ECOThink

Design for Sustainability

Practical worksheets
for designing sustainable products and processes

Co-funded by
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ACEEU LEVILO IITR

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Worksheets 1: Setting Up a Project Team and Planning a Sustainability Project

➲ In the table below, write which departments and employees of the company will be included in the sustainability planning team? What will be the specific role of the individual in the team? What steps of planning for sustainability will the person participate in?

	Department	Person	Specific role in the team	Collaborate in steps
1				
2				
3				
4				
5				
6				

➲ Would involving or hiring external experts or stakeholders in the project or project team be useful? If so, what types of experts or stakeholders will you involve, and what will their role be?

	Expertise	Person	A specific role in a team or project
1			
2			
3			

➲ Would involving students from (local) universities in the project be useful?

	University or school	Department	A specific role in a team or project
1			
2			
3			

➲ Prepare a project timeline and agree on the frequency of meetings of the sustainability planning team.

➲ Think about how the team will communicate with each other.

➲ How will the team communicate with other departments of the company?

Worksheets 2: Motivational Planning Factors for Sustainability and Project Goal Setting

Worksheets 2.1: SWOT Analysis for the Enterprise

- Try to identify the internal and external state of the company and fill out the SWOT matrix.

Use all four quadrants of the SWOT matrix to analyse the company's current state. List all the pros and cons that exist now. Next, make a list of all the options that exist in the future. Opportunities are potential future advantages. Finally, list all the threats.

- Advantages must be maintained and upgraded.
- Disadvantages must be eliminated or stopped.
- Opportunities need to be prioritised and optimised.
- Threats must be contained or minimised.

Internal factors	
Advantages	Disadvantages
➲	➲
➲	➲
➲	➲
➲	➲
➲	➲
External factors	
Opportunities	Danger
➲	➲
➲	➲
➲	➲
➲	➲
➲	➲

Worksheets 2.2: Exploring the Motivational Drivers of Planning for Sustainability

To find out what to expect from any sustainability planning project and its importance to your business, we must explore the motivational factors for sustainability planning. These worksheets will help you identify why planning for sustainability is essential for your business and what improvements are needed.

The established sustainability planning team, the support team, and the company's top management should consider each proposed motivational factor and determine its relevance and ability to achieve it. Each proposed motivational factor is assessed by scoring (scores 1–10, with a score of 10 being the most influential factor). If necessary, we can add a comment to the assessment that explains the selection of the assessment and thus help the team to remember the basics of the discussion and the reasons for the decisions made regarding the assessments.

Motivational factor	Description	Importance (1-10)	Argument
Social external motivational factors			
Public opinion			
Environmental pressures from NGOs and sectoral organisations			
Environmental external motivational factors			
Legislation and regulations			
Disclosure requirements			
Eco-labelling schemes			
Requirements of consumer organisations			
Pressures from specific environmental groups			
Pressures from immediate neighbours			
Financial external motivational factors			
Norms and standards			
Subsidy schemes			
Suppliers			
Requirements of clients (industry and end users)			
Competition in the market			
Social intrinsic motivational factors			
Strong social policy			

Employee motivation
Environmental intrinsic motivational factors
Green marketing
Environmental awareness of the company's management
Financial intrinsic motivational factors
Improved product quality
Improving the reputation of products and the company
Cost reduction
The power of innovation

➲ Prioritise internal and external motivational factors. Indicate whether the factors are related to people (L), profit (D) or planet (P), or a combination of these.

	Priority factors	internal	L D P	Priority factors	external	L D P
1						
2						
3						
4						
5						

➲ Think about the balance of people (L), profit (D), and planet (P) aspects in a project, or the advantage of one or two aspects over the other.

Worksheets 2.3: Setting Sustainability Planning Project Objectives

➲ List the goals of your sustainability planning project:

1
2
3

Worksheets 3: Product Selection

The criteria for selecting a product are specific to each company, but, as a rule, they must adhere to the following guidelines:

- The product must have a sufficient number of degrees of freedom in order to be modified.
- The product should preferably be one that is largely influenced by the motivational factors of sustainability planning.
- In the case of the first product to be planned according to the sustainability design criteria, it is recommended that the modified product or part of it is relatively simple.

Worksheets 3.1: Evaluation questionnaire for product selection

This questionnaire is intended for the Sustainability Planning team to support selecting the target product for implementing the Sustainability Planning Project. Based on the assessments, the most strategically appropriate product with the greatest potential for improvement will be selected.

