

Platform Industrie 4.0

**Learning journey on
sustainability**



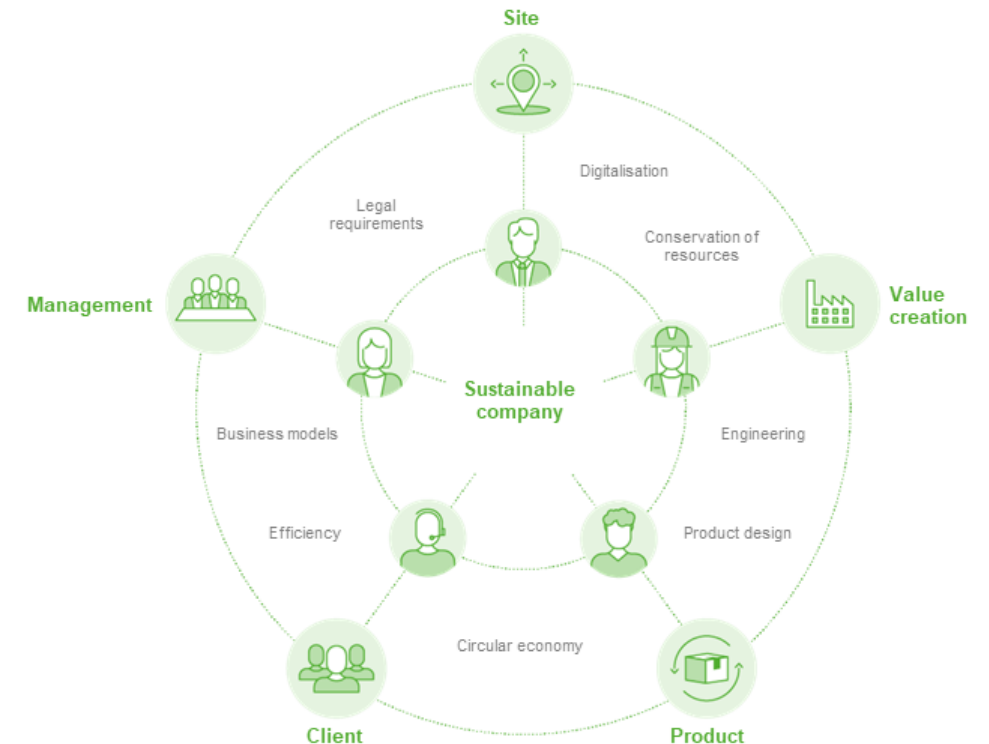
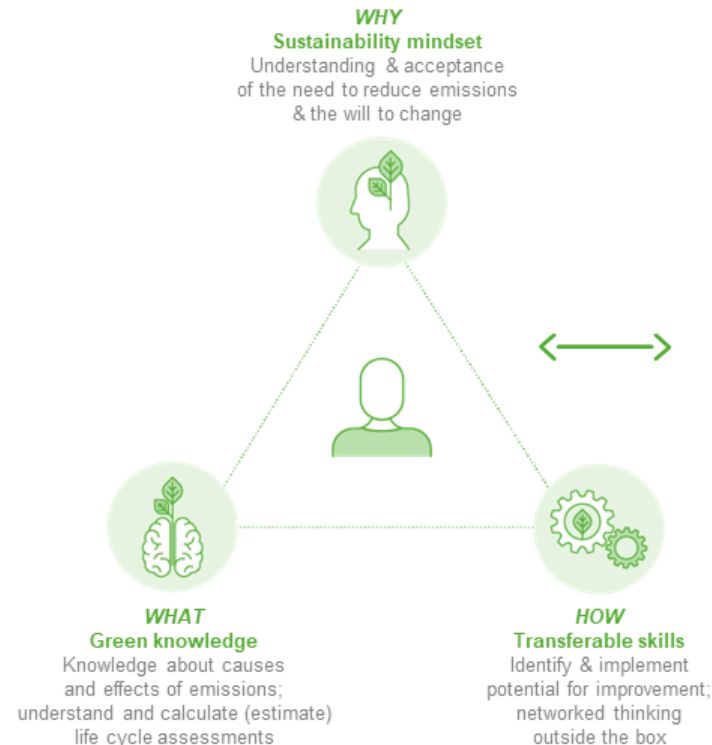
Learning journey on sustainability

Background – Green skills

There's a green collar worker in all of us!
Green skills are needed in all areas of the company.

As of 2021, WG5 – Work, Education and Training has implemented a sub-working group to look at the topic of sustainability and the effects it is having on companies in terms of changing requirements and the need for skills development.

The findings of the Sub-Working Group on Green Skills show that competencies around sustainability are needed not only by specialists, but also by staff at all corporate levels and in all areas, so that companies are steered towards a sustainable future.



Learning journey on sustainability

Introduction

This learning journey provides interested members of staff with the opportunity to gain an initial introduction to the topic of sustainability in-house over twelve weeks.

Learning journeys are structured routes through a series of coordinated tasks, which participants can work on independently and on their own initiative.¹

This learning journey provides impulses, opportunities for reflection and tasks to help employees take a closer look at the topic of sustainability in-house. You will build a stronger understanding and greater knowledge of the issues surrounding sustainability and take a first small step towards implementing sustainability in your business practices.

