European Commission

EUROPEAN COVENANT OF COMPANIES FOR CLIMATE AND ENERGY

CLEAN ENERGY TRANSITION GUIDE

December 2023

CONTENTS

1. EXECUTIVE SUMMARY

The journey to ultimately achieving net zero emissions and assuring there is an affordable transition is not an easy task. There is a stringent protocol which has to be taken into consideration for successfully implementing a clean energy transition plan into your company.

Developing your clean energy transition plan
Identification of emission reduction measures is of paramount importance. There are different ways to decipher and identify these potential emission and energy reduction measures. Companies will use measurement tools detailed within the report, old company protocols or national regulations to identify and assess the potential of the emission reduction measures. The scope of these measures varies in importance regarding the type of emission: greenhouse gas emissions coming directly from the company; emissions from purchased energy; and emissions from the value chain – whether that be purchased goods by the company or customer usage of products.

Once these reduction measures are identified and collated into a list they need to be clearly labelled in accordance with their usability for SMEs and then assessed on the importance of the emission they are reducing and the ability of small and medium-sized businesses to implement across their company. This can then be monitored to track progress and keep companies accountable for their emission usage. This is very much achievable with a stringent implementation process put in place.

Scope of operations
There are initiatives that have been put in place to deal with sector and country-specific challenges regarding reducing emissions for SMEs. This guide analyses intricately the challenges and successes that these different initiatives have come across by looking at their implementation across different cases. This analysis precedes the information in the guide on data collection, which is concisely set out with SMEs best interests at heart. The guidelines for data collection aim to make sustainable transition as seamless as possible by identifying the most important areas for data collection on the different scopes of emissions. This is done as efficiently as possible with the additional help of the tools detailed earlier for calculating and evaluating emissions. These tools use the data collected and additional information to assess the energy uses in different company locations, or across the company as a whole. This allows SMEs to set manageable targets for successful emission reduction in line with the European Commission's goal of reaching Net Zero by 2050. There are however, many different target reaching criteria differentiated by sector and in accordance to different EU proposals.

Reporting and processes
These targets and the decided measures for emission reduction and Green House Gas (GHG) protocols should then be translated into a framework which complies with EU directives on the matter such as the Non-Financial Reporting Directive (NFRD). This ensures that companies adhere to the guidelines set out by the EU regarding disclosing environmental target and impact information. The current Corporate Sustainability Reporting Directive (CSRD) which is a revision of the NFRD, encourages more stringent measures for reporting on upholding sustainable workplace practices. Along with the EU Taxonomy which encourages environmentally sustainable activities, there is a clear sentiment behind achieving green transition within a company. The frameworks available work in accordance with the tools provided in this guide meaning the road to more sustainable enterprise is more accessible than ever.

2. INTRODUCTION

The EU aims to be climate-neutral by 2050 – an economy with net-zero greenhouse gas emissions. This objective is at the heart of the European Green Deal and in line with the EU's commitment to global climate action under the Paris Agreement.

Businesses, including SMEs, will play a vital part in achieving this ambitious target.

For a business, reaching net-zero emissions means achieving a state in which the activities within the company's value-chain result in no net impact on the climate from GHG emissions. Developing action plans, setting intermediate targets, publishing annual reports, and providing clarity about the scopes of emissions covered enhances the credibility of net-zero emission targets and the journey towards achieving them.

Aim of the Covenant of Companies
The Covenant of Companies is a pilot initiative by the European Commission's Directorate-General for Energy (DG ENER) to encourage and support companies to step up their contribution to a clean energy transition, energy savings and related climate objectives.

The initiative aims to provide practical, step-by-step guidelines and technical assistance to European companies to help them take concrete actions resulting in the decarbonisation of their businesses.

The initiative is currently in a pilot phase for two years where concepts will be developed and tested to establish a strong foundation for its possible continuation.

3. DEVELOP YOUR CLEAN ENERGY TRANSITION PLAN

Introduction
This guide aims to support companies (with a focus on SMEs) with a practical, step-by-step approach to building a clean energy transition plan. The opportunities and challenges to meet the energy and emission reduction targets differ greatly per sector and can also vary per company. This is because the measures to be taken, and the impact and reduction potential of these measures, look different for each sector and activity. Nevertheless, the process of developing a clean energy transition plan is similar across sectors and companies. To help companies in their journey, this guide refers to several initiatives that have developed sector-specific guidance and overviews of potential measures that can be included in a clean energy plan. After reading this guide, a company should be able to draft their own step-by-step approach and select valuable generic and sector specific sources on energy and emission reduction.

Definition of a clean energy transition plan
A clean energy transition plan is defined as an action plan of how a company, or a group of companies can reach the EU's 2030 and 2050 targets for clean energy usage, energy efficiency and/or greenhouse gas emissions reduction. The clean energy transition plans cover technical and non-technical measures.

Structure and content of this guide
The following chapters provide a step-by-step guide on how to shift to clean energy and reduce your emissions. The first step is to analyse your emissions and set targets (chapter 4). Thereafter you will need to plan your transition (chapter 5) and then develop a monitoring and reporting process (chapter 6). The final part of the guide offers case studies (chapter 7) and an appendix with additional sources for sector-specific measures and plans.

Is this guide also applicable for micro companies?
This guide aims to support both SMEs and big companies in their journey to net zero and lowering emissions and energy costs.

However, this guide is designed with a particular focus on SMEs because the vast majority of companies in the EU are small or medium-sized. All tools and resources referenced in this guide have been hand-picked for their suitability for SMEs. Owners of micro companies might consider some of the steps and actions in this guide too elaborate for their purposes, therefore.

The following short cut for micro companies is recommended:

- Use the list of information resources provided in chapter 3 to identify and assess potential emission reduction measures;

- Decide if extra support from an energy consultant is needed;

- For a final assessment and selection of measures: it is expected most micro companies will be able to select the easy-to-implement measures from the identified sources. But most might need extra support to identify measures beyond these;

- To finance potential extra investments in reduction measures via financial institutes of via requests for subsidies/grants and other financial support schemes, check the overview with the main support schemes in the six focus countries from CCCE via this link;

- Select applicable measures;

- Develop a timeline and an action plan in a working session with an energy expert or one of your employees since joint development often leads to a more efficient process;

- Present the plan to employees to give them the opportunity to contribute and to make sure you get as close to a flawless implementation of the plan as possible.

3. DEVELOP YOUR CLEAN ENERGY TRANSITION PLAN Continued.

What if my country or my sector is not covered by one of the initiatives?
Of course, an overview based on the specific knowledge of the sector and the energy systems in your country has the highest potential value. But if this is lacking there are several ways forward:

- Initiatives such as SME Climate Hub and Net Zero Now are expanding their reach. Check their website for the most recent overview;

- Check the availability of guides and overviews of reduction measures for residential and commercial buildings. Most countries have material on this. The reduction measures for buildings are also applicable for micro companies and have a considerable reduction potential in all service sectors;

- Check the availability of sector-specific guides and overviews for your sector in other countries (Annex A). These overviews can be very valuable but come with the limitation of being published in local languages. Especially in the services sectors, there is a lot of similarity in the overviews of reduction measures. Reduction themes are related to better insulation and more efficient heating & cooling of buildings and lighting[1].

Further guidance to support companies in their transition
In addition to this guidance, the Covenant of Companies has developed an array of further support materials, including the following guides:

- **A Guide to Science-Based Targets**;

- **Analysis of E-Tools Supporting SMEs in Reducing Greenhouse Gas Emissions**;

- **Overviews of Support Schemes available in different EU Member States and at EU level.**

4. EMISSION ANALYSIS AND TARGET SETTING (STEP 1 OF 3)

Introduction

This chapter will discuss the main steps to be taken to analyse your emissions and set your targets (Figure 1). Note that these steps can be executed iteratively.

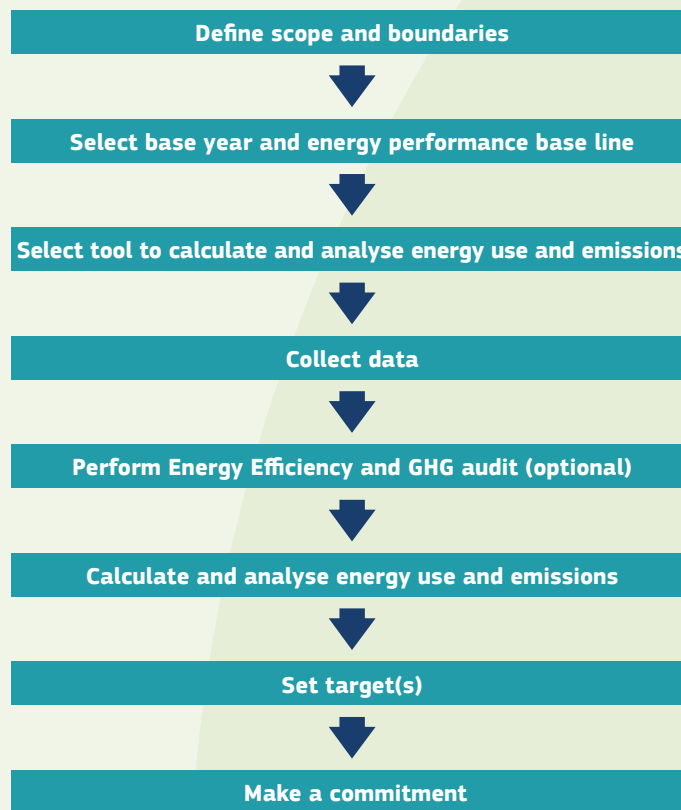| Define scope and boundaries |
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| Calculate and analyse energy use and emissions |
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| Set target(s) |
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| Make a commitment |

Figure 1: Overview of steps to do your emissions analysis and target setting.

The approach presented in this guide is based on and compliant with the Green House Gas Protocol (GHG Protocol). The GHG Protocol establishes comprehensive global standardised frameworks to measure and manage greenhouse gas (GHG) emissions from private & public sector operations, value chains and mitigation actions. The protocol has been developed as a collaborative effort between governments, NGOs, businesses, and other organisations. The GHG Protocol supplies the world's most widely used greenhouse gas accounting standards and guidance. Initiatives like the Science Based Target Initiative and the initiatives that support SMEs in their emission reduction journey (such as **SME Climate Hub** and **RETScreen Expert**) are compliant with this protocol. The GHG Protocol provides the Corporate Standard requirements and guidance for companies and other organisations, such as NGOs, government agencies, and universities. The GHG Protocol also provides:

- The **Corporate Value Chain (Scope 3) Standard** which allows companies to assess their entire value chain emissions impact and identify where to focus reduction activities;

- The **Product Standard** can be used for the full life cycle emissions (LCA) of a product and focus efforts on the greatest GHG reduction opportunities;

- The **Scope 2 Guidance** standardises how corporations measure emissions from purchased or acquired electricity, steam, heat, and cooling (called "scope 2 emissions");

- The **Scope 3 Calculation Guidance** builds on the Scope 3 Standard, this companion guide makes it easier for businesses to complete their scope 3 inventories.

4. EMISSION ANALYSIS AND TARGET SETTING (STEP 1 OF 3) Continued.

Standard software for SMEs to quickly start analysis and target setting

SMEs[2] and micro companies in the service sectors can limit data collection to yearly energy bills and use standard software to calculate and analyse energy use and GHG emissions. The tools will provide a standard benchmark analysis and a set of potential reduction measures that show the reduction potential. These insights are valuable inputs for the target setting. An energy efficiency and GHG-emission audit is not required. The whole exercise can be performed within a few hours. See the section 'Select tool to analyse current energy use and emissions' for an overview of some of the available software. An energy and GHG emission audit is mandatory for ETS companies. ETS companies can then use the data from the energy audit report to set targets.
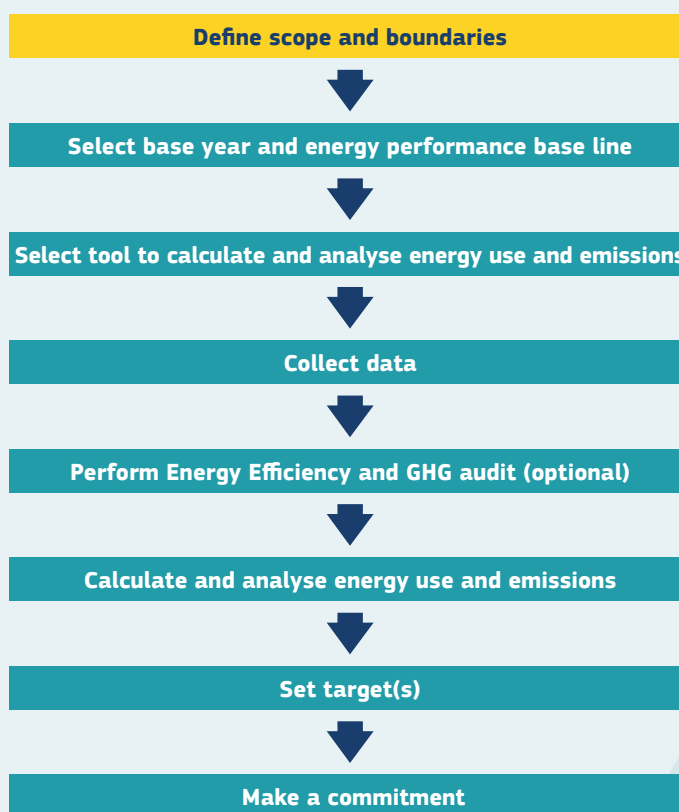
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Figure 2: Step 1 – Define scope and boundaries.

Scope 1, 2 and 3 emissions

A company's emissions fall under three scopes. The emissions from your company itself (scope 1), the emissions related to the energy you buy (scope 2 emissions), and supply chain emissions (scope 3). They are shown in Figure 2 below. Currently, most voluntary programmes for SMEs are limited to scope 1 and 2. However, these programmes welcome efforts from SMEs to reduce their scope 3 emissions. They also recognise that building a data set for a correct analysis of scope 3 emissions is often a difficult and time-consuming process. To support companies, in particular SMEs, initiatives like **SME Climate Hub** and the **ZDH craftsmen initiative** are expanding their tools to include scope 3 emission analysis and target setting.

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[2]According to the Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises (Text with EEA relevance) (notified under document number C(2003) 1422), an SME is defined as a company (or institution with an economic activity) that has up to 249 employees and an annual turnover not exceeding € 50 million or a balance sheet total not exceeding € 43 million (this includes participations in partner companies and affiliated companies).