The Sustainability Planning team and the company's management will identify potential target products and use an evaluation questionnaire, summing up the answer points to all questions for each product analysed. The product with the highest score will, in principle, be the best option for a sustainability planning project, but the team must also consider the following:

- Suppose a product has received a majority of 1 rating. In that case, it may not be suitable for a sustainability planning project, and alternative strategies to promote eco-efficiency should first be introduced, such as cleaner production or life-cycle management.
- If a product has received most of 3 ratings, it is, in principle, very suitable for a sustainability planning project. The team should analyse the issues rated 3, as they can immediately identify some promising planning strategies for the product's sustainability, such as reducing the use of materials, improving the production process, etc.
- Some issues are more important than others when analysing the potential of planning for sustainability. Evaluations of one issue will immediately indicate that the product is not suitable for a sustainability planning project, while evaluations of other issues will not significantly affect the selection. Therefore, we leave the decisions on the importance of individual questions to the discretion of the questionnaire user, who can give more importance to individual ratings than to others.

Question	Assessment			
	Product 1	Product 2	Product 3	Product X
A) What is the role of the company in the product design process?*				
1. Low: The company does not influence the design process.				
2. Medium: The design is mainly defined by the customers.				
3. High: The product design is carried out in-house or with a subcontractor.				
B) Are there any restrictions on modifying the product?				
1. The product does not allow any modifications.				
2. The product allows for modifications, but with limitations.				
2. There is great potential for product change.				
C) Is there a strong link between this product and the company's production processes (i.e. modifications to the product could result in significant improvements in production)?				
1. No.				
2. Yes, in some respects.				
3. Yes.				
D) What are the internal drivers for implementing sustainability planning?				
1. There is no need to make changes to the product.				
2. Some improvements to the product are necessary (functionality, reliability, durability, aesthetics, etc.).				
3. There is an opportunity for product innovation (radical re-design, product service system, etc.).				

E) What is the client's interest in sustainability planning?				
1. Clients' interest in sustainability planning is low/zero.				
2. Clients' interest in planning for sustainability is medium.				
3. Customers' interest in planning for sustainability is high.				
F) Does the product demonstrate the potential or the need to innovate?				
1. No.				
2. Yes, some modifications are necessary.				
3. Radical improvements are needed, combining function, market, and technology.				
G) What is the company's other competitors' interest in sustainability planning?				
1. There is no interest in sustainability planning on the part of competitors.				
2. Some competitors use sustainability planning in their development process.				
3. Many competitors are implementing sustainability planning projects.				
H) Are there social pressures to reduce the product's environmental impact?				
1. No.				
2. Not much, but there are concerns from some social groups.				

3. The product is subject to explicit pressure and concern from scientists, environmentalists and the general public.				
I) Is the reduction of the environmental impact of the product **required by company** policy **or by the actions of** customers or competitors?				
1. No.				
2. Yes, in the medium/long term.				
3. Yes, in the short term.				
J) Is the product obliged to comply with specific environmental legislation?				
1. No.				
2. No, but the new legislation will include this soon.				
3. Yes.				
K) Does the product contain hazardous substances according to European legislation?				
1. No.				
2. Yes, but the company does not know the substitutes.				
3. Yes, at least some of them could be replaced by non-hazardous substances.				

˙ If the score is low (1), it means that the product does not have the potential to be designed for sustainability. The evaluation of the questionnaire can therefore be concluded.

Sort the evaluated products according to the number of points received and choose the most suitable product for the implementation of the sustainability planning project:

	Selected product	Total number of points received
1	Best Product:	
2	Second most suitable product:	
3	Third most suitable product:	
x	*X-th* most suitable product:	

WORKSHEETS 3.2: PREPARING A PRODUCT DOSSIER

	Product Checklist	Included in the checklist (YES/NO)
Product and its use:	history	
	The original product draft and marketing plan for the existing product	
	Marketing data (how and to whom the product is sold, market share, etc.)	
	Distribution and typical transport information	
	Typical product lifetime	
	Typical 'user scenario' – usage patterns (including a rough estimate of the amount of all sources of raw materials and waste generated)	
	Typical end-of-life of a product (how it is recycled or disposed of at the end of its life)	
Product design and production:	Breakdown of key components and their delivery	
	List of materials	
	a simplified scheme of the production process – including inlets and outlets (waste, pollution) at each stage of life (preferably with rough estimates of quantities)	
Competitive Products:	Other products on the market	
	All characteristics that define the product (function, market segment, etc.)	
	Marketing attributes of a product that would have an environmental value	
	data on relative effectiveness (often available from consumer or business magazines, websites, etc.)	
Market analysis:	Market size	
	Market growth rate	
	Market trends	
	profitability potential	
	Cost structure	
Another		