The learning journey is divided into 3 sections: **why**, **what** and **how**. In the first section, you will look at the topic of sustainability and discover why it is important and how sustainable your corporate practices are. In the second section 'what', you will look at background, studies and terms relating to sustainability. In the third section, you will define your own sustainability project with the aim of seeking out partners at your company who will work on it with you, because the first step is always the hardest and we can achieve more by working together.

You can embark on this learning journey alone, but you will need about an hour each week to complete it. Every week, there will be one or more tasks and impulses to guide your thoughts. You can work through these at your own pace. The suggested timelines are only recommendations to help you avoid getting lost in certain topics, but it is up to you how much time you invest.

You can follow the learning journey as a group. If you choose to do it together, it is good to find a specific day and time in the week where you are all able to spend an hour working on the set tasks together and can discuss your findings and any questions that arise.

¹ https://unterrichten.zum.de/wiki/Lernpfad#cite_ref-1 – accessed 20.10.2022

Learning journey on sustainability



Week 1-3: WHY





Learning journey on sustainability

Week 1: Climate change – Testing your existing knowledge

Objective:

The first 3 weeks look at the aspect 'why': why is it important to deal with the issue of sustainability?

In the first week, you will get to grips with the topic by testing your existing knowledge on the topic of climate change.

Test your existing knowledge



Take 5 minutes:

What terms come to mind when you think of climate change? Write them down in a list.



Take 5 minutes:

What thoughts do you associate with this topic? Write them down in a list.



Take 5 minutes:

Where can you go to learn more about this topic? What media or formats could be useful here?



Learning journey on sustainability

Week 2: Reasons for sustainability

Objective:

In the second week, you will gather information on climate change. Once you have done this, the next step is to compile a list of reasons why companies need to address the issue more.

Step 1:



Take 20 minutes: Research the topic of climate change on the internet.



If you need a bit of help, take a look at the short impulse on the IPCC Assessment Report of the Intergovernmental Panel on Climate Change on the following slide.

Step 2:



Take 5 minutes: Write down your thoughts on climate change again (see week 1). Has anything changed?



Take 5 minutes: Why do you think that companies and ordinary citizens do not always deal with the issue or take action?

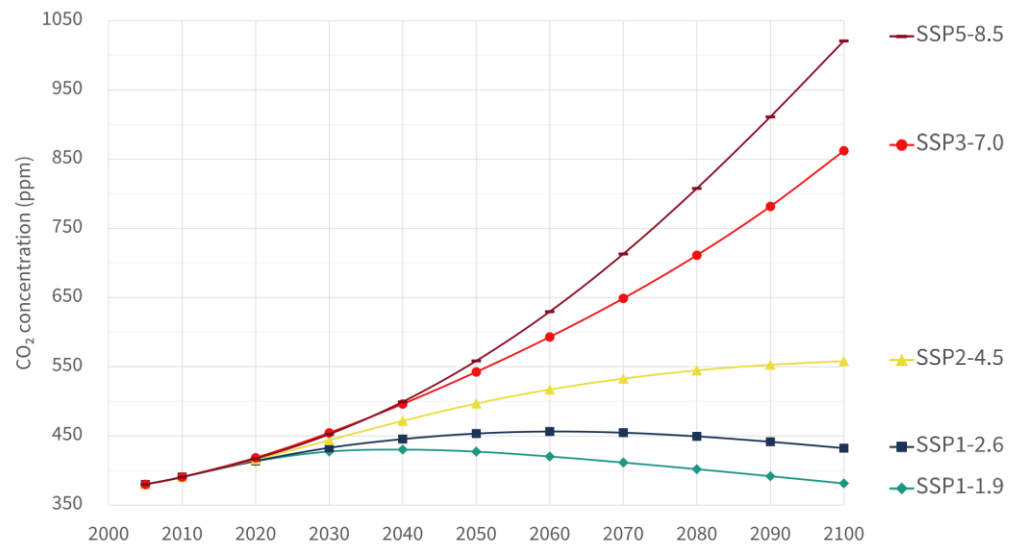


Take 5 minutes: In what areas do companies need to take more action in order to limit the impact of climate change?



Learning journey on sustainability

Week 2: Impulse – Assessment Report of the Intergovernmental Panel on Climate Change



The IPCC climate report presents five possible future scenarios.

These SSP (Shared Socioeconomic Pathways) scenarios describe the projected socioeconomic global changes up to the year 2100.

The five future scenarios differ in terms of:

- Carbon emissions
- Rise in temperature
- Rise in sea level
- Increase in extreme weather events
- Aridity

[LINK 1](#)



Learning journey on sustainability

Week 3: Sustainability at the company

Objective:

In the first 2 weeks, you dealt with the topic of climate change in general. This week you will focus on sustainability at your company.

Step 1:

Look through the impulse on sustainability 1.0 -3.0 on the following slide.

Step 2:

Take 10 minutes: Think about what stage (1.0, 2.0 or 3.0) your company is at and how you are able to identify this.



