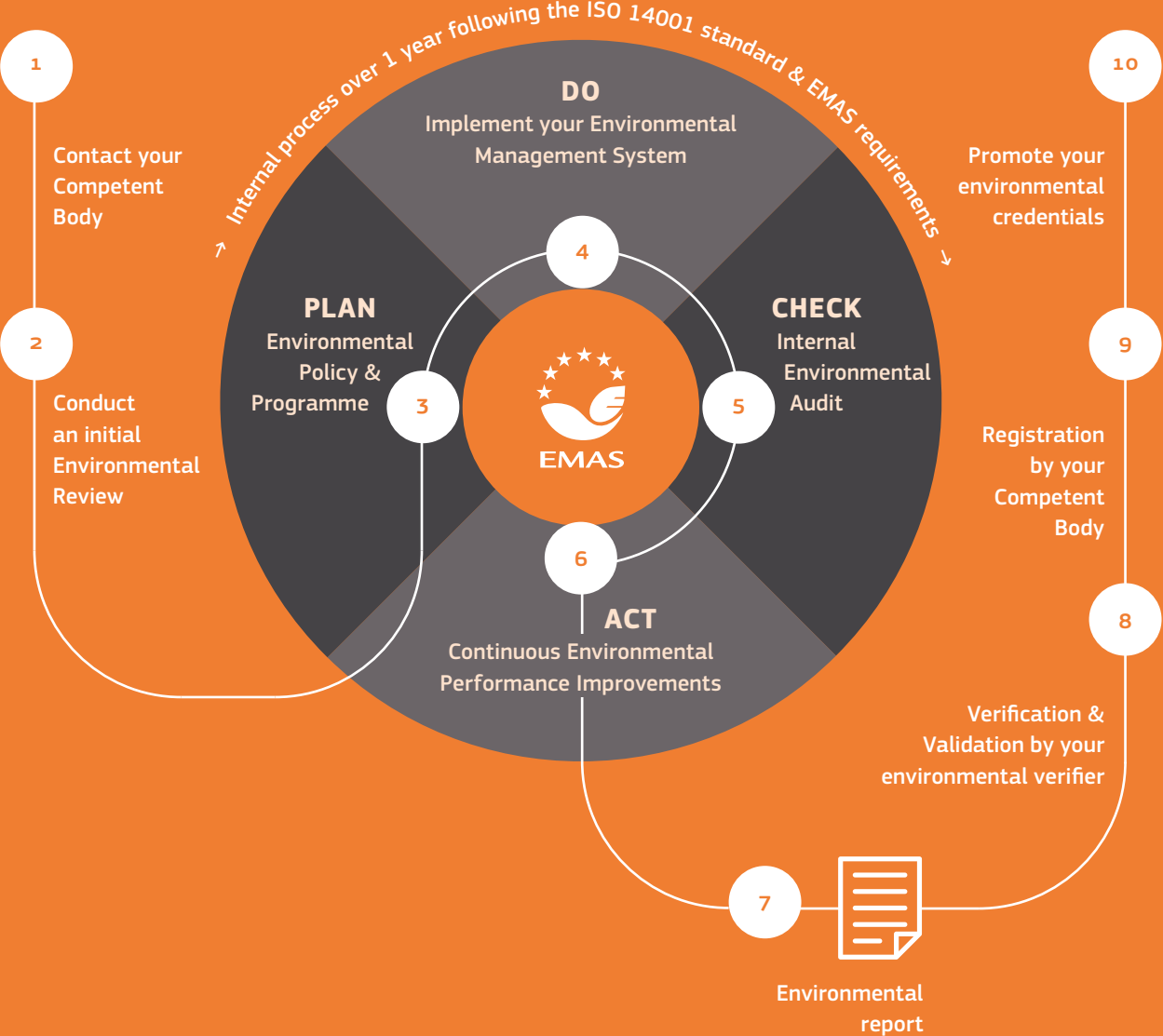
Here, the organisation should collect employee and other stakeholder’s feedback, assess progress towards resource efficiency and the circular economy, and identify opportunities for improvement (see best practice No 5). It is essential that the organisation reflects on the ambition of its strategy; a true circular economy strategy goes beyond the improvement of the environmental performance. The organisation should consider new innovative material loops and restart the steps mentioned above to truly transform the organisation.

When preparing the environmental report or statement:

The report should include the organisation’s narrative for its circular economy strategy and clear indicators related to the circular economy (see best practice No 4). EMAS organisations may stress how they contribute to the circular economy and can also make reference to international or national objectives



The EMAS “Plan-Do-Check-Act” approach



The tables below summarises how organisations can consider the circular economy in their implementation of EMAS.