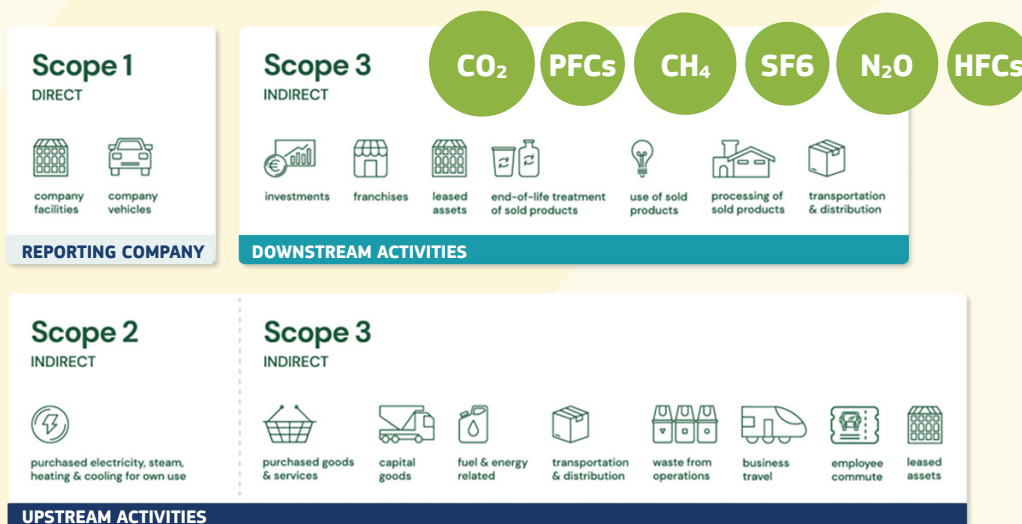## 4. EMISSION ANALYSIS AND TARGET SETTING (STEP 1 OF 3) Continued.

Figure 3: Scopes (source: **https://plana.earth/academy/what-are-scope-1-2-3-emissions**).

Setting boundaries

Setting boundaries is necessary to create a complete overview of the assets in the scope of the emission analysis and targets. For most SMEs this will include all stationary locations a company owns (plant, offices, warehouses), company owned vehicles (cars, trucks, and internal vehicles) as well as transport materials, products, people and waste. Depending on the chosen consolidation approach, the inventory can also include leased vehicles and fugitive emissions like the leakage of refrigerants or methane.

The Green House Gas Protocol defines 3 approaches for setting organisational boundaries of the Greenhouse gas emission targets and analysis:

- Equity share. Under the equity share approach, a company accounts for GHG emissions from operations according to its share of equity in the operation;

- Financial control. The company has financial control over the operation if the former has the ability to direct the financial and operating policies of the latter with a view to gaining economic benefits from its activities;

- Operational control. A company has operational control over an operation if the former or one of its subsidiaries has the full authority to introduce and implement its operating policies at the operation.

The common approach for most SMEs would be to follow the equity share approach.

Table 1: Approaches defined by The Green House Gas Protocol

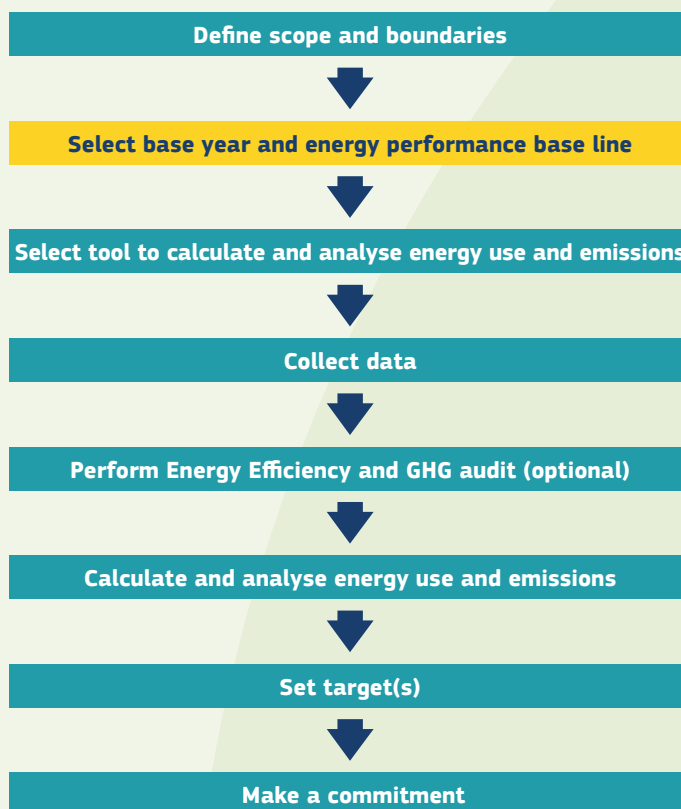## 4. EMISSION ANALYSIS AND TARGET SETTING (STEP 1 OF 3) Continued.

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Figure 4: Step 2 – Select base year and energy performance base line.

The GHG protocol requires a recent and representative business base year of 12 months with a complete data set. The selection of the base year should be explained and should contain verifiable GHG and reduction data. The base year can be changed, but changes and reasons must be explained and documented. Preferably the base year is a year with an average weather pattern and production output. The following factors have an impact on the performance baseline:

- Seasonal variables like extreme hot summers or cold winters: this is relevant if a large share of the energy is used for heating or cooling of floor space. Correction for the weather impact is often done by recalculating the energy used for space heating to energy use per heating degree per day. Space cooling is recalculated as the energy used for cooling per cooling degree per day;

- Exceptional variation in production and sales: Years with long production shutdown or shop closures like during the COVID period led to an exceptional variation. 2022 is not a normal business year for the industrial companies who shut down (part) of their plants because of the high energy prices. The years 2020 and 2021 are exceptional for restaurants and hotels that were closed for months or for companies that had low output because of a shortage of supplies. Commonly used indicators to correct for differences in production levels are energy per ton of output or product, revenue or employee. Depending on your exact business and sector, one is better than the other;

- Acquisition or sales of a factory size or change in products produced are the raw materials used. In case of major acquisitions/or divestments choosing a more recent year is recommended.

If all recent years show extreme deviations, you can consider normalising or correcting the data. This can be done by taking an average of multiple years (for example 3). For an accurate normalisation and for the selection of KPI to normalise for exceptional variation in production, you might need the support of your accountant or an energy specialist to perform the calculation in a correct and transparent way.

4. EMISSION ANALYSIS AND TARGET SETTING (STEP 1 OF 3) Continued.

Several countries and sector-specific voluntary programmes (in the manufacturing sectors) require 1990 data referring to the Kyoto Protocol. For companies starting with energy management, it will be very difficult to find reliable data for that base year. In this case, a motivated choice for a more recent year is accepted. You can use the first GHG accounting period as the base year if no historical data is available. Because national and sectoral differ, a check of relevant requirements is essential.

Selecting an energy performance baseline (for example the hypothetical evolution of a hypothetical scenario for what GHG emissions would have been if no decarbonisation actions were taken) is important to monitor the impact of implemented measures in a correct way, to benchmark performance with similar companies and to report emissions and progress in a clear and transparent way.

Define scope and boundaries

⬇

Select base year and energy performance base line

⬇

Select tool to calculate and analyse energy use and emissions

⬇

Collect data

⬇

Perform Energy Efficiency and GHG audit (optional)

⬇

Calculate and analyse energy use and emissions

⬇

Set target(s)

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Make a commitment
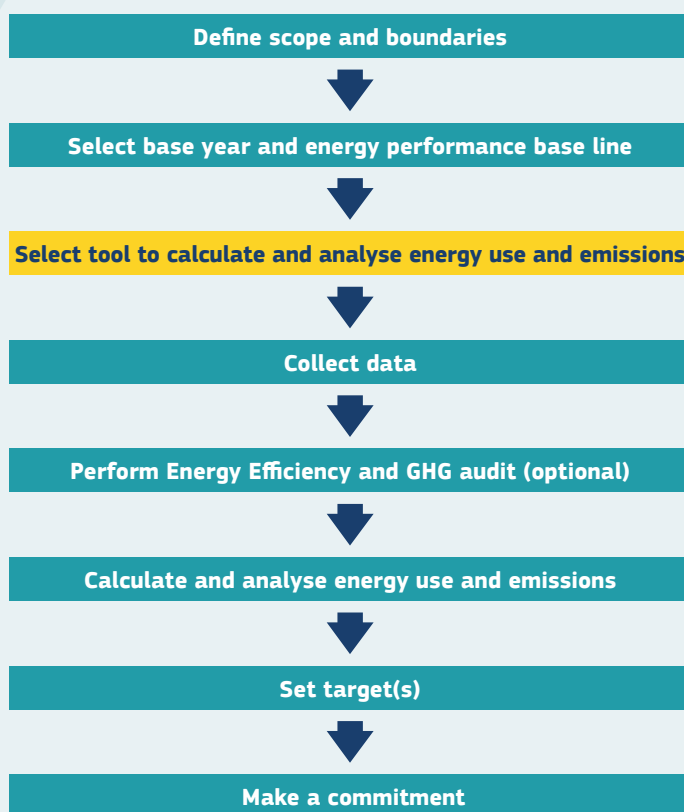
Figure 5: Step 3 – Select tool to calculate and analyse energy use and emissions.

To support the calculation and analysis of GHG emissions you can use software tools. See Table 1 for an overview of tools that support companies in their journey towards net zero. See also our full analysis of the software tools which can be found in the CCCE report: 'Analysis of e-tools supporting SMEs in reducing GHG'.

The tools differ in their ease of use, the (level of) inclusion of scope 3, the availability of a benchmark and the coverage of sectors (see Annex A). Whether or not your SME should look into scope 3 emissions depends on the type of activity and your ambition. For example, scope 3 is less significant for a small accountancy business, but it is important for a cleaning product producer that sells internationally. A benchmark can give you an idea of where you are compared to companies with similar activities. Such a benchmark could, therefore, give you an idea of what is feasible. Again, the relevance of benchmarking depends on your specific case. The accountant's business is heavily impacted by the heating and cooling demand of the building they use, a benchmark will reveal less about the activity's impact aside from a potential need to move to a more energy-efficient location or to select and implement measures to lower the demand for cooling and/or heating.

4. EMISSION ANALYSIS AND TARGET SETTING (STEP 1 OF 3) Continued.

Most of the tools are developed as self-assessment tools for SMEs. All tools, with the exception of the RETScreen expert and the SBTi tool, are easy to use for the calculation and analysis of emissions associated with your business. This means that the tools can calculate scope 1 and 2 emissions based on a limited set of data (yearly energy bills in preferably kWh electricity and m3 natural gas) or based on a detailed overview of energy use per production line or equipment.

TOOL NAME	LANGUAGE	GEOGRAPHICAL SCOPE	MODULAR	SCOPE3	BENCHMARK	MEASURES
SME Climate Hub	English	Global	🟢	🟢	🔺	🟢
ZDH craftsmen initiative	German	Germany	🟢	🟢	🔺	🟢
KWA triple C tool **	Dutch	The Netherlands	🟢	🟢	🟢	🟢
MKB-Netherlands DEB Tool***	Dutch	The Netherlands	🟢	🟥	🟢	🟢
Science Based target Initiative	English	Global	🟥	🟢	🔺	🔺
RET screen expert	Multi	Global	🟢	🟢	🟢	🟢

Table 2: Summary table characteristics of tools of selected initiatives.

The 🟢 indicates a coverage of most/all subjects, 🔺 indicate a partial coverage and 🟥 a limited coverage.

** **Link** provides information on the KWA Triple C Tool.
   The tool itself is not openly accessible;

*** **Link** to MKB-Netherlands DEB Tool.

The tools from the SME Climate Hub and the ZDH craftsmen initiative currently only cover a first rough insight into some scope 3 emissions. The MKB-Netherlands DEB Tool is limited to scope 1 and 2 emissions.

All tools provide a benchmark. The benchmarks of SME Climate Hub and ZDH craftsmen initiative are limited to the data they have available, i.e., the data they have gathered from other users of the tools. This means that the benchmark may not be representative of the sector as a whole. For this reason, these benchmarking tools were given a score of "partly covered" (🔺) although these tools also provide benchmarks from a number of competitors. An example of the core visualisation of the ZDH craftsmen initiative is provided in Figure 1.

Based on the input provided and the calculation of the emissions, all tools with the exception of the tool of the science-based target provide a set of measures to reduce energy use or emissions. SME Climate Hub provides the measures in separate web pages. The overviews in most tools are limited to easy to implement measures for SMEs. The overviews are considered helpful to get a first assessment of the reduction potential.

A good approach is to compare the tools using some limited, preliminary data. This allows you to choose the tool that best matches your needs and ambitions. More information on these tools can be found in a separate CCCE report **'Analysis of e-tools supporting SMEs in reducing Greenhouse Gas Emissions'**.

Note that the overview of tools provided in this report is not only useful for this step, but for all steps in creating your clean energy transition plan.

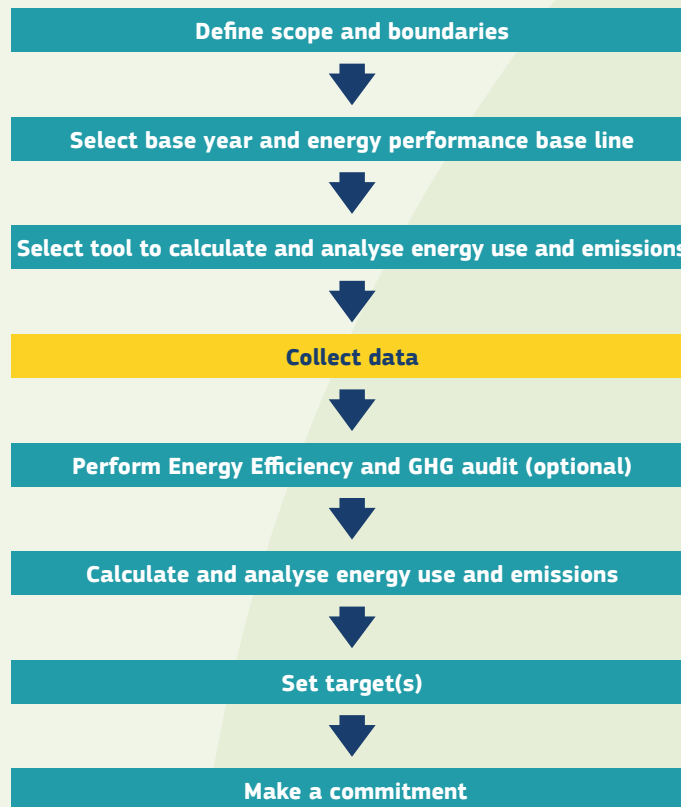## 4. EMISSION ANALYSIS AND TARGET SETTING (STEP 1 OF 3) Continued.