Learning journey on sustainability

Week 3: Impulse – Sustainability 1.0 - 3.0

1



Sustainability 1.0:

- The focus is on achieving financial goals
- Companies recognise that activities to promote sustainability bring economic benefits
 - Cost savings
 - Risk reduction
 - Attractiveness for potential employees
 - Competitive advantages
- Refined shareholder value
- Sustainability as a means to an end (economic success)

2



Sustainability 2.0:

- Here, companies are breaking away from the one-dimensional goal of profit maximisation and opening up to the three-dimensional triple bottom line
- There is a simultaneous focus on economic, ecological and social goals
- Sustainability management systems have been established, reporting measures introduced and the strategic and organisational infrastructure for implementing the desired sustainability goals is in place
- Specific programmes have been defined

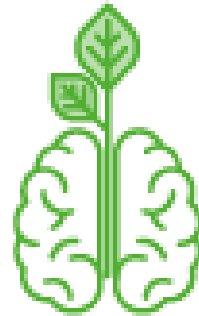
3



Sustainability 3.0:

- It is not about avoiding or reducing the negative impacts of the company's own activities, but about making positive contributions to help resolve sustainability issues in society
- Startups: social entrepreneurship and social business – pursuing social and green business goals based on self-financing in the medium term
- Integration of sustainability strategies into the actual business process of the company

Week 4-7: WHAT





Learning journey on sustainability

Week 4: Your sustainability glossary

Objective:

In the 4th week, you will start to look at the aspect 'what'. Over the next few weeks, you will deal with technical terms, models and the various relations/reciprocal effects between different sustainability goals.

This week, you will create your own individual glossary on the topic of sustainability. You can continue to add to the glossary at any time.

Step 1:

Take 5 minutes to list all the terms that you have come across in the last 3 weeks but would not be able to explain to someone else.

On the following slide, you will find an example list of terms related to sustainability.

Step 2:

Decide where you are going to keep your glossary (paper notebook or a digital notebook in OneNote, Word or Excel).

Choose a term and take as much time as you need to research it. When you feel you have understood its meaning, try to write a definition in your own words. Imagine that you have to explain it to another person in a personal conversation.



Learning journey on sustainability

Week 4: Impulse – Your sustainability glossary

EARTH OVERSHOOT DAY

The day on which humans have already used up all the renewable resources the Earth can provide within a year. In 2022, it was 4 May, which means that as of this date, more resources had been consumed than could be regrown in the same year. Overshoot days are also calculated at country level.

[LINK 3](#)

CORPORATE/PRODUCT CARBON FOOTPRINT

The total amount of carbon dioxide emissions generated directly and indirectly by a particular activity or over the life stages of a product. The measure can be applied to individuals, organisations and companies, countries or events.

[LINK 6](#)

ECOLOGICAL FOOTPRINT

A complex sustainability indicator that shows how much land a person needs to produce the resources they use up. Criteria include the origin and type of food consumed, means of transport used and production conditions of consumer goods.

[LINK 4](#)

LIFE CYCLE ASSESSMENT

A procedure for recording and evaluating environmental impacts. Although originally developed primarily to evaluate products, it is now also applied to processes, services and behaviours.

[LINK 7](#)

ECOLOGICAL HANDPRINT

The opposite of ecological footprint; measures what you have done to foster sustainability, both in your private life and in your own environment. This forward-looking perspective is more motivating and can be applied to all areas: private behaviour, political activities and professional action.

[LINK 5](#)

CIRCULAR ECONOMY

A model based upon which we strive to use products and raw materials for the longest possible time. In practical terms, this means avoiding waste by reusing and repairing existing products. If this is not possible, they are broken down into their raw materials again and recycled.

[LINK 8](#)



Learning journey on sustainability

Week 5: UN Sustainable Development Goals (SDGs)

Objective:

In order to create globally sustainable structures, the member states of the United Nations have set themselves 17 goals to be met by 2030 (see impulse for week 5). These are called the UN Sustainable Development Goals, or SDGs for short.

This week, you will look more closely at these SDGs and what they stand for.

Step 1:

Take 15 minutes to have a look at the '17 goals' page (see link below the image).

Step 2:

Now take 5 minutes to choose 3-5 SDGs that are relevant to your business and explain why.