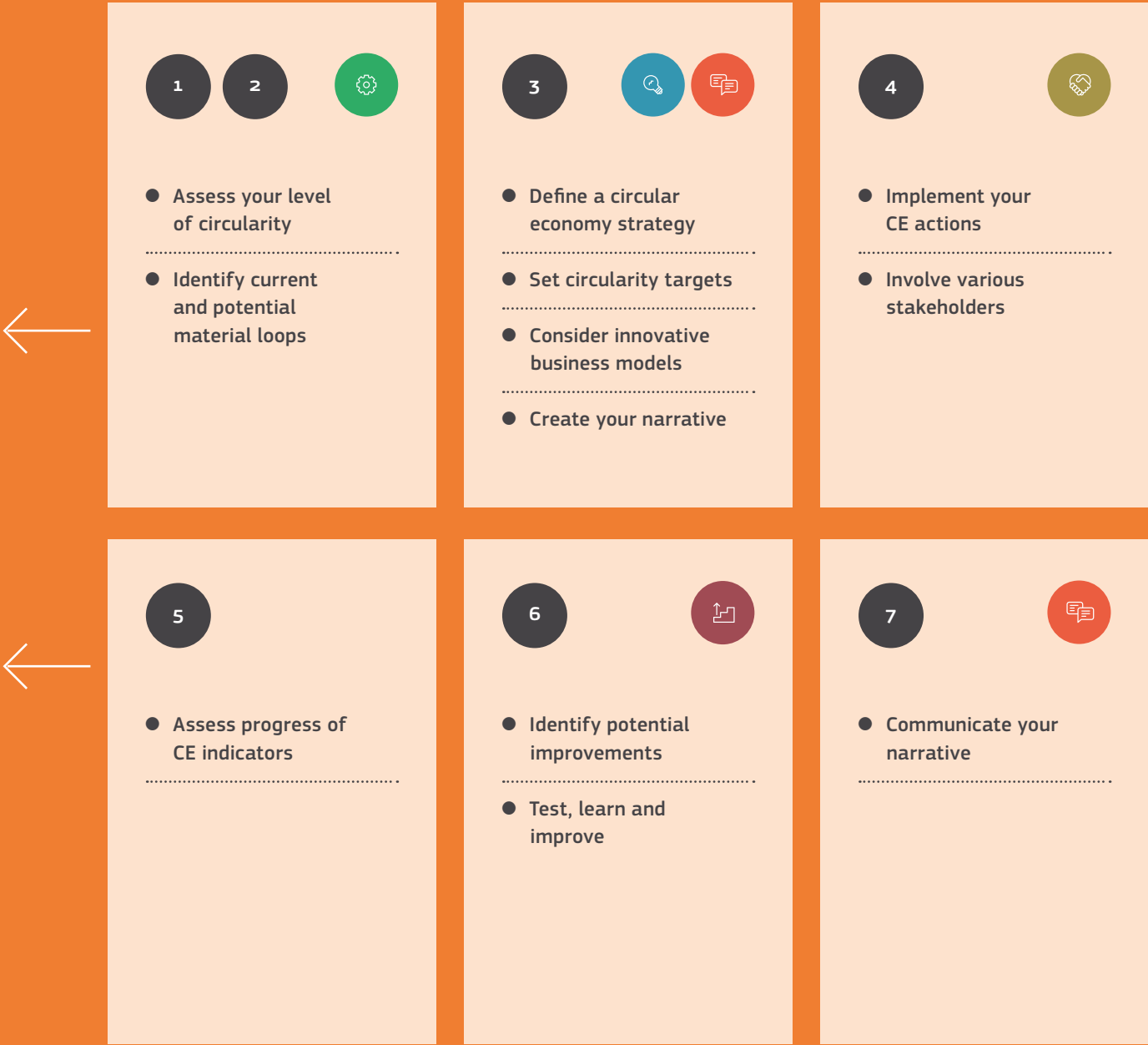


Figure 11: How to implement EMAS with the circular economy in mind

Conclusion

Circular economy strategies can be applied in various ways across a variety of sectors and organisations

This report highlights very different examples of circular economy measures adopted by SMEs, large organisations, and public organisations. These organisations operate in a wide variety of sectors — from the print industry to hotels, universities, industry, furniture design, food manufacture, and distribution. Some companies have been working at designing waste out of their processes (procurement of recycled, reusable or recyclable materials; eco-design; investment in long-lasting products or leasing; donation of used equipment; withdrawal of single-use products; digitalisation, etc.) while others have invested in new business models (renting, reverse logistics, refurbishing, etc.).

