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LOW-CARBON PROCUREMENT PLAYBOOK

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KEINO
Competence Centre for Sustainable and Innovative Public Procurement

Menu

TABLE OF CONTENTS

1. INTRODUCTION

The Low-Carbon Procurement Playbook is a guide for anyone working in public procurement. It helps to refine strategy, tactics and practical implementation to achieve the low-carbon goals. It shows which factors and stages of management and implementation are the most critical, in order to achieve the set goals.

Low-carbon public procurements refer to choices aimed at reducing emissions when making procurements. In Finland, public procurements amount to approximately EUR 47 billion annually [1], so the low-carbon nature of procurement plays an important role in achieving climate goals.

Public procurement is a team sport that requires the input of all parties. The playbook describes the progression paths for directors, managers and experts. Along the paths, the potential dangers of procurement have been identified, and the playbook offers recommendations for avoiding them. The playbook also describes the preconditions for a successful low-carbon procurement. Promoting low-carbon procurement means cooperation with the client organisation, its various units and suppliers. The playbook helps with building cooperation as well as evaluating and using tools that promote innovative procurement methods.

The playbook moves on three different levels – strategic, tactical and operational – at the same time. The playbook is intended for persons working with procurements, management, persons in positions of trust and companies. Success is guaranteed by means of well-balanced planning and implementation at all three levels, which are equally important. It is a matter of leadership that guides the development and transformation of operations, and thus produces effectiveness, which in the case of this playbook means a reduction in CO_2 emissions. Even the best climate strategy does not in itself bring about a reduction in emissions, but it must be broken down into tactical and operational actions and adapted to the available resources and capabilities. The playbook is also suitable for promoting other effectiveness goals.

Sustainable public procurement can be achieved through systematic, pragmatic and long-term management and actions. Welcome to the team!

The playbook has been compiled in 2021 under the Low-Carbon Procurement Development Programme implemented by the KEINO Competence Centre. The work involved six public procurement units preparing low-carbon procurements in the programme. The example cases are presented in detail in the appendices to the playbook and outlined in chapter 1.3.

Vocabulary related to low-carbon procurements can be found in Appendix 1 of this playbook.

1.1 IDENTIFYING THE MOST SIGNIFICANT LOW-CARBON PROCUREMENTS

Public procurement has significant potential to reduce climate emissions. The largest carbon footprint in public procurement is that of the purchased energy of buildings, i.e., the procurement of heat, gas and electricity, the construction and maintenance of buildings and areas, and civil engineering. Heating accounts for almost one third of the carbon dioxide emissions of public procurement and, together with construction, approximately one half.

In terms of the carbon footprint, significant product groups also include travel and transport, food products and food services, the procurement of machinery and equipment as well as services such as maintenance, cleaning and sanitation services (Figure 1) For these groups, there are also environmental criteria applicable to procurement.

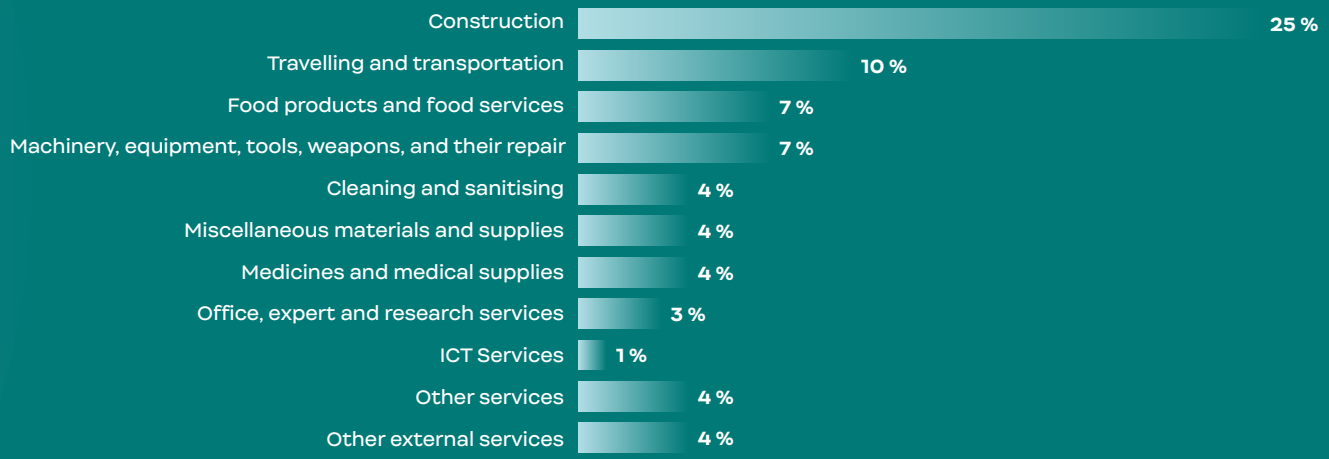


Figure 1 The share of the carbon footprint of the different categories of public procurement in the total carbon footprint of public procurement (Source: Kalimo et al. 2020.)

1.1.1 PROCUREMENT EFFECTIVENESS IDENTIFICATION PATH

After the Spend analysis and categorisation, procurements should be divided into procurements carried out by the procurement unit itself and those that are purchased, for example, through national framework agreements.

Without this breakdown, it is difficult to get moving. After the categorisation of procurements, it is possible to move on to identifying the most important influencing possibilities. Some of the procurements may already be on their way to low carbon, and some may still be on the starting blocks.

When the preparation of an individual procurement begins, the possibilities for achieving its sustainability and innovation objectives can be assessed with the help of various tools, such as Hankintaluotsi. In addition, the competitive tendering of procurements and monitoring during the contract period require reliable tools and transparent criteria, which can be used to demonstrate emission reductions or the superiority of the solution from an environmental point of view in relation to other similar solutions.

The emission reduction potential of low-carbon procurement, i.e., the low-carbon potential, can be realised in different ways. The procuring entity may have procurement guidelines that, in principle, lead to low-carbon solutions. This may include, for example, the prioritisation or avoidance of certain forms of travel, the use of alternative motive power or the primary use of remote services. In this case, the object of the procurement itself is low-carbon, and the task of the procurer is to select the most suitable solution from the low-carbon alternatives on the market. It should be noted that there is, of course, a difference in the amount of emission reductions between low-carbon solutions.

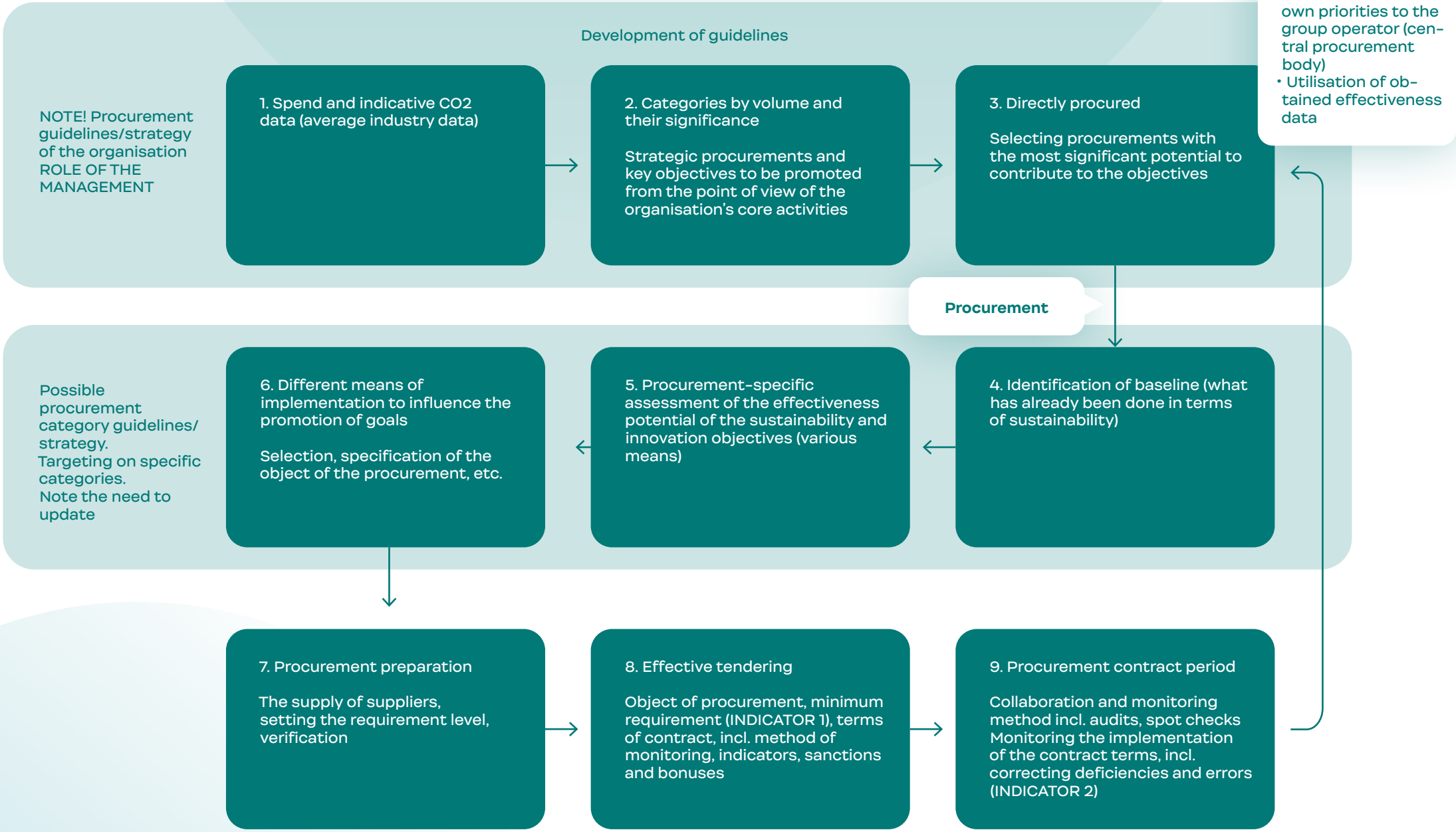
Normally, low-carbon procurement is promoted by setting guiding targets, minimum requirements and benchmarks and/or contract conditions. The use of the criteria guides to the realisation of low carbon, especially when the procurement has identified the criteria with the greatest impact and which can be implemented cost-effectively. In addition to low carbon, it is important to take into account the other environmental and sustainability impacts of the procurement.

However, from an overall perspective, a large number of different sustainability and environmental criteria are not appropriate. For example, in construction, the biggest factors affecting low carbon emissions are related to the main heating mode, energy efficiency and material choices. Preliminary assessment of the environmental impact of the procurement is important in order to detect these "hot spot" aspects. Existing product group-specific life cycle reviews and existing criteria sets can be used as tools. However, they do not directly provide answers to the extent to which different elements can be influenced in the particular procurement, but serve as a basis for the assessment and market dialogue.

The implementation of low-carbon procurements in practice will continue to be influenced by the resources available to the procuring entity and the expertise related to low-carbon procurement. This affects the extent to which market information can be utilised and environmental objectives set at different stages of the tendering process. Ultimately, it is also a question of what low-carbon solutions are available on the market or what new solutions can be developed or deployed within the framework of procurement. From the procurement organisation's point of view, the most significant procurement categories, the low-carbon nature of which it can influence the most, may therefore well be other than construction and building maintenance or transportation, for example.

The carbon footprint of the procurement can be considered as a kind of low-carbon indicator. Carbon footprint calculation is a good tool in procurement planning and in locating the most effective emission targets. However, carbon footprint calculation is still used to a limited extent in public procurement tenders, as widely approved carbon footprint calculation methods suitable for procurement are still being developed. Therefore, the use of the carbon footprint as a criterion for comparison should be considered on a case-by-case basis in order to ensure that genuine competition is being supported in terms of low carbon emissions and that the carbon footprint is not being minimised at the expense of quality. Construction is an example of an industry where a standard-based, widely approved calculation method has been developed and tested.

Procurement effectiveness identification (assessment) path



1.2 WHAT ARE THE MEASURES FOR IMPLEMENTING THE DESIRED CHANGE?

Since the opportunities for reducing emissions from low-carbon procurements are diverse, it is possible to manage the whole through three steps. The first step is to determine what the desired change is and when it should be implemented (for example, by 2030). The second step is to define the change palette with which the change is made possible. The third step is to define the types of agreements with which the change can be achieved.

Managing the change actions requires a new kind of management of the whole process. Regarding low carbon, we often move at the level of the big target (for example, "by 2030") and concrete actions (for example, individual procurement). The risk is that the levels do not interact with each other. Therefore, low-carbon procurement should be managed on an organisation-specific basis through a change palette with the following core questions:

- How much change can be brought about by existing activities?
- How is the low-carbon potential divided between different procurements?
- What new low-carbon measures must be implemented or procured in order to achieve the effectiveness target?

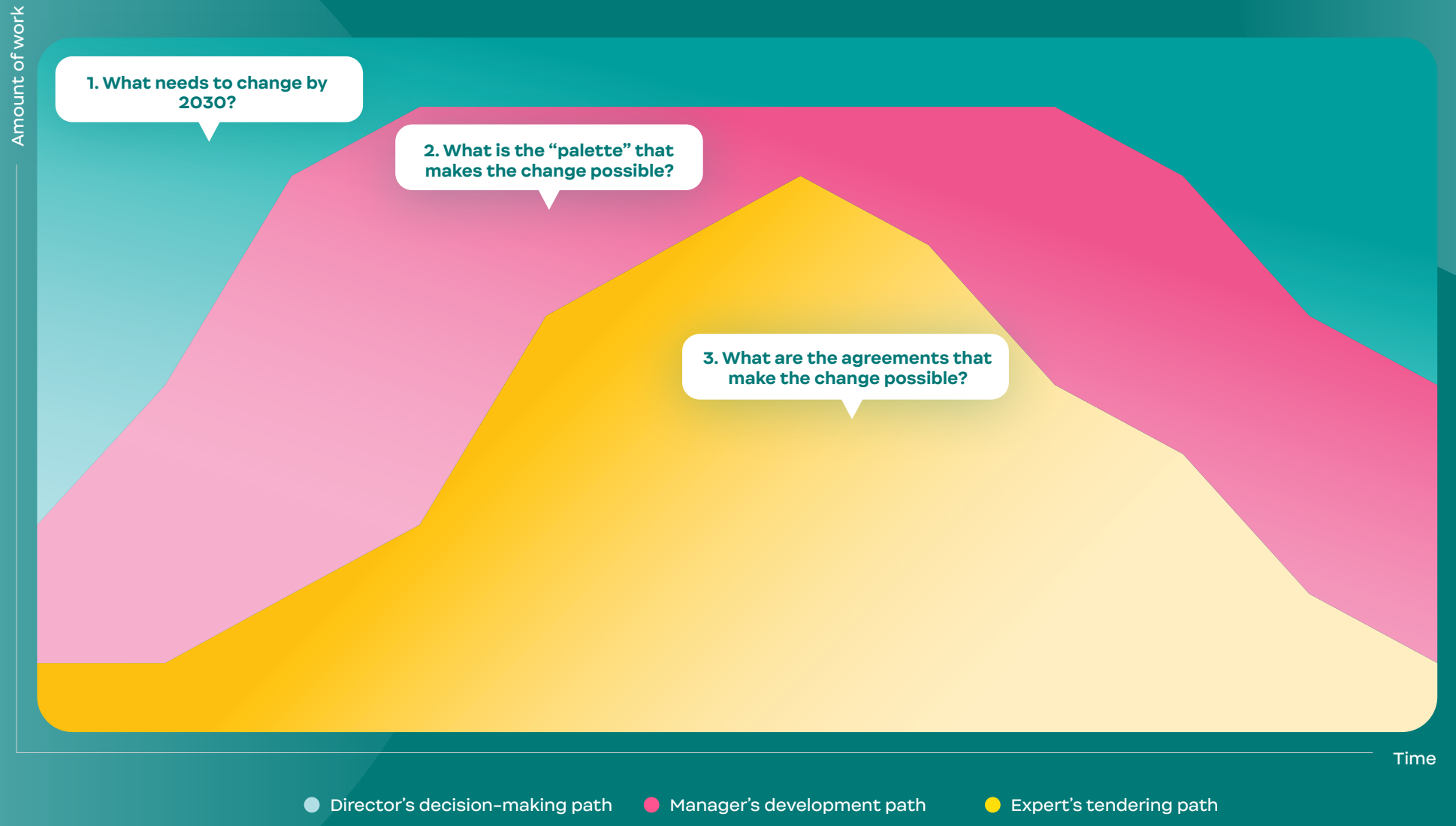
These questions provide answers on how much change can be achieved by changing procurement requirements and how much other measures are needed.

Transforming existing procurements into low-carbon ones is not always easy. A new way of operating is often found at the intersection of the old and the new, where procurement is mainly defined by traditional performance-based models, but these are supplemented by effectiveness targets.

In practice, mixing traditional purchasing activities and effectiveness-based procurements is inevitable, at least to some extent. Change often comes about through small steps. Not everything can be transformed overnight into an effectiveness-based approach, nor is it worthwhile. Traditional performance-based procurement has its own time and place also in the future.

However, it is of paramount importance to note that the intersection of the operations logics is prone to collisions. If, at the same time, the project team wants certainty and ambitious results, the preparation of the procurement can lead to internal conflicts, because the approaches are practically the opposite (are performances required or are the results rewarded?).

THE THREE STEPS TO LOW-CARBON PROCUREMENT



1.3 PARTICIPATING ORGANISATIONS AND PROCUREMENT TARGETS IN THE LOW-CARBON PROCUREMENT DEVELOPMENT PROGRAMME

The Low-Carbon Procurement Playbook is based on the observations of the Low-Carbon Procurement Development Programme. Six procurement units were selected for the programme, which had a procurement target with low-carbon potential under preparation.

City of Tornio: Low-emission school transport
Tornio acquires school transport as low-carbon as possible by defining route optimisation and vehicle emission requirements. The goal is a 20% reduction in CO2 emissions, which is the minimum requirement under the current directives. The procurement concerns school transport in the area of the City of Tornio, including the transport of Finnish children to the Haparanda Language School.
Read a more detailed description of the procurement

Suomen Erillisverkot Oy: Achieving low-carbon through server procurement
Suomen Erillisverkot Oy is acquiring energy-efficient servers for the existing data hall. The procurement is carried out as part of a framework agreement with Hansel Ltd. The aim is to increase the energy efficiency and thereby the low-carbon nature of the purchased servers. Suomen Erillisverkot Oy's procurement strategy includes a carbon-neutrality objective. The development of procurement is part of the implementation of the target.
Read a more detailed description of the procurement

City of Kouvola: Procurement of a low-carbon wooden school
The City of Kouvola is procuring a new building for 700 pupils for the use of the Kuusankoski elementary school. The school combines smaller teaching units. Wood is used as the building material. Investments are made in the school's carbon footprint and energy efficiency. The estimated cost is approximately EUR 17 million. The building will be ready for pupils in August 2025.
Read a more detailed description of the procurement

Metsähallitus: Real estate stock energy efficiency procurement
The object of Metsähallitus' procurement is procurements that improve the energy efficiency of the property portfolio of nature services. Simulation-based optimisation is ordered for the design of energy repairs. The optimisation takes into account energy consumption, total costs, the payback period of the investment, the return on investment, the increase in the return value of the property and the emissions of repair options, including the replacement of heating systems.
Read a more detailed description of the procurement

City of Tampere: Street construction procurement with circular economy principles
The City of Tampere is developing street construction procurement that takes into account the aspects of the circular economy: Material and soil mass recycling is optimised, and virgin materials are being avoided. The object is the contract procurement of Yliopistonkatu, which is carried out using the ST model for planning and implementation. The development is part of the KIEPPI circular economy project.
Read a more detailed description of the procurement

City of Vaasa: Winter maintenance of cycle paths and preparation of the service alliance promoting cycling
The City of Vaasa tendered out the regional contracts for winter maintenance, taking low carbon into account. The procurement process was planned and implemented in spring/summer 2021. In addition, Vaasa is developing a service alliance for the comprehensive development of bicycle traffic. The alliance would include the following areas: Design, construction, maintenance and development.
Read a more detailed description of the procurement

1.4 HOW TO USE THE LOW-CARBON PROCUREMENT PLAYBOOK

The playbook moves on three different paths towards low-carbon procurements. You can click on the path you want by following the menus or read the playbook from start to finish step by step. The playbook provides help with strategic and tactical management of procurements as well as concrete implementation.

Director's decision-making path to organisational low-carbon procurement
The director's decision-making path, i.e., the strategic level, is intended for the management of public organisations and municipal decision-makers as well as other persons in positions of trust as a tool for the strategic management of low-carbon procurements. You will learn how low-emission procurements are managed most effectively and what concrete steps are needed across the organisation and at the level of concrete action.

Manager's development and contract management path to low-carbon procurement in different industries
The manager's development and contract management path, i.e., the tactical level, is intended for managers responsible for procurement in different industries and other key public sector employees and public office holders. Along the path, you will learn to draw up and utilise category-specific goals as part of the implementation of low-carbon procurements. An environmental or sustainability expert will also find a role on this path.

Expert's tendering path to low-carbon procurement
The expert's tendering path, i.e., the operational level, describes the journey towards the concrete implementation of low-carbon procurement. Along the way, you will learn how to most effectively carry out the market dialogue, the preparation of the invitation to tender, as well as prepare for the monitoring and cooperation of the contract period – from the beginning to the end of the procurement life cycle. An environmental or sustainability expert will also find a role on this path.

2. HOW CAN LOW-CARBON PROCUREMENT BE EFFECTIVE?

In low-carbon procurement, there are many phases implemented by different actors, which are linked to each other. This playbook explains the decision-making moments for low-carbon procurement and matters to be decided or done in relation to each other. In addition, the playbook takes into account whose tasks each phase mainly belongs to. In addition, measures to be taken in three different roles (director, manager, expert) have been identified concretely at different stages of the procurement life cycle. The playbook helps to identify the action path in terms of time, content, as well as in relation to the other two roles.

The procurement life cycle begins with determining the desired effectiveness, for example, deciding on a carbon-neutrality target in procurement guidelines. Based on the monitoring data, the life cycle ends with the conclusion whether or not the desired change arose from the reduction in the CO_2 emissions of the object of procurement. Typically, the following steps occur between the beginning and the end of the life cycle: Defining the objectives of the procurement, planning and budgeting the procurement process, defining the object of the procurement, competitive tendering, procurement decision, monitoring the contract period and implementation of the procurement in cooperation with the supplier during the contract period.

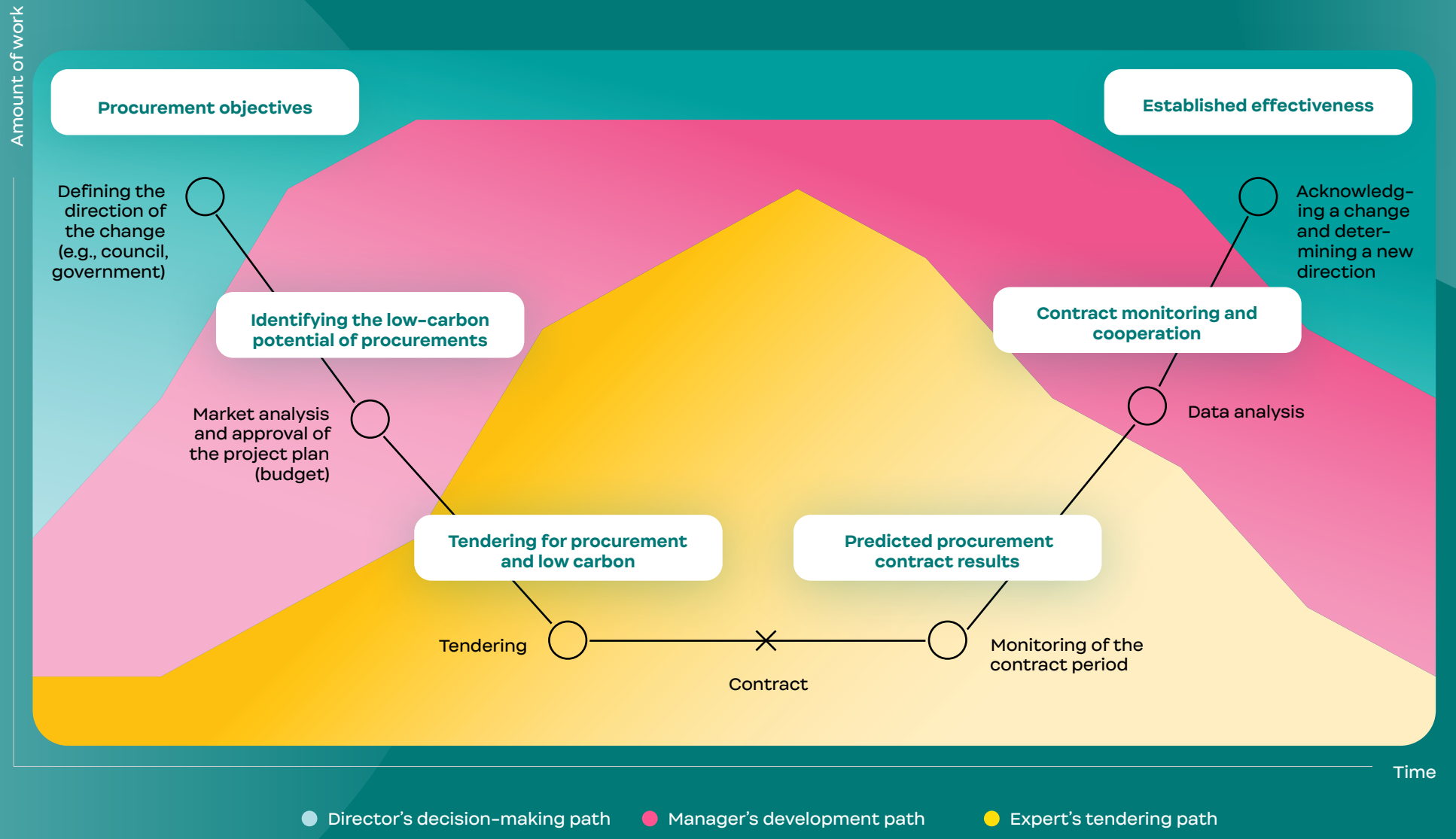
The life cycle of procurements often appears different for the person in the different roles, which is why the playbook emphasises the importance of understanding the life cycle of procurements as a whole.