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Figure 6: Step 4 – Collect data.

The minimum data set you need to calculate your scope 1 and 2 emissions are:

- Volumes of energy used. These separate volumes for electricity, natural gas and LPG can be picked from your energy bills. Data on electricity should further include the type of contract, i.e., if the company opted for a full renewable energy supply;

- Data on fuel use for company vehicles and data related to employee commuting.

Additional data to get a more accurate or detailed insight into your emissions are:

- Fuel use per piece of equipment, at least for the main energy using equipment. Data can be provided via separate sub-meters via the integrated production control system of the equipment;

- Emission factor of the energy provided by your supplier. For this information, you should contact your supplier. Otherwise, the software tool uses standardised data from your country based on its energy mix. Country specific electricity emission factors can be found on the website of the UNFCCC (United Nations Framework Convention on Climate Change), the IFI Dataset of Default Grid Factors v.3.0 and on national energy agency or government websites.

If it is required that you make a benchmark comparison to a specific year (e.g., 1990), data must be prepared for both years.

4. EMISSION ANALYSIS AND TARGET SETTING (STEP 1 OF 3) Continued.

Measuring supply chain emissions (scope 3) is often more complicated and requires data from supply chain partners that are not readily available. The GHG Protocol has a free Scope 3 Evaluator tool which helps to identify reduction opportunities. The Net Zero Now Sector protocol also includes (for the relevant sector) the required data to calculate scope 3 emissions.

The goal of the GHG-Protocol Scope 3 evaluator tool is to identify the areas in which to pursue a more accurate inventory. The outputs are estimates based on simplified approaches and the outputs should not be considered to have been assured for conformance with the Scope 3 Standard without further assessment.

Several additional inputs are needed for benchmarking purposes. These include:

- Number of employees;
- Size of facilities (m2 buildings, ton production per year);
- Revenue.

Define scope and boundaries

⬇

Select base year and energy performance base line

⬇

Select tool to calculate and analyse energy use and emissions

⬇

Collect data

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Perform Energy Efficiency and GHG audit (optional)

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Calculate and analyse energy use and emissions

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Set target(s)

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Make a commitment
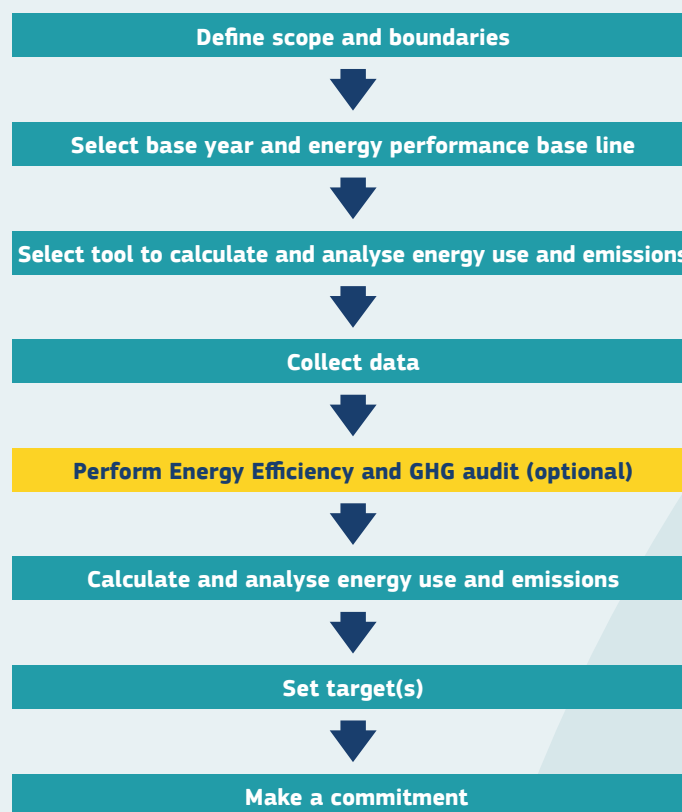
Figure 7 – Step 5: Perform Energy Efficiency and GHG audit (optional).

If you are a large company that does not have an SME status according to the European definition, you are obliged to perform an Energy audit every four years. The exact requirement is part of Article 8 of the EU Energy Efficiency Directive (EED). Some countries also demand extra analysis. Check the National Energy and climate plan and/or the site of the National Energy Agency (or responsible ministry) for more information. The energy audit is a 2–5-day audit executed by independent energy specialists. In several EU countries, industry associations and/or the National Energy Associations (or responsible ministries) provide lists of (accredited) specialists.

4. EMISSION ANALYSIS AND TARGET SETTING (STEP 1 OF 3) Continued.

An EED Energy Audit Report consists of a:

- Schematic overview of all existing energy flows (including transport);

- Description of the main factors influencing energy consumption;

- Quantified overview of the company's energy saving potential;

- Description of all possible cost-effective energy saving measures.

If you are a mid-sized company in the manufacturing sector with a substantial energy bill an energy audit from (accredited) specialists could add very valuable insights into energy use, emissions, and most importantly reduction potential. Small SMEs and micro companies can most likely complete their emission analysis using the data and software mentioned earlier in this guide.
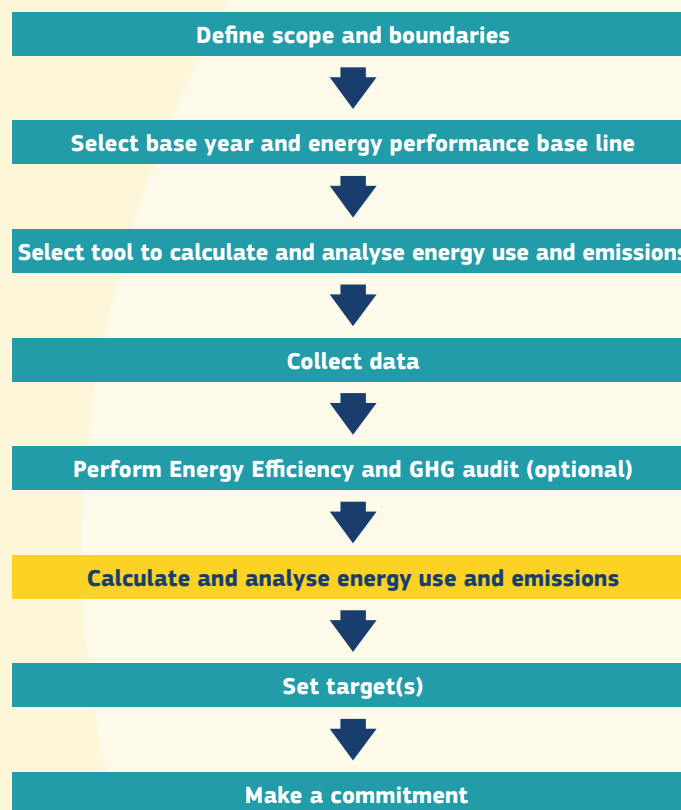
Figure 8: Step 6 - Calculate and analyse energy use and emissions.

This step will be greatly facilitated by the use of a software tool.

Most tools will start with a request for information on the company and contact details. They guide you through the data collection phase using interactive menus, where the user provides the required information. Depending on the tool, the user can choose the level of detail, e.g., the emissions per device, or the assessment of various locations independently. It is important to provide the information as accurately as possible.

The different tools provide different levels tof detail with regards to the presented outputs. **The CCCE Tool analysis report gives more insights in this regard**.

4. EMISSION ANALYSIS AND TARGET SETTING (STEP 1 OF 3) Continued.

All tools provide the total amount of CO2-emissions and how they are distributed over the scopes assessed. While the tools provide a view on your current performance, they also allow you to assess what the impact would be of changes such as a different supplier contract or the transition to 100% electric vehicles. This can be done by adapting the inputs for that item and re-running the calculation. Not all actions can be included, e.g., the switch to CO2-compensation for airline tickets is generally not included.

Define scope and boundaries

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Select base year and energy performance base line

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Select tool to calculate and analyse energy use and emissions

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Collect data

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Perform Energy Efficiency and GHG audit (optional)

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Calculate and analyse energy use and emissions

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Set target(s)

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Make a commitment
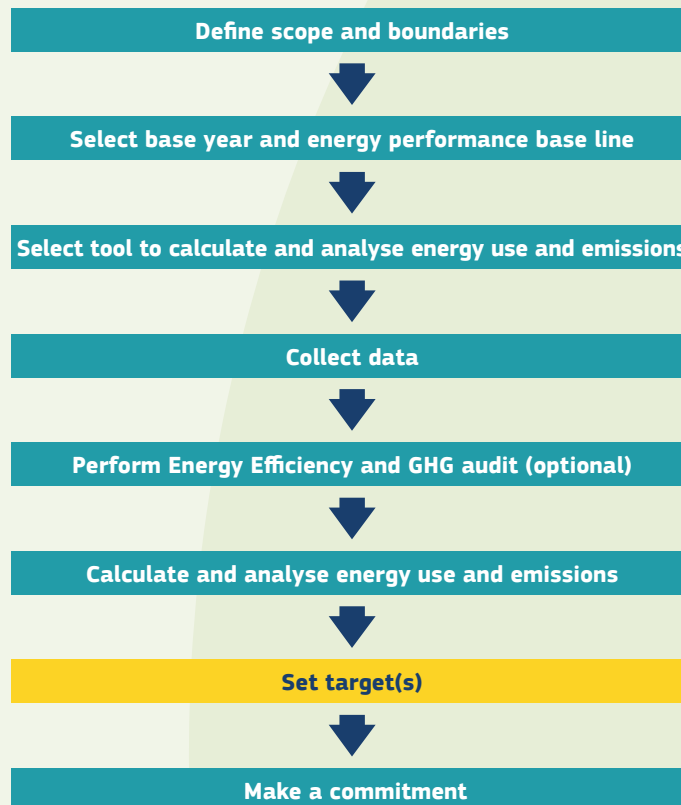
Figure 9: Step 7 - Set target(s)

In several EU countries, following the EU green deal emission reduction targets is considered sufficient. This means: 55% scope 1 and 2 emissions' reduction before 2030 and achieving Net Zero by 2050. EU countries are setting targets through the nationally determined contributions (NDCs). However, as these targets are widely considered to be insufficient to achieve the Paris Agreements Goals, industries and NGOs are working on their own targets. These targets vary by sector and country based on the available resources, knowledge, technology, etc. Checking the required targets in your country (via the responsible ministry or the national energy agency) or sector (via your sector organisations) is essential. Links to relevant sources in your country can be found on the **CCCE website**.

4. EMISSION ANALYSIS AND TARGET SETTING (STEP 1 OF 3) Continued.

Voluntary programmes such as the UNFCCC led campaign Race to Zero, the Science Based Targets initiative (SBTi) and the SME Climate hub also require a pledge to reach net zero as soon as possible, setting an interim science-based target and the annual disclosure of emissions. SBTi also requires SMEs to make a commitment to addressing scope 3 emissions. Setting a target is not required. For large companies, scope 3 target setting and action planning is required. If you consider joining one of these targets you should of course also check their recommendations for target setting. SBTi has developed a specific simplified route[3] which removes the obligation for an SME to collect and assess much of its scope 1, 2 and 3 emissions but instead focus on 1 of the 2 target options. See table 5.

OPTION 1: NEAR-TERM 1.5 C OPTION		OPTIONS 2: NEAR-TERM WELL-BELOW 2 C OPTION	
1.	50% from a 2018 base year	1.	30% from a 2018 base year
2.	46% from a 2019 base year	2.	28% from a 2019 base year
3.	42% from a 2020 base year	3.	25% from a 2020 base year
4.	38% from a 2021 base year	4.	23% from a 2021 base year

Table 3: Option 1 and option 2 near-term.
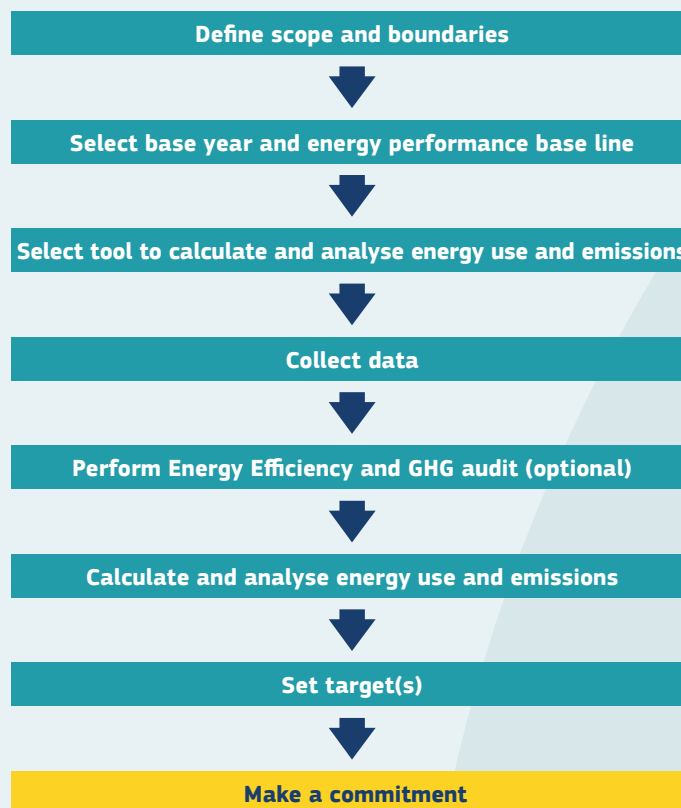
Figure 10: Step 8 - Make a commitment.

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[3] **https://form.jotform.co/targets/sme-target-validation**

4. EMISSION ANALYSIS AND TARGET SETTING (STEP 1 OF 3) Continued.

Initiatives like the SBTi and the SME Climate hub invite companies to make a public commitment to take action to reduce greenhouse gas emissions. This commitment can be made via a standard letter or an easy to fill commitment letter. The focus of the requested commitments differs from organisation to organisation. SME Climate hub, as an example, requires companies to recognise, 'that climate change poses a threat to the economy, nature and society at large, our company commits to take action immediately in order to halve greenhouse gas emissions before 2030; achieve net zero emissions before 2050; and disclose our progress on a yearly basis.'