Circular organisations experience multiple benefits

Frontrunners in the circular economy have increased their competitiveness and have better control over their resources. At the same time, they are continuously reducing their environmental impact. Martin's Hotels managed to decrease its CO₂ emissions by 12 % while increasing occupancy by 8 %, and HNE Eberswalde reduced its CO₂ emissions by 40 % in under six years. Such resource efficiency can result in clear economic benefits. Seacourt, for example, has a 9% pre-tax profit, compared to the print industry average of 3 %. As resources become scarcer in the future, being more circular is likely to be essential for business success.

The transition to a circular economy can be started in a few steps

As seen in the examples, an organisation can implement a circular economy mentality by identifying potential material loops, considering innovative business models, involving employees and other stakeholders, developing a message, and testing, learning and improving. Other more specific best practices include collaborating with suppliers and employees on resource-efficiency measures, looking at the whole life cycle of products and services, and rethinking the users' needs and the service of products. The key is to look at processes from a different perspective — a resource perspective — and to see the organisation as part of a system, which can interact with other businesses and stakeholders to reuse resources indefinitely. Organisations should look at ways to be innovative and even unconventional in their approach to resources – starting small and thinking big.

EMAS is an effective tool to support the process

Organisations can use EMAS to start assessing their impacts and resource use and implement actions. As seen previously, aspects related to the circular economy can be easily integrated throughout the general implementation of EMAS — when conducting, for example, the environmental review and assessing the organisation's performance, or when setting environmental policies, targets and action programmes.

Organisations in the EMAS network can also benefit from being part of a community in which many others have already gained important experience, as highlighted by the various examples in this report. Sectoral Reference Documents are available for organisations to identify best practices in their sector. In addition, the environmental statements of many EMAS organisations, which highlight their environmental actions, are available in the EMAS register on the EMAS website. As mentioned in the introduction, there are five main reasons that EMAS helps in the transition to a circular economy:

- It is a tool to measure resource efficiency
- It ensures continuous improvement and innovation
- It requires involvement of employees
- It keeps organisations a step ahead of legislation
- It provides transparent and credible information to all stakeholders, including authorities, thus favouring collaboration and fostering a circular economy

Government and public authorities can further promote EMAS and the circular economy

The actions highlighted in this report show that organisations are already investing in the circular economy and committing themselves to reducing their environmental impact through EMAS. However, faced with the current environmental challenges, there is a need to scale-up these initiatives, and this scaling-up can only be achieved with the support of all stakeholders.

Public authorities can further encourage the use of EMAS as a means to move towards a circular economy through a variety of measures. A number of legal, economic and promotional instruments used by Member States are highlighted in a compendium available on the EMAS website (www.ec.europa.eu/environment/emas/pdf/other/EMAS_Compendium_2015.pdf). EMAS also benefits public authorities (legal compliance and environmental performance verified by a third-party verifier, reduced risk of pollution, transparency of environmental impacts, etc.) and can help them achieve their objectives. Policy-makers could therefore reward EMAS organisations, primarily through regulatory relief, to encourage the spread of circular economy and best environmental practices.

The purpose of this report is to highlight the contribution of EMAS organisations to the circular economy, but also the many opportunities for stakeholders to collaborate and help ensure that the future economy is, indeed, circular.

Useful resources



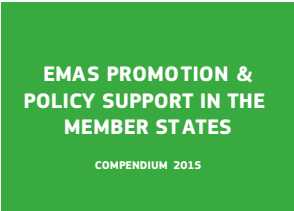
Presentation of the nominees and winners of the EMAS Awards 2017 on the EU EMAS website www.ec.europa.eu/environment/emas/emas_for_you/emas_awards/emas_awards_2017_en.htm



Video “How to become a Green SME in a Circular Economy” www.youtube.com/watch?v=V1Tzs48xCI



Ellen MacArthur Circular Guide www.ellenmacarthurfoundation.org/news/new-circular-design-guide-launched



Compendium on EMAS Promotion and Policy Support www.ec.europa.eu/environment/emas/pdf/other/EMAS_Compendium_2015.pdf



Sectoral Reference Documents (SRDs) on Best Environmental Management Practice www.ec.europa.eu/environment/emas/emas_publications/sectoral-reference_documents_en.htm



EEB Factsheet “Measuring and Monitoring Resource Efficiency” www.eeb.org/publications/81/circular-economy/1267/measuring-and-monitoring-resource-efficiency-factsheets.pdf



A CEO Guide to Circular Economy, released by WBCSD, World Business Council For Sustainable Development www.docs.wbcsd.org/2017/06/CEO_Guide_to_CE.pdf

