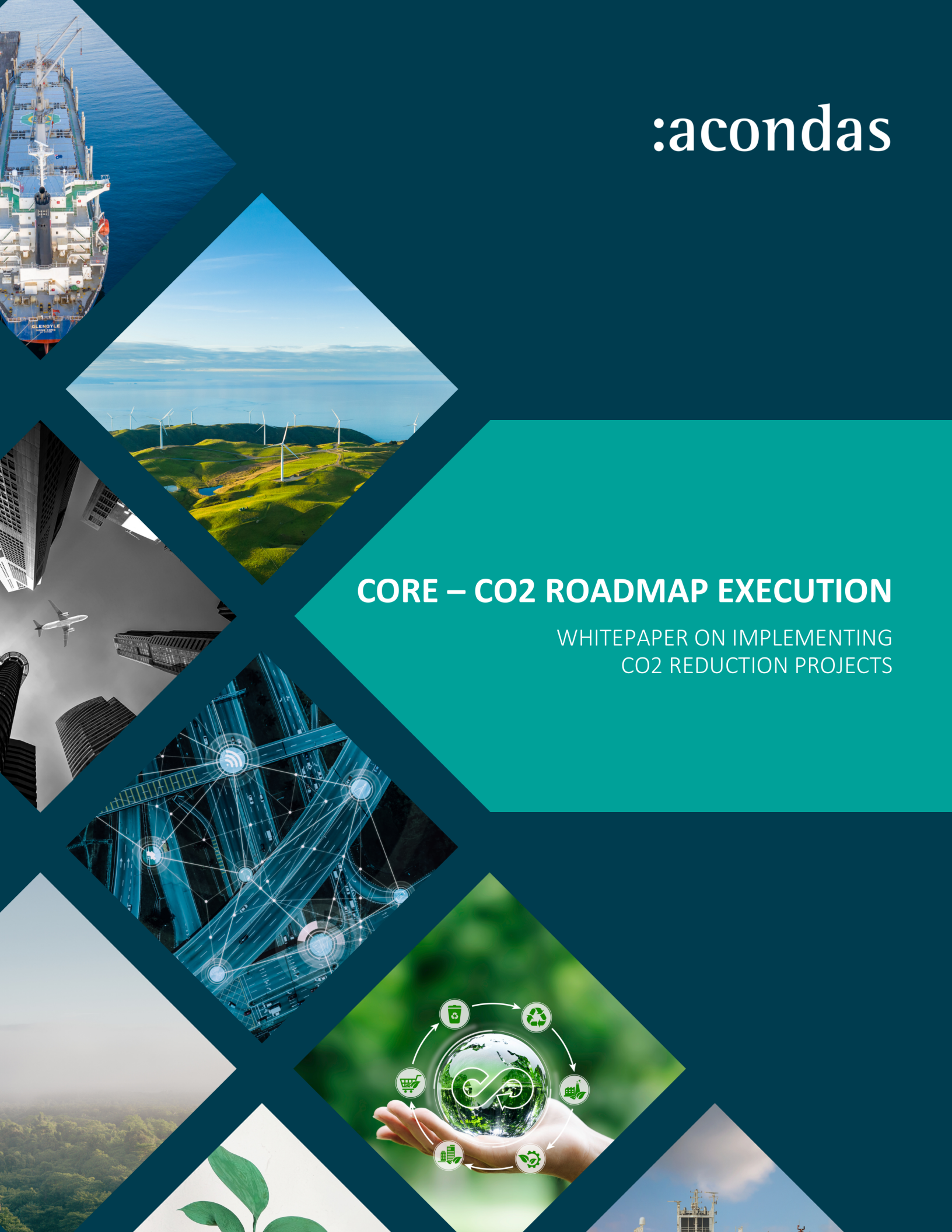


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CORE – CO2 ROADMAP EXECUTION