A very simple way to make a public commitment to action is offered by The Covenant of Companies for Climate and Energy itself. Its secretariat would welcome your commitment, which you can submit via: **https://covenant-of-companies.ec.europa.eu/get-involved/ make-pledge_en**

5. EMISSION ANALYSIS AND TARGET SETTING (STEP 2 OF 3)

Introduction

By now, you should have a clear idea about your emissions and have set a target to reduce them. This chapter explains the main steps to be taken in the development of your clean energy transition plan. The development of this plan starts after the company has analysed its emissions and energy use. See Figure 3 for an overview of the steps covered. The actual implementation of the measures is not included here.

Select information resources & develop a longlist of reduction measures

Assess measures to develop shortlist of scoped reduction measures

Rethink business strategy and models to reduce (supply chain) emissions

Analyse critical conditions

Develop a clean energy transition plan

Organise implementation
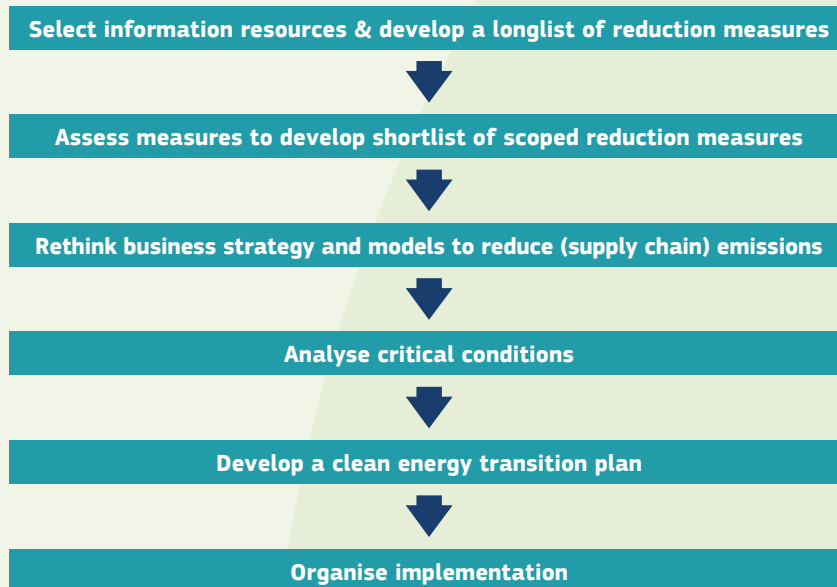
Figure 11: Main steps to develop a clean energy transition plan.

A step-by-step approach

Select information resources & develop a longlist of reduction measures

Assess measures to develop shortlist of scoped reduction measures

Rethink business strategy and models to reduce (supply chain) emissions

Analyse critical conditions

Develop a clean energy transition plan

Organise implementation
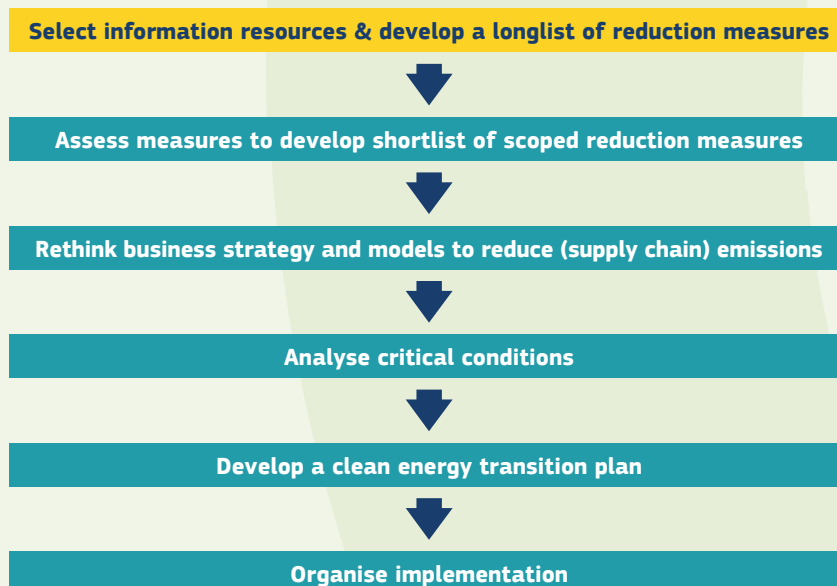
Figure 12: Step 1 – Select information resources & develop a longlist of reduction measures.

The first step is to compile a longlist of potential energy or emission reduction measures from easily accessible sources. This step includes the following sub-activities:

1. Select information resources that contain potential reduction measures;
2. Build first draft list of reduction measures relevant to your business;
3. Organise a brainstorm with internal and optional external experts to review the long list;
4. Finalise the long list with potential reduction measures.

5. EMISSION ANALYSIS AND TARGET SETTING (STEP 2 OF 3) Continued.

Select information resources that contain potential reduction measures.

To undertake the first sub-activity, you can benefit from valuable information resources that contain potential reduction measures such as:

1. Measures generated and/or identified by the e-tool used in the guide 'how to analyse your energy use and emissions'. Some of these tools like the Dutch DEB tool already provide some (3-5) reduction measures as a first teaser;

2. Sector-specific measures compiled by support organisations, sector associations or energy agencies in your country or in other countries. Annex A gives an overview of the sectors covered by 8 initiatives. All these initiatives provide an overview of potential generic and sector-specific measures;

3. Best practices, energy plans from other companies working in the same sector;

4. Previous plans of your company to change/optimise processes. These plans might also include emissions reduction measures that were not implemented but might now have a positive business case;

5. International or national (sector specific) overviews with energy efficiency measures per sector. For example, RVO (the Dutch Energy Agency) publishes and maintains a bank of Recognised Energy Efficiency Measures for 19 (industrial) sectors. The list contains Recognised Energy Efficiency Measures with a payback period of 5 years or less.

Emissions and emission reduction measures are often structured by the scope of the emissions:

• **Scope 1** emissions — The greenhouse gas emissions from sources a company owns or controls. These are emissions a company makes directly — for example while running its boilers and vehicles;

• **Scope 2** emissions — These are the emissions it makes indirectly from purchased energy like electricity, heat, or steam;

• **Scope 3** emissions — Emissions up and down its value chain. For example, from buying products from its suppliers, and from its products when customers use them.

Table 4: Emissions and emission reduction measures are often structured by the scope of the emissions.

The information resources are sorted in descending order according to our perception of their usability for SMEs. In general, the sector-specific measures (if available and not older than 2 years) are expected to provide the best fit for an average SME. Note that the information resources listed might lack some of the more innovative and hard-to-implement measures.

5. EMISSION ANALYSIS AND TARGET SETTING (STEP 2 OF 3) Continued.

Build first draft long list of reduction measures. After selecting the information resources of most use to you, you can start building a first draft list of reduction measures. Most companies will be able to compile a suitable longlist of potentially applicable measures by combining/processing two of the above-mentioned resources.

Organise a brainstorm to review the draft long list. A useful step is to organise a brainstorm with company experts and/or energy consultants to complete the draft list. Especially for mid-sized and big companies in the manufacturing sector such an additional brainstorm with internal (energy and process experts) will lead to extra valuable measures. On the other hand, small companies in the service sector might engage an external energy consultant with in-depth sector knowledge or in-depth knowledge on energy efficient buildings (because heating and cooling of buildings is the main source for energy use and emissions for these companies).

Involving employees is essential for the successful implementation of measures. Their involvement also improves the quality of the selected measures and the clean energy transition plan. Employees can be involved via existing structures like regular team meetings.

Tip: The German craftsmen initiative **developed a guide** with a diverse set of techniques to generate and assess measures and to prepare employees for the implementation of the measures. The guide also covers 10 cases. The publication is in German.

Further information on techniques can be found in the publication: "Creativity today" by authors Ramon Vullings, Godelieve Spaas and Igor Byttebier.

Tip: For service sectors and commercial buildings the US-based Energy Star initiative provides a checklist of energy saving measures in operation & maintenance, lighting, office equipment, food service equipment, heating & cooling and occupant behaviour and education. The checklist can be found on **their website**. They also published the US Energy Star building upgrade manual.

Table 5: Tip.

Finalise the long list with potential reduction measures. The outcomes of the brainstorming with experts are processed to produce a final longlist of measures.

The result of this step is a long list of potential measures for your company to take. The longlist covers technical measures and (as far as relevant) non-technical measures such as improving procedures, knowledge, and competencies. It is recommended to start the list with the largest energy users or emission sources.

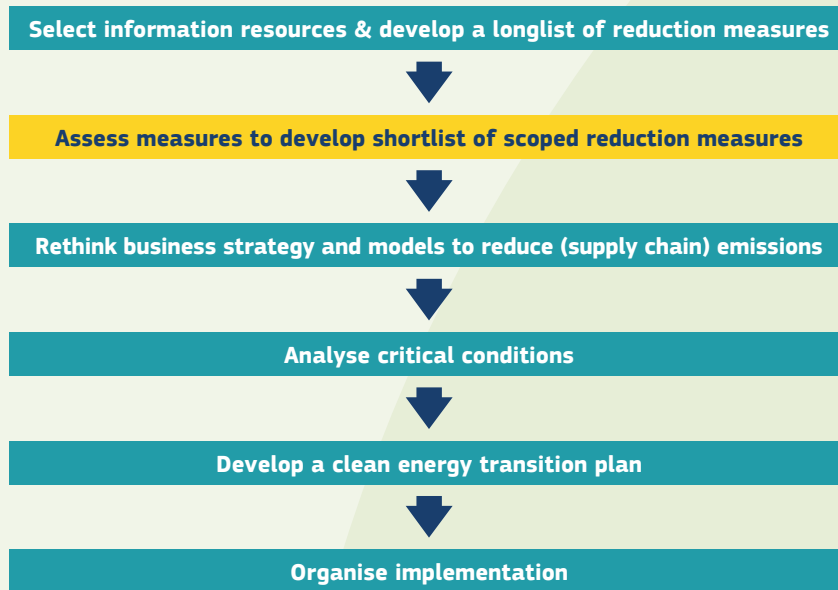## 5. EMISSION ANALYSIS AND TARGET SETTING (STEP 2 OF 3) Continued.

Select information resources & develop a longlist of reduction measures
▼
Assess measures to develop shortlist of scoped reduction measures
▼
Rethink business strategy and models to reduce (supply chain) emissions
▼
Analyse critical conditions
▼
Develop a clean energy transition plan
▼
Organise implementation

Figure 13: Assess measures to develop shortlist of scoped reduction measures.

The aim of this step is to create a credible and manageable shortlist of potential energy or emissions reduction measures to reach the goals/targets set in the target setting phase. Assess the different measures and create a shortlist of measures in a meeting with company experts and/or energy consultants. Start with the largest energy users or sources of emissions. For a first assessment it is recommend using a traffic light system with the following criteria:

- Energy and/or emissions reduction potential;
- Period of implementation;
- Ease of implementation;
- Costs.

See Figure 4 with additional information on the criteria.

For this step it is recommend that you execute the following activities:

- Select and define assessment criteria via desk research and/or meeting with the energy consultant;
- Validate criteria and definition with management and/or energy team;
- Collect and process available assessment data on the reduction measures via desk research;
- Assess measures in an assessment meeting with company and energy experts;
- Validate output in a discussion with the (internal or external) energy expert(s).

5. EMISSION ANALYSIS AND TARGET SETTING (STEP 2 OF 3) Continued.

Energy and/or emissions reduction potential: The reduction potential of measures differs a lot. Besides a handful of measures with a reduction potential of 20–50% most long- and shortlists also cover reduction measures with a 1% or even lower reduction potential. The energy and emissions reduction potential is often included in the list of reduction measures generated by the tool or in the sector energy plan.

Ease of implementation: With this criterion you can assess the technical effort and risk of implementing a measure. Replacing a machine with a more efficient (newer) version from the same supplier will lead to easy implementation. First recovery of waste heat with an innovative heat pump will be assessed as a complex measure. For most measures you will be able to make a distinction between easy- and difficult-to-implement measures. For complex technical innovations you might need expert opinion (energy experts or supplier).

Period of implementation: Can a measure be implemented in the short, medium, or long term? This criterion is partly related to the previous one, but experience shows that a separate assessment leads to new insights and better choices. Easy-to-implement solutions can often be implemented in a short timescale, especially if a measure is already mature (proven, established on the market) and replaces systems that are nearly at the end of the technical and/or economical lifetime. Complex innovative systems need more preparation and in some circumstances some time to mature further. These measures will be allocated to medium or long-term implementation period.

Cost: For cost a wide range of indicators are used. Popular indicators are investment cost (CAPEX), operational cost, payback period, cost per ton of emissions reduced. The selection of one or more appropriate criteria will of course be in line with internal decision-making criteria. Some of the selected tools and guides also give an indication of the needed investments.

Table 6: Criteria's of the traffic light system

Tip: Check for opportunities to align with local initiatives like redevelopment plans of business parks, smart city initiatives and/or circular initiatives. Often these initiatives also include activities to reduce greenhouse gas emissions..

Tip: The assessment on cost could (at least for short term measures) include a first exploration of different financial support schemes that are available to finance the measures. It is recommended that the company also explores the expected continuity of the different schemes since some countries tend to change conditions and support levels almost on a yearly basis. An overview of the support schemes of different EU countries can be found here.

Table 7: Tips

The result of this step is an overview of assessed reduction measures including a summary rating (high, medium, low priority) and some qualitative explanation of the rating.