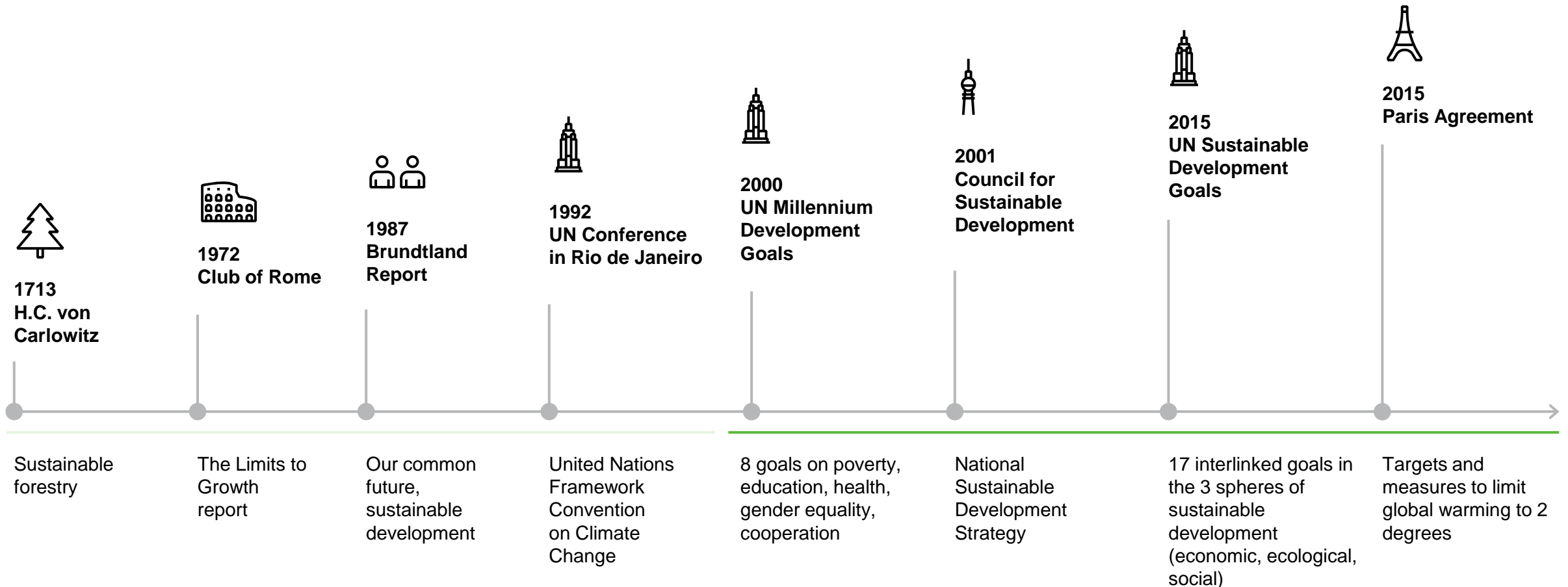


[LINK 9](#)



Learning journey on sustainability

Week 5: Impulse – Sustainability milestones





Learning journey on sustainability

Week 6: Efficiency and reciprocal effects

Objective:

Last week, you learned about the SDGs.

In this week's activity, you will look at the efficiency and reciprocal effects of different sustainability goals in order to understand that they have different levels of importance and can influence each other both positively and negatively.

Step 1: Take 3 minutes to think about the areas that can have the greatest impact in terms of sustainability. Make a top 3 list of sustainability activities that you think produce the biggest effect.

Next, take 10 minutes to look at the impulse on efficiency and LINK 1 on the following slide. Analyse the diagram.

Now take 3 minutes and compare the findings with your top 3 from step 1. What do you notice?

Step 2: Now take 5 minutes to read the article under LINK 2 on the following slide.

Then take 10 minutes to look at the diagram under LINK 3 and analyse it.

Finally, take 5 minutes to compare your findings with those from step 1. What do you notice?



Learning journey on sustainability

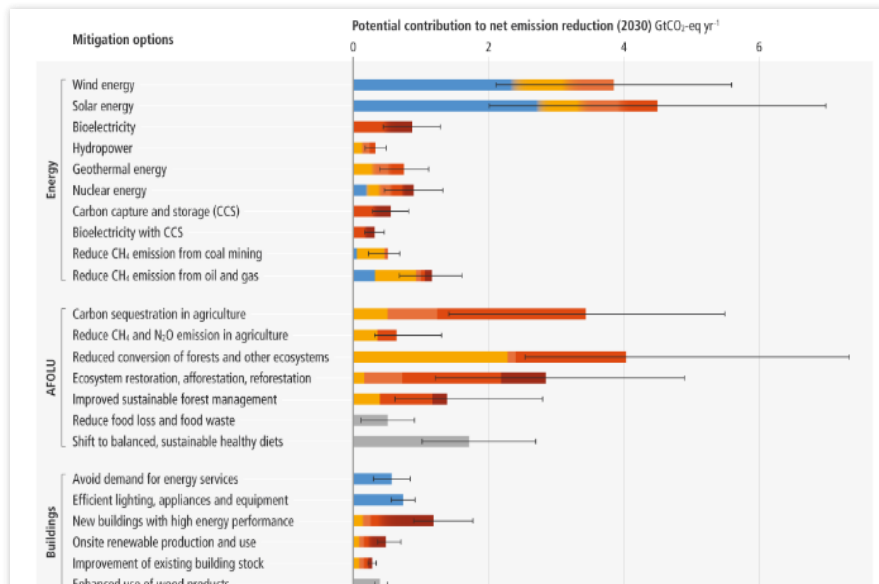
Week 6: Impulse – Efficiency and reciprocal effects

1. Efficiency

In order to reduce the impacts of climate change, various measures can be taken in each different sector. These differ in terms of efficiency and cost. In certain areas, cost savings are then expected in the future.

[LINK 10](#)

Fig. 1: Overview of mitigation options and their estimated ranges of costs and potential in 2030