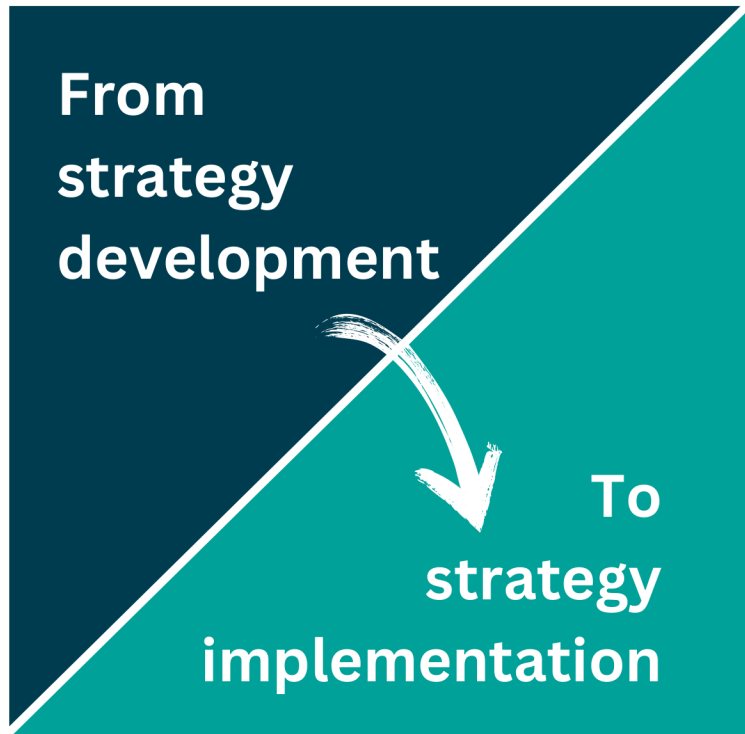
WHITEPAPER ON IMPLEMENTING
CO2 REDUCTION PROJECTS



The international public community has reached various agreements on climate policy and social targets. The Paris Climate Agreement, which was adopted at COP 21 in 2015, set the first binding targets to limit global warming to 1.5 °C at most. In its Agenda 2030, the United Nations set 17 goals for sustainable development, including reducing greenhouse gases. The EU's Fit for 55 package is a key initiative to reduce CO2 emissions. Among other things, it includes around three-quarters of all European CO2 emissions in emissions trading, increased energy efficiency and the proportion of renewable energies.

These agreements and ambitions set the course for a sustainable future and require companies to take strategic measures to reduce CO2 emissions. The 2001 Greenhouse Gas Protocol (GHG) defines emissions in three areas, known as scopes: direct emissions from a company's activities (scope 1), indirect emissions from energy consumption (scope 2) and indirect emissions along the entire value chain (scope 3). While many companies have clearly defined climate targets, they often find it challenging to implement concrete CO2 reduction measures and programs. In this whitepaper, we identify the challenges of implementing CO2 reduction programs and define a path for successful strategy development and implementation.

From strategy development to implementation – key aspects



Before suitable measures can be identified and implemented, current emissions must first be measured. Collecting comprehensive data is often challenging at first and is often based on assumptions. Detailed documentation of the process facilitates subsequent automation.

Finding reliable data on emissions along the value chain (scope 3) is particularly difficult. While the German Supply Chain Act, which went into effect on January 1, 2024, increases transparency for European supply chains, it does not apply to companies outside the EU.

Setting comprehensive and chronological targets

Sustainability targets must be expressed clearly and progress toward achieving them recorded accurately. In order to reach net-zero CO2 emissions, companies must adopt a holistic approach in setting targets and order them sequentially to enable incremental but ultimately complete implementation.

The constantly evolving legal framework and external influences on corporate emissions along the value chain are some of the major challenges companies face along this path.

Identifying and evaluating suitable measures through stakeholder assignment

Implementing CO2 reduction projects requires careful planning and evaluation. Costs, implementation time, and savings potential are key factors to consider in sequencing measures. While the full range of measures may need to be implemented to achieve the net-zero CO2 emissions target, the challenge is to identify the right measures for the company and to put them in the best possible order. Some short-term measures result in quick wins, whereas other long-term measures are often complicated, investment-intensive and have unfavorable ROIs. The challenge is to prioritize the right measures and to maximize the synergies between them.

While it is essential to involve all relevant stakeholders, combining measures, timing, and stakeholder assignment is complex. In the remainder of this white paper, we will outline a structured approach to this complex challenge.

Making necessary adjustments and responding to changes in the legal framework

The legal regulatory framework around sustainability is in a state of fluctuation. In many areas, the regulatory conditions are incomplete and continue to be adapted and updated regularly. This fluctuation poses major challenges in implementing sustainability measures.

German and international law continue to wrestle with major issues surrounding the ambitious environmental goals. The relevant legal requirements are often imprecise and difficult to implement in practice. Accordingly, companies must be able to react flexibly and appropriately as new requirements emerge, adapting to changing circumstances as they implement their CO2 reduction measures.