Worksheets 3.3: Describing the Context of Use

The context of use can be described by answering the following questions:

- "*What is the product used for?*" describes the basic task that the product must perform for the user.
- "*What function does the product have?*" allows you to describe the product's functionality, including the technological principle and the functions the product must have to provide the service to the user.
- "*For whom?*" leads to a description of the primary user or user group.
- "How *long?*" and "How *often?*" define the timeframes and uses in which the product must operate.
- "Where *in the world?*" leads to the definition of the geographic area in which the product must operate and likely be removed.

The answers to the questions asked are entered in the table below, whereby:

- My team and I answer questions based on our knowledge of the product and insight into the user's use.
- Some questions can be answered by looking at the product specifications (or business specifications if the product has not yet been developed).
- The spreadsheet filling process is completed once the team has a detailed picture of all product features and user viewpoints.

What is the product used for?	
What is the function of the product?	
The main users of the product?	
How long is the product used (daily, monthly or yearly)?	
How often is the product used?	
Where in the world is the product used?	

Worksheets 4: Determining the environmental aspects of a product

Worksheets 4.1: Choose an Environmental Impact Analysis Tool

Review the differences between the MECO matrix and Eco-indicators, and complete a computer-aided LCA analysis, and list or consider their advantages and disadvantages. Based on the recommendations for using the MECO matrix, Eco-indicators or a complete LCA analysis, choose the appropriate tool for environmental impact analysis.

Selected Environmental Impact Analysis Tool
Reasons

Worksheets 4.2: Define the purpose and scope of the environmental impact analysis

Specify the purpose of the analysis, the complexity level, and the product's name under consideration. Also specify the purpose of communicating the results.

			YES / NO
Purpose of the study		Overview of opportunities for improvement in the product life-cycle	
		Overview of the activities in the product life cycle that contribute most to environmental impacts	
		Analysis of the environmental consequences of changes in certain processes in the life cycle of a product	
		Analysis of the environmental consequences of using secondary recycled materials instead of using primary raw materials	
		[Other...]	
Level of complexity		Overview analysis	
		Simplified analysis	
		Full analysis	
The system under consideration:		Product	
Purpose of communicating results:		Internal	
		External	
		For customers	
		Publication	
		[Other...]	

Select system boundaries, that is, to indicate which stages of the product life cycle will be included in the analysis:

Production stage:		Supply of raw materials
		Transport
		Production
Construction process:		Transport
		Construction process – layouts
Application phase:		Use
		Maintenance
		Repair
		Replacement
		Renovation
		Power consumption during use
		Water use during use
Final life stage:		Degradation
		Transport
		Waste management
		Disposal
Benefits and Burdens:		Reuse – Refurbishment – Recycling

4.3 Worksheets: Define a Function Unit

A functional unit combines a product function and a user scenario for a product.

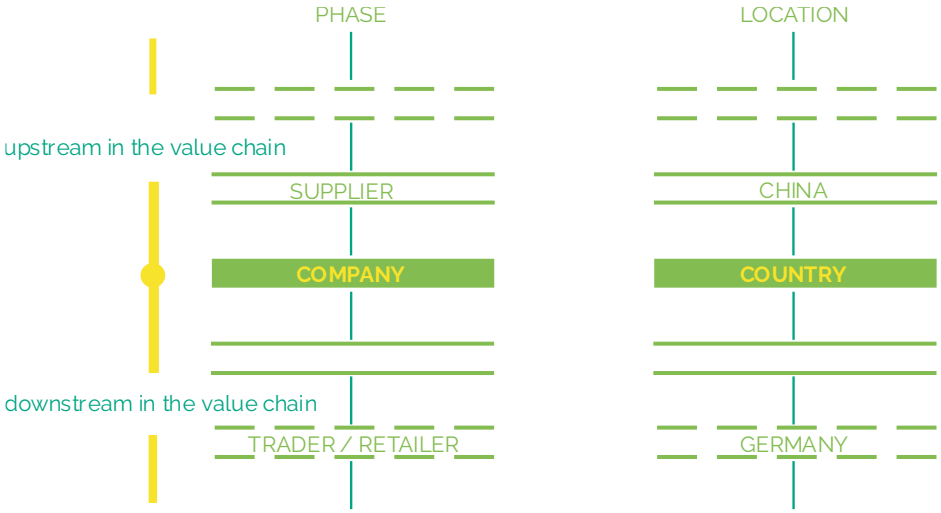
Feature				
What is the primary function of the product for the user?				
Describe qualitatively and quantitatively?				
Reference unit		(e.g. 1 kg, 1 m3, etc.)		
Product group:		(e.g., wood products, etc.)		
Required service period		(e.g. 10 years)		
The product will most often be used in:	Mode of operation – during...	No. Hours per day	Number of days per week	Number of weeks per year
Location of use:				