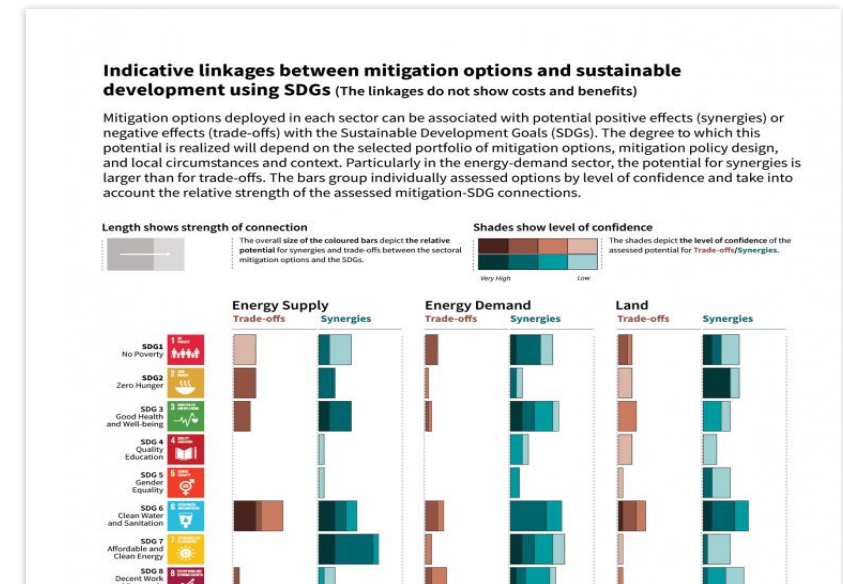
2. Reciprocal effects

The SDGs are each associated with various costs and risks. A large number of them help with securing the energy supply, lowering the energy demand and reducing land use. However in some cases, trade-offs are needed.

[LINK 11](#)

[LINK 12](#)

Fig. 2: Indicative linkages between mitigation options and sustainable development using SDGs





Learning journey on sustainability

Week 7: Greenhouse Gas Protocol

Objective:

This week, you will look at the Greenhouse Gas Protocol.

If you want to reduce your emissions sustainably and in the long term, your first step as a company must be to create transparency. This transparency is achieved by calculating the carbon footprint based on the Greenhouse Gas (GHG) Protocol.

- Step 1:** Take enough time to study the impulse on the Greenhouse Gas Protocol on the following slide. If this is the first time you have encountered the topic, you might also like to watch the video.
- Step 2:** Now take 10 minutes to calculate a rough carbon footprint for your company. Don't worry about being exact. This step is just about brainstorming where emissions are generated at your company/in your department and which of the three scopes they belong to. Create a table and try to list as many sources of emissions as possible.

Source of emissions	Scope 1 (direct emissions)	Scope 2 (indirect emissions)	Scope 3 (upstream and downstream emissions)
...			
...			



Learning journey on sustainability

Week 7: Greenhouse Gas Protocol

1. Greenhouse Gas Protocol

The Green House Gas (GHG) Protocol defines which emissions are attributed to the company itself (Scope 1 and 2) and which are generated in the upstream and downstream supply chain (Scope 3), all of which need to be factored into the calculation. It also specifies what types of emissions need to be recorded. In addition to carbon dioxide, these also include methane and nitrous oxide. In most cases, the emissions are converted into CO₂ equivalents so that they can be compared with one another. When it comes to recording emissions, various official standards for sustainability reporting, such as the Global Reporting Initiative (GRI), are based on the guidelines of the GHG Protocol.

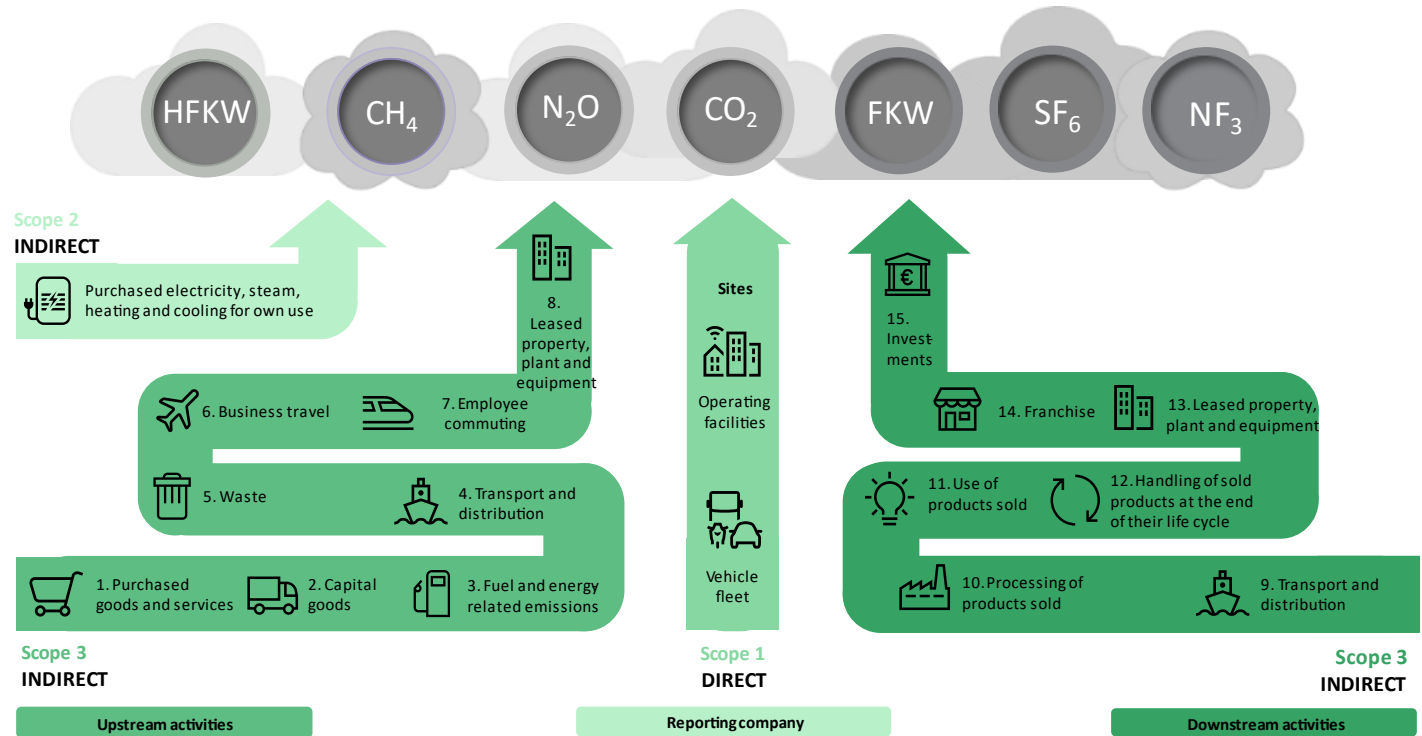
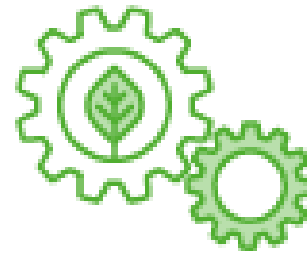