Effective controlling involves tracking progress and measuring implementation success

It can be difficult to track and measure the success of a CO2 project implementation. Progress tracking ensures that measures are implemented on time and comprehensively, while effect controlling shows how measures impact the company's sustainability targets and the business environment.

Tracking also ensures the efficient use of resources such as time, money, and personnel by aligning resource requirements with expected effort. In addition to quantitative data, qualitative factors that influence sustainable choices and behaviors can also be tracked. Continuous monitoring enables project leads to learn from the findings and improve the effectiveness of implemented measures and the overall CO2 reduction program.

Transferring actual and target emissions and emission reduction measures into a holistic IT system architecture

Transferring emissions data submitted by different areas of the company into a standardized system is challenging. In order to ensure that the effort needed for data collection remains feasible and to facilitate effective controlling and reporting on progress toward sustainability goals, a well-structured and holistic IT system architecture is essential.

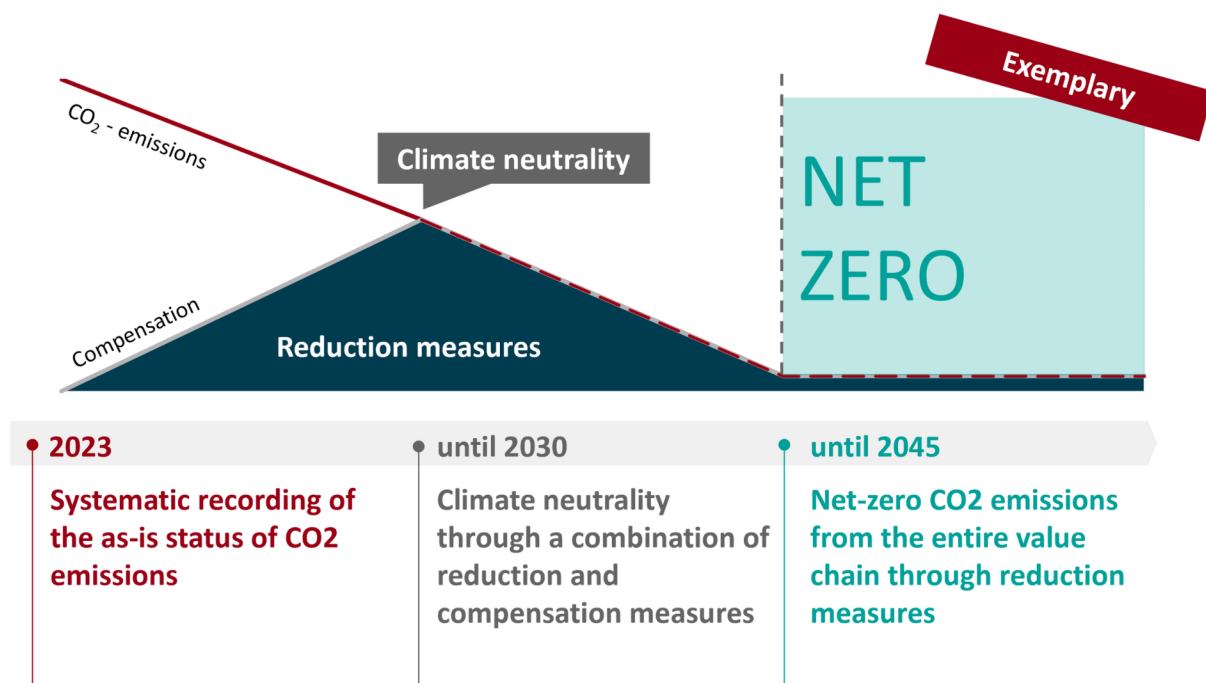
In summary, the implementation of CO2 reduction projects requires a clear strategy and a well-considered implementation plan. Setting the right priorities, defining clear targets and measures, monitoring progress toward targets, and adjusting to fluctuating conditions are crucial to bringing sustainability to life. Due to the enormous effort involved in collecting data and structuring the packages of measures, well-structured implementation is of fundamental importance. To achieve sustainability goals with long-term positive effects on the environment and society while remaining competitive is a big challenge for every company, requiring an integrated view.