Use this form to specify the functional unit for your product or service. This ensures comparability of analyses and appropriate interpretation of LCA results.

Element	Description / Instruction	Enter a value
Name of the product/service	Name of the product or service analysed	
Description of the primary function	What is the basic purpose or function? (e.g. "passenger transfer", "cleaning dishes")	
Quantitative reference	How many units of function are provided? (e.g. 1 washed dish, 1 km of transport, 1 kg of product)	
Duration of service life	How long or how many cycles does it take to use? (e.g. 5 years, 1000 cycles)	
Frequency of use	How many times a day/week/year is the product used?	
Location of use	Geographical region or conditions (e.g. EU, indoor space, household)	
Quality standards/requirements	Norms, technical requirements, functional requirements (e.g. EN, ISO)	
User Scenario	A brief description of how the product/service works in real life	
Additional notes	Possible specifics affecting the analysis	

Worksheets 4.4: Define the Life Cycle

Describe the stages in the product life cycle process diagram and write them down in the left column. Indicate the physical location of these phases in the right column. See example below.



Worksheets 4.5: Inventory (inventory of material flows of individual processes in the life cycle)

The table below shows what data are required for the inventory of the material flows of individual processes according to the type of study:

◘	**Mandatory**
○	optional due to minor importance or potential missing data

WORKSHEETS 4.6: ENVIRONMENTAL IMPACT ASSESSMENT

ASSESSMENT OF ENVIRONMENTAL IMPACTS BY CLASSIFYING THE IDENTIFIED ENVIRONMENTAL IMPACTS IN THE MECO MATRIX

➲ Determine the planning criteria for sustainability. Planning for sustainability to be included in the MECO matrix:

1_ Use of materials
2_ Energy consumption
3_ Solid waste
4_ Toxic emissions
5_ Social responsibility
6_ .....
7_ .....
8_ .....

➲ Type the above criteria in the first column of the MECO matrix.

➲ Enter the previously identified life-cycle process stages in the first row of the MECO matrix.

➲ Fill in the MECO matrix and tick the fields with a relatively high impact.

	Preparation of raw materials	...	...	...	...	...
Use of materials						
Energy consumption						
Solid waste						
Toxic emissions						
Social responsibility						
...						
...						
...						

	Type of study		
	MECO Matrix	Eco-indicator	Complete LCA
BEFORE THE APPLICATION PHASE			
Supply of raw materials	o	◘	◘
Transport (to the factory)	o	◘	◘
Production	o	◘	◘
Transport (until assembly)	o	o	◘
Assembly/assembly process	o	o	◘
APPLICATION PHASE			
Use	o	o	◘
Maintenance	o	o	◘
Repair	o	o	o
Replacement	o	o	◘
Restoration	o	o	◘
Energy use for operation	o	o	◘
Water use for operation	o	o	◘
END OF LIFE CYCLE			
Degradation	o	o	◘
Transport (for disposal)	o	o	◘
Waste processes for reuse, recovery and/or recycling	o	◘	◘
Disposal	o	◘	◘

Worksheets 5: Product Life Cycle Cost Analysis

These worksheets help identify the most problematic or promising life cycle stages from a financial point of view. The table below provides some examples of costs that need to be examined on a case-by-case basis. From the producer's point of view, the costs of the production phase can be derived from invoices and costs for purchased products or services.

The most challenging thing is obtaining information about the application phase's costs and the following phases. The costs are the most variable for the application phase because they strongly depend on users' habits and are often not included in the literature. To this end, assuming hypothetical scenarios and cost estimates is often necessary. The costs for the end-of-life phases relating to the demolition of buildings and transport can be obtained from the literature.