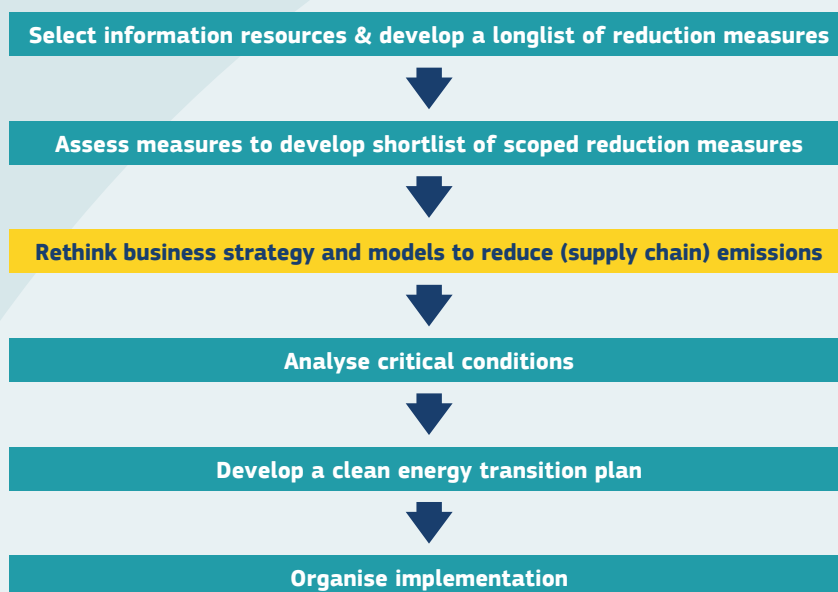## 5. EMISSION ANALYSIS AND TARGET SETTING (STEP 2 OF 3) Continued.

Select information resources & develop a longlist of reduction measures

▼

Assess measures to develop shortlist of scoped reduction measures

▼

Rethink business strategy and models to reduce (supply chain) emissions

▼

Analyse critical conditions

▼

Develop a clean energy transition plan

▼

Organise implementation

Figure 14: Step 3- Rethink business strategy and models to reduce (supply chain) emissions.

Companies also have an opportunity to reduce upstream and downstream supply chain emissions. Initiatives like the SBTi request near term targets (to be fulfilled within 5 years) for these scope 3 emissions. SMEs are excluded from this requirement. But SBTi, SME hub and Net Zero Now also invite SMEs make an effort to reduce their (most important, biggest) value chain emissions (scope 3). Potential measures to reduce your value chain emissions are selection of suppliers, the redesign of products for example to facilitate repair of products and the reuse of products and components, shift to nature-based resources, and a shift to service-based business models.

Several initiatives (amongst others SBTi, SME hub, Net Zero Now) argue that in order to fulfil the ambition of reaching net zero, a company's vision, strategy, value proposition, products and services should be aligned with the 1.5°C ambition.

In order to reduce the scope 3 emissions, you can execute the following activities:

- Collect data on supply chain emissions;

- Analyse the main emission sources in the current supply chain;

- Develop circular and service-based business models;

- Organise a session to identify, analyse and select additional emissions reduction measures.

Collect data on supply chain emissions. SME Climate Hub and Net Zero Now provide sector-specific data on supply chain emissions. Another valuable resource is the website of the Ellen McArthur Foundation. These organisations provide basic data, links to other data sources calculation methodologies and/or software tools to estimate or calculate supply chains emissions. Ellen McArthur Foundation has for example published several sector roadmaps with potential measures.

Analyse the main emission sources in the current supply chain. This analysis should at least cover a general insight into the climate impact of the different links in the supply chain. Analysis of the Dutch National Environmental database shows that building owners can reduce the scope 3 upstream emissions by 20% to 40% by buying products (like insulation panels, bricks, and LED lighting) with a lower climate footprint. Reducing scope 3 downstream emissions are often considered more difficult to realise.

5. EMISSION ANALYSIS AND TARGET SETTING (STEP 2 OF 3) Continued.

Analysis of the supply chain, identification of measures and assessment of these measures can be done in one or more successive meetings with internal and external (supply chain) experts combined with some desk work. The guides and tools of amongst others SME Climate Hub and Net Zero Now are a good starting point for that analysis.

Develop circular and service-based business models. A more fundamental way to reduce scope 3 emissions is by developing circular and service-based business models. Starting from circular principles a company can develop new products and/or services with a lower footprint that enable reduction of customer and societal emissions and enable resource efficient lifestyles. Circular models can lead to longer lifetimes of products. Service-based models can also lead to more intense use of products (because products are shared). Both strategies have the potential to reduce scope 3 emissions considerably. Developing circular and service-based business models and identification & assessment of the measures can be done in one or more successive meetings with internal and external (supply chain) experts combined with some desk work. The Ellen McArthur Foundation developed an overall concept and strategic approach (the 9-Rs approach that supports companies in a more systematic exploration of potential opportunities to move to a circular value chain and to reduce scope 3 emissions (see Figure 5).

The result of this step is an extension of the short list of measures:

Refuse: prevent the use of resources
Reduce: decrease the use of resources
Re-use: find new product use (second hand)
Repair: maintain and repair
Refurbish: improve product
Remanufacture: create new product from second hand
Re-purpose: re-use product for different purpose
Recycle: re-use raw materials of product
Recover: recover energy from waste
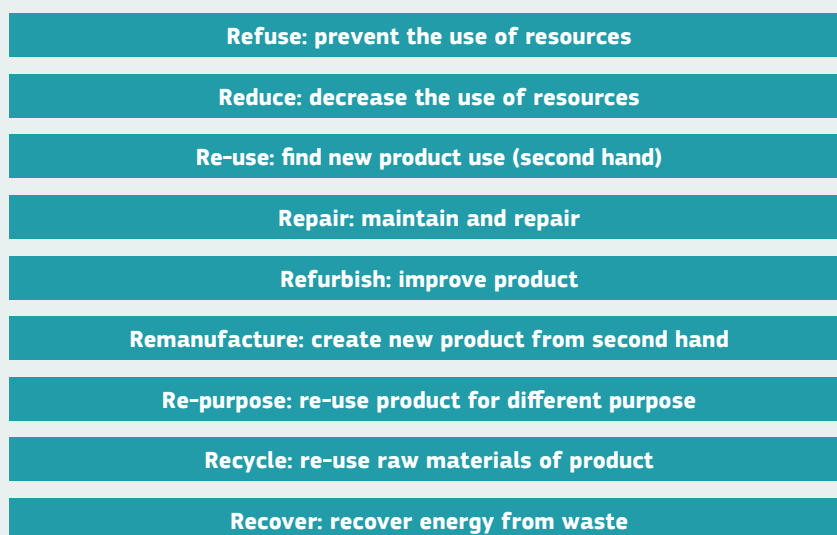
Figure 15: 9 Rs of the Ellen McArthur Foundation.

Organise a session to identify, analyse and select additional emission reduction measures. The results of the previous actions can be processed via a meeting with internal and external experts. In this meeting the participants develop a shortlist of applicable measures to reduce the supply chain emissions. For a first assessment a traffic light system is recommend using the following criteria:

- Emissions reduction potential;

- Ease of implementation;

- Costs;

- Period of implementation;

- Potential to generate extra business.

The criteria 1-4 are the same as the criteria used to select measures to reduce your company's own emissions. The fifth criterion is added because new products and a transition to a more circular value chain is considered as an opportunity to generate extra business (market share and/or margins).

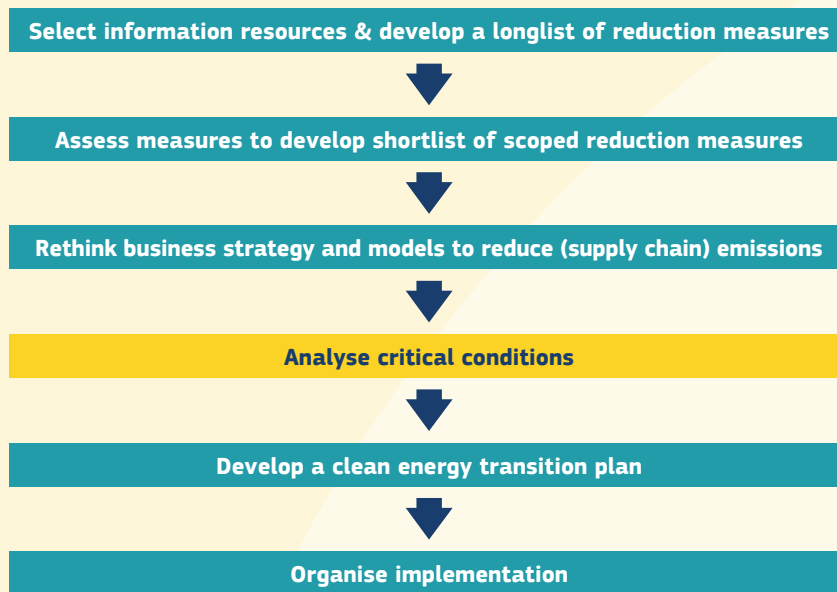## 5. EMISSION ANALYSIS AND TARGET SETTING (STEP 2 OF 3) Continued.

Select information resources & develop a longlist of reduction measures
▼
Assess measures to develop shortlist of scoped reduction measures
▼
Rethink business strategy and models to reduce (supply chain) emissions
▼
Analyse critical conditions
▼
Develop a clean energy transition plan
▼
Organise implementation

Figure 16: Step 4- Analyse critical conditions.

A good insight into measures to reduce emissions is not enough to guarantee a flawless implementation of the measures. Flawless implementation requires a good insight into potential critical conditions (main barriers) to successfully implement measures, as well as taking potential mitigating actions to meet the diverse critical conditions applicable to different companies and sectors. Some critical conditions are generic and related to multiple measures, others are linked to one or a few measures. See text box below with an overview of critical conditions. The potential impact of critical conditions varies per sector and within a sector per company

For this step the company has to execute the following activities:

- Identify critical conditions for a successful implementation of measures via desk research;

- Analyse main critical conditions for a successful implementation of measures in a meeting with external and internal experts;

- Identify and select mitigating actions in a meeting with external and internal experts;

- Organise a session to identify, analyse and select additional emissions reduction measures.

The results of this step are a better insight into the critical conditions to implement the clean energy transition plan, and additional necessary actions to enable flawless implementation.

Overview of main barriers that prevent SMEs to take climate action[4]:

• Lack of requisite skills;
• Lack of funds;
• Other more important priorities;
• Lack of time;
• Customers are not asking for it.

[4]Source: **https://smeclimatehub.org/sme-survey-barriers-to-climate-action/**

5. EMISSION ANALYSIS AND TARGET SETTING (STEP 2 OF 3) Continued.

Select information resources & develop a longlist of reduction measures

▼

Assess measures to develop shortlist of scoped reduction measures

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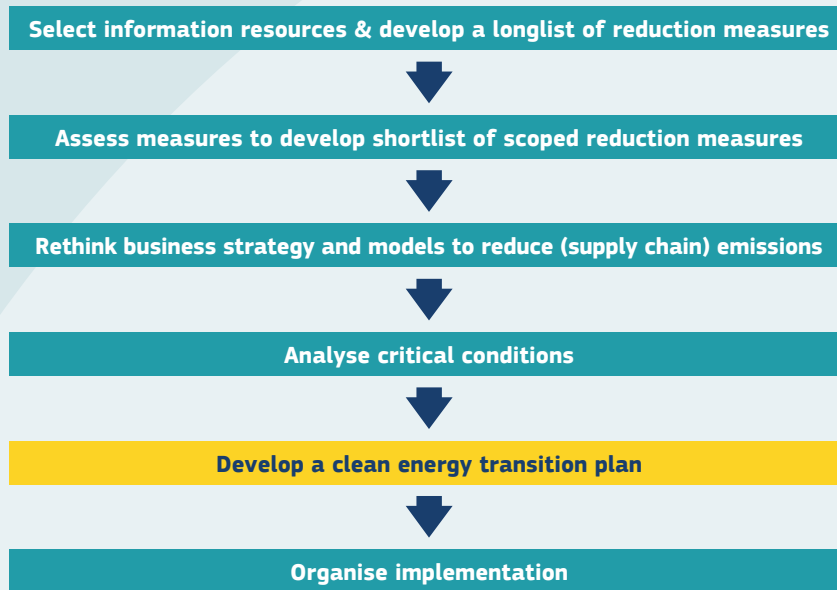
Figure 17: Step 5 Develop a clean energy transition plan.

In this step you build the clean energy transition plan based on the results of the previous step. For companies with a limited list of mainly straightforward measures this is a simple activity where measures are plotted in a logical order and are put on a timeline. After that the mitigation actions for the critical conditions are placed on the timeline. The time between individual measures is heavily based on the finances needed and available, and (internal and external) available labour sources. For an example of how such a timeline might look like, see Figure 6.

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Figure 18: Example of timeline roadmap.

5. EMISSION ANALYSIS AND TARGET SETTING (STEP 2 OF 3) Continued.

Companies with a more elaborate and diverse list of measures might need an extra step where they combine measures to coherent pathways. These pathways are analysed (quantitative via software tools and qualitative via a SWOT analysis). The criteria used for this SWOT analysis are reduction potential, ease of implementation cost, technical maturity and sensitivity for energy and CO2 prices. Pathways consist of a set of long, medium, and short-term goals and actions (projects). The pathways are developed and assessed in one or two iterations with internal and external experts. Based on the analysis, the organisation chooses a pathway or combination of pathways and builds a roadmap. Often this roadmap is summarised in one visualisation. Figure 7 gives an example of the structure of a roadmap. The first column shows the main reduction themes (for a meat processing company).