Our approach to developing and managing CO2 reduction programs

acondas IMPACT is an integrated approach for the implementation of sustainability strategies and targets in general, while acondas CO2 Roadmap Execution (CORE) is designed specifically for CO2 reduction programs. Our CORE approach translates the complex components of CO2 reduction programs into a standardised structure that can be integrated into companies to create additional value, a decisive factor in ensuring long-term competitiveness. In addition, achieving self-defined climate targets is an opportunity for companies to position themselves as pioneers in sustainability and gain a competitive advantage.

As illustrated in the exemplary case below, the path to climate neutrality begins with the systematic measurement of the current state of CO2 emissions as of a fixed date. This step creates a clear starting point for setting climate targets. The two most important milestones for companies are climate neutrality and net zero emissions. Whereas climate neutrality can be achieved through compensation measures, to achieve net zero emissions, investments must be redirected from compensation measures to reduction measures.

The two milestones may serve as foundational goals for a company. However, tailoring these to the company's capabilities is advised to ensure they're attainable. Adjusting goals post-failure can significantly harm the company's reputation.



1. Structuring CO2 reduction measures

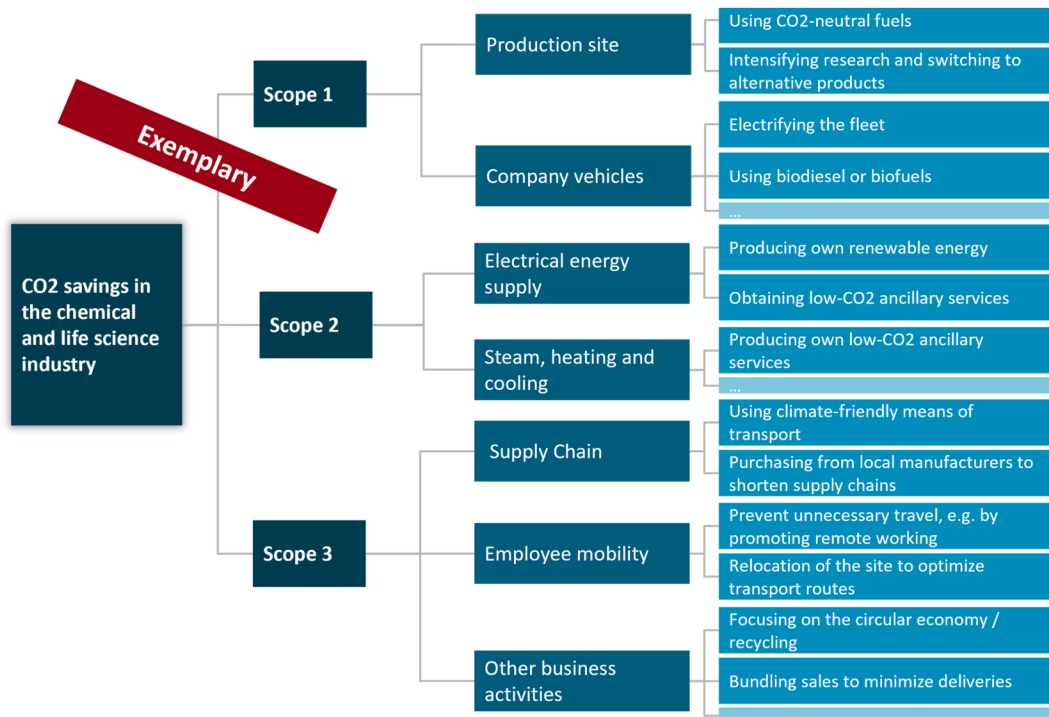
Once a database has been created, the resulting measures can be derived. Companies should use internal and external expertise to structure potential measures along the scopes according to the GHG Protocol Corporate Standard. Depending on the industry and company structure, very different measures are important to ensure effectiveness. A complete record of all measures is also the starting point for any successful CO2 reduction strategy.

Success factors



- Milestones: Define milestones and resources needed to implement identified measures.
- Team and capacity resources: Identify qualified teams with capacity resources for each phase and project.
- KPIs and communications: Define KPIs and establish clear lines of communication to manage sustainability strategy implementation.

All areas of the company should be included to identify interdependencies at an early stage and gain a broad understanding of any adjustments needed. Here is an exemplary structure of measures:



2. Evaluation and Implementation of Measures

To implement measures, two steps are necessary. In the first step, the measures need to be evaluated and in the next step, a schedule must be drawn up taking the evaluation into account.