The user of these worksheets must indicate how they calculated the above costs (estimates, literature, etc). If quantitative data do not exist, a qualitative description may be included.

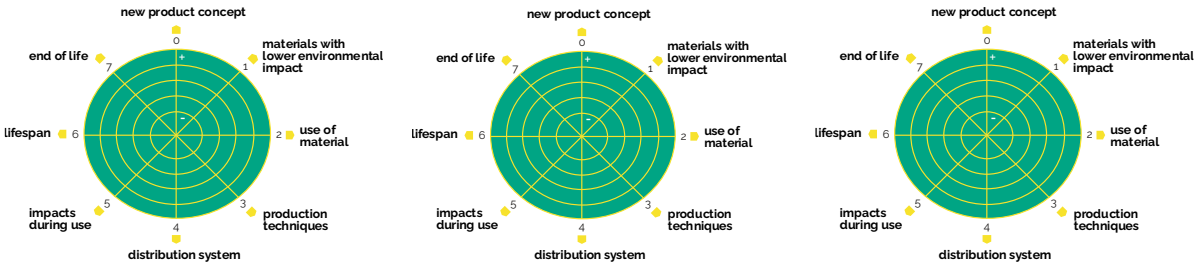
In the table below, it is necessary to insert economic estimates of pre-production, production, distribution, use and end-of-life costs.

	Pre-production (EUR)	Production (EUR)	Distribution (EUR)	Application (EUR)	End of life (EUR)	Comment
	Cost of raw materials	Electricity consumption costs	Storage costs	Cost of use	Decommissioning costs	
	Another:	Equipment maintenance costs	Another:	Direct costs (e.g. related to the costs of energy supply of buildings)	Another:	
		Packaging costs		Another:		
		Marketing and advertising costs				
		Depreciation				
		Staff costs (including education)				
		Another:				
Total for the life cycle stage (EUR):						
TOTAL (EUR):						

Worksheets 6: Developing a strategy and preparing a sustainability planning brief

Worksheets 6.1: Developing a Planning Strategy for Sustainability

- What are the two most crucial sustainability planning strategies for improvement based on the results of the MECO matrix? Mark them on the Strategy A wheel.
- What are the two most crucial sustainability planning strategies for improvement based on the results of selecting motivational factors for sustainability planning? Mark them on the B strategy wheel.
- What strategies will the company and the sustainability planning team focus on in the idea generation and concept development stages? Mark them on the C strategy wheel.



Worksheets 6.2: Preparing a Sustainability Planning Brief

- Prepare a brief overview (draft/brief) of sustainability planning.

A brief outline of sustainability planning is essential to understanding the objectives of the product sustainability planning process, as it provides the planner with all the information needed to develop and present solutions that meet the company's needs, expectations, and goals.

A good design of sustainability planning should provide the information presented in the table below. The column notes provide examples that should not burden you. While the complete worksheets are essential, we must pay particular attention and care to the draft in point 4.

1 Contact		Notes:
Company		
Title		
Tel/fax		
E-mail		
Web page		

Person responsible for the project		
2 Company profile		
History	History	Social and technological development, products and business
Current state of the company	Brief description	Products/services: Technologies for materials and costs
	Main customers and markets	Turnover Geographical distribution Products/Markets Markets/prices
Current situation of direct competitors	Include the results of any benchmarking and/or any related information	Products/services: Materials, technologies and costs
Motivational Factors of Sustainability Planning	Include the results of the analysis of motivational factors.	Internal
Keywords		Business Profile Keywords
3 Context/Problem/Opportunity		

Elaborate on the problems/opportunities of the project, as well as the environment in which the final product is expected to operate.	(Short and clear description of the problem/opportunity)	Context may include: Social, cultural, aesthetic, emotional, behavioural, economic, technological, industrial, political, geographical conditions, etc.
Target group	Identify the target audience of the project about the strategic goal of the company (consolidation of the position with major customers, creation of new markets)	For example, demographic and psychographic characteristics: Age Gender Revenue Employment
Keywords		Keywords for achieving the objectives of a strategic plan that supports the development of a sustainability planning project
4 Draft Sustainability Planning		
Product description **(product design or refurbishment)**	Identify the problem/product and how you plan to solve it with sustainability planning.	At this stage, the description of the measures envisaged should not be too specific to allow for as many possible solutions to the problem as possible.