Different actors have different tasks at different stages of the life cycle. It is the task of decision-makers and directors to determine the direction of procurement and what effects the procurements are intended to achieve.

The task of the managers responsible for tactical choices is to split the desired effectiveness into feasible procurement entities and individual procurements. The managers' task is to find solutions that can achieve carbon-neutral or low-carbon outcomes.

The task of the experts responsible for operational activities is to carry out the preparation of competitive tendering, implementation of competitive tendering and matters related to the commencement of the contract in such a way that the desired effect or effectiveness determined at higher levels is realised.

DECISION-MAKING MOMENTS IN LOW-CARBON PROCUREMENT



WHAT IS MEANT BY PROCUREMENT EFFECTIVENESS?

Effectiveness as the starting point of the procurement directs attention to longer-term goals, the identification of the need for change in the current situation and activities to achieve the desired change. Effectiveness objectives are outlined in procurement guidelines or strategies, and there is often more than one effectiveness objective. The method explained in the playbook to model the implementation of change can also well be applied to other objectives, such as employment, the circular economy or the promotion of human and working life rights through procurements.

For example, the procurement unit will change its procurement and operating methods in a way that the goal of carbon neutrality by 2030 is achieved. Promoting the carbon-neutrality target is a clear effectiveness target for procurements. This can be achieved by identifying the low-carbon potential through an analysis of the procurement volume and purchase invoice data of the organisation, as well as by examining the calculated carbon footprint based on procurement category research.

When the existing tools and ways of influencing the implementation of low-carbon procurement categories are added to the assessment, the low-carbon potential of each procurement category is revealed. In other words, the magnitude of any achievable CO_2 emission reductions in the procurement of the category. In Figure 3, the point "When can the change begin" describes all future procurements where the goal of reducing CO_2 emissions in line with the low-carbon potential can be pursued.

The figure below illustrates the process of determining the "change". The starting point for everything is the analysis of the current situation ("How things have developed"), the determination of the object of change ("Which trend is to be reversed"). The point "When can the change begin" describes all future procurements where the goal of reducing CO_2 emissions in line with the low-carbon potential can be pursued.

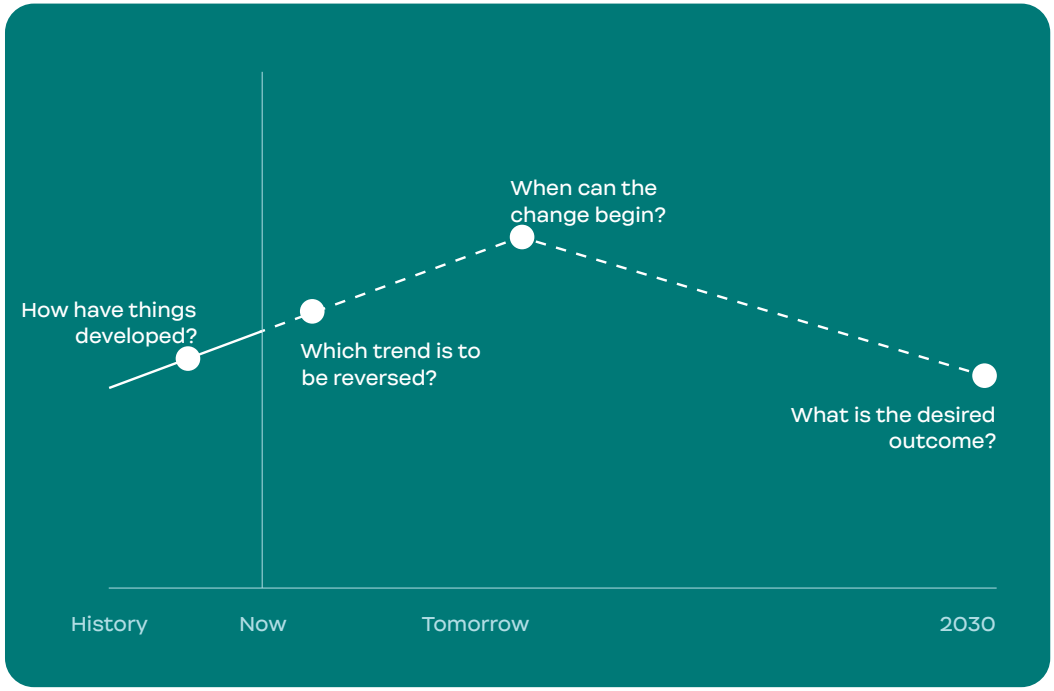


Figure 3 Defining the change

2.1 INNOVATION POTENTIAL OF THE LOW-CARBON ROADMAP FROM THE POINT OF VIEW OF THE LIFE CYCLE AND OPERATING METHODS OF THE SECTORS

The objective of Finland's national climate and energy strategy is for Finland to be carbon neutral by 2035. Pressing down greenhouse gas emissions to net zero within a decade will also be a major challenge for the state and municipalities, as well as for the procurements carried out by them. It is useful to look at the situation as part of the wider green transition of the economy and technology, within which public procurement is also carried out. It requires that at every moment, the capabilities offered by the market for low-emission solutions are fully utilised and, at the same time, preparations are made for the implementation of future solutions. The development of the market supply is supported by communicating consistently and sufficiently in advance about future needs and objectives.

The emission reduction targets set in the government programme, ultimately aiming at net zero targets for a carbon-neutral Finland, have been described at the top level in Figure 4. From these, it should be possible to lead to suitable emission requirements for procurement that take into account the products, services and solutions available on the market at any given time. These are based on existing know-how and technologies that are utilised in the products. At the same time, new low-emission technology is also being developed, but it will mature into operational service production and procurements with a delay.

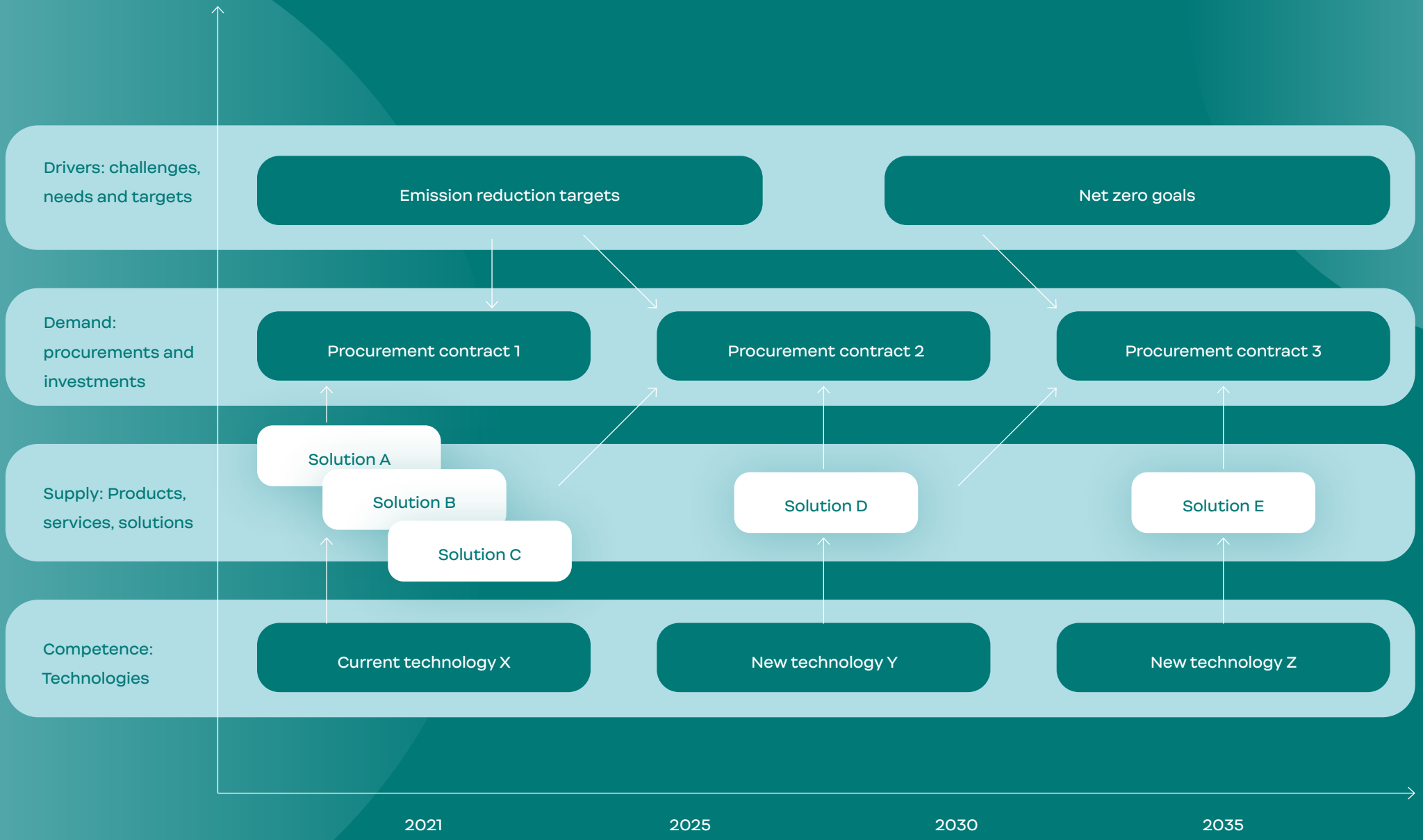
Procurement should aim to make use of the best available technology, taking into account the overall economy. In the products of several procurement categories, competitive tendering is implemented in practice over multiple-year contract periods. For example, in the case of four-year contract periods, already after a few contract periods, it should be possible to press the emission level of the procured commodities close to zero. Therefore, it is important to start assessing the possibilities of using new low-emission technology and solutions well before the renewal of the contract period and to draw up a roadmap towards carbon-neutral procurements. A key part of this work is to identify the largest carbon footprint sources.

The transition to emission-free solutions requires significant changes in both consumption and production. Through their procurements and investments, public sector organisations represent public consumption, whose impact on the development of different sectors varies. On the one hand, the state and municipalities buy mass-produced products that are interchangeable on the global market, such as electronics or passenger cars, whose characteristics and carbon footprint they are not able to influence much except by choosing the lowest-emission products on offer. On the other hand, there are locally produced services, such as infrastructure construction contracting and food product procurement, the content and characteristics of which the central and local government procurement units can have a very large steering effect on. It is important to identify the impact of the purchasing power of public procurement on the supply of the market as part of the strategic planning of procurements and the preparation of competitive tendering.

Cooperation between procurement units is an important way to support the implementation of low-carbon procurements. Through cooperation, it is possible to share the costs of preparatory work, share information and experiences, carry out experiments and pilots and communicate to companies a shared aim regarding emissions requirements, which provides companies with predictability as a basis for product and service development.

An example of cooperation between client organisations is the Green Deal commitment for emission-free construction sites, which outlines the emission targets of large cities and government organisations for the emissions of construction contracts, work machinery and transport. The Green Deal offers a predictable outlook over the next decade with progressively tightening emissions requirements. Increased certainty about tightening environmental requirements and their timeline provides a predictable outlook for the development and deployment of new zero-emission motive power technologies, such as battery power and hydrogen cell machinery, in different types of equipment. Based on the common progression model, it is also easier for an individual procuring entity to set requirements for moving towards cleaner solutions.

Figure 4 Inclusion of new technology in procurement contracts.



CHOOSE PATH

2.2. Director's decision-making path to organisational low-carbon procurement

Follow the path

2.3. Manager's development path to low-carbon procurement

Follow the path

2.4. Expert's tendering path to low-carbon procurement

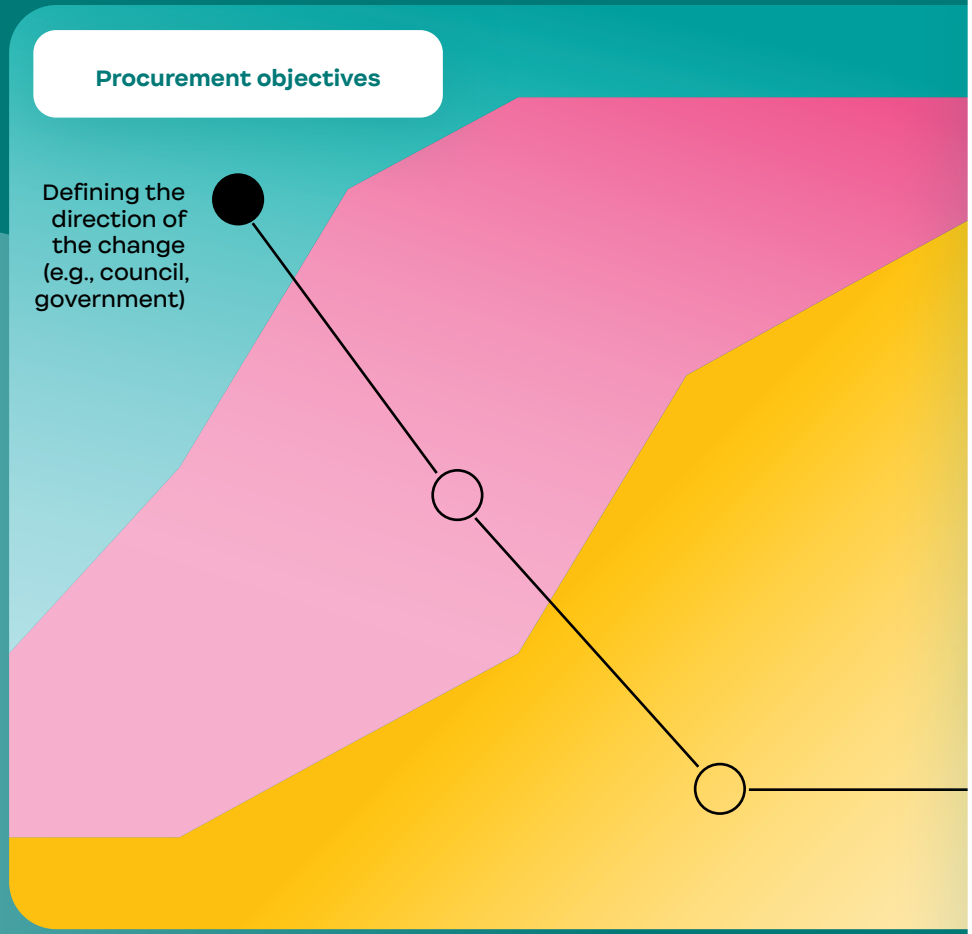
Follow the path

2.2. DIRECTOR'S DECISION-MAKING PATH TO ORGANISATIONAL LOW-CARBON PROCUREMENT

No one can carry out the management, development and implementation of procurements alone. It is essential to understand your own role and responsibilities in relation to others and to promote cooperation in all possible ways. Carrying out and promoting cooperation is everyone's task and responsibility. The director's task is to lead and enable the implementation of the objectives. The director must understand the importance of all the roles and steps 1–6 described below in order to achieve the objectives. The position of the director may be the director of the division, procurement director, financial director, top management of the organisation or the management of elected representatives.

PHASE 1: PROCUREMENT OBJECTIVES

65% under the responsibility of the director

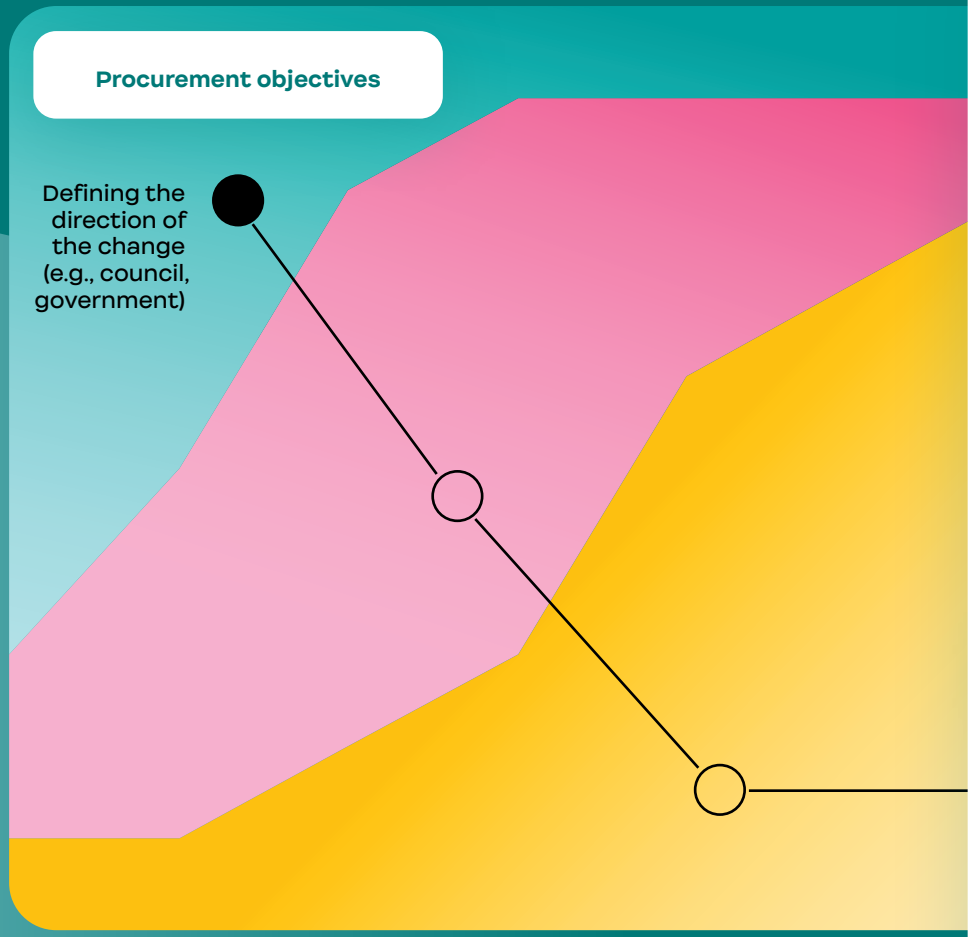


Achieving effectiveness starts from defining the direction of the change in the council, board of directors or management team by deciding on the procurement guidelines or strategy. This is the responsibility of decision-makers and directors. In terms of the success of a low-carbon procurement, there may be a risk that there is a conflict between the targets. In practice, this may mean wanting cheap and effective at the same time or, for example, reducing emissions without changing anything.

Succeeding requires that the different perspectives behind the need for change are taken into account and the target is set far enough (for example, beyond the council term). The entities should be outlined on the right scale and in such a way that a realistic path is set for the goals. Examining the low-carbon and innovation potential by procurement category is an excellent tool for this and provides sufficient concrete information for bringing climate goals into the annual financial planning of the municipality. By combining climate and economic information in the annual cycle of a municipality's economy, for example, with the help2 of a climate budget, it is possible to make effective decisions on municipal procurements. The climate budget is also used to concretise the inputs and results of climate work for decision-makers. The director is responsible for bringing the budgeting needs in order to implement the low-carbon target for future procurements and investments in accordance with the economic and investment planning cycle with sufficient anticipation.

PHASE 1: PROCUREMENT OBJECTIVES

65% under the responsibility of the director

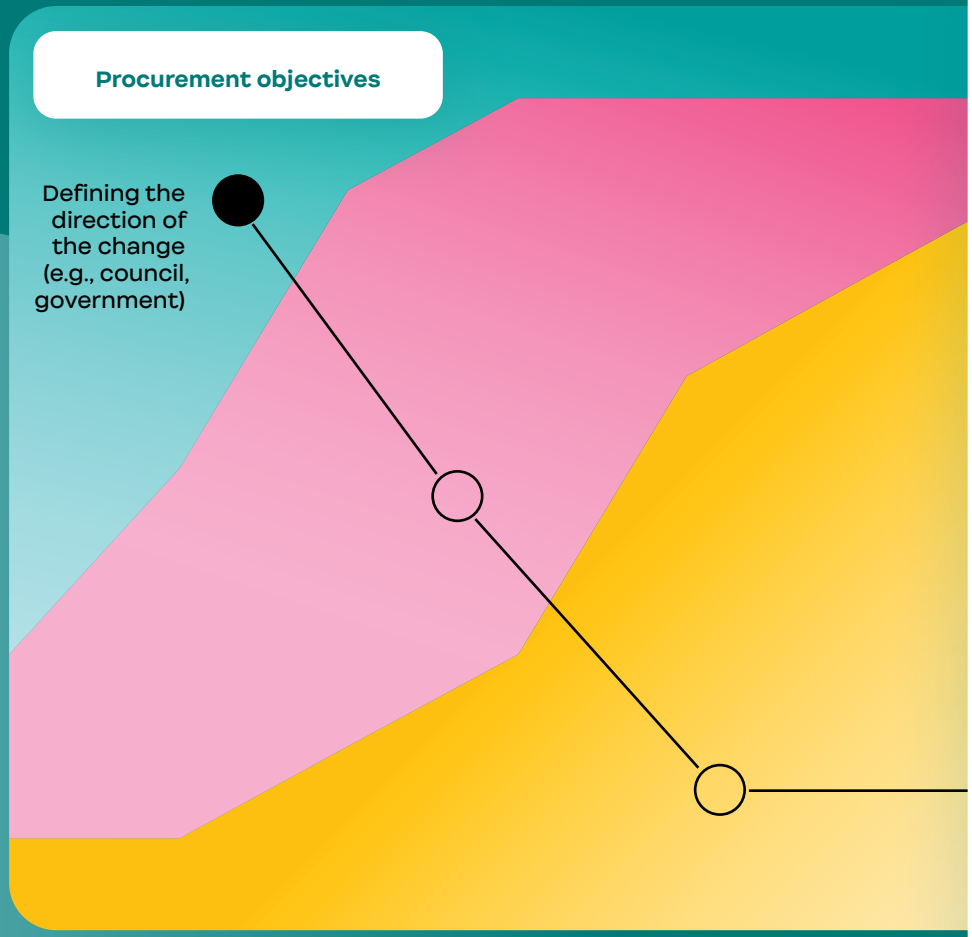


Examples of places of danger:

- Is society ready for change?
- Is the market able to provide what is desired?
- Realistic setting of guidelines and goals.
- Conflicts between different objectives of the procurement programme or with the objectives of other programmes (e.g. localisation, support for SMEs).
- A too-tight schedule is the enemy of a large and new kind of project. Sufficient time must be reserved for the necessary assessments and planning.
- The political acceptability of procurement models, when a new operating model is aimed at systemic change in larger procurement.
- The organisation has not allocated enough resources to complete the procurement throughout its life cycle. This is especially critical if there are problems with the process and the schedule is stretched or if time is needed to prepare the procurement

PHASE 1: PROCUREMENT OBJECTIVES

65% under the responsibility of the director

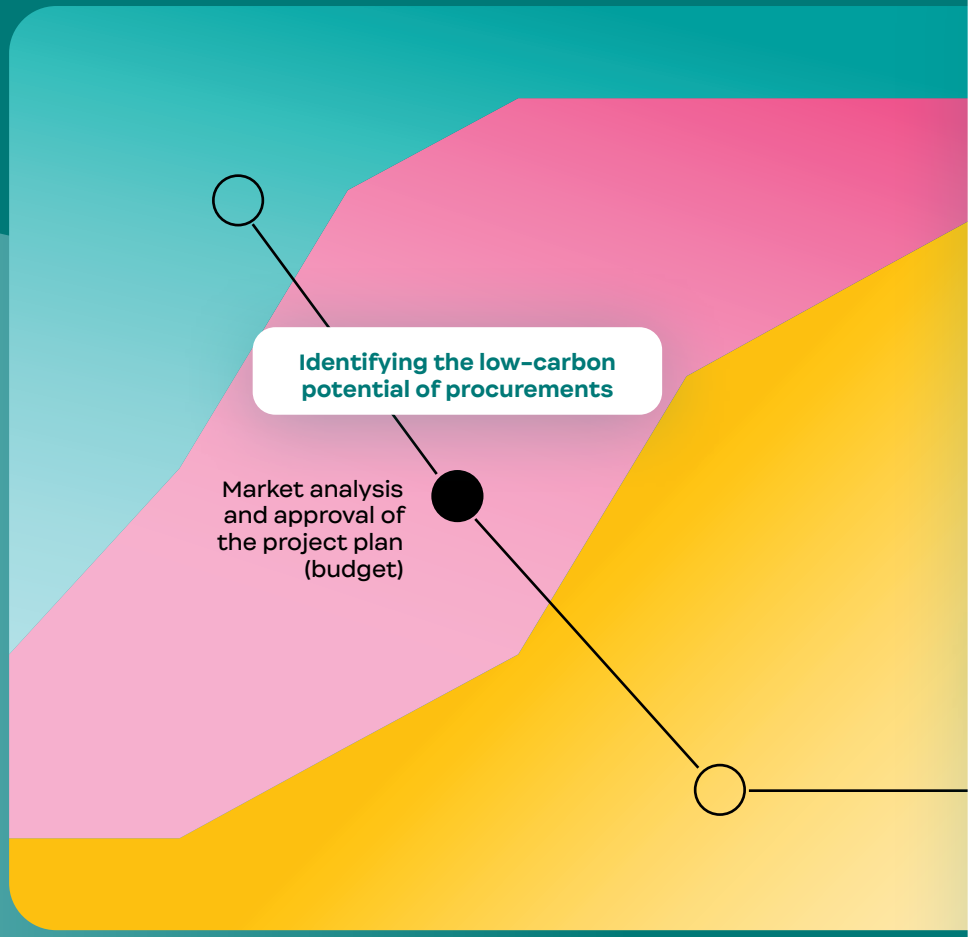


Examples of the preconditions for success:

- Commitment of decision-makers and management and coordination of different programmes (organisational strategy, environmental programme, procurement guidelines).
- The time span of guidelines and programmes extends sufficiently beyond the council term.
- Increasing understanding of which functions, units and sectors can achieve emission reductions most cost-effectively. This is also reflected in the procurement guidelines and policies of the units and industries in question.
- Good procurement guidelines, coordinated with the organisation's other programmes, such as the environmental or responsibility programme.
- The roles and responsibilities of the different actors are clear.
- Sufficient client resources to carry out the procurement.
- Bringing procurement effectiveness objectives into financial planning and budgeting.
- Reliable and relevant indicators are identified for the purpose of monitoring the objectives.