Fig. 1: On the path to climate neutrality – Scope 1, 2 & 3 categories according to GHG Protocol © Bosch Climate Solutions GmbH 2022

Week 8-12: HOW



Week 8-12: HOW – Your individual learning journey

WOW! You've already come a long way and learned a lot about sustainability.

Now it's time to look at the aspect 'how'.

How can you spur progress on sustainability at your company?

In the next 5 weeks, you will define and initiate your own sustainability project.

The aim of the next 5 weeks is for you to identify a sustainability issue that you would like to address at your company/in your team or just in your personal work environment. With the help of the learning journey, you will find this idea, elaborate it in greater detail and develop it to a level that enables you to convince other people of its value.





Learning journey on sustainability

Week 8: What's on your radar?

Objective:

Now it's time to look at the aspect 'how'.

How can you spur progress on sustainability at your company?

In the next 5 weeks, you will define and initiate your own sustainability project.

This week, you will start with the exercise 'What's on your radar?' to identify potential sustainability projects that are relevant to you.

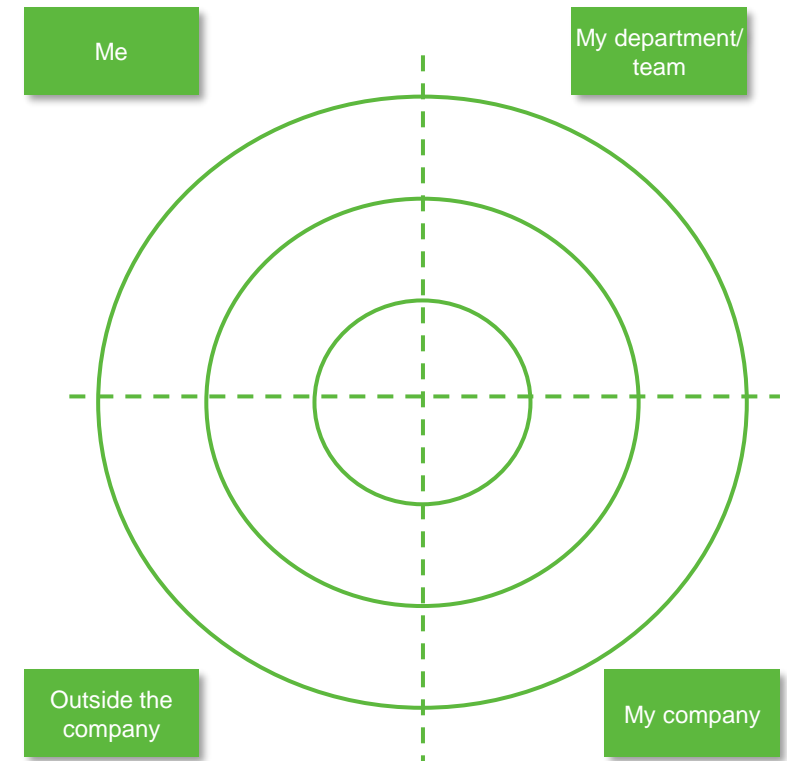
This method uses the set of circles on the right to help you look at priorities and the relationships between them. For more information and a detailed description, please click on the link below the image.

Step 1:

Take 10 minutes to think about the sustainability topics that are relevant to you. Start by dividing up the topics into the 4 quadrants: me, my department/team, my company, outside the company.

Step 2:

Take another 3 minutes to order the topics according to priority (the most important/urgent topics in the inner circle through to the least important/urgent topics in the outer circle).



[LINK 14](#)

Learning journey on sustainability

Week 9: Impact feasibility matrix

Objective:

Last week, you identified topics that are relevant to you.

This week, you will pick up on the 5 most important topics from last week and evaluate them in terms of impact and feasibility.