List of attributes	It creates a list of criteria, arranged according to their importance, so that they can later be compared with the proposed solution. In the case of product refurbishment, include the results of the preliminary analysis of the reference product.	Criteria may include: Appearance Function Ergonomics Form Production Environment Security Technical feasibility Maintenance Reliability Standardisation
Visual inspiration	Graphical information is a potential source of inspiration for developing a feasible solution.	Graphical information may include: Sketches Snippets Photos Movies Materials Textures Patterns Colors Landscapes Architecture

5 Budget		
Funds for the project	Specify the budget allocated to the project (even if it is impossible to determine this, it is necessary to have an idea of the significance of the project and the announced investment).	This information helps the sustainability planning team deliver more realistic solutions.
Timeline and deadline	Provide a project plan.	Fundamental information for planning the development of the project.
Project team and support team		Specify the project team and support team and their functions within the project.
Consulting/external support		Specify the needs for external support in the project.

Worksheets 7: Product Improvement Ideas

- Identify a problem to conduct a creativity session:
-

-
-
-
- Organise a creativity session and suggest possible improvements using selected planning strategies for sustainability. Collect noticeable possible improvements during the analysis of the MECO matrix and the motivational factors of planning for sustainability.

	Possible improvement
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	

➲ What criteria should be included in the prioritisation of possible improvements?

Idea	Criterion 1	Criterion 2	Criterion 3	Criterion 4	Criterion 5	Criterion 6	Action plan (K, S or D)	Note
	Environmental benefits	Social benefits	Financial benefits	Technical feasibility	Market opportunities	.....		
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								

➲ Rank your options based on your assessment of time feasibility – short-term (K), medium-term (S), or long-term (D).

The purpose of this matrix is to evaluate the product improvement ideas that have arisen in the search for ideas for improvement, in terms of their technical, financial, market and environmental feasibility.

This matrix serves the sustainability planning team and the company's top management as a basis for deciding whether certain possible improvements should be made in the short, medium or long term, or whether an option should be discarded. In some cases, additional research is needed to validate a particular idea.

These worksheets can be used qualitatively in the context of a discussion by the sustainability planning team and support groups, or they can be used after several in-depth studies using environmental analysis, life cycle costing, or market analyses presented in the manual. The assessment can be carried out in-house or with external professional support, depending on the

complexity of the ideas and the team's workforce. In any case, it is essential to note all the assumptions behind each scoring. Subjectivity is not a problem if it is managed transparently.

Depending on the draft design for sustainability, additional criteria can be added (e.g., aesthetic, ergonomic, etc.).

For qualitative evaluation, we take into account aspects such as:

- Technical feasibility: Are the required technical resources available in the company? Are there risks to reducing the quality of the product? Are the necessary new raw materials easily accessible? Are new technologies tested and available on the market? Are the suppliers known and trustworthy? Is new equipment necessary? Is new staff necessary (or new responsibilities)?
- Financial feasibility: How much investment is required? What is the financial impact of possible improvements throughout the life cycle?
- Market feasibility: Does the idea have a significant impact on the market?
- Environmental feasibility: Are we achieving material and energy savings? Is there an increase or decrease in waste and emissions? There are often trade-offs, as planning for sustainability brings both disadvantages and advantages from an environmental point of view. Often, rough assessments in relation to energy and raw material flows can be carried out at no significant cost, and sufficient information is quickly available to assess the environmental optimum. This can be confirmed in a rigorous way through a quantitative assessment of the life cycle.

Other possible fields in the array can be as follows:

- Timeline for implementation: The sustainability planning team needs to determine whether the option is part of the short, medium or long-term implementation plan. This timeframe, of course, is dictated by the company's overall strategy.
- Level of analysis: Here, the team is determined by the sufficiency of the analysis performed, or whether the planning options for sustainability need to be further explored before a decision can be made about their implementation.
- Note: There is also a box to enter the views that justify the decision, or we can enter any relevant comments.

After evaluating all options, the team must select ideas that will be elaborated in the new product concept.

Evaluation matrix							
Possibility of improvement	Feasibility				Timeframe for implementation	Robustness of the analysis	Notes
	Technical	Economic	Environmental	Market			
Option 1							

Option 2							
Option 3							
Option 4							
Option 5							
Option n							
Assessment	Feasibility	**"0"** - Negative or Not Workable **"="** – Neutral **"1 to 5"** – Positive or very positive					
	Implementation	**"K"** – short-term " **S"** – medium-term "**D"** – long-term					
	Robustness	**"1 to 5"** (from low robustness to high robustness)					

Worksheets 8: Product Concept Development and Evaluation

➲ Determine what criteria should be included when choosing the best concept.