2.1 Evaluation of measures

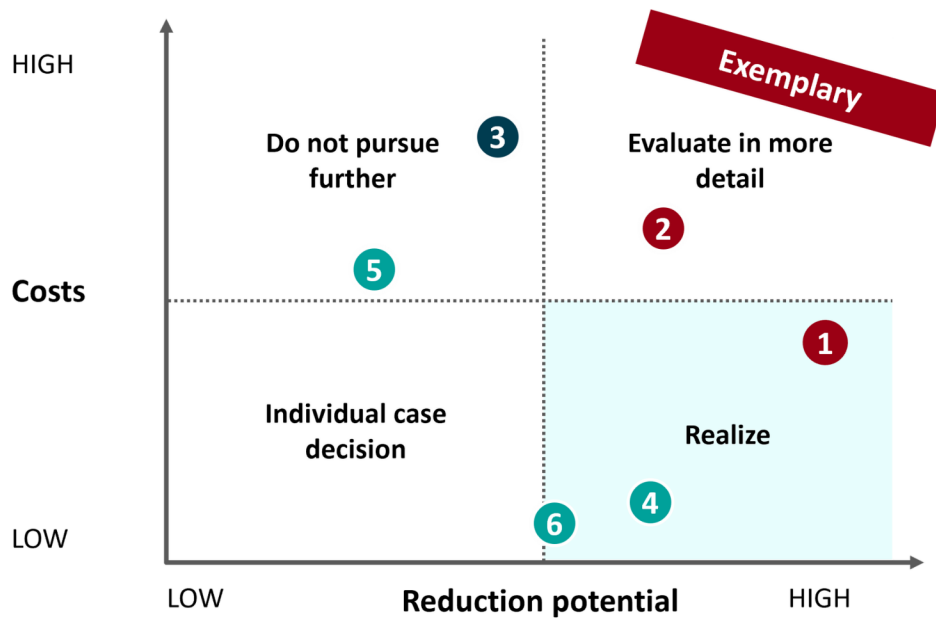
Once a complete tree of measures has been created, consisting of a combination of reduction and compensation measures, the measures must be evaluated according to costs, the implementation period, and emission reduction potential.

Success factors



- **Comparability:** Determine the relative importance of measures by ensuring they are comparable based on technical and economic criteria.
- **Short- and long-term:** Combine quick-wins and long-term measures to generate the highest added value.
- **Company-specific prioritization:** Prioritize measures based on the company's own goals.
- **Synergies:** Record synergies among measures to derive implications for the implementation sequence.

A matrix with the dimensions emissions reduction potential, costs, and time can be used to evaluate the measures. The following figure is a highly condensed and simplified representation. In reality, the solution space is considerably larger and more complex.



- | | | |
|--|---|---|
| 1 Climate-friendly transportation | 3 Purchase of raw materials from local suppliers | 5 Own production of renewable energies |
| 2 Purchase of green electricity | 4 Relocation | 6 Promoting a circular economy |
- Short-term ● Medium-term ● Long-term

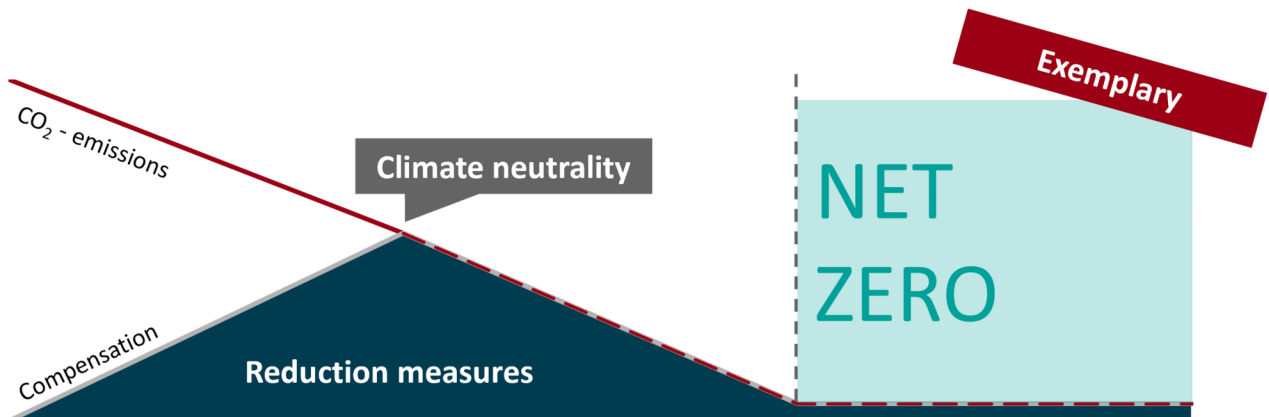
2.2 Disentangling the measures along the timeline