The result of this step is a timeline or roadmap visualisation plus a short definition of the measures and activities needed for a flawless implementation.
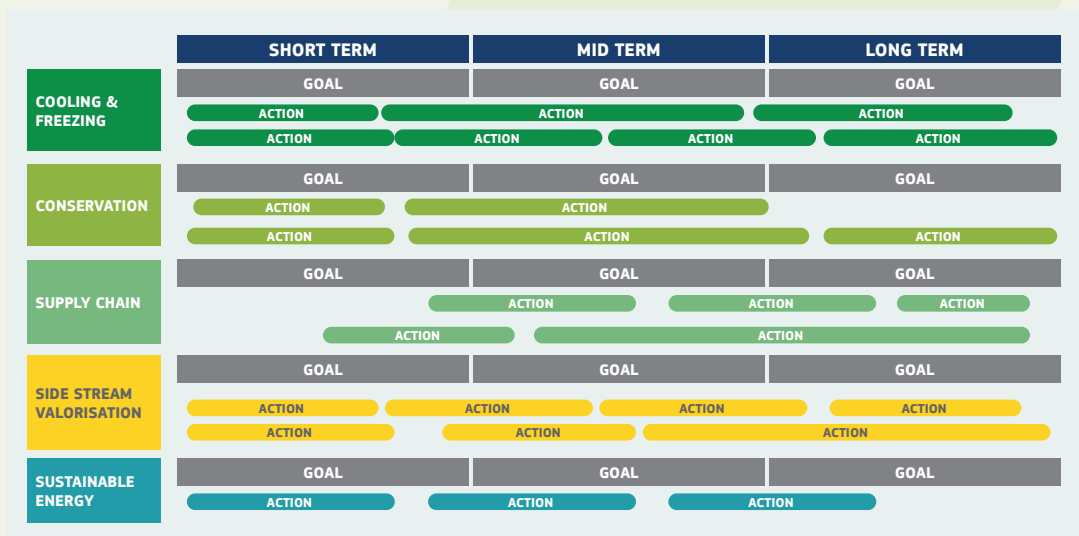
Figure 19: Example summary roadmap visualisation.
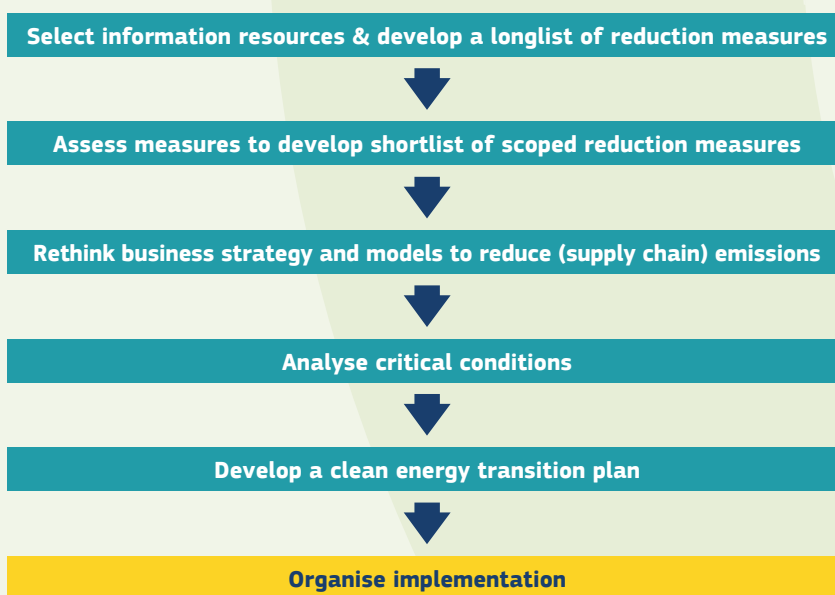
Figure 20: Step 6 – Organise implementation.

5. EMISSION ANALYSIS AND TARGET SETTING (STEP 2 OF 3) Continued.

A flawless implementation requires a great deal of communication and coordination, particularly for medium and large companies. To be prepared for implementation it is recommend that these companies take the following actions:

- Compose a skilled implementation team (for the activities of the coming 2-5 years) and allocate resources for the execution of the actions for at least the coming 12 to 24 months;

- Select and apply for suitable international, national, and local subsidies/grants, see also available support schemes on EU level and CCCE countries;

- Plan an internal kick off with the implementation team;

- Set up a detailed action plan for at least the coming 12 to 24 months;

- Allocate internal and external resources needed to implement the plan;

- Due to internal and external resource scarcity in several countries it is recommend that you build these resources into your planning from the outset;

- Develop and kick off the internal communication plan;

- Develop an external communication plan.

Small companies also need to develop and communicate a concrete plan for at least the coming 12 –24 months. For the development of this plan your company can seek support by an external energy consultant. This consultant can also select and develop requests for suitable subsidies and grants.

The results of this step are a detailed action plan and a communication plan for the coming period (1–3 years) and a skilled team to prepare and execute the identified measures (or projects or actions).

An overview of the steps to create a clean energy transition plan is presented in Table 2.

Step	Activities	Output	Tools/Methods
1. Select sources & develop long list of measures	• Identify sources • Complete draft list • Complete list with internal and/or energy experts	Longlist of technical and non-technical measures	Desk research Brainstorming
2. Assess measures to develop short list	• Select and define assessment criteria • Validate criteria and definition via desk research • Assess measures in an assesssment meeting with company and energy experts • (Fill in blanks via desk research) • Validate output in the energy plan team	Shortlist of measures on cost	Technology Readiness Levels Commercial Readiness Index SWOT analysis (Strength-Weakness-Opportunity-Threat)
3. Rethink business strategy and models	• Collect data on supply chain emissions • Analyse the main emission sources in the current supply chain • Develop circular and service-based business models • Organise a session to identify, analyse and select additional emission reduction measures	Additional measures (related to a changing product portfolio) to minimise the energy use and emission	SWOT analysis Stakeholder analysis Materiality analysis 9 R strategies for circularity Figure 2 Valve proposition design
4. Analyse critical conditions	• Identify and analyse main critical conditions for a successful implementation of measures in a meeting with external and internal experts • Identify and select mitigating actions in a meeting with external and internal experts	List of conditions and critical success factors related to the implementation of measures plus related actions to minimise risks	SWOT analysis
5. Develop Clean Energy Plan		Timeline with main measures Clean energy plan with specific action (and action owners) needed to realise the energy and/or emission reduction	Brainstorming Brainwriting COCD matrix (to allocate measure to short, mid, or long term) Back casting
6. Organise implementation	• Compose a skilled implementation team • Identify all available support schemes on EU level and CCCE countries • Plan an internal kick off for the project team • Set up a detailed action plan for year one • Allocate internal and external resources to the plan • Develop a communication plan	A roadmap for implementation of your energy/emissions reduction measures A communications plan for your internal and external stakeholders	Earmarked budget Dedicated project team

Table 9: Summary of steps to create a clean energy transition plan.

6. DEVELOP AN ACCURATE MONITORING AND REPORTING PROCESS (STEP 3 OF 3)

Introduction

With this guidance on analysing your energy use and Greenhouse Gas (GHG) emissions, you can build an understanding of where you are on your journey towards reducing your emissions.

If you repeat your measurements over time, you can track progress. Tracking progress on emissions reductions is something you should be doing as part of your normal management practices: you will want to see the effect of your emissions reduction on your bottom-line but also to track how your efforts are helping you reach your corporate social and environmental responsibility goals. Linking your emissions reduction targets and progress to existing frameworks will not only make it easier for you (as there is a lot of guidance and support for you out there), but it also helps your external stakeholders to better understand and compare what you do in relation to others, for example in your sector. In some cases, you may choose to do even more: you can disclose your emissions data by making them public.

Across the EU there is a lot of activity in the area of reporting standards as well as a movement towards making environmental impact reporting mandatory; so, it is recommended that you stay informed on this, for example through your national sector organisation and national authorities. This section aims to provide information on the different frameworks, to help you choose which one is most suited to your needs. Working backwards from the reporting requirements of your framework of choice, you can then set up your monitoring system internally, to make it easy to report on a regular basis.

Why work with a framework to set up your monitoring and reporting?

Several (inter)national governmental, non-governmental and sector/industry bodies have developed frameworks to guide companies in their efforts to monitor and report progress. Their frameworks consist of a set of agreements to disclose either targets set and/or emission data in a comparable manner. Examples of frameworks that have a specific Small & Medium Enterprise (SME) focus include CDP and Science-Based Targets Initiative (SBTi). The latter focusses on validating your targets against scientific criteria and once validated, it communicates through its website that you comply. The former provides a framework for reporting progress and allows you to be visible on the CDP platform.

Increasingly, your national legislation or your clients may ask you to use a certain framework. Should you choose to voluntarily disclose information on your reduction targets and your progress against those, it is important to determine your scope and intended audience (e.g., customers, shareholders, banks) for your monitoring and reporting and select a suitable framework.

An overview of existing and emerging environmental and sustainability reporting frameworks

The basis of corporate sustainability reporting in the European Union in the non-financial business sector is Accounting Directive 2013/34/EU which currently applies to large public-interest companies with more than 500 employees. This Directive was amended by Directive 2014/95/EU otherwise known as the **Non-Financial Reporting Directive** (hereafter NFRD), which lays down the rules on how companies have to report information on non-financial/sustainability/ESG matters, with the purpose of providing more clarity to investors, consumers and other stakeholders on how they approach environmental and social challenges.

6. DEVELOP AN ACCURATE MONITORING AND REPORTING PROCESS (STEP 3 OF 3) Continued.

Under the NFRD, companies are required to publicly disclose, within 12 months from the balance sheet date, the approved financial statements as part of the management report and the evaluation submitted by the statutory auditor or audit firm[5]. Member States may allow the non-financial information (NFI) to be provided in a separate report published together with the management report, or within 6 months of the balance-sheet date. The non-financial statement contains the disclosure of their position, performance and impact of their activity relating to, as a minimum, *environmental, social, employee, human rights, anti-corruption and bribery matters*[6], see Table 3.

Content of the non-financial statement

• Description of the company's business model;

• Description of the policies implemented in relation to the above-mentioned matters, including due diligence processes and the outcome of the policies implanted;

• The principal risks related to the above-mentioned matters linked to the company's operations and how they manage those risks;

• Non-financial Key Performance Indicators.

Table 10: Contents of the non-financial statement.

The NFRD states that where companies do not "pursue policies in relation to one or more of those matters, the non-financial statement shall provide a clear and reasoned explanation for not doing so[7]." Companies can rely on national, Union-based, or international frameworks when disclosing the required information e.g., GRI, UN Global Compact. A statutory auditor or audit firm has to confirm whether the non-financial statement has been provided, but Member States may require the information stated to be verified by an independent assurance provider. It is important to point out therefore, that the NFRD does not require assurance on the content of the non-financial statement and statutory auditors are only checking whether the statement is provided or not. Furthermore, companies are free to choose which frameworks they rely on when reporting, unless it is otherwise specified in national law. Regardless, some member states require an independent assurance provider to verify the content e.g., Spain, Italy, and some companies seek verification themselves without a legal obligation[8]. See Table 4 for an overview of the level of assurance required in the European Union.

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[5]Directive 2013/34/EU of the European Parliament and of the Council of 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC, Article 30 (Available at: **https://eur-lex.europa.eu/legal-content/EN/TXT/ HTML/?uri=CELEX:32013L0034&from=EN#d1e1150-19-1**).

[6]Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/ EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups, Article 19a (Available at: **https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014L0095**).

[7]Ibid.

[8]European Commission, Directorate-General for Financial Stability, Financial Services and Capital Markets Union (DG FISMA): Study on the Non-Financial Reporting Directive, Final Report, November 2020 (Available at: **https://www.ceps.eu/wp-content/uploads/2021/04/EV0220277ENN.en_.pdf**).

6. DEVELOP AN ACCURATE MONITORING AND REPORTING PROCESS
   ### (STEP 3 OF 3) Continued.

The level of assurance of NFI in the European Union as of 2020

In France, Italy and Spain it is required by law to acquire independent assurance on non-financial statements, 11 Member States (MS) introduced some kind of additional requirement for the auditors[9], while some MS (12) only transposed the minimum requirements of the NFRD into their national laws and here, the number of companies without assurance on their non-financial statements can be very high e.g., Poland. However, it is noteworthy that these 12 Member States have adopted or transposed the International Standard on Auditing (ISA) 720 at national level, therefore the statutory auditor is required to read and consider other information, thus check the consistency of the information as part of his work despite any legal requirements. Many companies seek voluntary verification themselves and practices in this regard are varying per country. However, in most countries, the standard used by auditors or independent assurance providers to conduct assurance engagement is ISAE 3000.

The cost of assurance on the content of the non-financial information tends to be similar across sectors for smaller companies ranging between €28.000 – €42.000. Approximately two-thirds of companies currently under the scope of the NFRD have at least part of their non-financial statement assured (limited or reasonable assurance). Moreover, undertakings that rely on reporting frameworks and standards usually pay much higher average assurance costs compared to companies that do not rely on these standards[10]. The first year of compliance is always the most burdensome, with small companies experiencing incremental cost somewhere above 50% of administrative costs. Later on, as companies become more acquainted to reporting requirements, these costs decrease slightly. When it comes to who performs the assurance check, most companies choose statutory auditors or audit firms which can be, in part, explained by the higher costs that are associated with independent assurance providers.

Table 11: Level of assurance of NFI in the EU as of 2020.

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[9]Accountancy Europe, Towards reliable non-financial information across Europe, February 2020 (Available at: Accountancy-Europe-NFI-assurance-practice_facthseet.pdf (**accountancyeurope.eu**)
[10]Supra note 4.

6. DEVELOP AN ACCURATE MONITORING AND REPORTING PROCESS
(STEP 3 OF 3) Continued.

Disclosure on environmental matters

The Commission published its guidelines in 2017 on how to disclose environmental and social information under the NFRD. According to these guidelines, "a company is expected to disclose relevant information on the actual and potential impacts of its operations on the environment, and on how current and foreseeable environmental matters may affect the company's development, performance or position[11]". This may include information on pollution prevention and control, environmental impact from energy use, direct and indirect atmospheric emissions, protection of biodiversity, and natural resources, waste management or environmental impact from transportation. A company may consider key performance indicators such as energy consumption from non-renewable sources and energy intensity, energy performance and improvements in energy performance, GHG emissions in metric tonnes of CO_2 equivalent, and emissions of other pollutants etc. The Commission recommends methodologies such as, the Product Environmental Footprint or Organization Environmental Footprint methods. These are life cycle assessment methods allowing companies to identify, for a specific product or for the entire organisation, the most relevant impacts and their contributing processes and emissions along the supply chain. It is important to emphasize again that the guidelines provided by the Commission are not mandatory and companies are free to choose the most appropriate EU, national or international framework for their particular business. Companies are also allowed to rely on several frameworks at once.

In 2019, the Commission published its guidelines on reporting climate-related information, which supplements the Guidelines provided in 2017. The guidelines provide perspectives on both risks affecting the company resulting from climate change (e.g., transition risks, policy risks as a result of new EU or national legislation), and risks of negative impact on the climate resulting from the company's activities (emission of GHG by the company's production facility). The guidelines propose a method of disclosure for all 5 reporting areas listed in the NFRD (see Table 5).

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[11]Communication from the Commission — Guidelines on non-financial reporting (methodology for reporting non-financial information) C/2017/4234 (Available at: **https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52017XC0705(01)**) 4.6.