➲ Give concepts and evaluate them according to criteria (with descriptive or numerical scores):

Concept	Criterion 1	Criterion 2	Criterion 3	Criterion 4	Criterion 5	Criterion 6	Notes
	Environmental benefits	Social benefits	Financial benefits	Technical feasibility	Market opportunities	.....	
1							
2							
3							

➲ Compare the concept of the new product with the base or reference product according to the set criteria (use descriptive or numerical estimates):

Concept	Criterion 1	Criterion 2	Criterion 3	Criterion 4	Criterion 5	Criterion 6	Notes
	Environmental benefits	Social benefits	Financial benefits	Technical feasibility	Market opportunities	.....	
New product							
Reference product							

Worksheets 9: Detailed Product Development, Production Preparation, and Market Launch

This chapter does not include specific tools.

Worksheets 10: Evaluating the Product and Planning Project for Sustainability

This questionnaire allows you to evaluate the company's project and product.

Worksheets 10.1: Assessing a Planning Project for Sustainability

Project evaluation					
1	The Sustainability Planning Project has contributed positively to the company's image (surround accordingly).	No contribution	A small contribution	Medium contribution	A Significant Contribution
	Explain in what sense and why.				
2	The results of the sustainability planning project can also be applied to other products.	No.	Partially/for some products.	Yes.	
	Explain how and why.				
3	The methods and tools of a sustainability planning project can also be applied to other company activities (e.g. quality management, environmental management, innovation, research and development, etc.)	No.	In some cases.	Yes.	
	Explain in which departments of the company, how and why.				
4	The Sustainability Planning Project had a well-prepared and easy-to-follow plan.	No.		Yes.	
	If not, please explain why.				

5	Were the activities of the Sustainability Planning Project useful?	No.	Partially.	Yes.
	Explain why.			
6	The in-house sustainability planning team was effective in terms of expertise and competencies.	No.		Yes.
	If not, what needs have been identified?			
7	The Sustainability Planning project team worked with the company's support team and staff.	No.		Yes.
	If not, please explain.			
8	Was the top management involved and committed to the project?	No.	Partially.	Yes.
	If not, explain the main reasons.			
9	Should sustainability planning become part of a company's systematic innovation activities?	No.	Under certain conditions.	Yes.
	Explain why and how.			

WORKSHEETS 10.2: ASSESSMENT OF DESIGN FOR A SUSTAINABLE PRODUCT

Product Evaluation					
10	Did the project team manage to achieve the set initial goals?	No.	Partially.	Yes.	
11	Please indicate the degree of fulfilment of particular specific objectives:	Very low.	Low.	Central.	High.
	Market				
	Functionality				
	Aesthetics				
	Ergonomics				
	Another				
12	Provide environmental results.				
	Use a spider diagram.				
13	Indicate the economic results of the project.				
	Compare them with the results of the original assessment.				

	What went well in the project?	
	Possibilities for improvement	
	State what in the sustainability planning method needs to be changed or adapted to the company's needs.	

Worksheets 11: Action Plan for Further Sustainability Planning Activities

Based on the assessment of the sustainability planning project and the planned product, the top management and the sustainability planning team must assess how to implement further developments regarding sustainability planning. A company with a quality assurance or environmental management system can incorporate a sustainability design method into these processes. At a minimum, the company should develop an action plan to continue planning for sustainability on future products, which should answer the following questions:

What	Who	When	How	How much

Environmental Management System and Sustainability Planning Checklist

In the spreadsheet, we provide a checklist that can be used to review the performance of a sustainability planning project.

	Performed	Undone	Can be improved	Notes
Definition of the scope				
1. The scope of environmental management systems shall include product design and development processes.				
Environmental policy				
1. Political commitments shall be appropriate according to the nature and extent of the environmental impacts of products throughout their life cycle.				
2. The policy shall include a commitment to comply with legal requirements in relation to the environmental aspects of products.				
3. The policy shall include the undertaking's commitment to comply with other requirements related to the environmental aspects of the products, activities and services.				