To plan the implementation, the identified measures are placed on the roadmap based on their impact horizon, distinguishing short-term, medium-term, and long-term measures. Achieving net-zero CO₂ emissions across the entire value chain by 2045 requires ongoing reduction measures, which can be adapted in parts to react flexibly to changing requirements. The net-zero target implies not only a drastic reduction in CO₂ emissions but also a balance between the greenhouse gases emitted and the emissions saved or offset. The goal is a long-term and comprehensive strategy that responds flexibly to ongoing regulatory changes and innovation.

Success factors



- Setting milestones: Define milestones and resources needed to implement the required measures.
- KPIs and communication: Define KPIs and establish clear lines of communication to manage the sustainability strategy implementation.
- Team and capacity resources: Identify qualified teams with capacity resources for each phase and project.



Short-term

- : Use of climate-friendly means of transportation for business trips
- : Purchase of green electricity

Medium-term

- : Electrifying the fleet
- : Bundling sales to minimize delivery routes
- : Procurement and production of low-CO₂ ancillary services
- : Purchase of CO₂ certificates

Long-term

- : Relocation
- : Promotion of a circular economy

3. Inclusion of the relevant stakeholders

The implementation of CO2 reduction measures requires the active involvement of relevant stakeholders. As outlined in the introduction, involving stakeholders at an early stage has many advantages. Stakeholders can come from different business areas and be assigned to different scopes or can also influence multiple scopes. Stakeholder involvement is especially important in measures to reduce/offset emissions within the scopes.

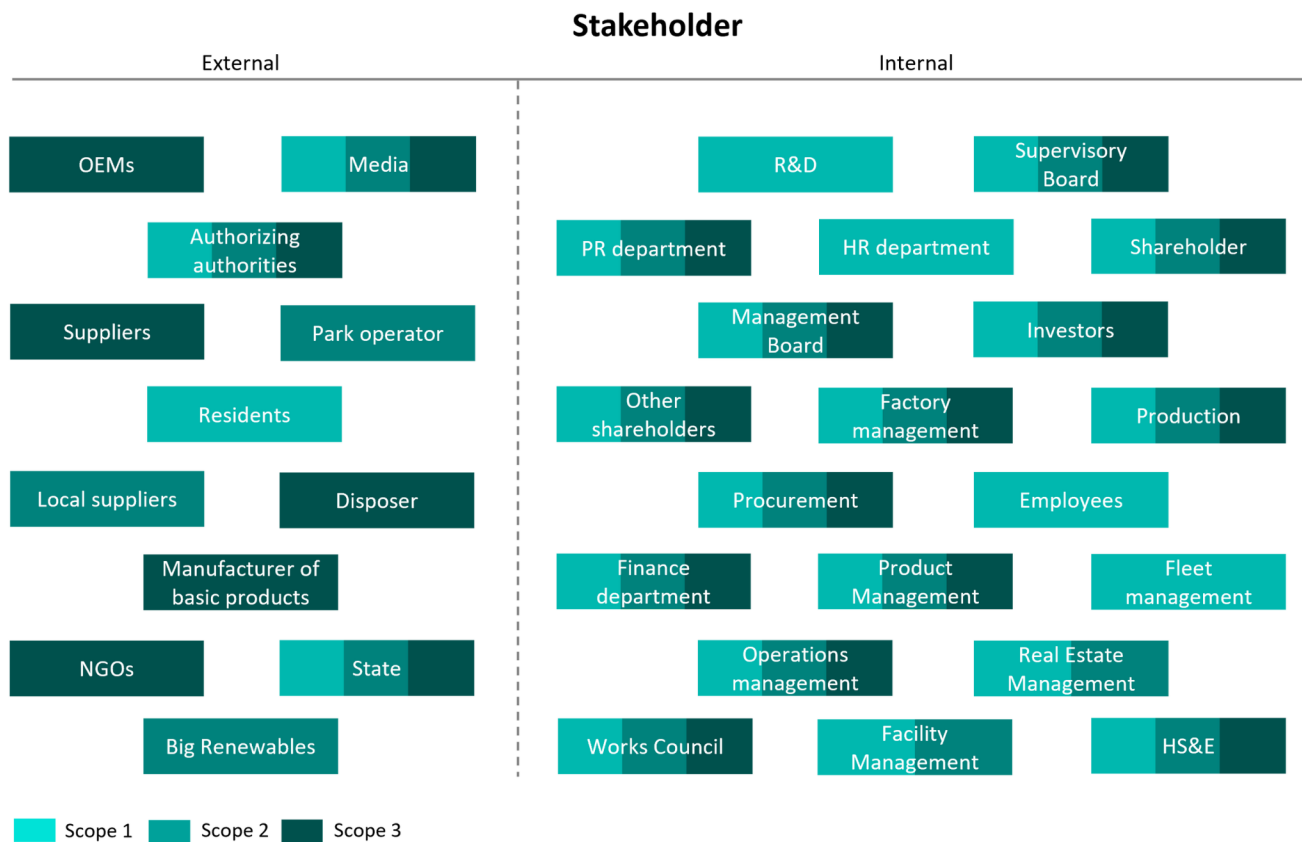
Internal stakeholders are particularly important to ensure a smooth transfer of knowledge. In the early stages of implementation, involved internal stakeholders feel more involved in the process, which makes them more likely to support changes.