PHASE 2: IDENTIFYING THE LOW-CARBON POTENTIAL OF PROCUREMENT IN DIFFERENT CATEGORIES

30% under the responsibility of the director

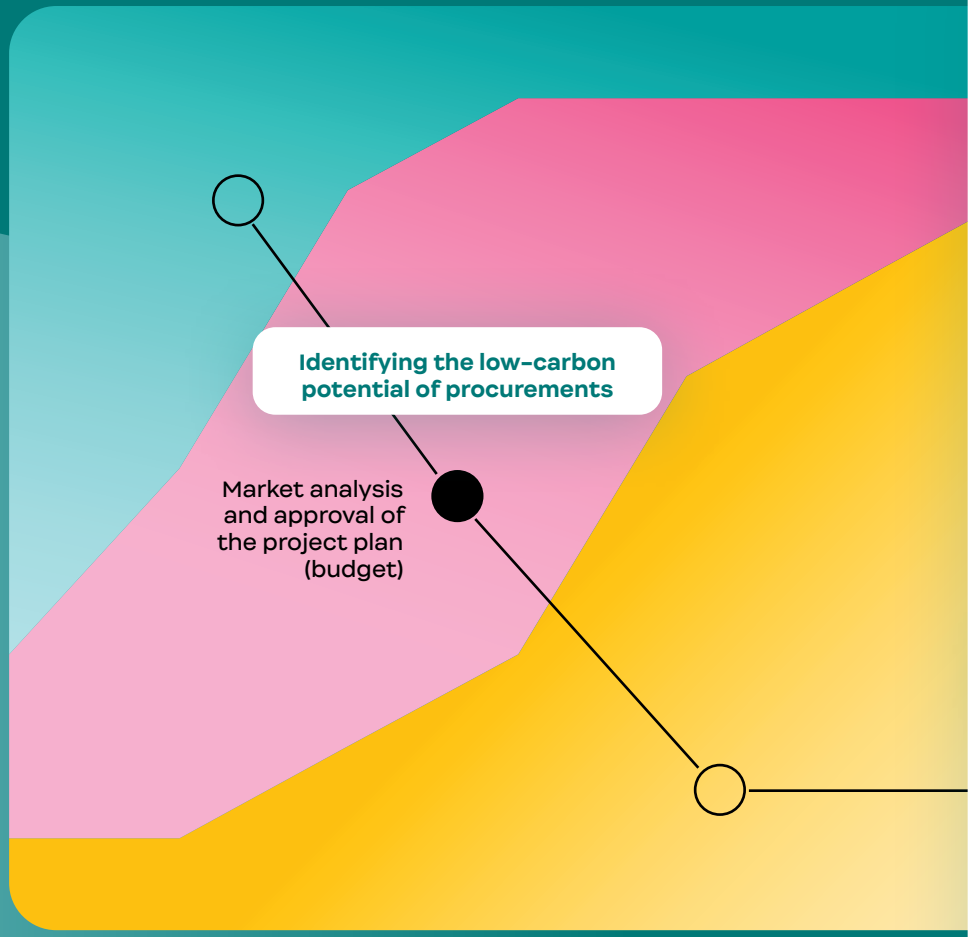


The second phase is the management of the desired effectiveness into a concrete procurement entity. In practice, the role of the director is to approve the procurement or project plan produced by the procurement and industry managers and its budget. The risk is typically that the effectiveness planned at the level of the director and decision-makers does not fully transfer to the plan. Typically, this is because the desired effectiveness was originally described in too abstract a way.

Success is based on the fact that directors and decision-makers ensure that the original effectiveness objectives are reflected on a concrete level in the project plan. This requires close cooperation and expertise extensively from within the organisation and possibly from outside. Expertise is needed in the sector's substance, financial management, procurement and from the environmental expert, in addition to which understanding of the sector's markets, including the cost level, is required.

PHASE 2: IDENTIFYING THE LOW-CARBON POTENTIAL OF PROCUREMENT IN DIFFERENT CATEGORIES

30% under the responsibility of the director

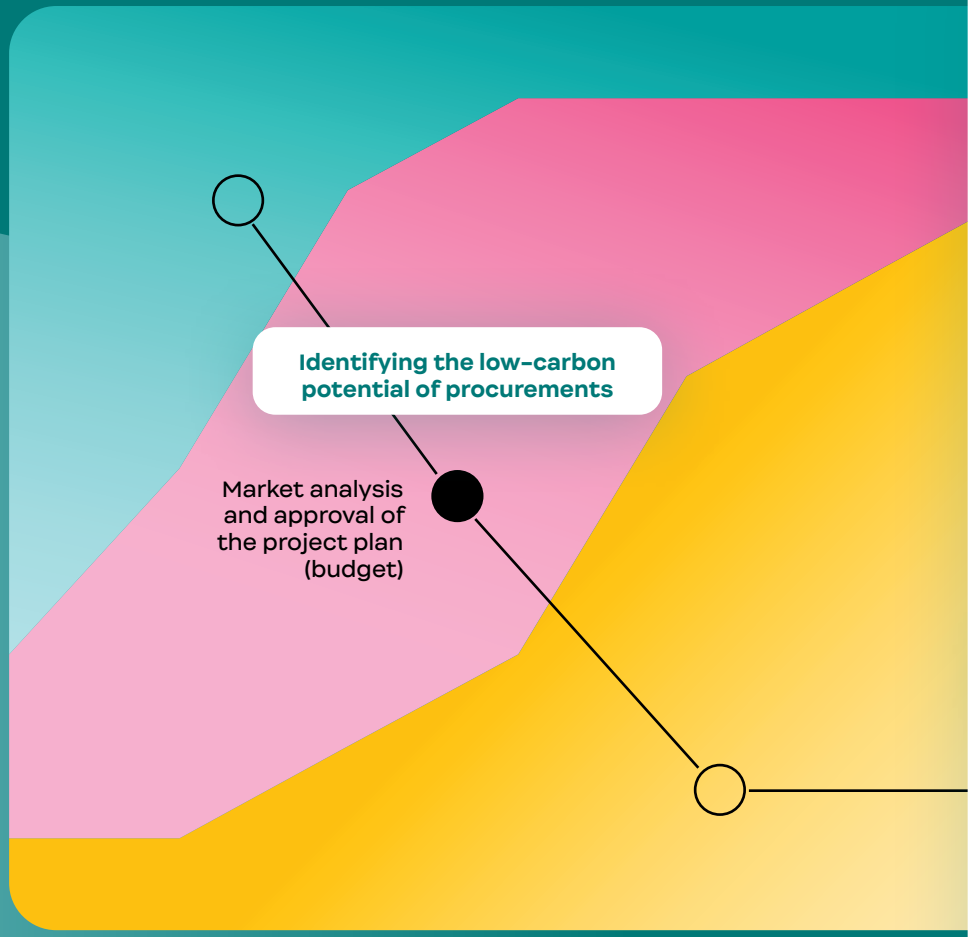


Examples of places of danger:

- Costs may increase if excessive demands are made without our knowledge (for example, do local entrepreneurs have the capacity to change equipment to be more environmentally friendly?).
- Insufficient resources for the preparatory phase of procurement.
- The organisation has not allocated enough resources to complete the procurement throughout its life cycle. This is especially critical if there are problems with the process and the schedule is stretched.
- Conflicting decisions by different decision-making bodies.

PHASE 2: IDENTIFYING THE LOW-CARBON POTENTIAL OF PROCUREMENT IN DIFFERENT CATEGORIES

30% under the responsibility of the director

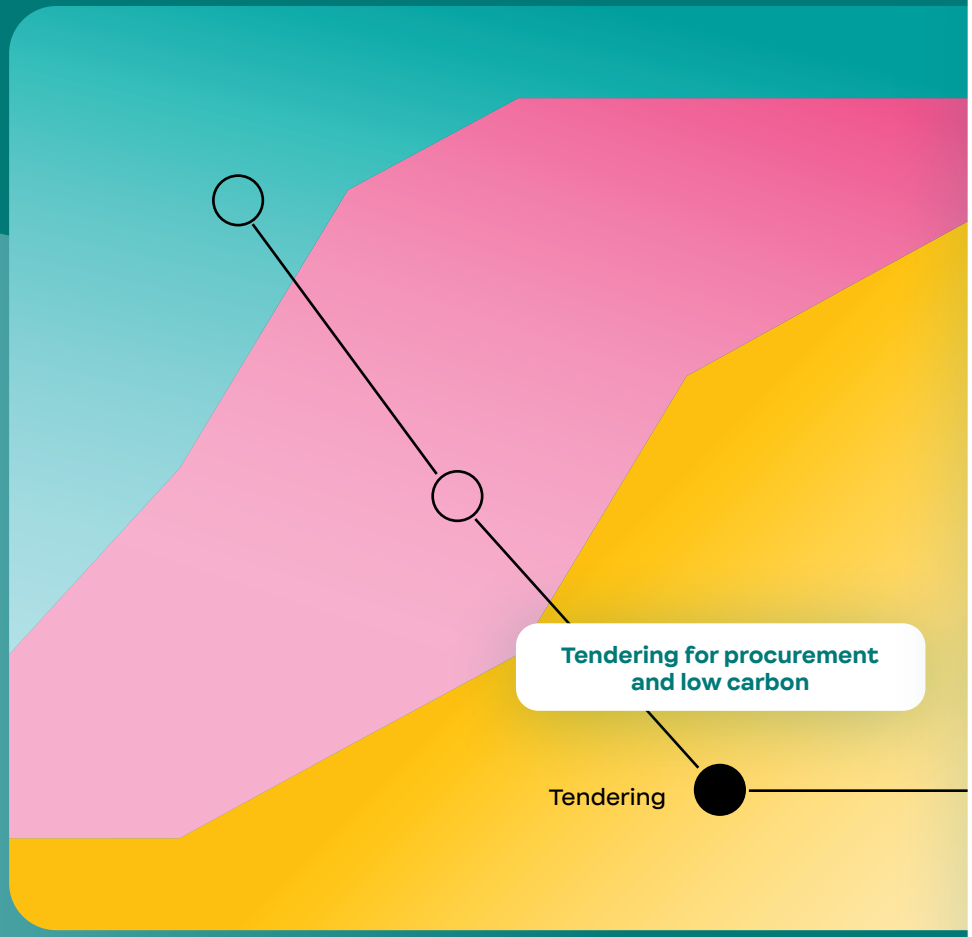


Examples of the preconditions for success:

- Good procurement guidelines
- Decision-makers and management are aware of what it costs to achieve the goals.
- The roles and responsibilities of the different actors are clear.
- Sufficient client resources to carry out the procurement.
- Large entities should be divided into smaller and more manageable sections. The division can be made, for example, according to the urgency of the measures or the order of magnitude.

PHASE 3: TENDERING FOR PROCUREMENT AND LOW CARBON

10% under the responsibility of the director

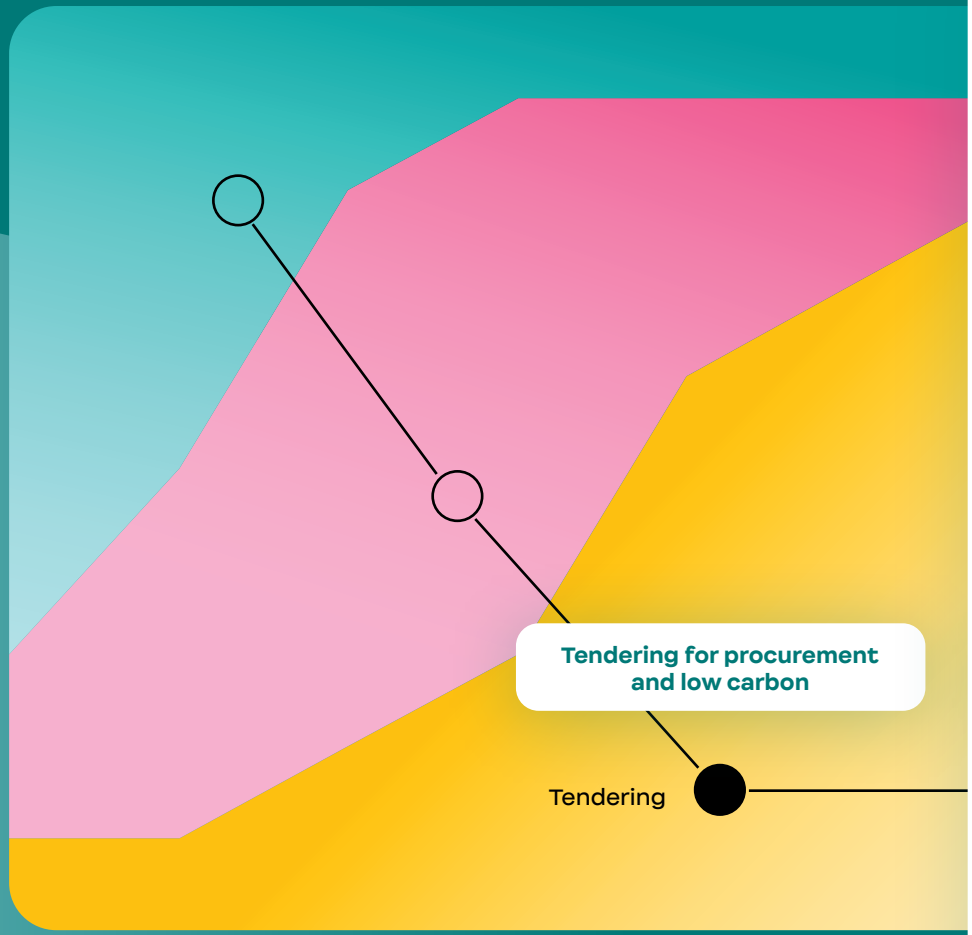


The third phase is competitive tendering. The end result of the tendering procedure is an agreement on how much and by what means low carbon is implemented within the scope of the contract. The risk is typically that there are no operating methods in the preparation of the procurement and the planning of the effective tendering, by which the objectives set in the guidelines are brought to a natural part of the preparation in a timely manner. Directors and decision-makers are responsible for bringing the broader views of the organisation to concrete attention during the procurement planning phase and ensuring sufficient expertise and resources to implement them.

The task of the director is to ensure that the information flows at different levels of the organisation with sufficient transparency from the planning stage onwards, so that everyone is able to fulfil their own duties in the best possible way. It is all about cooperation, and the director's special task is to ensure an encouraging and enabling operating culture to achieve the goal, as well as to build a clear process and operating model for cooperation.

PHASE 3: TENDERING FOR PROCUREMENT AND LOW CARBON

10% under the responsibility of the director

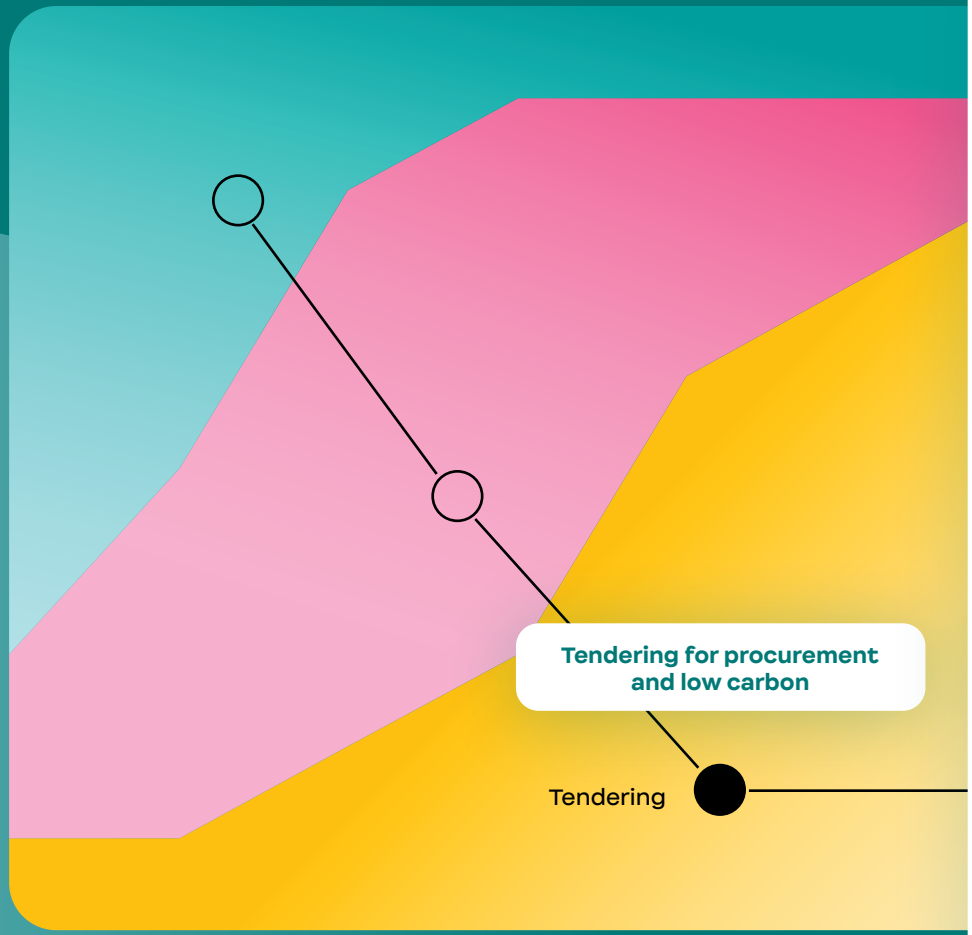


Examples of places of danger:

- Information on low-carbon objectives to be implemented in procurement is not available to experts in a timely manner and in a usable format.
- Traditional procurement culture, that is, fear of making mistakes if procured differently than the previous procurement.
- Rush and too little preparation time, lack of proactive market dialogue.
- Risk management does not extend to procurement. Risks are not taken into account in the market analysis and dialogue, in the preparation of the invitation to tender and in the preparation of the contract.

PHASE 3: TENDERING FOR PROCUREMENT AND LOW CARBON

10% under the responsibility of the director



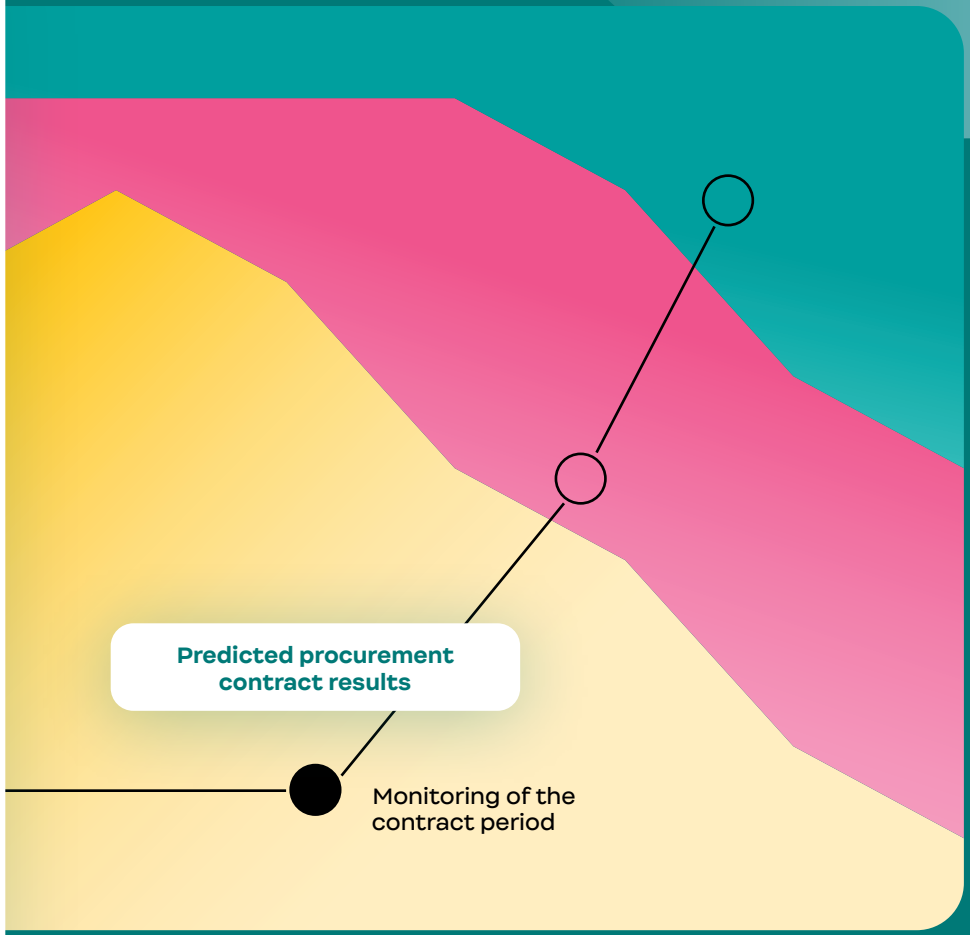
Examples of the preconditions for success:

- A clear operating model for the development of low-carbon objectives in the preparation of an individual procurement, which guarantees the flow of information and enables a well-functioning process.
- The operating model includes cooperation between management, managers and experts in various fields. Risk management is included in the preparation of procurements.
- Utilisation of existing support and tools; experiences learned from others, services of the KEINO competence network.

PHASE 4: PREDICTED PROCUREMENT CONTRACT RESULTS

5% under the responsibility of the director

The fourth step is to identify what should be monitored during the contract period in terms of the realisation of the CO_2potential. This set of tasks is part of the job description of directors and decision-makers only to a minor extent. The procurement guidelines define the objectives and their monitoring indicators as well as an operating system that enables monitoring. The procurement contract specifies the level of potential CO_2 emission reduction to be achieved through the contract. The procurement contract can be defined with the help of individual criteria and contract terms, by which means the object of the contract is (by mutual agreement) intended to reduce CO_2 emissions or achieve the set low-carbon goal. However, it is rarely possible to determine the exact amount of CO_2 emissions that are being reduced.