4. The policy shall include a commitment to the continuous improvement of products throughout the life cycle.				
5. The policy includes a commitment to the continuous improvement of sustainability planning processes.				
6. The policy includes a commitment to pollution prevention in the sustainability planning process (the product needs to be designed or re-designed in this way).				
Planning				
Environmental aspects				
1. The environmental aspects of an undertaking's products shall be determined throughout their life cycle.				
2. They have been described with identified aspects related to environmental impacts.				
3. Throughout the life cycle of the products, the importance of environmental aspects has been assessed.				
4. In the initial phase of the eco-(re-)design of the product, steps 1, 2 and 3 above have been carried out on the reference product.				
5. In the initial planning phase for the sustainability of a completely new product in an undertaking, steps 1, 2 and 3 above shall be carried out on a basic or similar product already existing on the market or on a hypothetical reference one.				
Legal and other requirements				
1. The company has defined and has access to legal requirements that apply to its products throughout their life cycle.				
2. The company has determined how to apply these legal requirements to its products throughout their life cycle.				
3. The company ensures that all legal requirements have been addressed and verified in the planning and development process.				

4. The company has also identified other requirements to apply to its products.				
5. An undertaking shall define how the requirements to which it undertakes apply to its products.				
6. The company shall ensure that the requirements to which it undertakes are taken into account and verified in the planning and development process.				
Objectives and programme(s)				
1. The objectives of an environmental management system (EMS) shall include improvements in the environmental impacts of products throughout their life cycle.				
2. In determining improvements to product targets, an undertaking shall consider important environmental aspects throughout its life cycle and legal and other, financial and operational requirements.				
3. The company has the program(s) in place to achieve its product-related environmental objectives.				
4. The company incorporates sustainability planning into the EMS program(s) that align the environmental objectives of the product with the project's sustainability planning.				
5. Product-related environmental objectives shall be set in a balance with other product-related objectives.				
Implementation and operation				
Resources, roles, responsibilities and powers				
1. Companies shall define, document, and communicate the roles, responsibilities, and powers of the people involved in the environmental improvement of products, particularly those involved in the design and development process.				
Competences, training and awareness				
1. Training and competency assessments need to be disseminated among the people responsible for product development.				

2. The company ensures that the people involved in product development are competent in planning for sustainability.				
3. The company ensures that the people responsible for the project (as environmental coordinator) are competent to understand and/or apply the methodology and tools to determine and evaluate the environmental aspects of products throughout their life cycle.				
4. Activities to raise the company's environmental awareness include environmental aspects, product impacts, and life cycle thinking.				
Communication				
1. Internal communication in relation to environmental aspects and the ESM shall include relevant issues related to products and sustainability planning.				
2. There shall be a procedure for receiving, documenting and responding to relevant communication from external stakeholders on product-related problems.				
3. The company has documented the decision to communicate (or not) important environmental aspects, which also includes those related to sustainability planning.				
4. In the event that an undertaking chooses to outsource its environmental aspects and the method for communication is implemented, important environmental aspects of the product are included.				
5. Communication shall support cooperation between different stakeholders in the supply chain with a view to exchanging information on relevant environmental aspects related to the life cycle.				
6. Communication shall inform the different parties involved in life-cycle activities (e.g. users, distributors, recyclers) of the product with a view to improving environmental performance beyond the production phase.				
Operation control, operation				
1. The company has established, implemented, and maintained one or more documented procedures for incorporating sustainability				

planning into existing design and development processes.				
2. The company shall communicate with suppliers, including contractors (e.g. subcontractors of project activities), about the appropriate use of procedures and its requirements.				
3. Design and development requirements include potential environmental needs, legal requirements and expectations from customers and other interested parties.				
4. Input from similar previous designs involving environmental performance issues may be used where possible.				
5. The design and development outcomes shall include environmental criteria for the acceptance of the product (e.g. environmental product specifications).				
6. At the appropriate stages of the planning and development process, assessments shall cover the environmental aspects and impacts of the product throughout its life cycle.				
7. The results of planning and development shall include environmental information and indicators that allow the verification and validation of environmental requirements.				
8. The verification shall include environmental aspects and impacts of the product.				
9. The finished product's performance shall be tested against environmental requirements (validation).				
10. Changes in planning and development shall be identified and recorded.				
Verification				
Fitness assessment				
1. The fitness assessment shall include legal and other requirements relating to the environmental aspects of the product.				
2. The fitness assessment shall include legal and other requirements related to other stages of the life cycle in addition to production activities.				

Monitoring and monitoring				
1. Surveillance and monitoring shall include information on the environmental performance of a product throughout its life cycle. Indicators are defined.				
2. Monitoring includes information about sustainability planning processes and how the business is managed and maintained. Indicators are defined.				

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