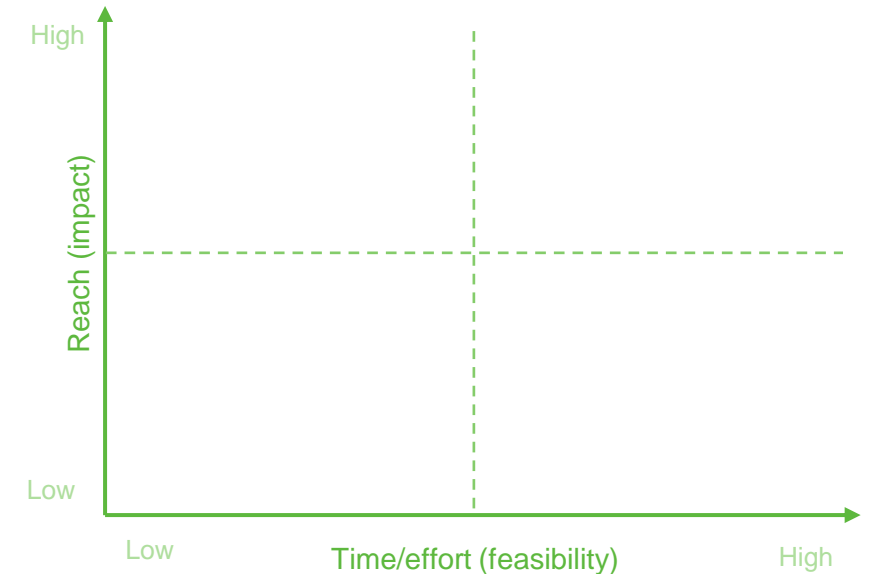
The matrix we are using this week is very flexible and you can individualise it for many situations, as we have done here. For more information and a detailed description, please click on the link below the image.

Step 1:

Take 5 minutes to place your top 5 ideas (you might have more/fewer) in the matrix.

Step 2:

Now take another 10 minutes to think about how you could, for example, reduce the time needed to implement these ideas or to increase their reach.



[LINK 15](#)



Learning journey on sustainability

Week 10: Concept poster

Objective:

This week, it's all about detail. Last week, you looked at your ideas in terms of their reach and the effort involved in implementing them.

This week, you will now elaborate one or two of your ideas in greater detail.

The method you will use is the 'concept poster'.

A concept poster helps you to develop a future vision for your idea and you can use it to win over other people. For more information and a detailed description, please click on the link below the image. Take 20 minutes to complete this task.

Step 1:

Give your concept poster a title and then answer the 3 questions in the first row:

What is the challenge that needs to be solved?

Who are the stakeholders?

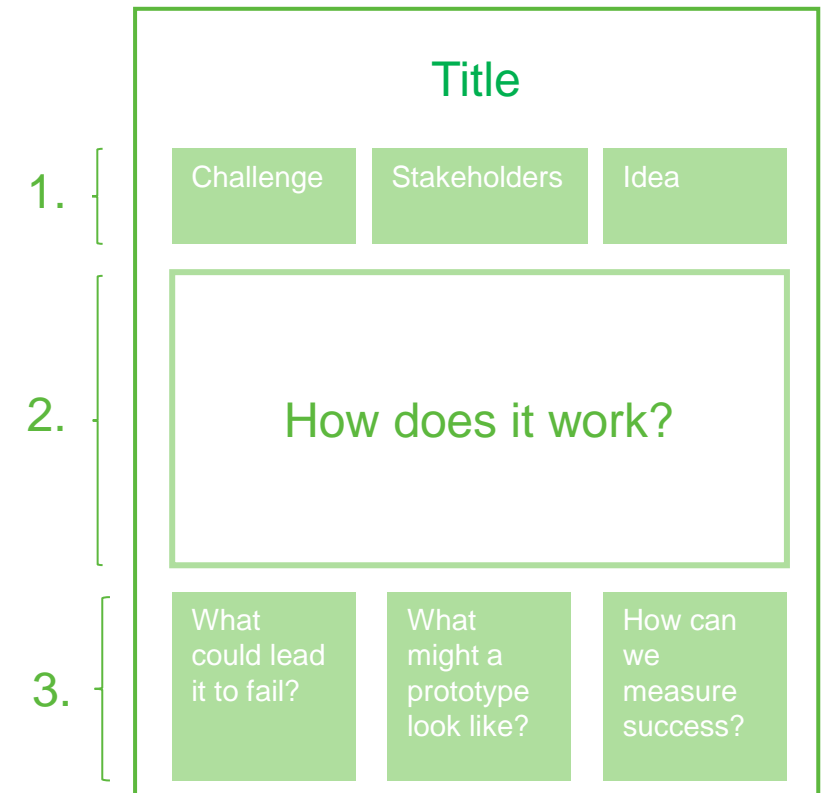
What is the big idea?

Step 2:

Try to present what the solution will look like. A diagram is worth a thousand words.

Step 3:

Answer the questions in the bottom row.



[LINK 16](#)

Learning journey on sustainability

Week 11: Feedback grid

Objective:

This week, you will present your idea to someone for the first time and get some feedback from them.

It is always important to gain other perspectives while developing your solutions, because other people will have points and ideas that you would not otherwise have thought of.

This is also good practice for presenting your idea to other people in the future.