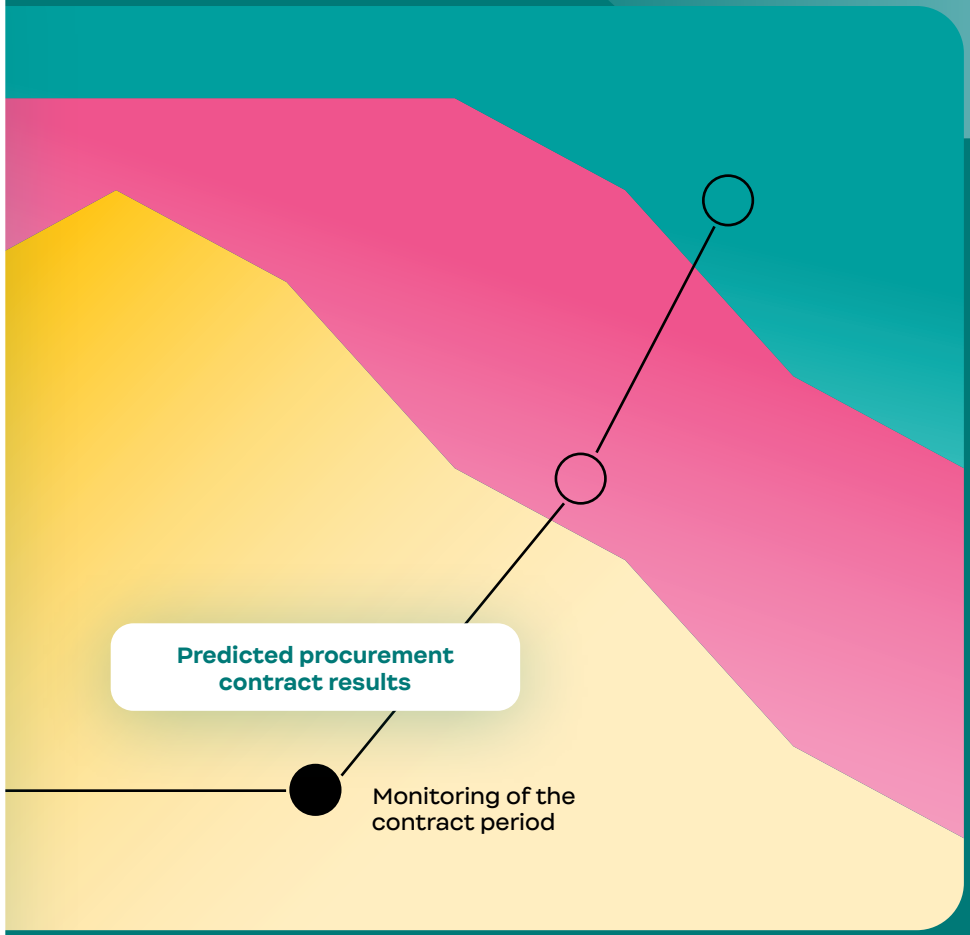


PHASE 4: PREDICTED PROCUREMENT CONTRACT RESULTS

5% under the responsibility of the director

Examples of places of danger:

- The organisation has not allocated enough resources to complete the procurement throughout its life cycle. This is especially critical if there are problems with the process and the schedule is stretched.
- No attention has been paid to the planning and resourcing of contract management, for example, in relation to personnel changes or the division of responsibilities.
- There is no operating model for monitoring deviations.

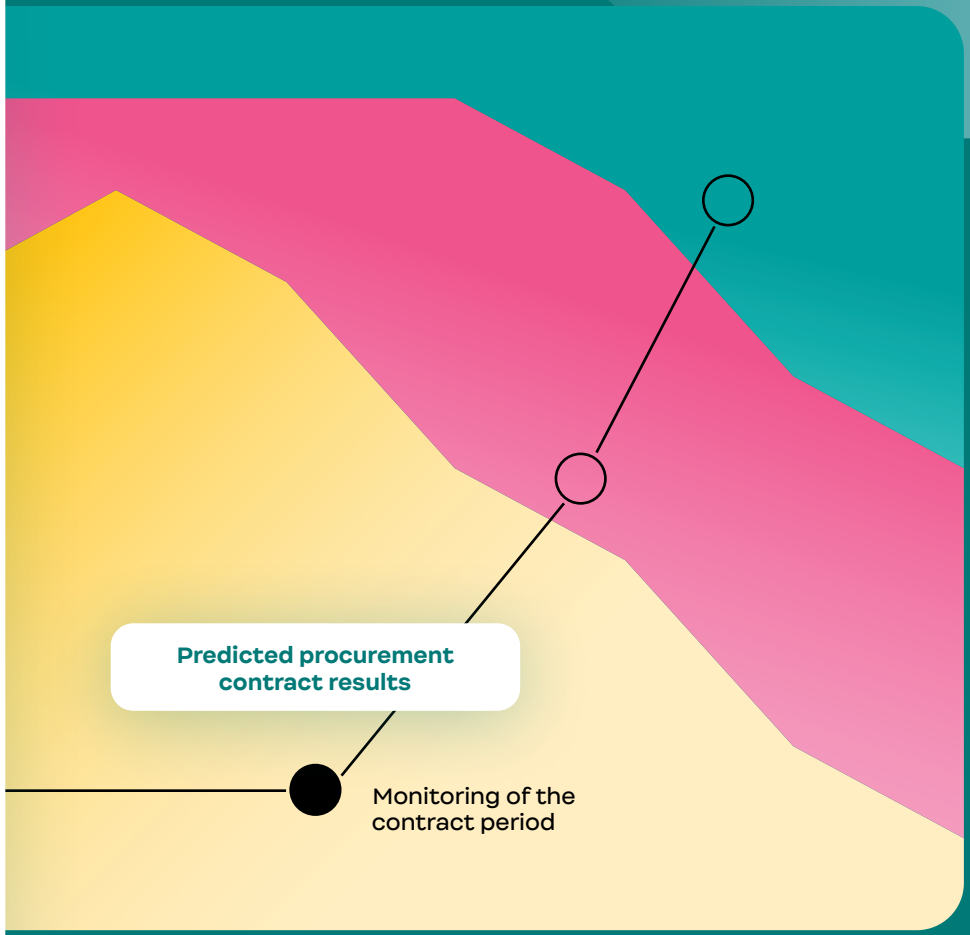


PHASE 4: PREDICTED PROCUREMENT CONTRACT RESULTS

5% under the responsibility of the director

Examples of the preconditions for success:

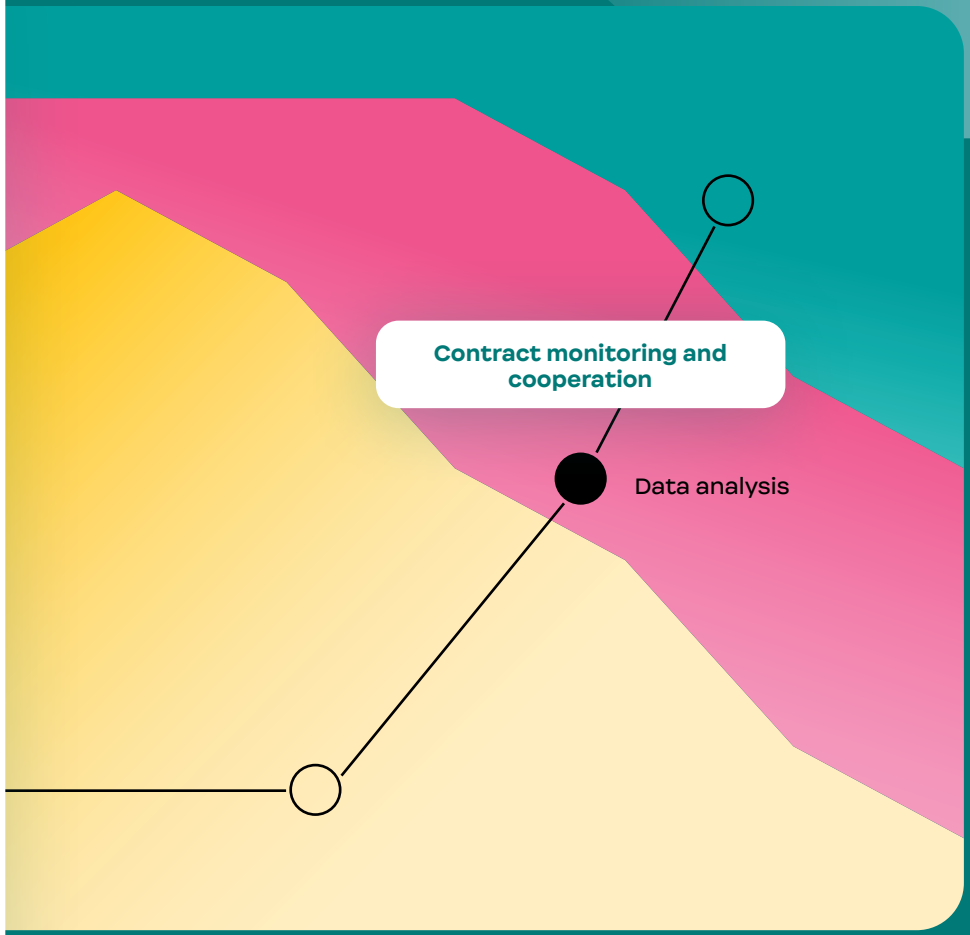
- Monitoring of deviations and deciding on possible measures
- The roles and responsibilities of the different actors are clear.
- Sufficient client resources to carry out the procurement.



PHASE 5: CONTRACT MONITORING AND COOPERATION

10% under the responsibility of the director

The fifth phase is to collect and thus produce information on what will be achieved during the contract period. In practice, this means concrete monitoring of the implementation of the contract terms, that is, meter data on the implementation of low-carbon emissions (method of implementation or information on detectable CO_2 emissions). Cooperation during the contract period has a significant impact on "releasing" the potential of the procurement contract. Here, the director also has a role in monitoring deviations from significant procurement contracts and making decisions on possible contract terminations. The procurement guidelines, which are the responsibility of the director, define the objectives and their monitoring indicators as well as an operating system that enables monitoring. It is essential that the director is aware of possible challenges in the procurement contract, as correcting deviations or terminating the contract will cause additional work for the public organisation. The role of the director includes resourcing and managing the situation as necessary.

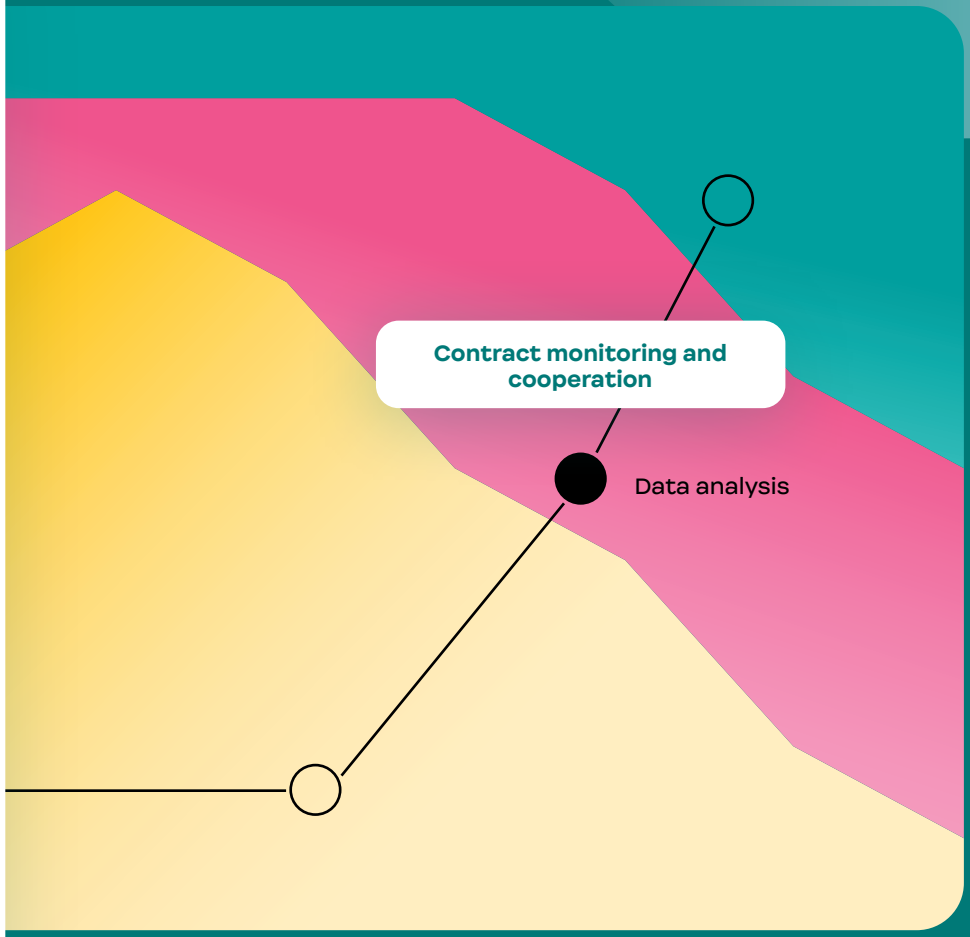


PHASE 5: CONTRACT MONITORING AND COOPERATION

10% under the responsibility of the director

Examples of places of danger:

- The organisation has not allocated enough resources to complete the procurement throughout its life cycle. This is especially critical if there are problems with the process and the schedule is stretched.
- The implementation of the monitoring has not been taken into account in the procurement planning and/or the project plan and is not recorded in the contract.
- Decision-making lacks the courage to intervene in observed deviations and to make the necessary decisions and actions.

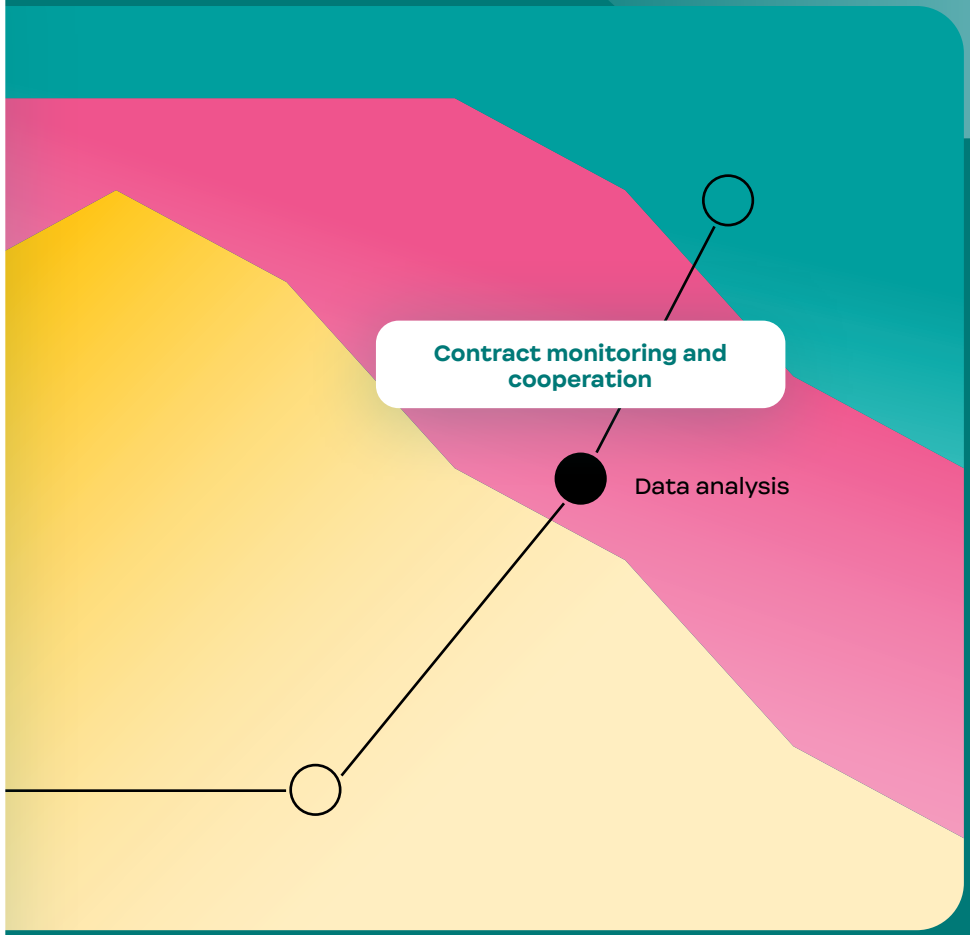


PHASE 5: CONTRACT MONITORING AND COOPERATION

10% under the responsibility of the director

Examples of the preconditions for success:

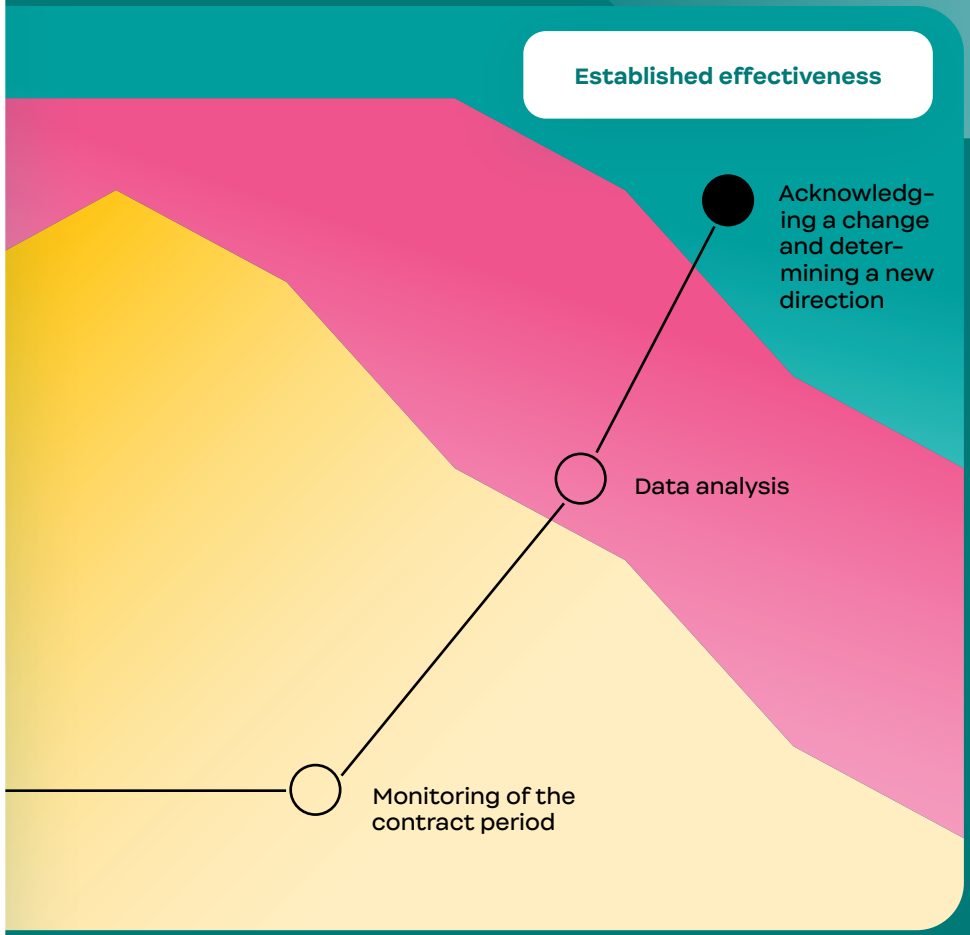
- Establishing the persons in charge of carrying out the monitoring. For example, is the organisation responsible for monitoring or is monitoring outsourced as a purchasing service?
- Utilise existing tools for monitoring low-carbon realisation, for example, Green Deal specifications or RTS environmental classification (in construction).
- Including monitoring as part of procurement (e.g., reward model, life cycle model, target model).
- Separate follow-up dialogues with the supplier, suppliers or end users 2–4 times a year or during the contract period on the quality of the service and observed issues.
- Any deviations are addressed in decision-making without delay.
- The contract has incentive mechanisms for the supplier, which clearly guide the achievement of the objectives in accordance with the contract terms.



PHASE 6: ESTABLISHED EFFECTIVENESS

15% under the responsibility of the director

The sixth phase is to verify the change/target achieved and to lead the implementation of the remaining low-carbon potential so that future procurements in the category in question have taken into account the targets already achieved or not achieved, for example, by defining a new guideline or target. The director and the decision-maker must become aware of the result of the monitoring and process it in relation to the original objective. In addition, making any necessary changes to procurement guidelines, policies, roles and resourcing is the responsibility of the director.

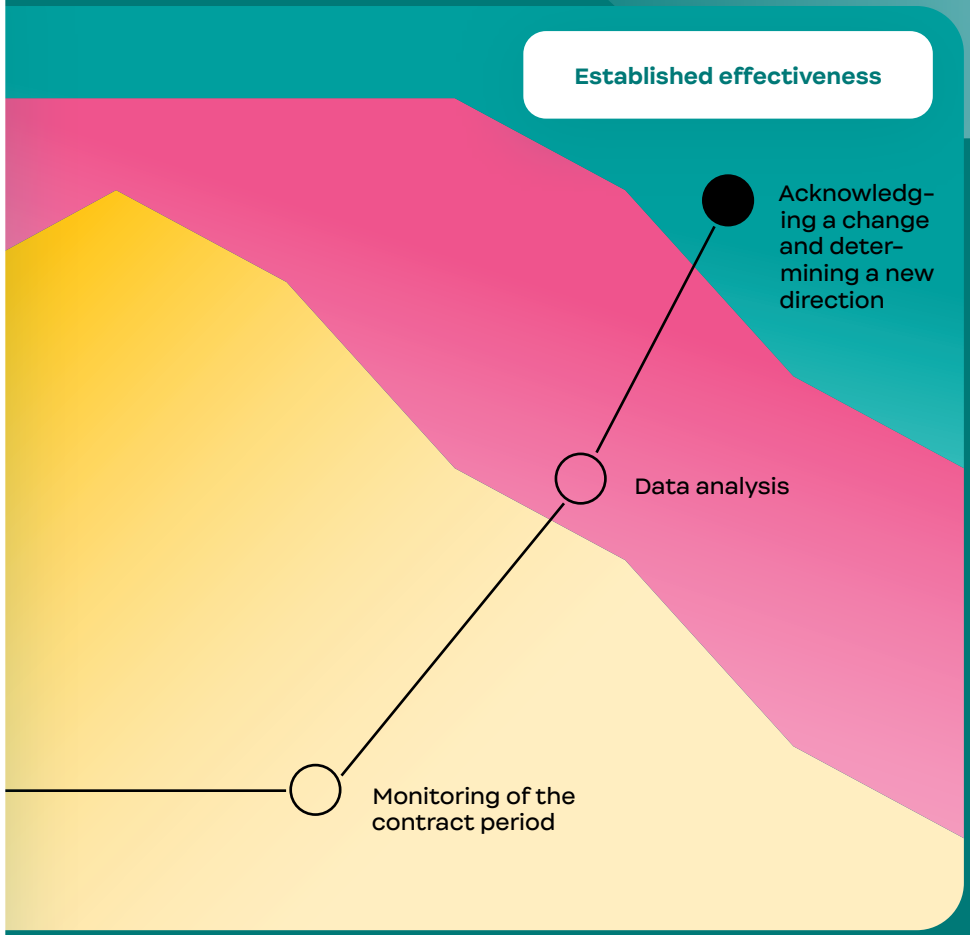


PHASE 6: ESTABLISHED EFFECTIVENESS

15% under the responsibility of the director

Examples of places of danger:

- The organisation has not allocated sufficient resources for monitoring the impacts over the entire life cycle of the procurement, and it has not been identified which indicators can be used to realistically monitor the impacts. This is especially critical if there are problems with the process and the schedule is stretched.
- The actual impact is not clearly communicated to the different actors, in particular what it means in terms of preparation for future procurements.

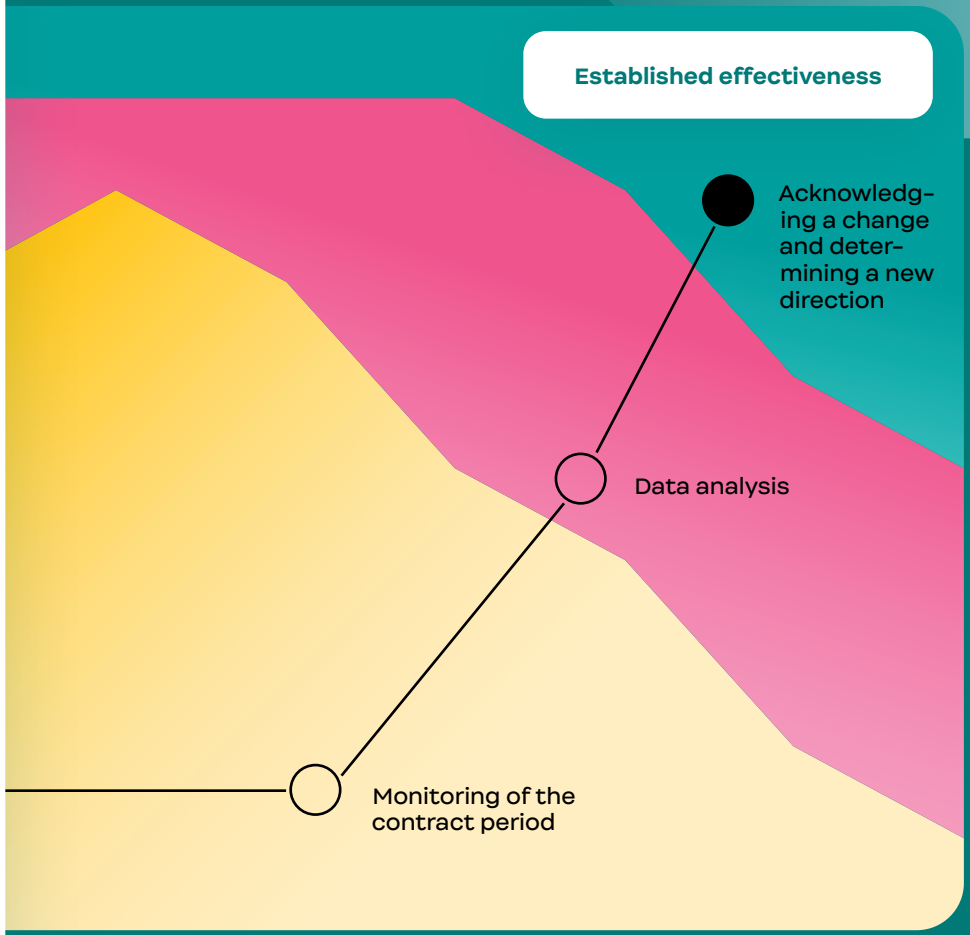


PHASE 6: ESTABLISHED EFFECTIVENESS

15% under the responsibility of the director

Examples of the preconditions for success:

- Based on the achieved effectiveness of the contracts (whether the targeted reduction in CO_2 emissions was achieved), possible changes to guidelines, roles and resourcing.
- The roles and responsibilities of the different actors are clear.
- Sufficient client resources to carry out the procurement. The incentive mechanisms of the contract guide the supplier to commit sufficient resources to the implementation of the procurement.
- A procurement monitoring system or an agreed monitoring approach implemented at the organisational level – evaluation of completed procurements.