6. DEVELOP AN ACCURATE MONITORING AND REPORTING PROCESS (STEP 3 OF 3) Continued.

Contents of the Non-Financial Statements[12]				
Business model	**Policies and due diligence processes**	**Outcomes**	**Principal risks**	**KPIs**
Description of the impact of climate related risks and opportunities with regards to the business model, strategy, and financial planning	Description of company policies related to climate	Description of outcomes of the company's policies on climate change including performance against targets set and indicators used to manage climate related risks and opportunities	Description of processes used to identify and assess climate related risks over short, medium, and long term	Disclose indicators and targets to assess climate-related risks and opportunities in line with company strategy and risk management processes e.g., Direct GHG emissions from sources owned or controlled by the company (Scope 1). Describe how target(s) relate to their Scope 1, 2 and/or 3 GHG emissions
Description of ways in which the business model can impact the climate positively/ negatively	Description of any climate related targets set	Description of development of GHG emissions against targets set and the related risks over time	Description of identified risks	It is recommended you calculate GHG emissions in line with the GHG Protocol methodology or the ISO 14064-1:2018 standard and, where appropriate, with the Commission Recommendation 179/2013
Description of the resilience of the company's business model and strategy in relation to climate related scenarios e.g.: 2°C or lower scenario	Description of the board's oversight of climate related risks and opportunities		Description of how climate-related risks are managed	Indicate third party verification/ assurance
	Description of the management's role in assessing climate related risks and opportunities and explanation of the approach		Description of how these processes are integrated into the company's overall risk management	Consider setting targets for 2025, 2030 or even 2050 and, where appropriate, disclosing GHG emissions targets by country, region or subsidiary

Table 12: Contents of the non-financial statements.

[12]Communication from the Commission — Guidelines on non-financial reporting: Supplement on reporting climate-related information, C/2019/4490 (Available at: **https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52019XC0620(01)**)

6. DEVELOP AN ACCURATE MONITORING AND REPORTING PROCESS
(STEP 3 OF 3) Continued.

Specific environmental disclosures are covered in Table 6.

The State of Environmental Disclosures as part of the NFI

Aspects related to climate change are considered to be key areas of focus almost everywhere. This is in part because of upcoming legislation, but also because it is expected by investors, business partners and society in general. When the NFRD was introduced, more than one-third of all surveyed companies asked for additional information relating to the environment from their suppliers and clients. This additional information primarily concerned: paper, water, energy consumption, waste recycling, renewable energy usage, use of raw materials and CO_2 & other GHG Emissions. Moreover, more than 45% of all surveyed companies introduced new due diligence processes. When it comes to reporting methods, two-thirds of the companies surveyed prefer reporting according to the GRI standards (appr. 60%), which are used in the UN Global Compact Framework, the 2017 EU Commission Guidelines (52%) and the Carbon Disclosure Project (42%)****. Additionally, the Alliance for Corporate Transparency 2019 Research Report "An analysis of the sustainability reports of 1,000 companies pursuant to the EU Non-Financial Reporting Directive" showed that approximately 82% of companies had policies on climate change but only 35% had targets and just about 28% reported progress against those targets[13].

Table 13: State of environmental disclosures as part of the NFI.

****survey responses from more than 212 companies conducted by DG FISMA[14]

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[13]European Financial Reporting Advisory Group, Appendix 4.6: Stream A6 Assessment Report Current Non-Financial Reporting Formats and Practices, February 2021 (Available at: **https://www.efrag.org/Assets/Download?assetUrl=%2Fsites%2Fwebpublishing%2FSiteAssets%2FEFRAG%2520PTF-NFRS_A6_FINAL.pdf&AspxAutoDetectCookieSupport=1**)

[14]Supra note 4.

6. DEVELOP AN ACCURATE MONITORING AND REPORTING PROCESS (STEP 3 OF 3) Continued.

The upcoming Corporate Sustainability Reporting Directive
In April 2021, the European Commission published its proposal for the revision of the NFRD, otherwise known as the Corporate Sustainability Reporting Directive (CSRD). The principal changes the proposal brings forward are: the extension of its scope to all large companies and listed companies excluding micro-enterprises; the requirement of the disclosure in electronic format; to make assurance mandatory on sustainability information; and to further specify the information companies should disclose in line with mandatory EU sustainability reporting standards[15], see Table 7. The CSRD will be applied gradually, first for large public interest companies currently under the scope of the NFRD from 2024, then from 2025 it will be extended to all large public interest companies not yet under the scope of NFRD. Finally, listed small and medium-size enterprises (excluding microenterprises) will be under its scope from 2026. It is important to point out that while microenterprises are not in the scope of the Directive, companies of any size can voluntarily use it.

Contents of sustainability reporting information under the CSRD	
Business model and strategy	• Resilience of the business model and strategy to risks related to sustainability matters and how the company's strategy is implemented; • Opportunities related to sustainability matters; • Plans to ensure the business model and strategy are compatible with the 1.5°C target in line with the Paris Agreement; • How the business model and strategy take into account stakeholder interest and the company's impact on sustainability matters.
Description of targets related to sustainability matters and progress towards achieving those targets	Including, where appropriate, absolute GHG emission reduction targets at least for 2030 and 2050 and explanations on whether the targets were based on conclusive scientific evidence[16]
Description of the role of administrative, management & supervisory bodies in relation to sustainability matters	
Description of policies pursued in relation to sustainability matters	
Description of due diligence processes implemented	• Principal, actual and potential adverse impacts connected to the company's value chain, operations, products and services, business relations or supply chain; • Actions taken and the result of those actions to prevent, mitigate or remediate these adverse impacts.
Description of principal risks and how these risks are managed	
Disclosure of indicators relevant to the information disclosed under the previous points	

Table 14: Contents of sustainability reporting under the CSRD.

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[15]Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Directive 2013/34/EU, Directive 2004/109/EC, Directive 2006/43/EC and Regulation (EU) No 537/2014, as regards corporate sustainability reporting, COM/2021/189 final (Available at: **https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0189**)

[16]Conseil de l'Union européenne, Dossier interinstitutionnel: 2021/0104(COD), Directive modifiant les directives 2013/34/UE, 2004/109/CE et 2006/43/CE ainsi que le règlement (UE) nº 537/2014 en ce qui concerne la publication d'informations en matière de durabilité par les entreprises, 10835/22, 30 Juin 2022 (Available at : **https://www.consilium.europa.eu/media/57644/st10835-xx22.pdf**).

6. DEVELOP AN ACCURATE MONITORING AND REPORTING PROCESS
(STEP 3 OF 3) Continued.

Small and medium-sized companies may limit their sustainability reporting to the following information:

- Description of the company's business model and strategy;

- Description of policies pursued in relation to sustainability matters;

- Principal, actual and potential adverse impacts of the company and actions taken to mitigate and remediate those impacts;

- Principal risks of the undertakings related to sustainability matters and how these risks are managed;

- Key indicators necessary to provide the information on the above points.

Article 19b provides that the Commission will adopt sustainability reporting standards to specify the information that any undertakings have to report in accordance with paragraph 1 and 2 of Article 19a by the 31st October 2022, and complimentary information by the 31st October 2023[17]. The upcoming sustainability reporting standards will require information to be reported in an understandable, relevant, representative, verifiable, comparable, and faithful manner. Companies will be required to disclose information on their approach in relation to climate change mitigation, climate change adaptation, water and marine resources, resources use and circular economy, pollution, and biodiversity & ecosystems. Article 19c states that the Commission is going to adopt sustainability reporting standards for small and medium-sized enterprises proportionate to their capacities and characteristics, by the end of October 2023. The standards are developed by the European Financial Reporting Advisory Group (EFRAG). The CSRD also introduces mandatory assurance requirements by inserting Article 26a into Directive 2006/43/EC on statutory audits of annual accounts and consolidated accounts[18] to "require statutory auditors and audit firms to carry out the assurance of sustainability reporting". Finally, it is important to point out that while Article 19 of the NFRD allows for not providing information in one, or more of the matters listed given that the undertaking can give a clear and reasoned explanation for not doing so, the CSRD abolishes this option[19]. There are no particular incentives for complying other than the obvious business case, but non-complying can lead to financial sanctions and exclusion from investment platforms.

Other related EU initiatives
As a compliment to the CSRD proposal, the Commission adopted a proposal for a **Directive on corporate sustainability due diligence (CSDD)** in February 2022, with the purpose to foster businesses "to the respect of human rights and environment in their own operations and through their value chains, by identifying, preventing, mitigating and accounting for their adverse human rights, and environmental impacts[20]" The main goal of the initiative is to identify, prevent, mitigate and account for negative human rights and environmental impacts in the company's operations or its value chain. Companies that have more than 500 employees and a net worldwide turnover of more than EUR 150 million in the previous financial year are required to adopt a plan to ensure their business model and strategy is compatible with 1.5°C targets[21]. SMEs are not under the scope of the proposed CSDD but it is estimated that they will be affected indirectly and exposed to some of the costs through their supply chains, even though Article 7.2d requires large companies to help SMEs in fulfilling their due diligence reporting requirements given that such requirements would endanger the SMEs viability.

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[17]Supra note 11, Article 19b.

[18]Directive 2006/43/EC of the European Parliament and of the Council of 17 May 2006 on statutory audits of annual accounts and consolidated accounts, amending Council Directives 78/660/EEC and 83/349/EEC and repealing Council Directive 84/253/EEC (Available at: **https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02006L0043-20140616) Article 26**.

[19]Supra note 11, Article (30).

[20]Proposal for a Directive of the European Parliament and of the Council on Corporate Sustainability Due Diligence and amending Directive (EU) 2019/1937, COM/2022/71 final (Available at: **https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022PC0071**).

[21]Ibid, Article 15a

6. DEVELOP AN ACCURATE MONITORING AND REPORTING PROCESS
(STEP 3 OF 3) Continued.

In order to meet our climate targets, it became inevitable to establish a definition of what is sustainable. That is the main idea behind the creation of the **EU Taxonomy**, which is a classification system containing a list of environmentally sustainable activities[22]. The Regulation entered into force in 2020, but its rules began to apply gradually from 1st January 2022 with regards to the objectives of climate change adaptation and mitigation; and from the 1st January 2023 in relation to the other objectives. The Taxonomy disclosures must be attached to the non-financial statements required under the NFRD and companies who are under the scope of the NFRD are obliged to report Taxonomy related information.

The Regulation introduces a set of four criteria for environmentally friendly economic activities:

1. It should contribute to at least one of the environmental objectives;
2. It does not harm any of the objectives;
3. It is carried out in compliance with the minimum safeguards;
4. It complies with the technical screening criteria developed by the Delegated Acts[23].

Moreover, the EU Taxonomy also recognizes two other types of activities as making a substantial contribution to one of the objectives: transitional activities – for which low-carbon alternatives are not yet available and that have GHG emissions levels that correspond to the best performance in the sector; and enabling activities –that directly enable others to make a substantial contribution to an environmental objective e.g., installing energy efficient equipment in buildings. In exchange for sharing data, the Taxonomy provides greater visibility in relation to investors and tax incentives. The verification of Taxonomy disclosures is not obligatory as they are part of the non-financial statements.

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[22]The Taxonomy Regulation establishes six environmental:
  1. Climate change mitigation,
  2. Climate change adaptation,
  3. The sustainable use and protection of water and marine resources,
  4. The transition to a circular economy,
  5. Pollution prevention and control.

[23]Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088, (Available at: **https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020R0852**)

6. DEVELOP AN ACCURATE MONITORING AND REPORTING PROCESS
(STEP 3 OF 3) Continued.

The Science-Based Target Initiative

The Science-Based Target Initiative (SBTi) is a sustainability reporting framework which provides a clearly defined pathway for companies to reduce their GHG emissions in line with the Paris Agreement. There is a streamlined target validation route for SMEs which provides an opportunity to immediately set up near-term science-based targets[24] for scope 1 and 2 emissions and optionally net zero targets[25], by choosing from one of the predefined target options. It is important to note, that under the SBTi, an SME is defined as a non-subsidiary, independent company with fewer than 500 employees (excluding financial institutions and oil and gas companies[26]). According to the SBTi's Annual Progress Report, as of 31st December 202, more than 1244 companies had approved targets and commitments in Europe[27].

Targets can be **absolute targets**, reducing a specified amount of emissions from the baseline year to the target year (e.g. 35% reduction of Scope 1 emissions from 2010 to 2022); and **intensity targets** which refers to reduction of emissions per unit of economic output (e.g. 35% reduction of emissions per unit of value added from 2010 to 2022). Intensity targets are not recommended because, while a company may achieve its intensity target, it does not guarantee the decrease of absolute emissions. There are 2 main target setting methods currently endorsed by the SBTi for setting targets: the Absolut Contraction Approach and a Sectoral Decarbonization Approach (see Table 8). For the Absolute Contraction Approach all companies reduce absolute emissions at the same rate, irrespective of their initial emissions performance. Under this cross-sectoral approach companies can set near-term targets and reduce their emissions at a minimum linear annual rate of 4.2% in line with the 1.5% scenarios. The Sectoral Decarbonisation Approach sets physical intensity targets that use the convergence of emissions intensity.

Absolute Contraction Approach		Sectoral Decarbonisation Approach
Company input	• Base year, • Target year, • Base year emissions divided by Scope.	• Base year, • Target year, • Base year emissions divided by Scope, • Activity level in the base year e.g., distance travelled, • Estimated change in activity level by the target year.
Method output	Overall reduction of GHG emissions by target year, relative to the base year	A reduction in emissions relative to a specific production output of the company e.g., tonnes of CO2 /MWh, and its translation to absolute emission reductions
Example	Commitment to reduce Scope 1&2 emissions by 25% over a 10-year period	Commitment to reduce Scope 1 GHG emissions from electricity and heat generation by 90%/ MWh by 2030 starting in 2020

Table 15: Absolute contraction and sectoral decarbonisation approaches.

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[24]Near-term targets are aabsolute scope 1 and 2 GHG emissions reduction targets. These must cover a minimum of 5 years and a maximum of 10 years from the date the target is submitted to the SBTi for official validation.

[25]Net-zero targets are absolute scope 1, 2 and 3 GHG emissions reduction targets that should be achieved by 2050 at the latest, from a predefined base year. SME targets must be aligned to a 1.5°C near-term science-based target to be eligible to set a net-zero target.

[26]The SBTi has a fossil fuel policy not to validate targets from fossil fuel companies and will no longer accept commitments from these companies regardless of whether they are an SME or not. A guidance document for oil and gas companies is on the way; and as for financial institutions, a specific framework is already available.