Success factors



- Stakeholders: Identify all stakeholders who are affected by or can contribute to the measures.
- Complexity: Consider the large number and complexity of potential measures to involve a wide range of stakeholders.
- Communications: Communicate goals and measures clearly and comprehensibly to gain the understanding and support of stakeholders.
- Scopes: Consider how stakeholders from different areas may be affected and influence measure according to the 3 scopes.

Even a simplified overview of potential stakeholders shows the complexity of involving stakeholders appropriately:



4. integration into the IT system architecture

In the steps outlined so far, a large amount of data is collected from different sources, some manually from different systems. An important next step is to transfer these data points to a consistent IT system architecture so it can be analyzed and managed. Parallel to the previous steps, we also look at how sustainability measures can be implemented and integrated into existing business processes.

Before integration can take place, initial data must be collected as a first step in baselining. Baselining is a one-off process, often based on assumptions, that systematically records the status quo.

Based on baseline data, data gaps and inconsistencies are identified and rectified. The data is then transferred to a centralized cross-company database, making it available for further processing. To maximize the usability of the data, it should be transferred to a central planning system and be able to be derived analogously.

Success factors



- IT: Involve the IT department early in centralized knowledge management and coordination between the various specialist departments.
- Documentation: Document the origin of emissions data during data collection to facilitate the process of transferring it to a cross-company database.
- Consistency: Collect data consistently and make it traceable to be able to transfer data queries into an automated process.
- Centralization: Merge decentralized systems into a uniform data collection system in compliance with the relevant data protection regulations.

Cross-company work with emissions-related data is expected to become increasingly important. The high cost of initial data collection and integration into an efficient IT system architecture is therefore an important investment in future competitiveness.

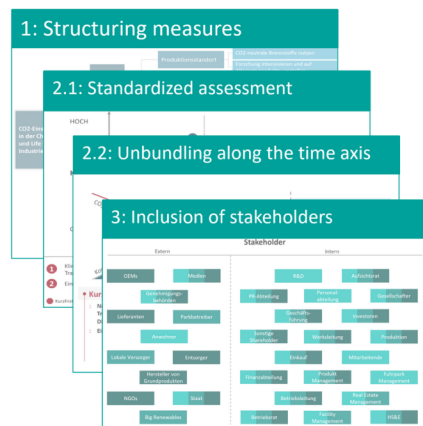
The key steps to success

Developing and implementing carbon reduction programs presents complex challenges, but also a unique opportunity for companies to achieve their sustainability goals while strengthening their positioning as environmentally-responsible businesses. Companies need to act now to achieve their ambitious sustainability targets. Uncertainty around many issues must not lead companies to postpone the start of CO2 reduction programs, but rather to adopt innovative solutions.