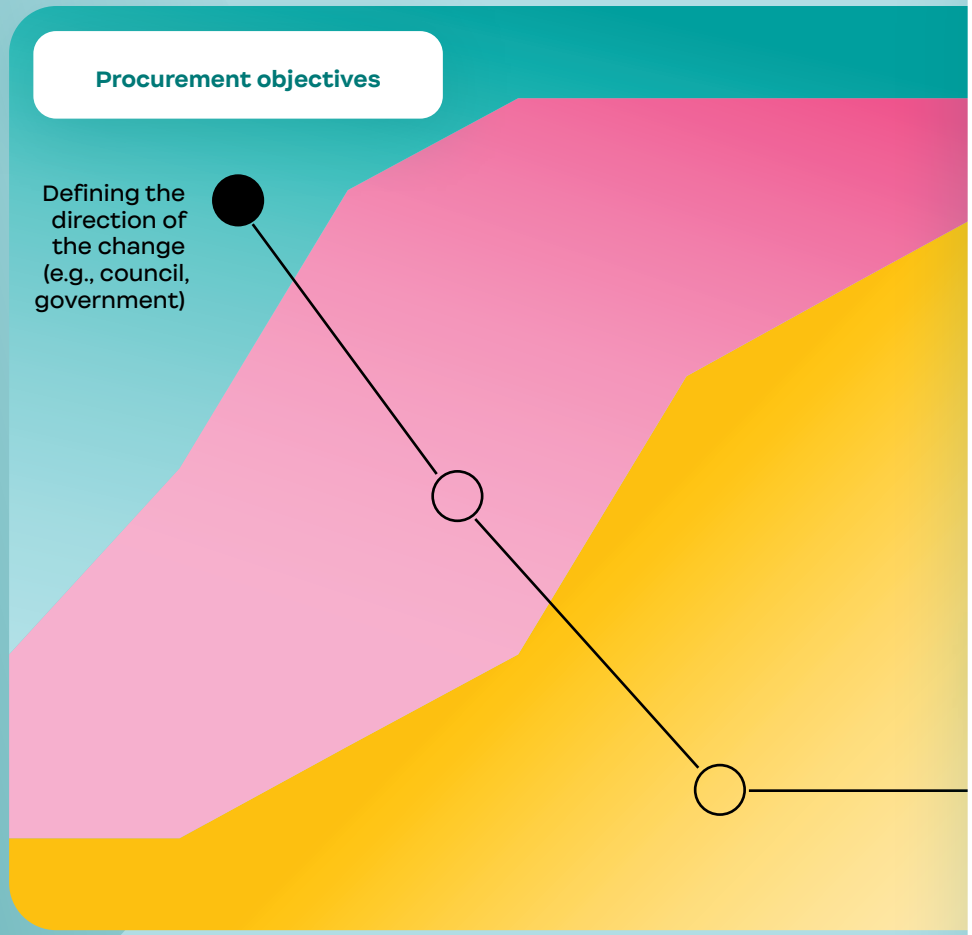


2.3. MANAGER'S DEVELOPMENT PATH TO LOW-CARBON PROCUREMENT

No one can carry out the management, development and implementation of procurements alone. It is essential to understand your own role and responsibilities in relation to others and to promote cooperation in all possible ways. Carrying out and promoting cooperation is everyone's task and responsibility. In practice, this means that in each of the points 1–6 presented below, the manager has an obligation to promote the matter, even if they do not have a defined responsibility. Promotion can be about conveying a message to a responsible level, and it does not necessarily mean taking responsibility for it. The manager's job description can be procurement manager, category manager or line of business unit manager. If the organisation has an environmental or responsibility expert, it is good to jointly agree on the division of work.

PHASE 1: PROCUREMENT OBJECTIVES

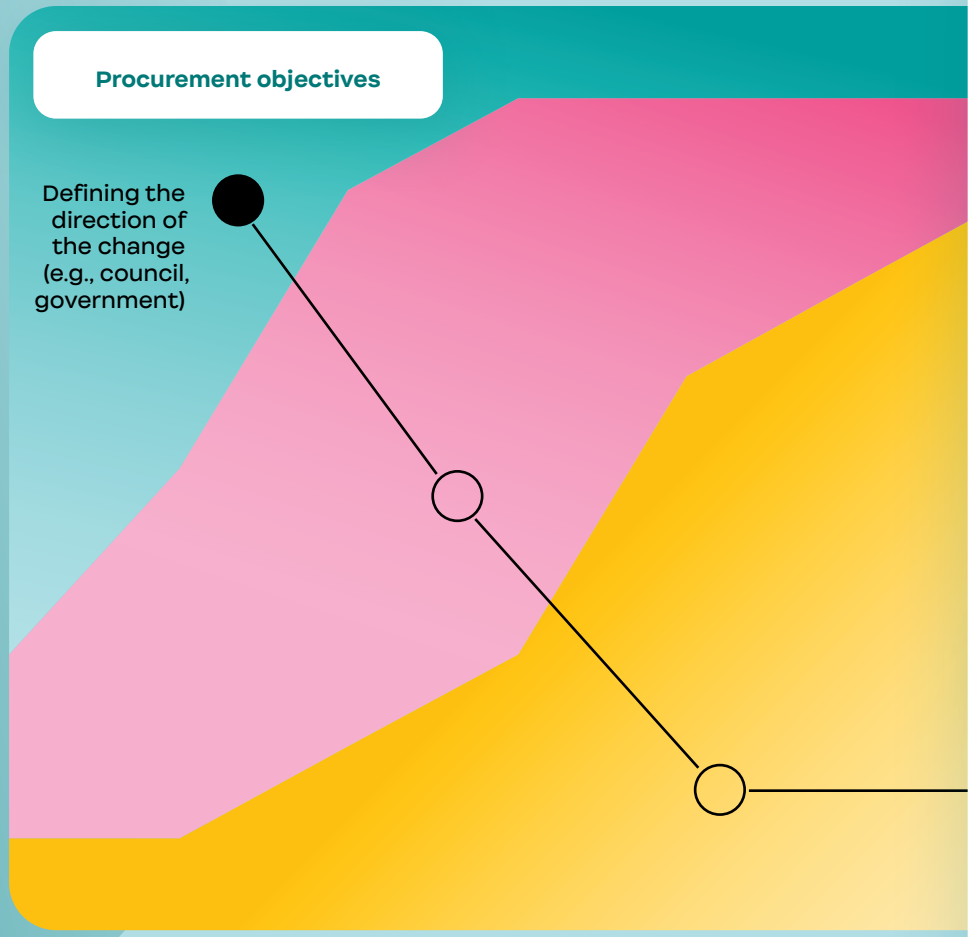
30% under the responsibility of the manager



Achieving effectiveness starts from defining the direction of the change in the council, board of directors or management team. This is the responsibility of decision-makers and directors. The task of a tactical-level manager is to produce background material and bring to the attention of directors and decision-makers the information essential for making a decision in terms of concrete implementation. This may include, among other things, finding and packaging city/organisation benchmarks or other benchmarks for directors/decision-makers. It may also be about opening the current state of your organisation in relation to the target, that is, being able to concretise how long the development path is (sprint or ultramarathon). In identifying and outlining the objectives of procurements, the expertise of an environmental or responsibility expert must be heard.

PHASE 1: PROCUREMENT OBJECTIVES

30% under the responsibility of the manager

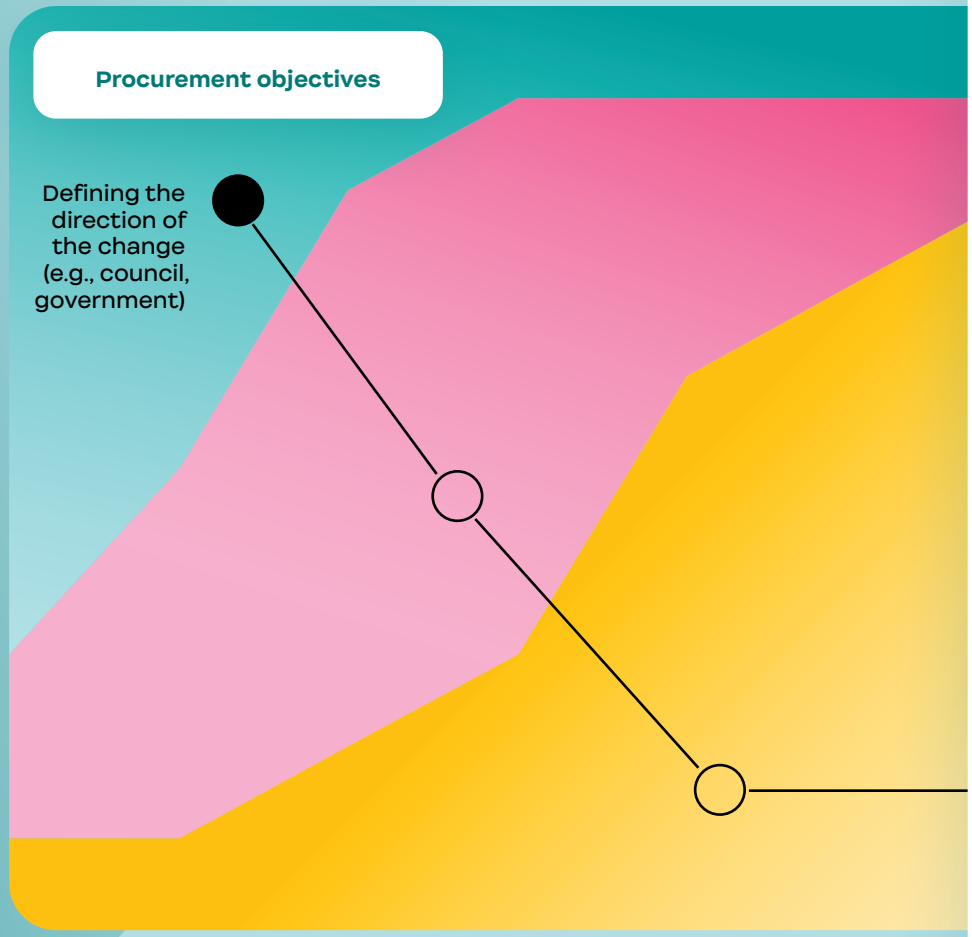


Examples of places of danger:

- A too-tight schedule is the enemy of a large and new kind of project. Sufficient time must be reserved for the necessary assessments and planning.
- The political acceptability of procurement models, when a new operating model is aimed at systemic change in larger procurement.
- The significance of the own industry in the implementation of reduction measures has not been identified, and low carbon is not part of the everyday way of working in all procurements (instead, low carbon is taken into account individually through pilot targets).
- The opinion of an environmental or responsibility expert is ignored or not even requested, for example, for fear of cost impacts.

PHASE 1: PROCUREMENT OBJECTIVES

30% under the responsibility of the manager

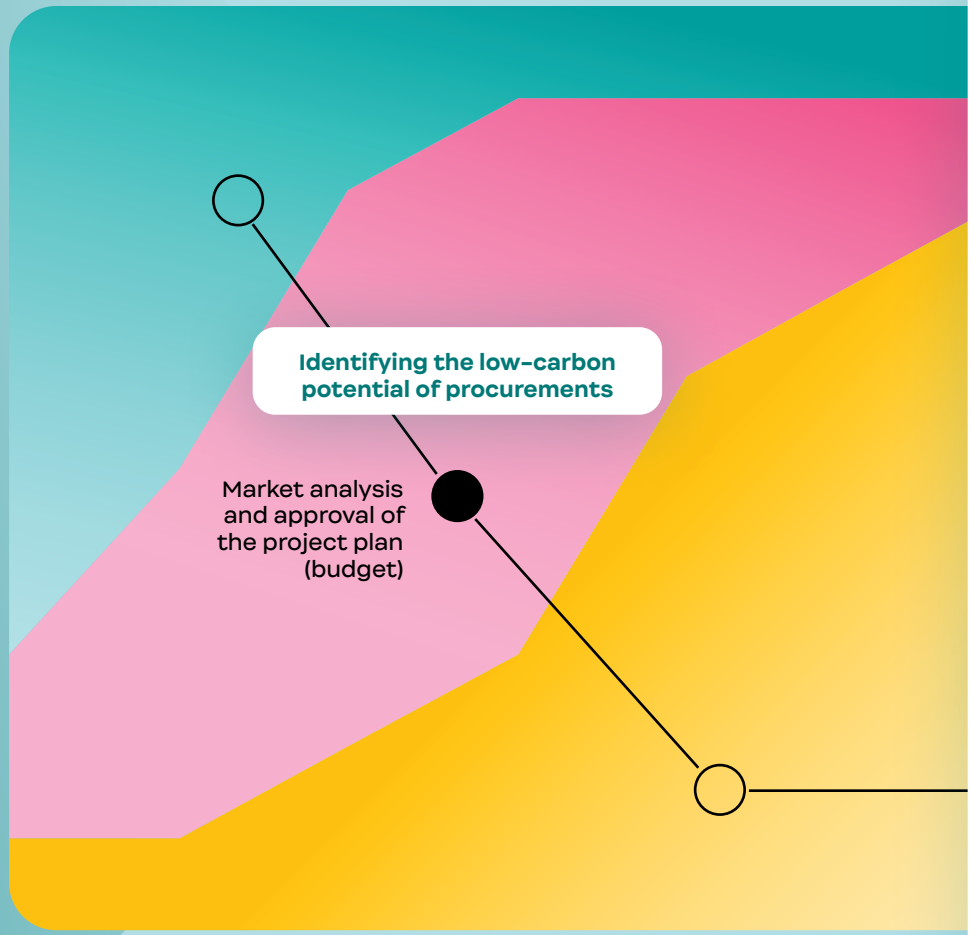


Examples of the preconditions for success:

- Authorisation for the completion of the procurement has been defined. This includes, among other things, competences, project management and resource management.
- Projects are examined from the perspective of life cycle costs, taking into account the possibility of the industry as a whole to influence the achievement of climate goals.
- Preparing for the potential additional cost or risk of sustainable or innovative procurement at the time of procurement, the level of which has been approved and shared within the organisation.

PHASE 2: IDENTIFYING THE LOW-CARBON POTENTIAL OF PROCUREMENT IN DIFFERENT CATEGORIES

60% under the responsibility of the manager



The second phase includes market analysis, project planning and concrete procurement. This phase includes preliminary implementation scheduling, identification of effectiveness objectives (low-carbon potential of the procurement category/procurement) as well as the definition and approval of the total value of the procurement by the decision-maker in accordance with the regulations.

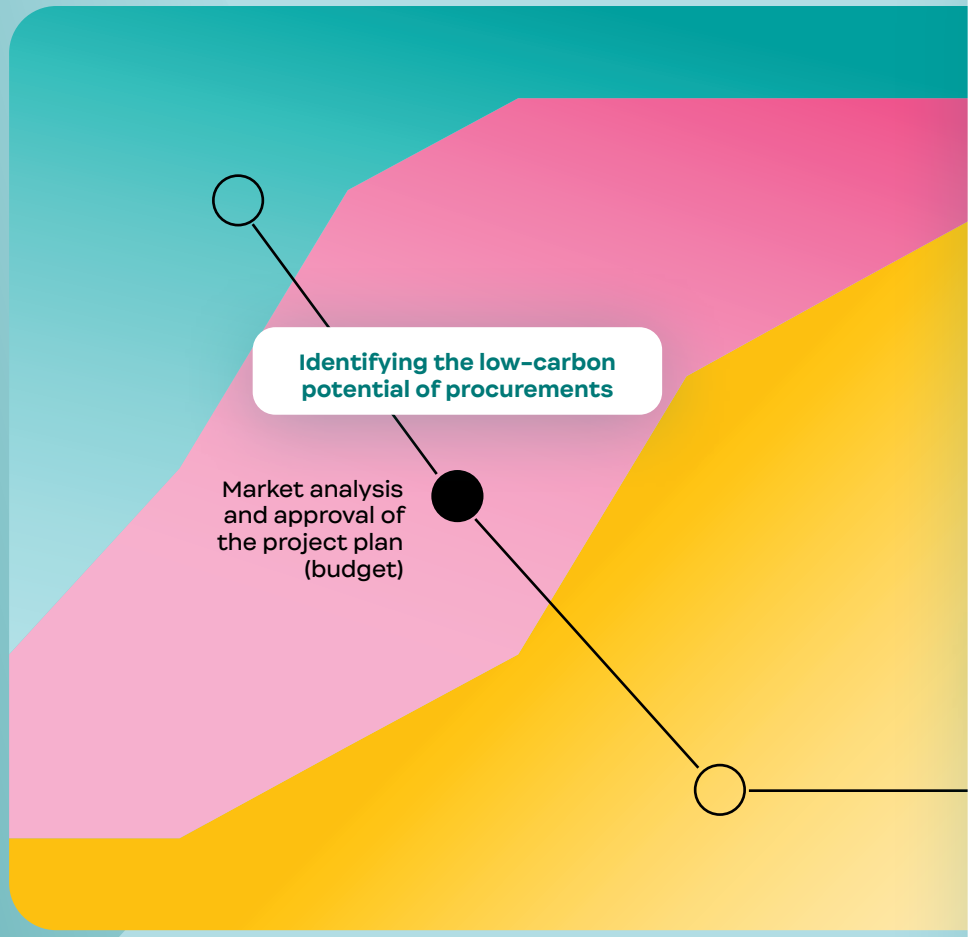
The starting point for the market analysis must be the basic information of the previous tendering round, if any, and the changes to the new contract that are desirable in the light of the still valid contract. The market analysis produces background and input data, which are specified as the criteria for the actual procurement and the terms of the contract through the market dialogue.

The manager's task is to identify the skills and resources required for making the procurement as well as the time required for preparation. If, at this stage, the objectives of the procurement seem too ambitious, it is the manager's task to identify alternative operating models to avoid the risk, for example, by giving more time and resources for preparation, training or acquiring expertise outside the organisation.

The risk is typically that data on the market's ability to deliver effectiveness is not collected or the project plan is unrealistic/not concrete. Success, on the other hand, starts from a discussion with the market on reducing environmental impacts and their cost effects.

PHASE 2: IDENTIFYING THE LOW-CARBON POTENTIAL OF PROCUREMENT IN DIFFERENT CATEGORIES

60% under the responsibility of the manager



Examples of places of danger:

- Insufficient resources for procurement planning.
- Sufficient expertise is not available in the organisation. Or, the required competence is not identified and there is no ability to acquire it from outside the organisation.
- The low number of tenders received, which may be due, for example, to the timing of the tendering procedure (holiday period), the stretching of the timetables (e.g., related to licencing matters) or insufficient market dialogue.
- In the preparation of the procurement, it is challenging to commit the substance field to the set target, especially if it requires cooperation with experts from many different fields. For example, from the point of view of school transport, a lot of cooperation is required in harmonising the school timetables between schools.

PHASE 2: IDENTIFYING THE LOW-CARBON POTENTIAL OF PROCUREMENT IN DIFFERENT CATEGORIES

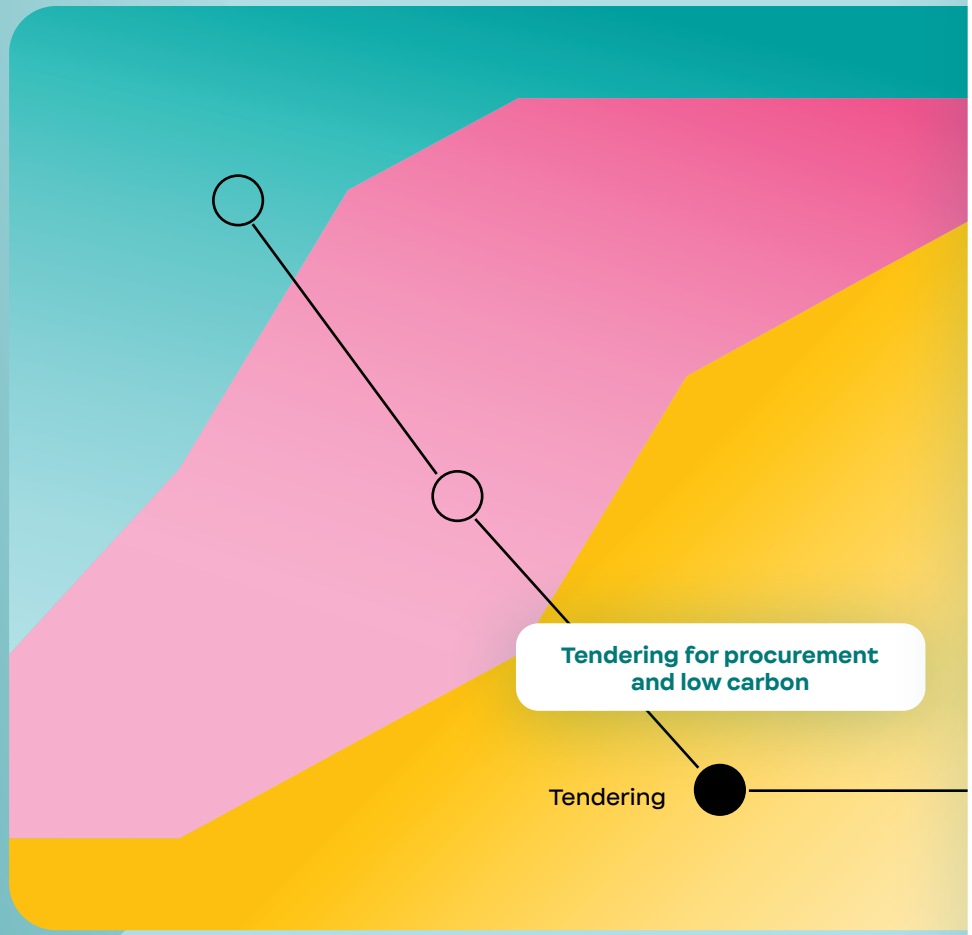
60% under the responsibility of the manager

Examples of the preconditions for success:

- Large entities should be divided into smaller and more manageable sections. The division can be made, for example, according to the urgency of the measures or the order of magnitude.
- Adequacy of resources is ensured and the initial data and any preliminary studies are in order.
- The main objectives of the procurement have been defined.
- The organisation has sufficient human resources to carry out the competitive tendering. At least the specifier of the procurement target and the procurement expert are named.
- The need for additional training of potential personnel or external skills has been identified.
- Authorisation for the completion of the procurement has been defined. This includes, among other things, competences, project management and resource management.
- The changed legislation and the ongoing preparation of tendering must be widely communicated to local companies. The procedure must be extensively justified with the changed legislation and the reorganisation carried out by the procurement unit.
- A separate briefing for local businesses on the changed legislation is organised.
- The city must investigate ways of financing and provide sufficient solutions to support the objectives of the procurement (for example, public quick charging points for entrepreneurs).
- The cost-effectiveness of the city's procurements can be improved by binding preparatory work within the city for all parties (commercial preparers, substance preparers and management).
- Systematic carrying out of ex ante impact assessment (correct setting of assessment questions).
- Successful market mapping and open dialogue.
- Entrepreneurs are given enough time to adapt to the targets and the city provides a clear signal of what the targets are and when they should be achieved.
- Decision-makers and management are aware of what goals can be promoted in procurement, as well as what it costs to achieve them.
- There is a discussion with the market on cost-effectiveness, risk management and ecological effectiveness.