[27]Science-based Targets Initiative Annual Progress Report 2021, Version 1.2-June 2022 (Available at: **https://sciencebasedtargets.org/resources/files/SBTiProgressReport2021.pdf**)

6. DEVELOP AN ACCURATE MONITORING AND REPORTING PROCESS (STEP 3 OF 3) Continued.

Companies in the power generation sector and in the forestry, land-use, and agriculture sectors are required to set science-based targets using sector-specific pathways (upon the finalisation of the GHG Protocol's Land Sector and Removals Guidance). For all other companies, use of the cross-sectoral pathway is recommended. Sector specific pathways for target setting are either available or under development for the 13 SBT sectors[28]. The targets must be in line with the criteria that the initiative considers critical for qualifying a target as "science-based". In general, a science-based target method is comprised of three elements: a carbon budget, which marks the amount of carbon that can be emitted into the atmosphere before warming will exceed predefined temperature thresholds; an emission scenario providing a way to distribute the available carbon budget over time; and the allocation approach exploring how a carbon budget underlying a given emissions scenario is allocated among companies with the same level of disaggregation (convergence or contraction).

The SBTi does not provide specific guidance on measuring and reporting emissions or on emissions reduction measures. In achieving their targets SMEs shall follow the rules of the GHG Protocol Corporate Accounting and Reporting Standard, the GHG Protocol Scope 2 Guidance and the GHG Protocol Value Chain Accounting and Reporting Standard.

The process to validate targets for SMEs goes as follows:

1. Filling out the target setting form which includes providing complete information on the company, selecting a predefined target and providing answers to the criteria related questions;

2. A thorough review performed by SBTi to ensure the provided information is accurate and complete, after which an email is sent to confirm the target approval. After passing the due diligence, the Terms and Conditions can be signed, and a one-time fee should be sent to SBTi;

4. After the payment is verified, a final confirmation is sent to the SME confirming the approval and registration of the target alongside a communication package including all relevant details about the target publication. The targets are published on the SBTi's website, as well as on partners websites.

Target setting by SMEs under SBTi means that they either commit to:

- **Setting a near-time science-based target**, as well as to measuring and reducing scope 3 emissions and to publicly reporting company-wide Scope 1 and 2 GHG emissions inventory and development against published targets on an annual basis, or;

- **Setting a net-zero science-based target** in accordance with the SBTi's Net-Zero Standard and Criteria which entails a 90% emissions reduction across all three scopes by 2050, and to publicly reporting company-wide Scope 1, 2 and 3 emissions inventory and development against published targets on annual basis. In achieving the targets, companies shall follow the rules of the GHG Protocol Corporate Accounting and Reporting Standard, the GHG Protocol Scope 2 Guidance and the GHG Protocol Value Chain Accounting and Reporting Standard.

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[28] The SBT sectors go as follows: Forests, land and agriculture pathway (FLAG), FLAG commodity pathways, Buildings, Iron and steel, Cement, Chemicals, Road and rail transport, Maritime transport, Aviation, Oil and gas, Power generation, Apparel and footwear, ICT.

6. DEVELOP AN ACCURATE MONITORING AND REPORTING PROCESS
(STEP 3 OF 3) Continued.

CDP

For over 20 years CDP has been a non-profit, global voluntary disclosure system that investors, companies, cities, states, and regions can use to manage their environmental impacts.

For years, CDP has been offering reduced, "minimum" versions of their questionnaires (**https://www.cdp.net/en/guidance/guidance-for-companies**) to collect information on climate change related disclosure. This was available for smaller entities to use to report their key activities and ambitions to their stakeholders with minimum effort. As of next year, this will be replaced by an even more streamlined climate questionnaire format which has been specifically developed around the needs of SME reporting. This questionnaire will be made available to the market over the next few months.

Further information available on the currently available questionnaires **here**.

SME Climate Reporting Framework

The SME Climate Hub is an initiative founded by the We Mean Business Coalition, Exponential Roadmap Initiative and the United Nations Race to Zero campaign in collaboration with Oxford University and the company Normative. The SME Climate Hub is a global initiative that aims to mainstream climate action in the small to medium sized business community and enable SMEs to build resilient businesses for the future (see: **https://smeclimatehub.org/about-us/**).

SME Climate Hub has launched a voluntary, simplified SME Climate Disclosure Framework in partnership with CDP, the Exponential Roadmap Initiative and Normative. The framework lays out the key climate-related indicators that SMEs should report on and use to inform their disclosures. The resource is open for anyone to access and is intended to be used directly by SMEs to guide their reporting of climate impacts and strategies to multiple stakeholders.

SME Climate Hub is now developing an interactive reporting tool based on the SME Climate Disclosure framework. SMEs will be able to use this tool to fulfil the requirement of publicly disclosing any progress, but also to provide reports as a basis for establishing strategy and action.

Further information on the reporting framework is available **here**.

How to set up your own monitoring and reporting process

Once you have adopted a framework, you need to think how to collect the data required. In many cases, it is a simple as understanding your energy consumption over time by looking at your utility bills and how that energy consumption is generating GHG emissions. If you did use software tools to calculate your base year commission, you can use the same tool to calculate the emissions of the current year. Most tools automatically generate a figure showing the evolution of the emissions in time or compare the emissions with emissions from a previous year and the factors that explain the significant changes since then. This explanation often offers a short description of the energy or emission savings implemented.

If you have more complex operations, involving machinery and factory processes, you will need to dig a bit deeper.

7. CASE STUDIES

Ways to motivate and mobilise employees in German Craftsmen Initiative
German organisations implemented amongst others the following measures to motivate and mobilise employees:

Energy Savings Week. The Energy Savings Week is a competition. The office that saves the most compared to the previous week is the winner. In the energy savings week, energy scouts of 4 offices of Sparrkase KolnBonn (bank) focused on different energy reduction measures. The scouts sent emails to colleagues with tips on how they could save energy. Additionally, they put coloured labels on energy-intensive devices, to warn their colleagues of their consumption. The winning office reduced its energy use by 11%.

Sustainability Oscar. The 45 employees of Ilapo, Internationale Ludwig Arzneimittel, (a multinational pharmaceuticals import and logistics company) can submit their ideas for energy reduction measures continuously. The ideas are assessed on a monthly basis, and where possible, directly implemented. At the end of the year the ideas that were implemented are assessed on impact (energy reduction). The idea with the most success (highest impact after implementation) gets the Oscar.

Bakery and Confectionery, Poznan, Poland
Bakery and Confectionery is a family business and has existed since 1946. The company is located in the Poznan area in Poland. The company combines the tradition of old Polish recipes with contemporary taste and modern technological solutions. The company sells its products in its own stores and also delivers bread to other shops. The company's energy saving plan is part of a broader goal to undertake pro-ecological actions and to observe sustainable development principles with the objective of adopting the rules of the circular economy. The company implemented the following measures to save energy: motion sensors, LED fluorescent lamps, steam condensers (in baking ovens), chimney exchangers, industrial dish washers. It also uses solar collectors. On the job training and education is provided to employees to raise their environmental awareness, ensure their buy-in to the company ethos and to eliminate bad habits.

Zingg Chocolatier, Westervoort, Netherlands
Three chocolate makers of Zingg Chocolatier produce a wide range of handmade and traditionally manufactured products of high-quality Belgian Callebaut chocolate and cooked Lubeck marzipan. Old and new recipes form the basis of consistent top quality. The company implemented white roofing and screens for windows to decrease the need for air conditioning. As a result, the air conditioning is used less in the summer. The company also replaced the old air conditioning unit because new parts were becoming increasingly difficult to obtain. The new device turned out to use 40 percent less energy. A fourth measure was LED-lighting. The payback period for installing LED-lighting was less than a year and a half. Measures currently in the planning stage are solar panels and electric mobility[29].

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[29]source: **https://www.deb.nl/ondernemersverhalen/voorkom-de-conclusie-ik-had-het-eerder-moeten-doen/**

7. CASE STUDIES Continued.

Case study and overview of reduction measures of a German Butcher

The family business Butcher Martin Göpp prepares and sells sausage products. A breakfast and lunch menu consisting of homemade dishes freshly prepared daily is offered. They also provide party services. The company has been able to continuously reduce energy consumption by purchasing a new, efficient deep-freeze cell with heat recovery and converting lighting in the sales area to energy-efficient LED technology. The efficient deep-freeze cell with heat recovery reduced the CO_2 emission by 7.5 tons per year. The LED lighting reduced the electricity consumption by 1600 kWh per year[30].

Table 16: Case study and overview.

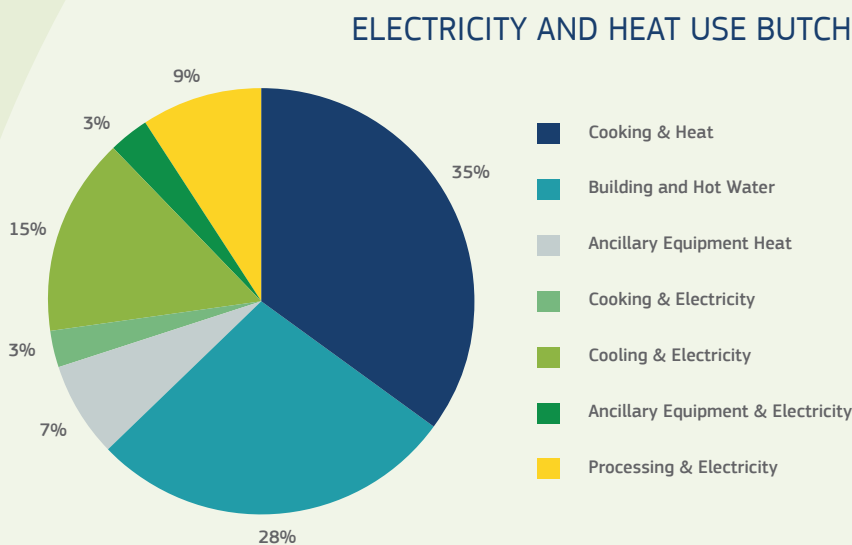### ELECTRICITY AND HEAT USE BUTCHER

Legend:
- Cooking & Heat
- Building and Hot Water
- Ancillary Equipment Heat
- Cooking & Electricity
- Cooling & Electricity
- Ancillary Equipment & Electricity
- Processing & Electricity

Figure 21: Graphic Electricity.

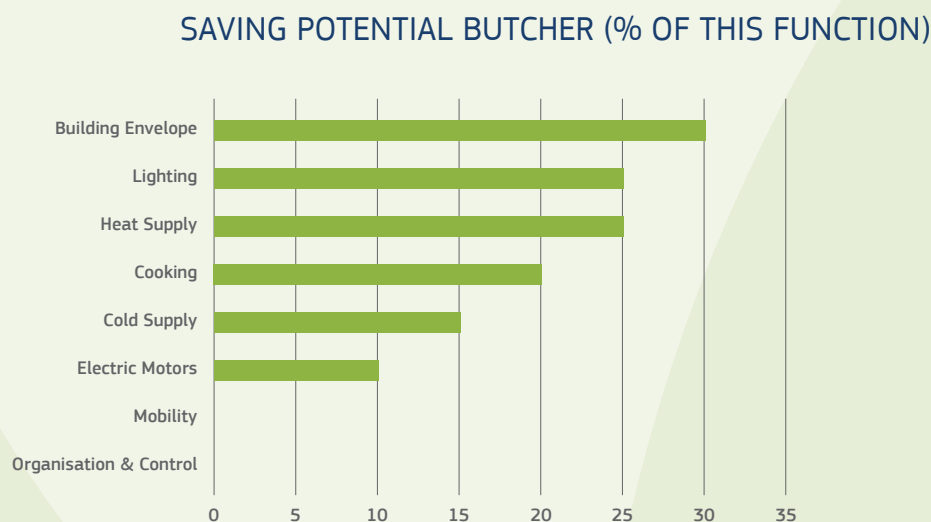### SAVING POTENTIAL BUTCHER (% OF THIS FUNCTION)

Figure 22: Graphic Saving Potential Butcher.

[30]source: Middelstandsinitiatieve Energie Wende und Klimaschutz Modelbetrief im Fleisherhandwerk Fleischerei Martin Göpp.

7. CASE STUDIES Continued.

Butcher: Overview of reduction measures related to lighting:

• **LED lighting in cold rooms or counters;**

• **Align lighting as required and replace if necessary;**

• **Zone and switch lighting separately;**

• **Increasing the use of daylight (e.g. light band in the ridge area, enlarging the window areas);**

• **Brightness-dependent control by daylight sensors;.**

• **Needs-based switching to presence detectors;**

• **Equip outdoor advertising / shop windows with twilight and time switches;**

• **Regular cleaning of the entire lighting system;**

• **Choose wall and ceiling colours as light as possible.**

Table 17: Butcher Overview.

8. ANNEX A: SOURCES FOR SECTOR SPECIFIC REDUCTION MEASURES AND PLANS

Table 9 below shows the sectors for which the tools discussed in this document provide overviews of reduction measures and/or a sector specific energy plan.

Legend: **X = sector covered**, **O = coverage expected before year end**, **? = not confirmed yet**

		SME	ZDH	NZN	KWA	DEB	SBTI	RET
		Int	DE	UK	NL	NL	Int	Int
Agriculture		X			X	X		
Manufacturing		X						
Food & beverage						X		
	Bakery		X	O	X	X		?
	Butchers		X					?
	Brewery			X				
Textiles							X	X
Wood & Wood product	Carpenters		X			X		?
Paper & Printing						X		?
Coke & refined petrol								?
Chemicals								x
Rubber & plastic					X	(X)		x
Metal products	Metal Crafts		X			(X?)		?
Computers								?
Electrical equipment								?
Machinery								?
Motor vehicles								?
Other transport equipment					X	X		?
Furniture						X		?
Repair and installation								?
Electricity and gas							X	
Construction		X?		O	X	X		
Whole sale & retail	Motor vehicle		X		X	X		?
	Retail	X			X	x		
Transportation & storage						X		
Accommodation & food	Restaurants	X		X	X	X		
	Hotels	X		O	X	X		
Information/ communication				X				
Real Estate activities								
Professional services	Tech services			X				X
Administrative service	Accountants			X				X
	Legal			X				
Other services	Other Services			O	X	X	X	X
	Textile cleaners		X					
	Hair dressers		X					
	Health & wellness			O	X	X		
	Education				X	X		
Other	Sport & recreation				X	X		
	Datacentres					X		

Table 18: Sectoral support and software tools.