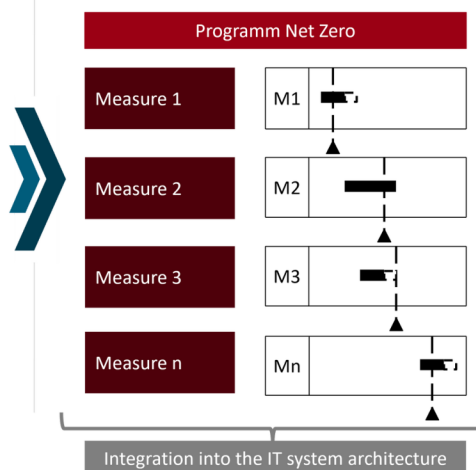
With our methodical approach to recording, evaluating, and implementing CO2 reduction measures, companies can not only reduce their CO2 footprint and make an important contribution to global climate protection, but also generate added business value. As acondas, we have developed an approach based on the experience of many comparable projects to systematically support CO2 reduction projects to make them a success. Our approach to the implementation of CO2 reduction projects is described below.

We also explain how our extensive experience from various project areas can be used profitably to help our clients successfully implement CO2 reduction programs and transform complexity into an organized structure.

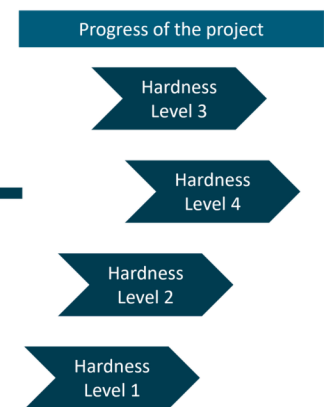
We grasp the complexity, ...



translate it into a consistent implementation plan...



... and track the realization process



Step 1: Record and structure CO2 reduction measures

The basis for every successful CO2 reduction project is a strong assessment and structure of the necessary measures. The large number of potential measures combined with diverse stakeholders and parallel integration into the IT system architecture creates a very complex project environment. Our team helps our clients translate this complexity into a clear structure. A consistent methodology for recording measures and efficient collaboration with internal and external knowledge carriers is essential. Our clients can benefit from acondas's extensive experience supporting them in the energy industry and in structuring complex measures.

Step 2: Evaluate and classify potential measures

The multitude of complex influences in CO2 reduction projects requires standardized evaluation of and a uniform timeframe for measure implementation. Our expertise in modeling and evaluating complex measures and associated implementation programs enables us to help our clients make the best decisions for their businesses.

We make sure that the chosen measures contribute effectively to reducing CO2 emissions and ensure that dependencies on other areas of the company are identified at an early stage.

Step 3: Involve stakeholders

A successful sustainability project requires the identification and appropriate involvement of all affected stakeholders. We help our clients manage these diverse stakeholders and provide specialist advice to ensure that all relevant interests and concerns are considered. We draw on a wealth of expertise in stakeholder management gained in various industries and can help our clients develop a strategy that leads stakeholders to feel well represented and that increases their understanding of the program. By collecting key input from stakeholders, we help ensure that they support the changes associated with the measures.

Step 4: Integration into the IT system structure

Integrating CO2 reduction strategies into a company's IT system architecture is an ongoing endeavor that spans the entirety of a CO2 reduction program. This process necessitates the seamless incorporation of both the existing and desired states, alongside the relevant measures, within the IT framework. Central to this integration is the ability of the IT architecture to aggregate, assimilate, and analyze extensive data from a variety of sources. The adoption of a centralized data platform is instrumental in eliminating silos and ensuring a comprehensive perspective on CO2 emissions. The architecture must also be scalable and adaptable in order to fulfil strict security and data protection standards.

Beyond these fundamental requirements, user engagement can be enhanced from the outset by developing an intuitive solution, complemented by user training sessions and proactive stakeholder engagement. This approach not only addresses the technical dimensions but also fosters a user-centric environment conducive to the successful implementation of CO2 reduction initiatives within corporate IT ecosystems.

As a leading consulting firm for strategy implementation, acondas bridges the gap between conception and realization. Our focus lies on three central areas: transactions, value enhancement, and transformations, with particular emphasis on organization, digitalization, and sustainability. Thanks to our experience from over 300 projects, we have developed holistic and field-tested approaches. These enable our clients to successfully position themselves for the future.

As part of the Ramboll Group, we can provide our clients with end-to-end support in the field of sustainability: from strategy and regulation to organizational implementation and technology. To this end, we leverage the expertise of over 18,000 professionals worldwide within the Ramboll network.

Our commitment to sustainability goes beyond words - we act and help our customers achieve their CO2 emission targets. Together we are shaping a sustainable future.

For more information, just send us an email to info@acondas.com.