PHASE 3: TENDERING FOR PROCUREMENT AND LOW CARBON

20% under the responsibility of the manager

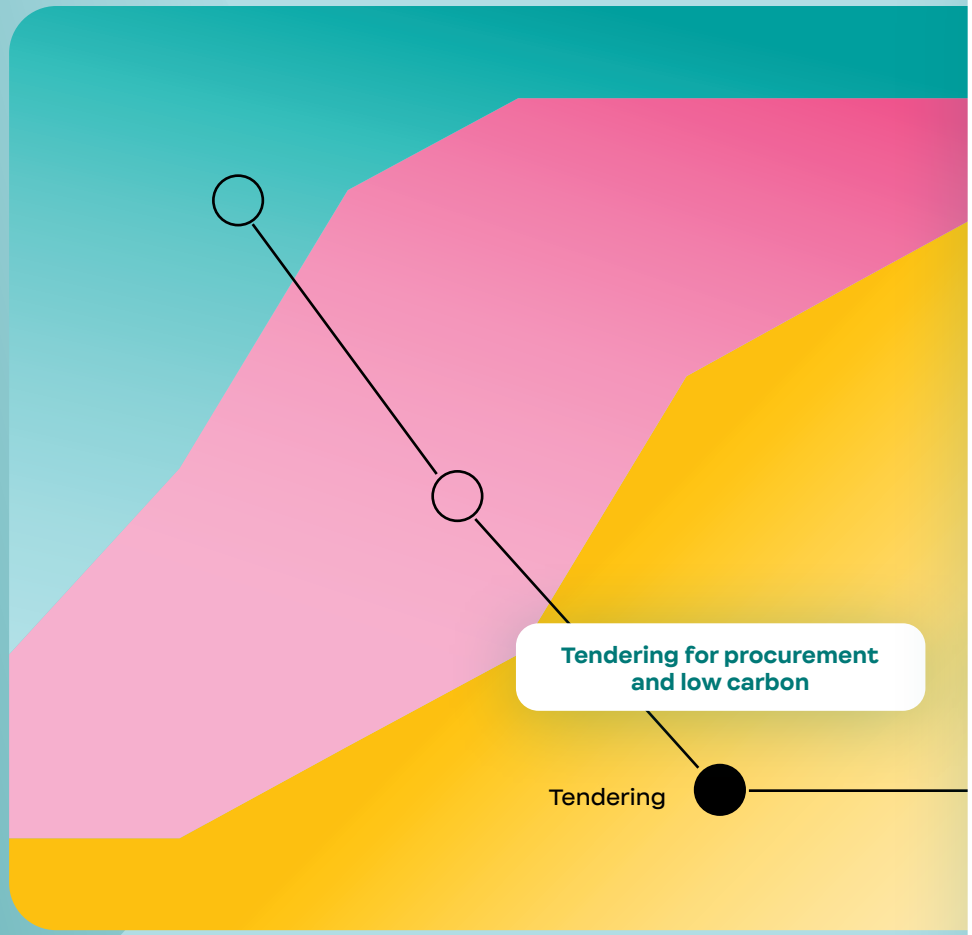


The third phase is competitive tendering. The risk is typically that the concept of tendering is locked and there is no leeway. For example, it has already been decided in advance to select one supplier, even if effectiveness is better generated through competition. Success is based on the fact that the roles and responsibilities of different actors are clear and the concept of tendering is chosen on the basis of potential impact. The prerequisites for the success of this stage are created in the previous stage, when the market analysis and market dialogue are carried out with sufficient precision and one is able to utilise the information in the selection of the procurement's effective tendering method, in the definition of the object of the procurement and in the drafting of the criteria and contract terms.

Success requires open and close cooperation between the procurement owner (internal client), substance, environmental experts and procurement experts. In addition, an open and balanced dialogue with the market plays a key role. By doing so, it is possible to identify a viable procurement-specific way to make a low-carbon procurement.

PHASE 3: TENDERING FOR PROCUREMENT AND LOW CARBON

20% under the responsibility of the manager

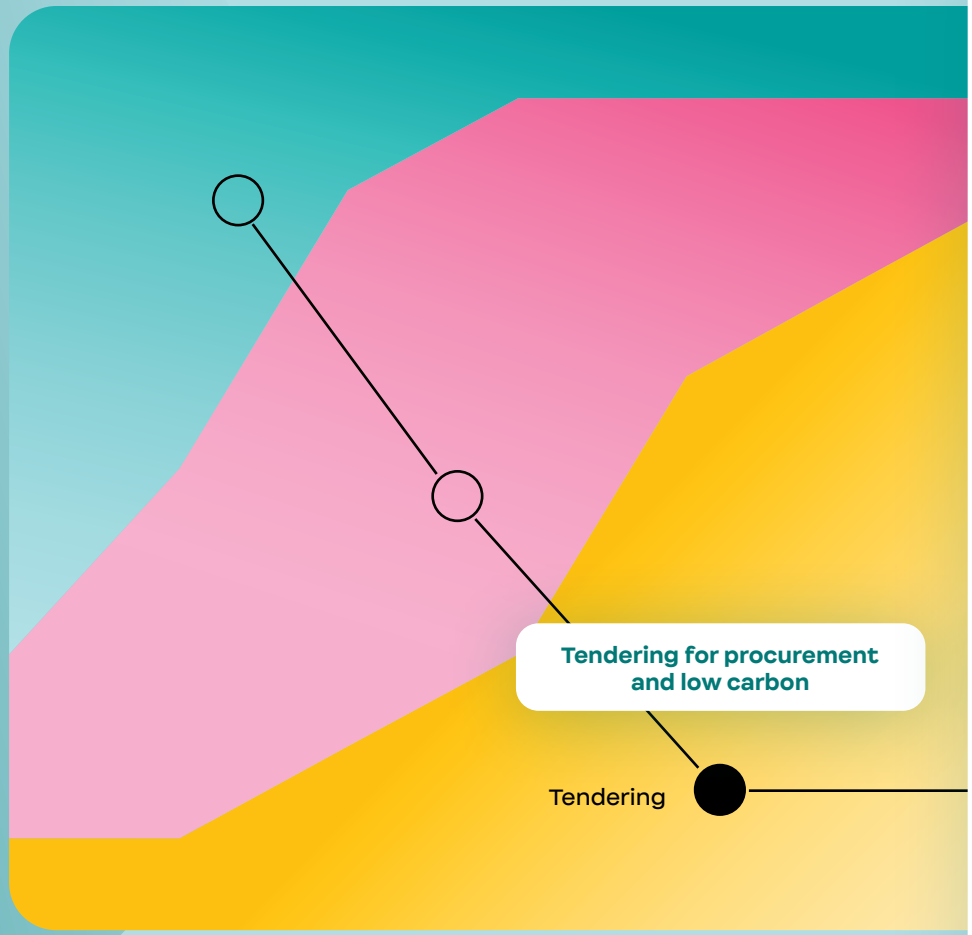


Examples of places of danger:

- Locking down the procurement model too early in the process.
- New or foreign forms of contracts for the procurement entity are introduced too quickly.
- Insufficient resources for the implementation of the procurement.
- The main objectives of the procurement and the concrete requirements of the competitive tendering are not clear enough.
- The organisation does not have sufficient expertise for defining the object of the procurement and preparing the invitation to tender. Problems may arise, for example, related to the selection of the criteria by which the supplier is selected.
- Insufficient market dialogue.

PHASE 3: TENDERING FOR PROCUREMENT AND LOW CARBON

20% under the responsibility of the manager



Examples of the preconditions for success:

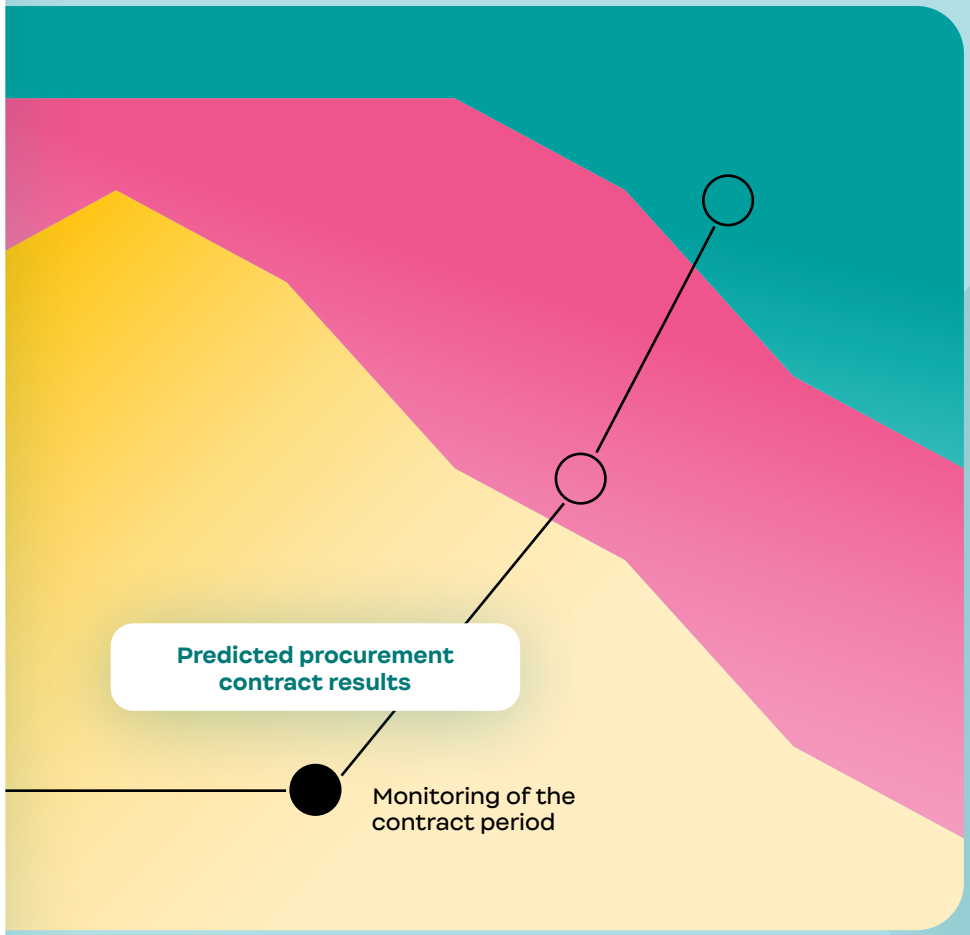
- The main objectives of the procurement have been defined. The limits of liability between the client and the tenderer for the achievement of the objectives are clearly defined by the measures
- The selection criteria guide towards the best tender for the achievement of the objectives.
- At an early stage in the preparation of the procurement, the organisation has reserved enough human resources to carry out competitive tendering. At least the specifier of the procurement target, the procurement expert and the environmental expert are named.
- Authorisation for the completion of the procurement has been defined. This includes, among other things, competences, project management and resource management.

PHASE 4: PREDICTED PROCUREMENT CONTRACT RESULTS

70% under the responsibility of the manager

The procurement guidelines define the objectives and their general-level monitoring indicators as well as an operating system that enables monitoring. In addition, the monitoring and cooperation of the procurement contract is defined in the draft contract for tendering based on market analysis and dialogue. At this stage, it is essential to find a few metrics that can be monitored concretely (data can be produced) and that reliably indicate the goal to be measured (data reliability).

The manager's task is to provide a smooth operating model and systems for monitoring the contract and to ensure sufficient resources and competence for the cooperation required during the contract period. Cooperation and monitoring during the contract may require greater involvement within the organisation, so that all activities within the scope of the contract can be systematically incorporated into the managed contractual cooperation. This allows directors and managers to monitor deviations and make any necessary decisions to correct the situation.

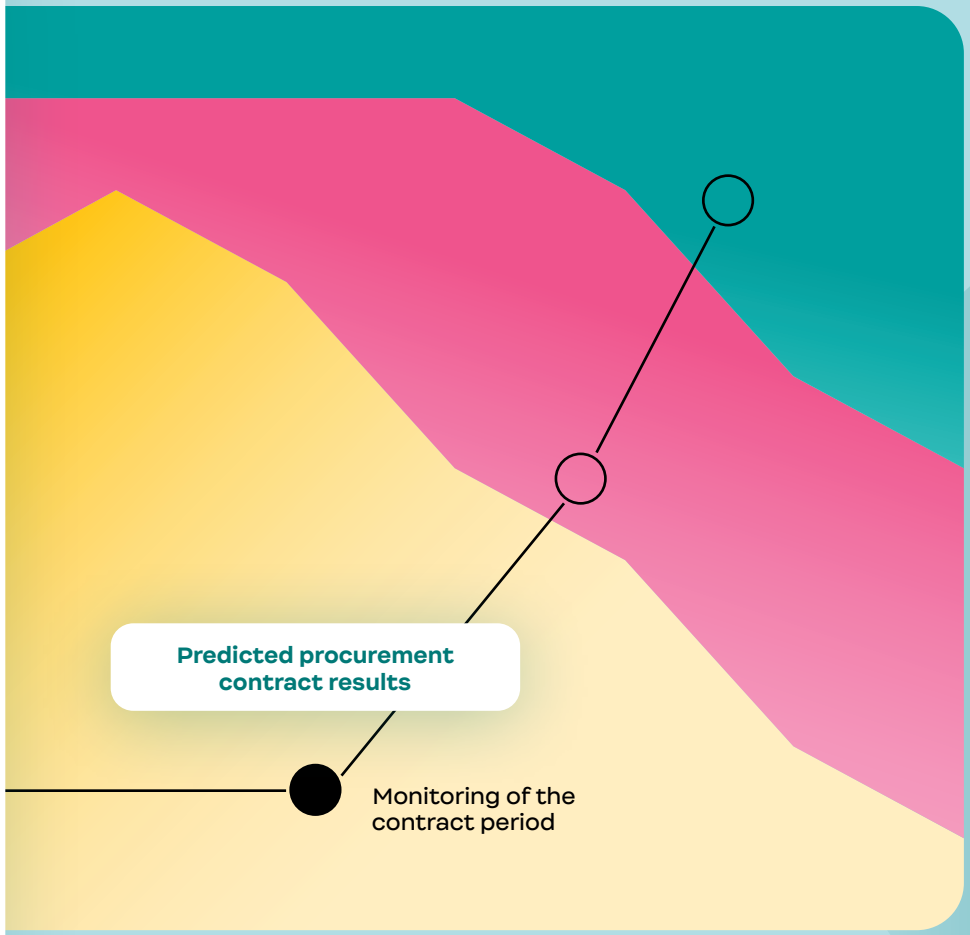


PHASE 4: PREDICTED PROCUREMENT CONTRACT RESULTS

70% under the responsibility of the manager

Examples of places of danger:

- Monitoring the achievement of objectives, that is, setting goals, the implementation or effectiveness of which cannot be monitored or for which there is not sufficient time to monitor them.
- The selection of metrics has not taken into account how well they describe the desired effect. Is the issue to be monitored relevant, how reliably does the meter describe the change/phenomenon and is the necessary data available or produced?
- There is no process or operating model in place to systematically collect data on the implementation of contracts.
- There is no operating model or process by which the accumulated data is processed within the organisation sufficiently extensively by listening to different actors.
- There is no decision-making model for the measures to be taken on the basis of monitoring data (deviations and risk management).

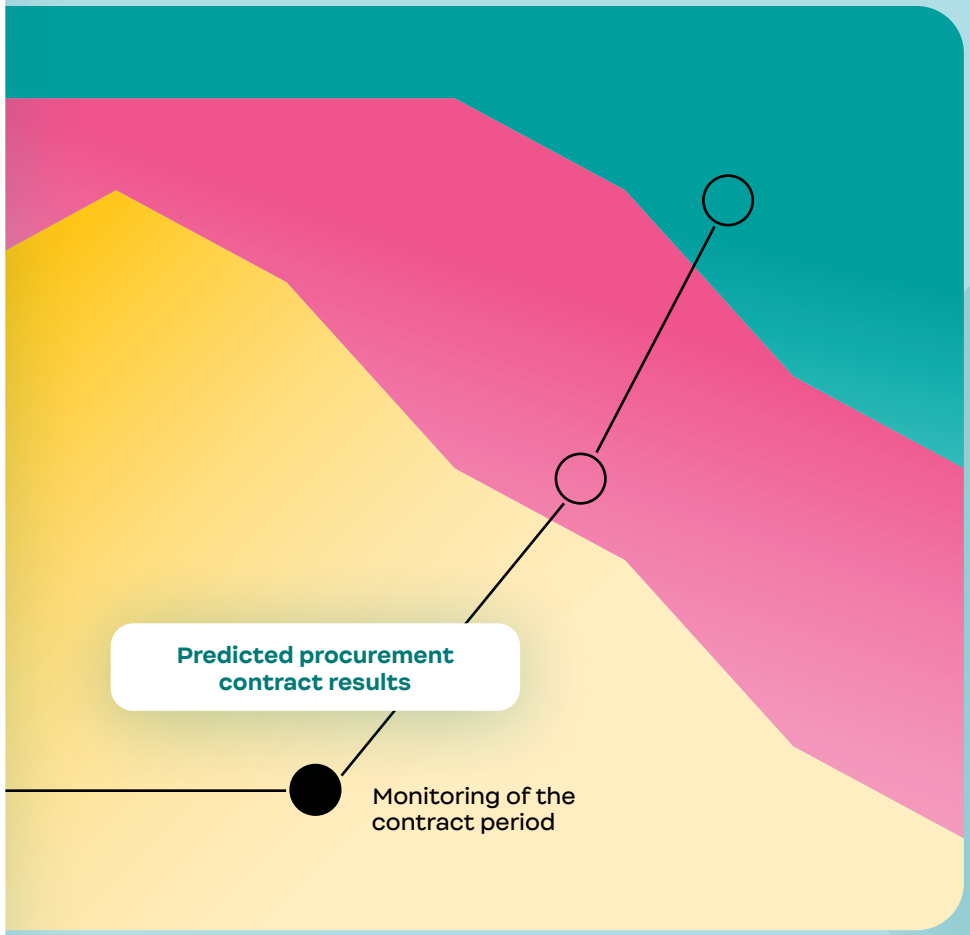


PHASE 4: PREDICTED PROCUREMENT CONTRACT RESULTS

70% under the responsibility of the manager

Examples of the preconditions for success:

- The organisation has sufficient human resources to carry out the competitive tendering. At least the specifier of the procurement target and the procurement expert are named.
- Authorisation for the completion of the procurement has been defined. This includes, among other things, competences, project management and resource management.
- An operating model has been created for monitoring and contract management, supported by appropriate reporting or information systems.
- Monitoring data is processed extensively by listening to different actors, and the necessary decisions to manage deviations and risks are made without delay.

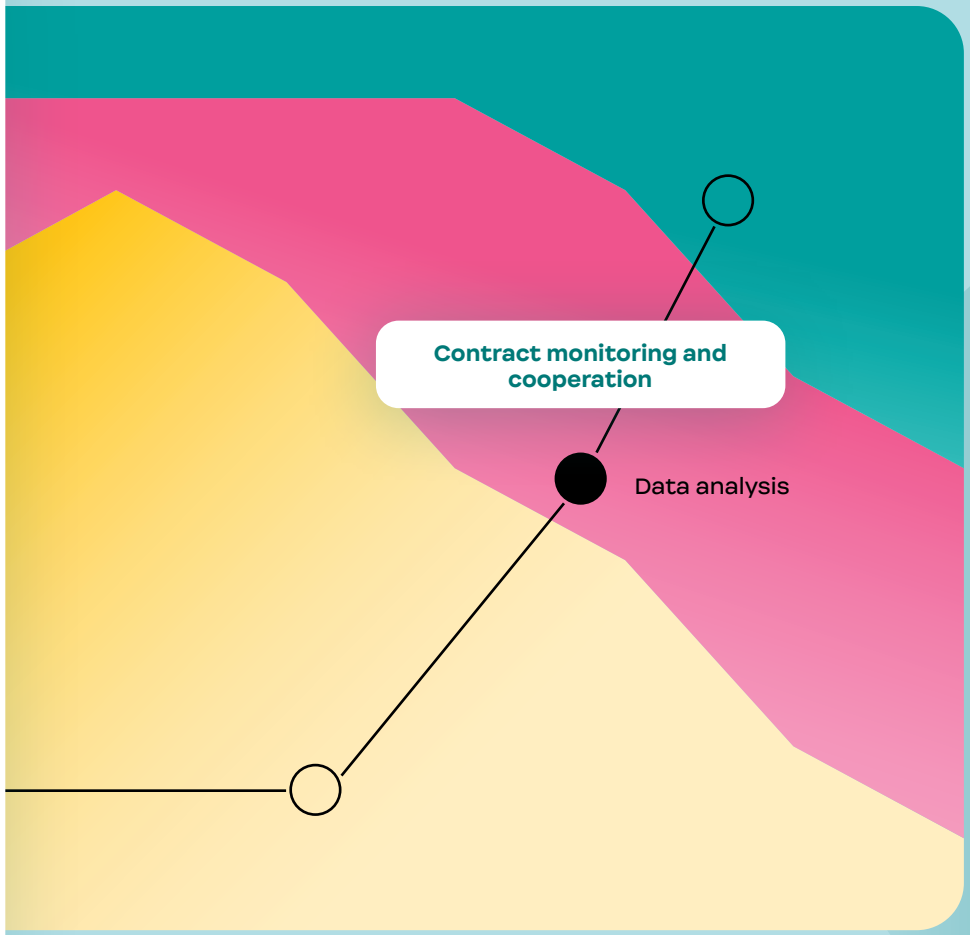


PHASE 5: CONTRACT MONITORING AND COOPERATION

70% under the responsibility of the manager

The fifth phase is cooperation in promoting the low-carbon objectives of the procurement agreement as well as monitoring and measuring the results. The aim is to achieve the low-carbon goal jointly agreed in the contract.

This entity is typically the manager's task. The risk is typically that there is no data at hand that could be used to compile sufficiently reliable situation information.

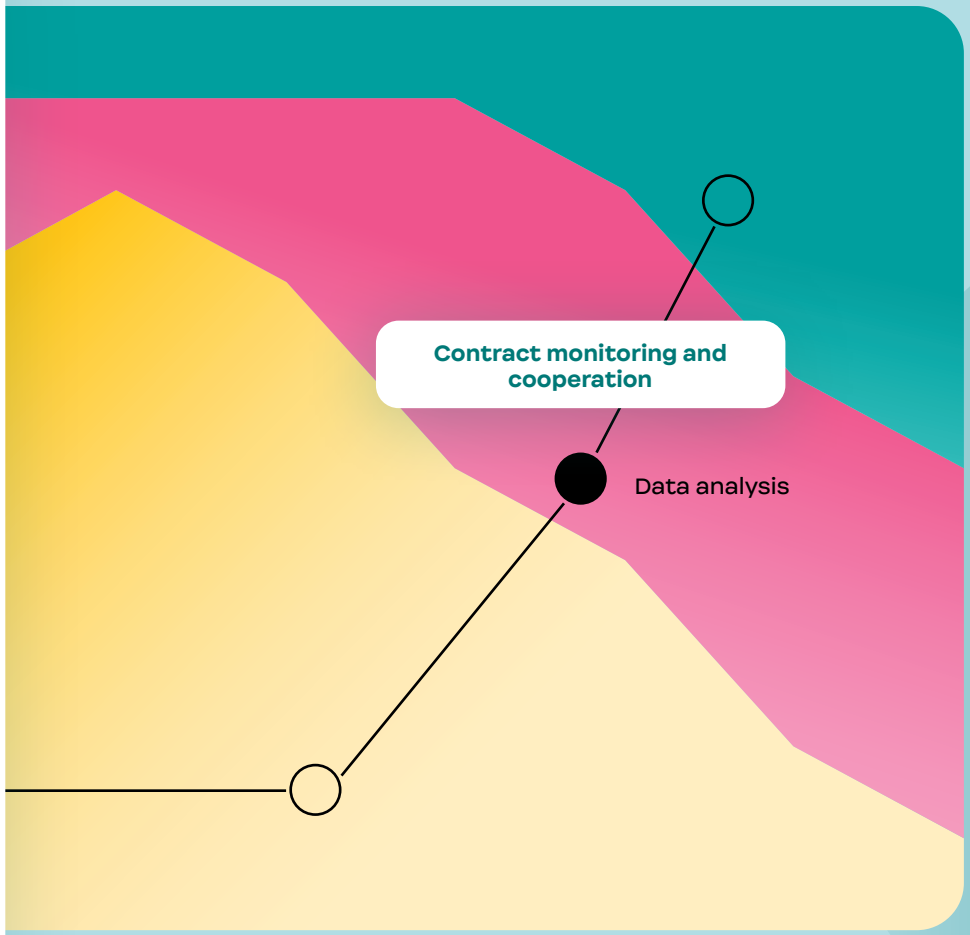


PHASE 5: CONTRACT MONITORING AND COOPERATION

70% under the responsibility of the manager

Examples of places of danger:

- In the tendering phase, metrics have been set that cannot actually be monitored.
- Monitoring work has not been scheduled and prepared in advance in a sufficiently concrete manner.
- The start of the contract period has not been prepared for with sufficient resources on the part of the client or supplier, and the implementation is delayed or incomplete.