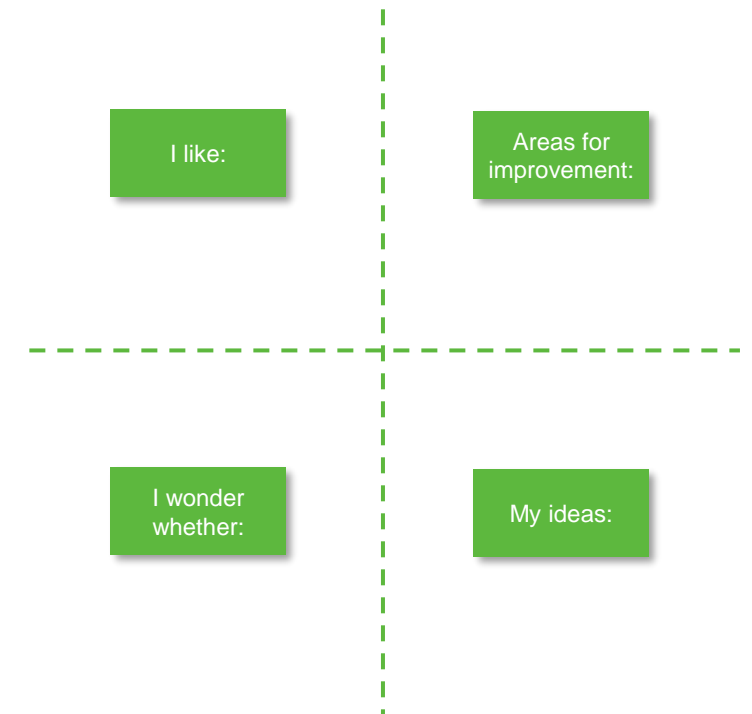
The feedback grid helps us to gather important feedback from users of our prototype during the test phase of the design thinking process. This method is particularly useful in early prototype phases and allows the testers to provide feedback in a simple but structured manner.

Step 1:

Take the concept poster from last week and present your idea to one or more persons. Ideally, you will have someone who can also help you with the documentation.

Step 2:

Afterwards, look at the results from the feedback grid and think about what you need to/might want to change in your concept poster to improve it.





Learning journey on sustainability

Week 12: Give your idea a boost!

Objective:

In the last week of this learning journey, you will present your idea to other future collaborators or people with decision-making power in order to gain support for your idea – whether in the form of backing from other staff or budgetary resources to implement your project/the initial steps.

Sustainability issues can only be tackled together and for this we need as many allies as possible.

Try to develop a pitch that is no longer than 2-3 minutes long: brevity is key! Try to gain as many supporters for your idea as possible in different ways.

Step 1:

Take enough time to read through the linked article on the [Elevator Pitch](#).

Then take 8 minutes to create a rough structure for your pitch based on your concept poster.

Step 2:

Take your time over the next few days to think about how you can lift your pitch with a story or different story elements. Look at it and adjust it again and again until you are happy.

List of sources

1. https://www.dkrz.de/en/communication/climate-simulations/cmip6-en/the-ssp-scenarios?set_language=en – accessed 16.11.2022
2. <https://www.unisg.ch/-/media/dateien/unisg/wissen/little-green-bags-autorentexte/littlegreenbags-text-unternehmerische-nachhaltigkeit-de.pdf?la=de&hash=EE9A1BA991AC1206004E25B74D0492E5181688C5> – accessed 16.11.2022
3. <https://www.welthungerhilfe.de/informieren/themen/klimawandel/earth-overshoot-day-welthungerhilfe> – accessed 16.11.2022
4. <https://www.welthungerhilfe.de/lebensmittelverschwendung/was-ist-der-oekologische-fussabdruck/> – accessed 16.11.2022
5. <https://www.klimafakten.de/meldung/handabdruck-statt-fussabdruck-ein-konzept-fuer-mehr-optimismus-im-klimaschutz> – accessed 16.11.2022
6. <https://www.ihk.de/fulda/innovation/nachhaltigkeit/carbon-foodprint-3407950> – accessed 16.11.2022
7. <https://www.ibp.fraunhofer.de/en/expertise/life-cycle-engineering/applied-methods/life-cycle-assessment.html> – accessed 16.11.2022
8. <https://www.europarl.europa.eu/news/de/headlines/economy/20151201STO05603/kreislaufwirtschaft-definition-und-vorteile> – accessed 16.11.2022
9. <https://17ziele.de/info/was-sind-die-17-ziele.html> – accessed 16.11.2022
10. https://www.ipcc.ch/report/ar6/wg3/figures/summary-for-policymakers/IPCC_AR6_WGIII_FigureSPM7.png – accessed 16.11.2022
11. <https://www.rifs-potsdam.de/en/news/new-report-identifies-trade-offs-and-synergies-between-united-nations-sustainable-development> – accessed 16.11.2022
12. <https://www.ipcc.ch/site/assets/uploads/sites/2/2019/02/SPM4.png> – accessed 16.11.2022
13. <https://www.youtube.com/watch?v=Aa5rG6qD95U> – accessed 16.11.2022
14. <https://miro.com/de/templates/whats-on-your-radar/> – accessed 16.11.2022
15. <https://www.mdi-training.com/blog/de/2019/07/03/klarheit-und-gute-argumente-fuer-das-naechste-ressourcen-meeting-impact-feasibility-matrix-im-praxistest/> – accessed 16.11.2022
16. <https://www.mural.co/templates/concept-poster> – accessed 16.11.2022
17. <https://nativdigital.com/feedback-grid/> – accessed 16.11.2022
18. <https://nativdigital.com/feedback-grid/> – accessed 16.11.2022