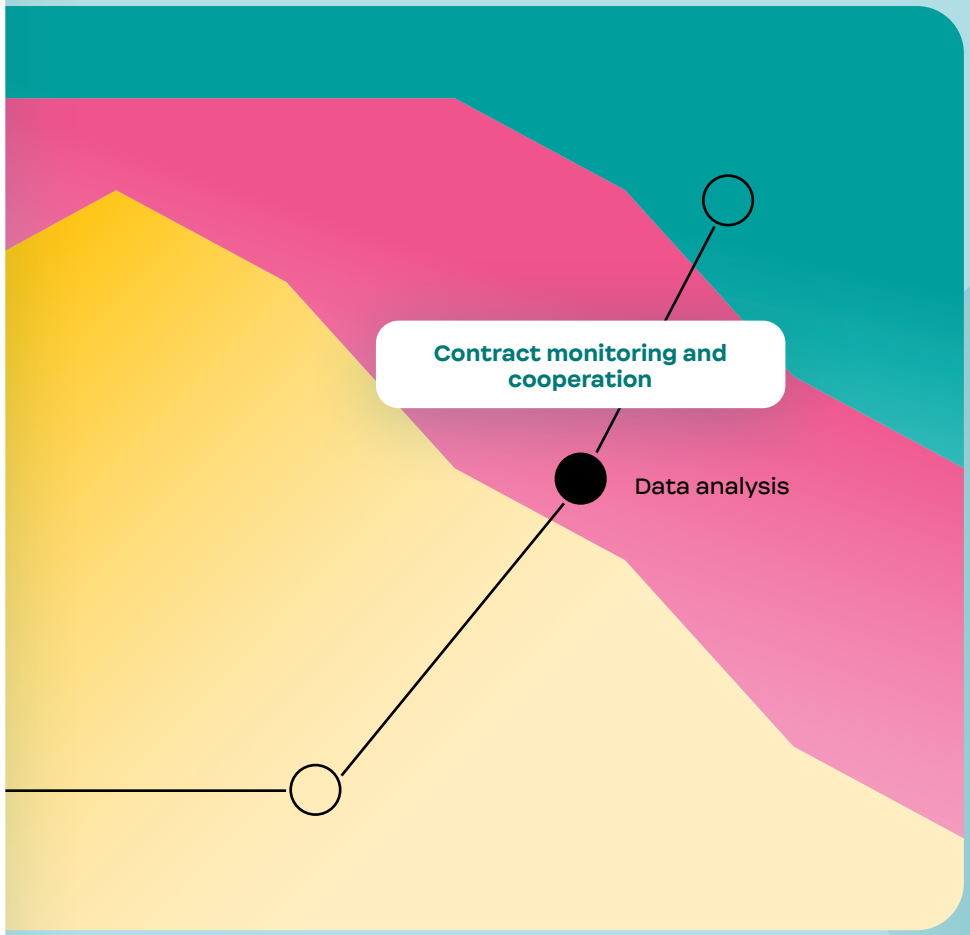


PHASE 5: CONTRACT MONITORING AND COOPERATION

70% under the responsibility of the manager

Examples of the preconditions for success:

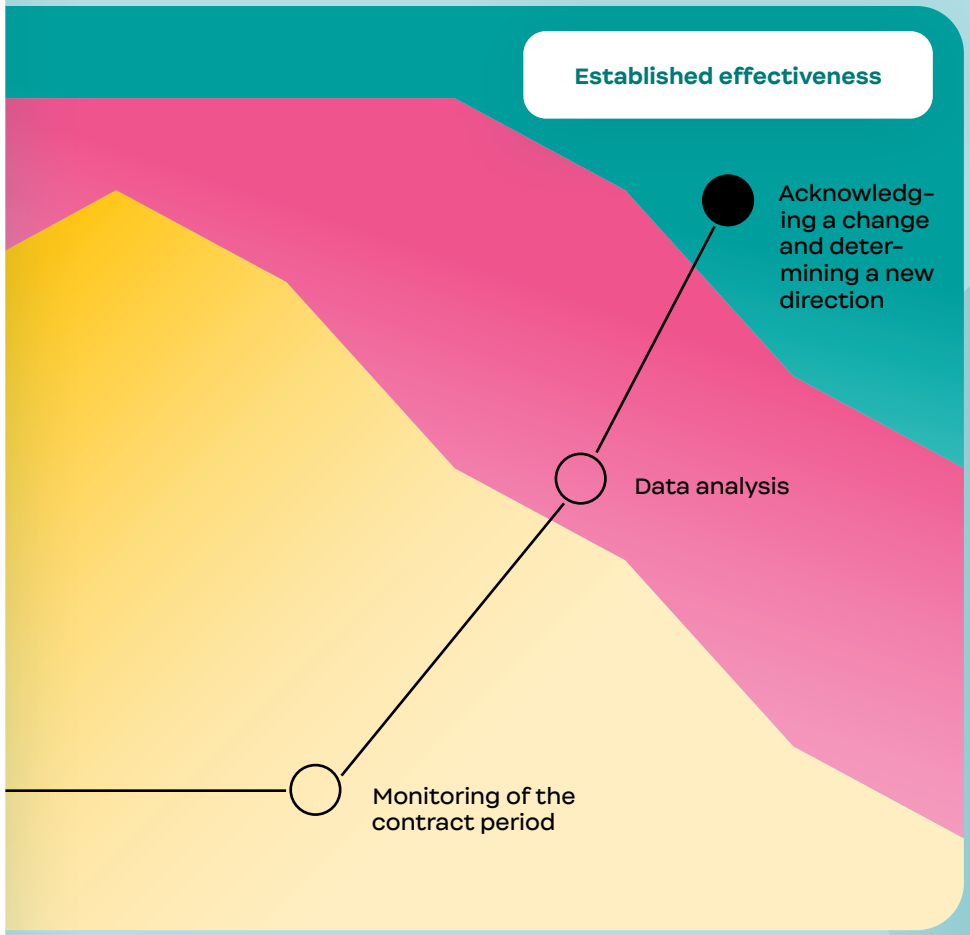
- Authorisation for the completion of the procurement has been defined. This includes, among other things, competences, project management and resource management.
- An established and uniform manner for monitoring and cooperation has been established, which is utilised in the contractual monitoring of individual procurements.
- The need for training communication has been assessed for the launch of the contract period and it is launched in a manner that supports the contract.



PHASE 6: ESTABLISHED EFFECTIVENESS

70% under the responsibility of the manager

The sixth phase is to acknowledge the change and determine a new direction. The risk is typically that the monitoring has not been carried out and the effectiveness cannot be identified. Another challenge may be that the tools are of a kind that cannot be used in other procurements aiming at effectiveness. Effectiveness monitoring tools should be continuously and actively refined to get the most out of them. In addition, the organisation must have an internal operating model for monitoring the achievement of the objectives of the procurement guidelines.

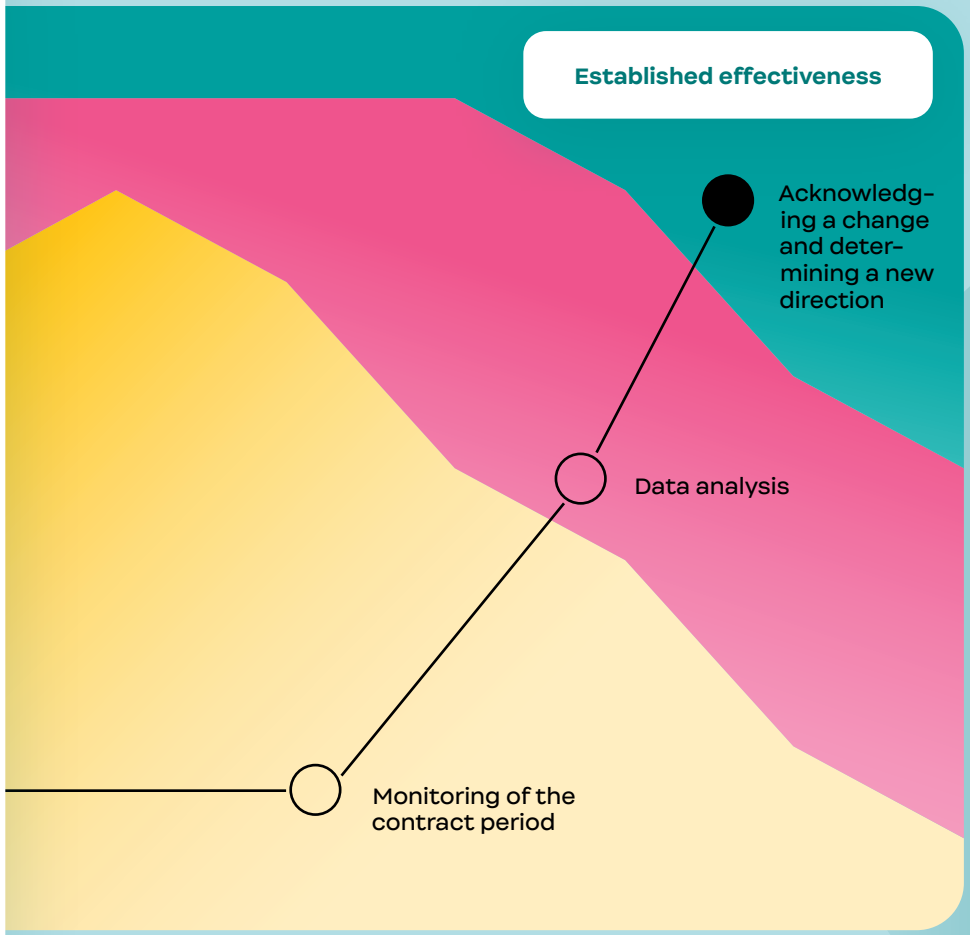


PHASE 6: ESTABLISHED EFFECTIVENESS

70% under the responsibility of the manager

Examples of places of danger:

- The operating model and processes for collecting data and making the required decisions and actions are missing.
- Monitoring data is not communicated within the organisation, meaning that the necessary changes in operations are not made.
- The supplier field is not notified of the achievement of the objectives or the possible shortcomings.

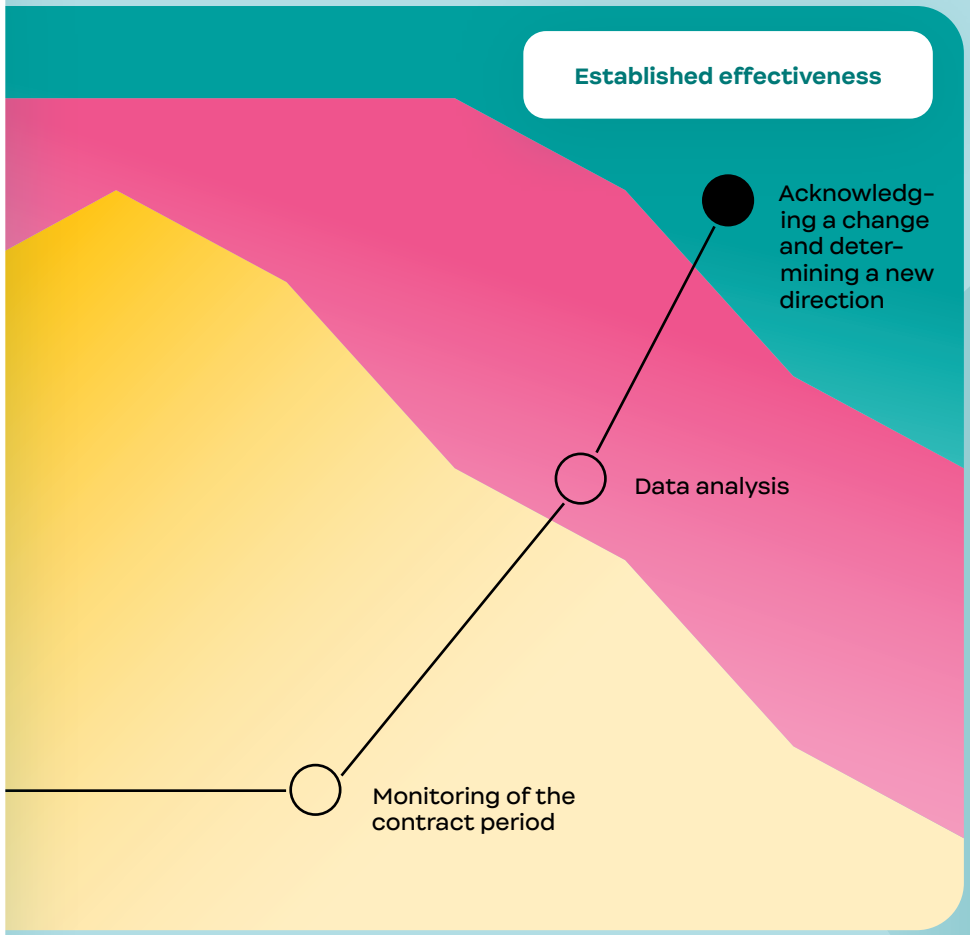


PHASE 6: ESTABLISHED EFFECTIVENESS

70% under the responsibility of the manager

Examples of the preconditions for success:

- Authorisation for the completion of the procurement has been defined. This includes, among other things, competences, project management and resource management.
- An established and uniform manner for monitoring and cooperation has been established, which is utilised in the contractual monitoring of individual procurements.

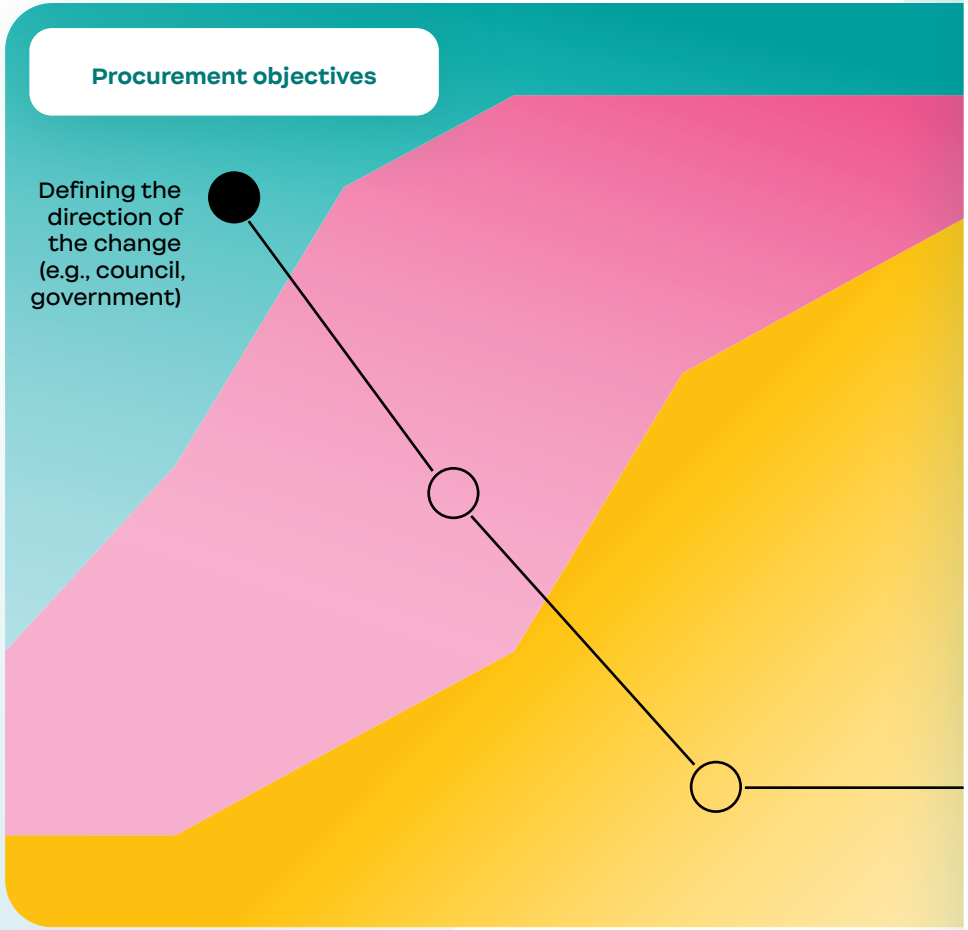


2.4. EXPERT'S TENDERING PATH TO LOW-CARBON PROCUREMENT

No one can carry out the management, development and implementation of procurements alone. It is essential to understand your own role and responsibilities in relation to others and to promote cooperation in all possible ways. Carrying out and promoting cooperation is everyone's task and responsibility. In practice, this means that in each of the phases 1–6 presented below, experts are obliged to be aware of the situation, even if they do not have a defined responsibility. An expert's job description can be a procurement expert, an expert in the field or a unit manager, or anyone who makes procurements in addition to their own job. If the organisation has an environmental or responsibility expert, it is a good idea to jointly agree on the division of labour.

PHASE 1: PROCUREMENT OBJECTIVES

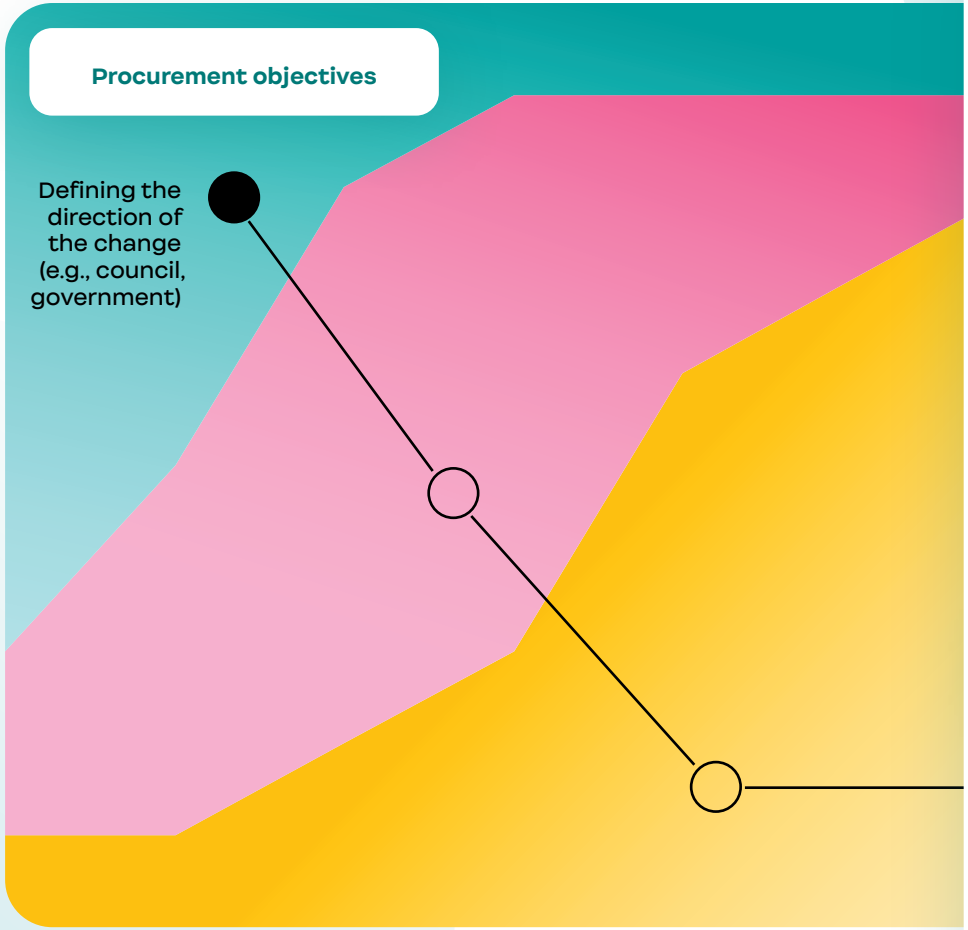
5% under the responsibility of the expert



The first step is to identify and define the procurement objectives. The expert's role does not include the preparation of procurement guidelines, but these must be aware, as they guide the preparation of procurement and tendering.

PHASE 1: PROCUREMENT OBJECTIVES

5% under the responsibility of the expert

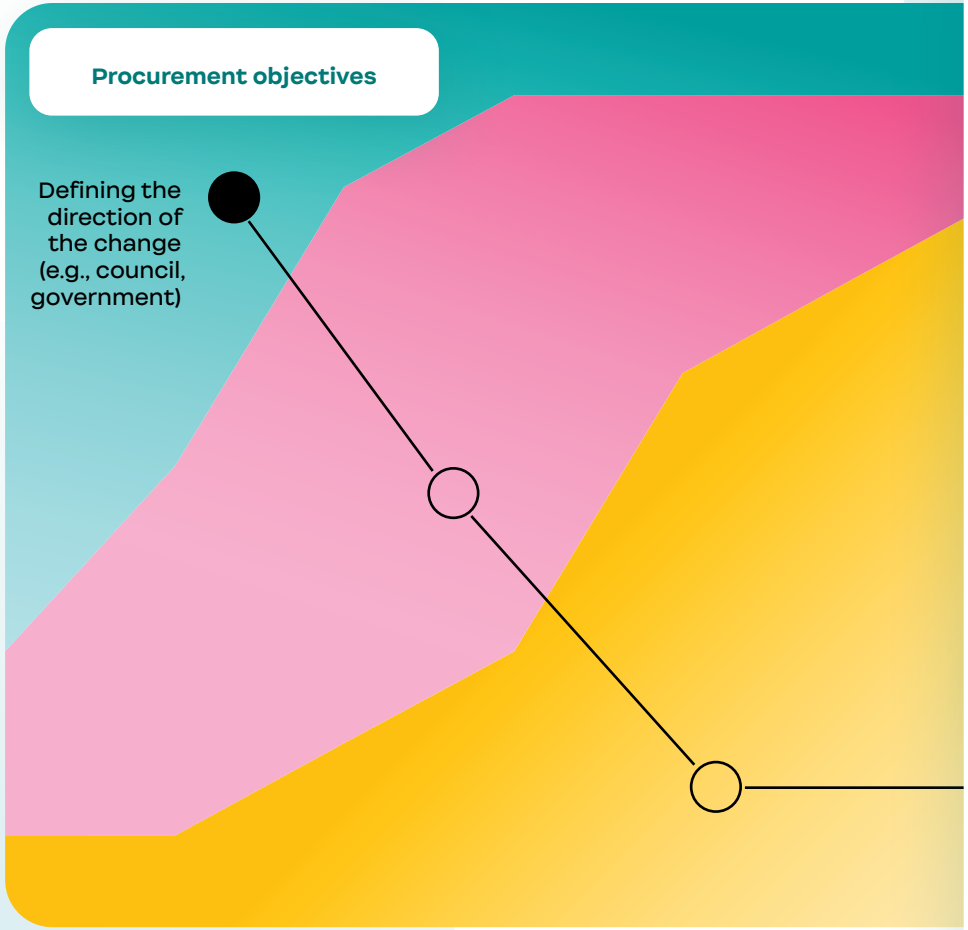


Examples of places of danger:

- Procurement guidelines have not been communicated in the organisation.
- It is difficult to apply procurement guidelines to individual procurement preparations.
- There are no established operating models in place for procurement management.

PHASE 1: PROCUREMENT OBJECTIVES

5% under the responsibility of the expert

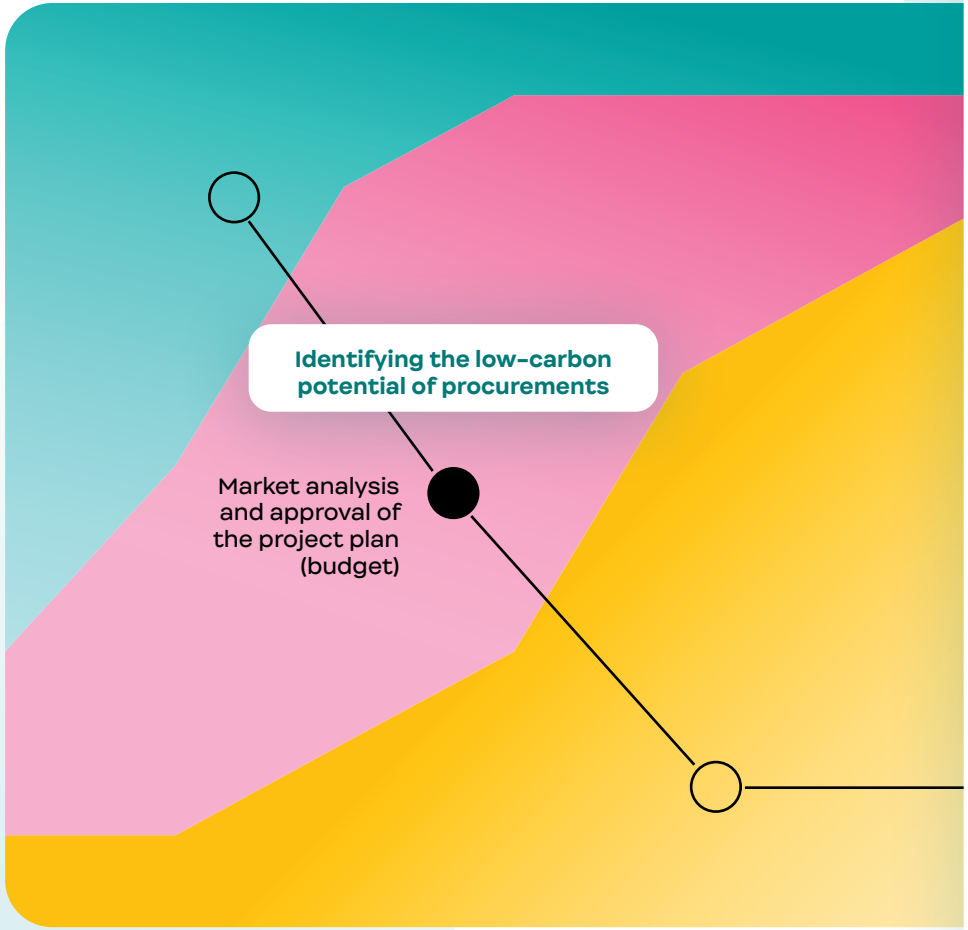


Examples of the preconditions for success:

- The expert has been assigned a clear role in promoting the sustainability aspects of procurement.
- The expert is committed to the work at an early stage, and the industries take the expert's views into account.

PHASE 2: IDENTIFYING THE LOW-CARBON POTENTIAL OF PROCUREMENT IN DIFFERENT CATEGORIES

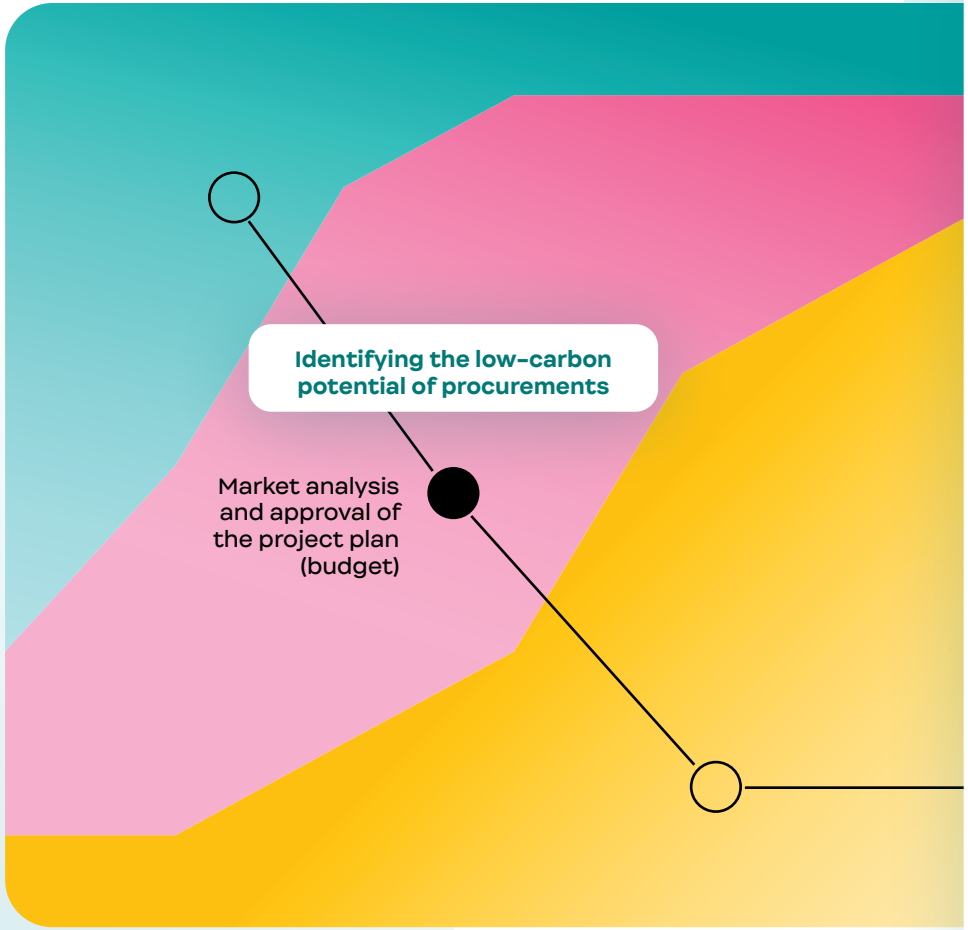
10% under the responsibility of the expert



The second step in the preparation of the procurement is to assess what kind of low-carbon potential there is in the different procurement categories and to specify within the procurement category the possibilities of different procurements to contribute to the low-carbon objectives. The expert has a role in this work when evaluating the procurement's low-emission target. The substance expert usually has a good understanding of the object of procurement and the supplier field, while the environmental and procurement expert has knowledge of what possible low-carbon targets have been required in the past. Cooperation between substance, environment and procurement experts is essential during the procurement planning phase.

PHASE 2: IDENTIFYING THE LOW-CARBON POTENTIAL OF PROCUREMENT IN DIFFERENT CATEGORIES

10% under the responsibility of the expert

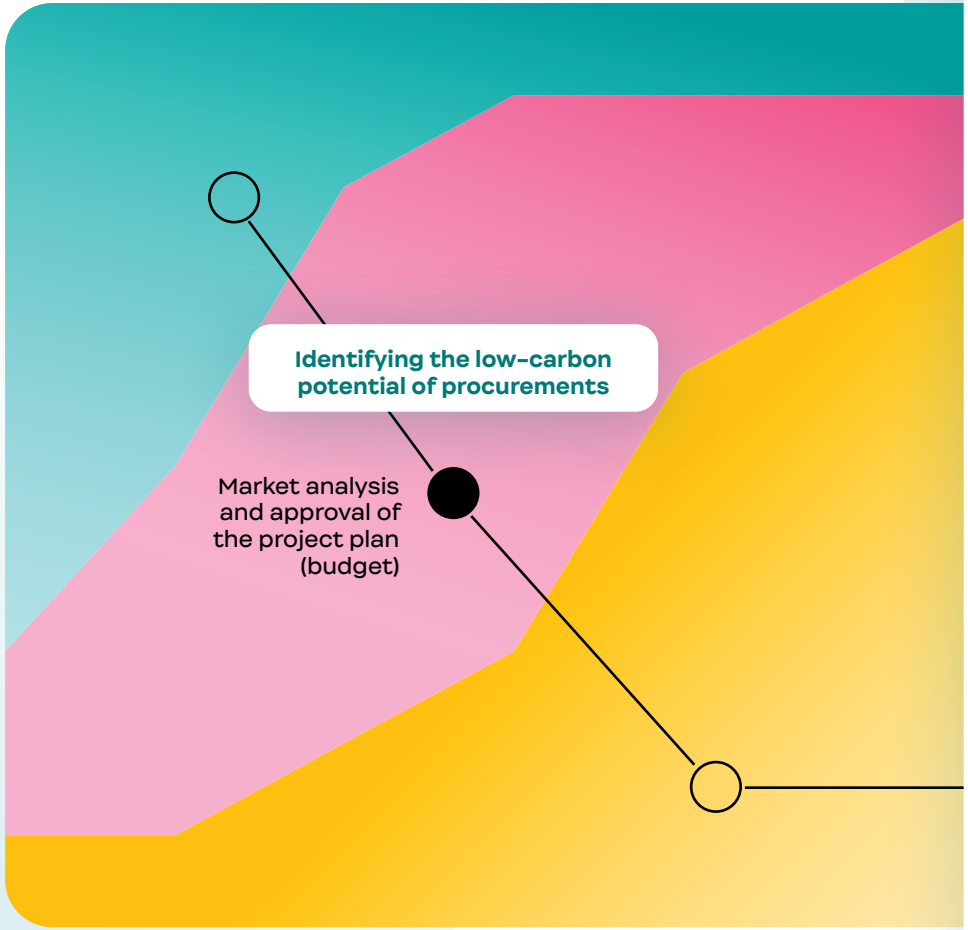


Examples of places of danger:

- Enough expertise is not available in the organisation.
- In the preparation of the procurement, it is difficult to get the substance sector to commit to the set goal.
- Low-carbon targets will be linked to the procurement, although it is not known whether there are realistic opportunities to implement emission reductions in this category and in the procurement.

PHASE 2: IDENTIFYING THE LOW-CARBON POTENTIAL OF PROCUREMENT IN DIFFERENT CATEGORIES

10% under the responsibility of the expert

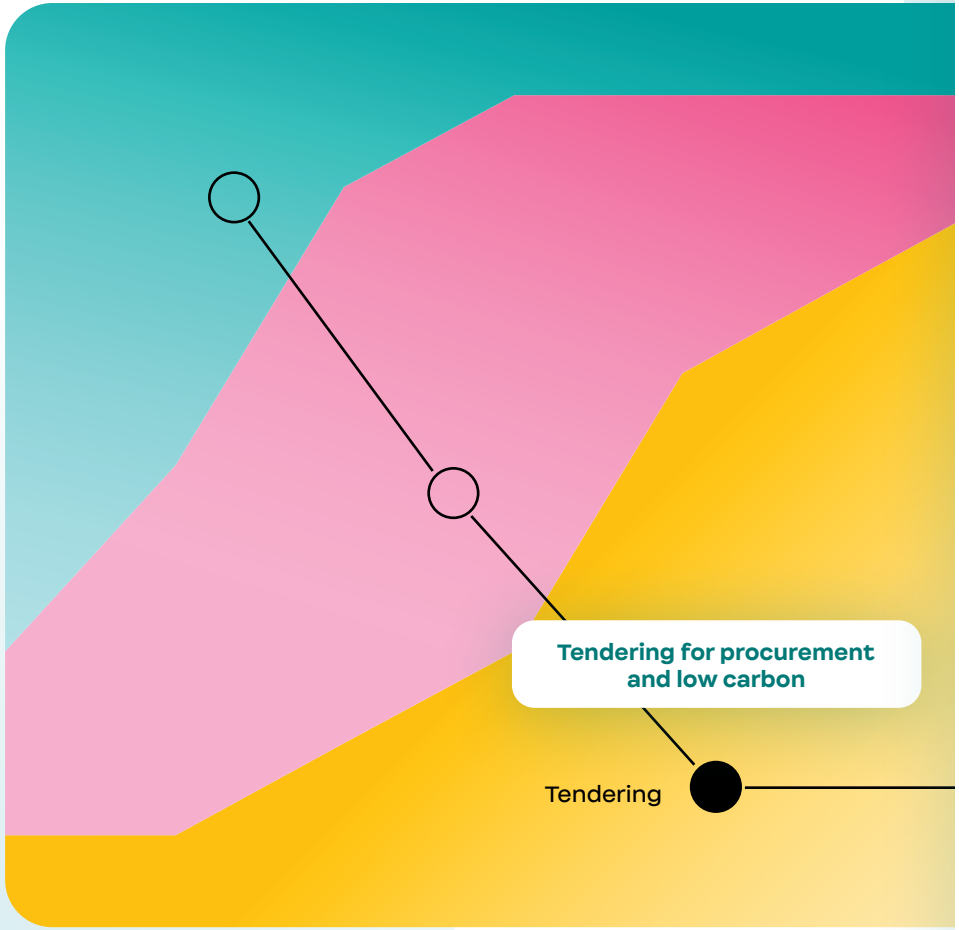


Examples of the preconditions for success:

- The main objectives of the procurement have been defined.
- A well-prepared procurement with low-carbon and circular economy objectives is as easy a competitive bidding process as a bidding process carried out in the "traditional way".
- Entrepreneurs are given enough time to adapt to the goals, a clear signal from the management level is coming in which direction and when.
- Careful mapping of implementation options.
- Active use is made of the available expert assistance and peer-to-peer information to fill in the missing substance information (e.g., KEINO Competence Centre or other expert bodies).

PHASE 3: TENDERING FOR PROCUREMENT AND LOW CARBON

70% under the responsibility of the expert



The third phase is competitive tendering. The challenge is typically that the objectives related to the effectiveness of the procurement do not come to the expert as a fully integrated whole, which may affect, among other things, the fact that the requirements of the subject of the procurement, the suitability requirements of the tenderer, the comparison criteria or the terms of the contract in the final invitation to tender are not as unambiguous as hoped at the managerial level from the point of view of effectiveness. Clarifying and communicating targets is the responsibility of directors and managers.

In the tendering process, there may be a risk, among other things, of resorting to old customary practices or document templates (avoiding legal consequences), which weakens the desired share of effectiveness in tendering. It is also possible that the procurement entity has already decided in advance to define the requirements, comparison criteria or conditions of the invitation to tender in such a way that only one of the known suppliers can submit a tender. Competition has a significant impact on the creation of effectiveness.

In addition, overly strict scheduling requirements for procurement may impair the achievement and utilisation of the potential for effectiveness. The expert is contacted too late, in which case they do not have the time needed to compile the tender material with the appropriate effectiveness objectives and criteria.

It is important that there is active discussion with the market on environmental and cost impacts as well as possible solutions to conflicting objectives. The collection of market mapping and information is concretely influenced by, for example, the expert's interaction skills and ability to utilise the information obtained.

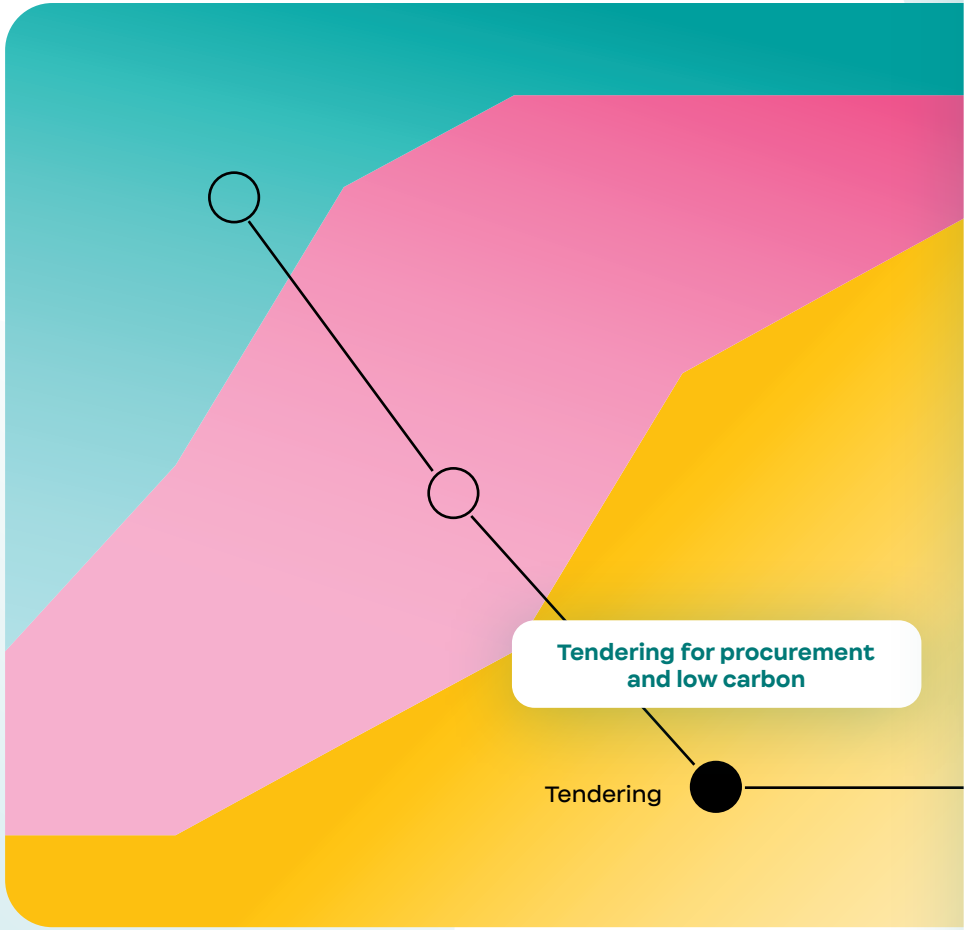
It is essential that the background work is carried out with high quality (structure of the tender documents, legal knowledge of the effectiveness criteria and formatting of the documents). In this case, the publication of the invitation to tender is smooth and the threats and risks are minimised already at the planning stage. The challenge may be that no market analysis or dialogue has been carried out, the project plan is being prepared unrealistic or it is not concrete.

It is important that the communication of objectives from the managerial level to the expert level goes directly and the expert knows the organisation's interests on a wider scale. This often requires training or other competence development in order to identify and implement objectives, so that the expert is able to promote these in the preliminary preparation of procurement planning.

Another key factor for success is that the roles and responsibilities of different actors are clearly divided, so that everyone are aware of their own tasks related to the procurement. In addition, success is influenced by a clear plan, close interaction with previous users of the agreement, experts of the substance knowledge and the market.

PHASE 3: TENDERING FOR PROCUREMENT AND LOW CARBON

70% under the responsibility of the expert

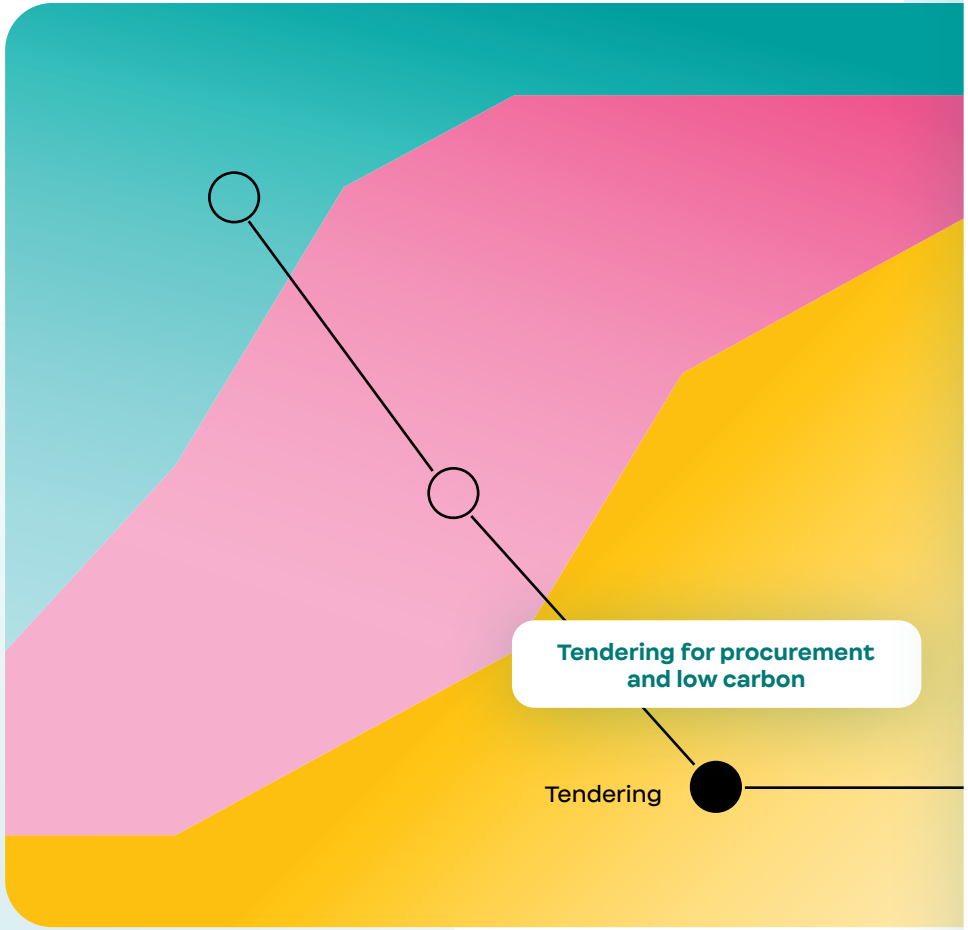


Examples of places of danger:

- Setting references too strict. Only in exceptional cases, due to the value and nature of the procurement, the tenderer may be required to have experience of projects of similar content. Care must be taken not to restrict the market.
- Locking down the procurement model too early in the process.
- The main objectives of the procurement and the concrete requirements of the competitive tendering are not clear enough.
- The organisation does not have sufficient expertise for defining the object of the procurement and preparing the invitation to tender. Problems may arise, for example, related to how to obtain competitive tenders and what criteria are used to select a supplier.
- No supplier-independent energy efficiency comparison found (e.g. computers, servers, network devices).
- Suppliers have their own consumption comparisons and figures that are not comparable – suppliers' own readings should not be used as a basis for comparison.
- There is no energy labelling corresponding to household appliances.
- The quality criteria must be sufficiently clear to the tenderer.
- There are few offers because the timing is unfavorable. For example, in the procurement of contracts, zoning, approval of street plans, etc. affect the time the contracts reach the invitation to tender stage.
- The criteria of the invitation to tender are too complex.

PHASE 3: TENDERING FOR PROCUREMENT AND LOW CARBON

70% under the responsibility of the expert



Examples of the preconditions for success:

- The main objectives of the procurement have been defined.
- Generally accepted standards are used to compare energy efficiency, such as the WLTP measurement of car fuel consumption. Even these do not indicate the final energy consumption, but they serve as a basis for comparison between different suppliers.
- For example, if possible, it is worth adding a benchmark measurement of energy consumption as a step in the tendering process – for example, the three tenderers with the most economically advantageous tenders submit the tendered equipment assembly for testing by the procurement entity and the energy consumption of the equipment assembly is measured. After the test, the supplier of the least energy consuming device is selected.
- The concept of competitive tendering is selected on the basis of potential effectiveness. The competitive tendering model and the contract model are considered with an open mind.
- Successful market mapping and open dialogue.

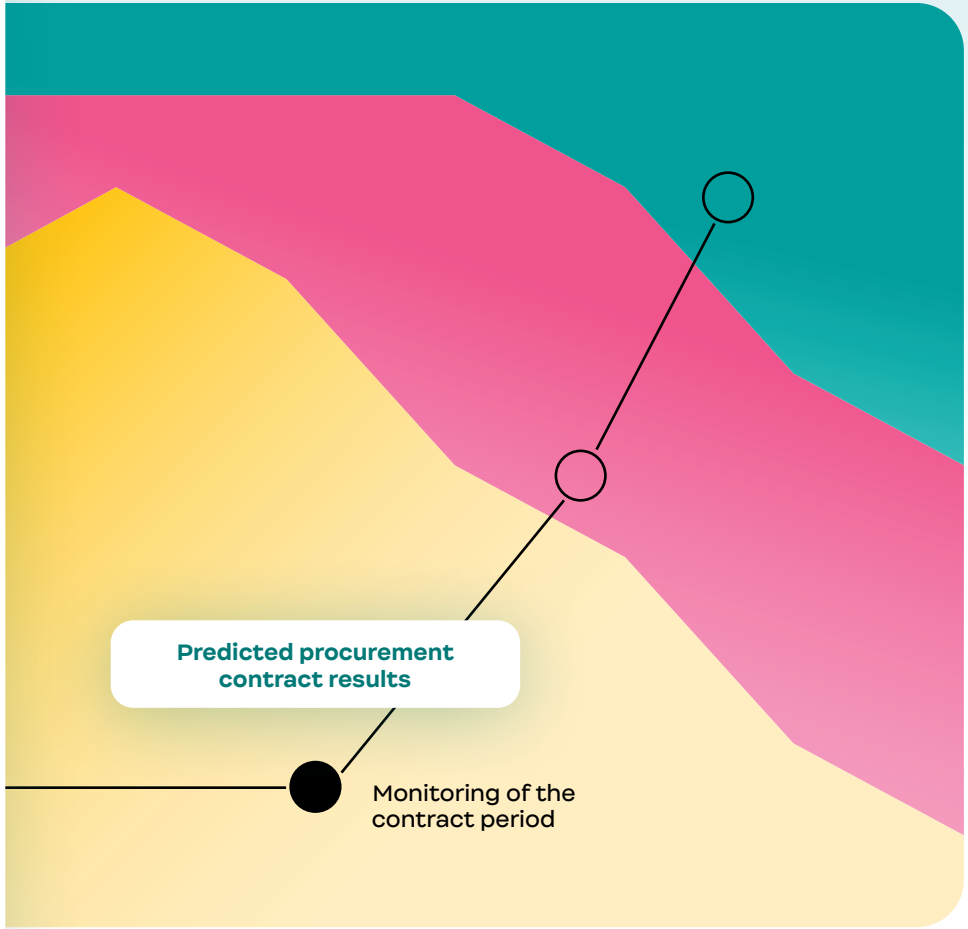
PHASE 4: PREDICTED PROCUREMENT CONTRACT RESULTS

25% under the responsibility of the expert

The fourth stage of the effectiveness procurement is the implementation of the low-carbon objective defined in the contract.

The risk is typically that the contract has not taken into account the effectiveness with sufficient precision. This is an obstacle to the implementation and monitoring of the impact assessment during the contract period. This may also be noted in the additional information questions made at the tender submission stage. In general, this indicates that the market dialogue has not sufficiently highlighted the contractual issues in question. The cooperation of procurement and substance experts before the market dialogue is important in order to bring these issues to the discussion as well.

The problem may be that there are no tools in the procurement contract that can be used to verify or measure effectiveness, and this may be reflected, for example, in the unclear price of the contract (tender comparison price vs. actually applicable price).

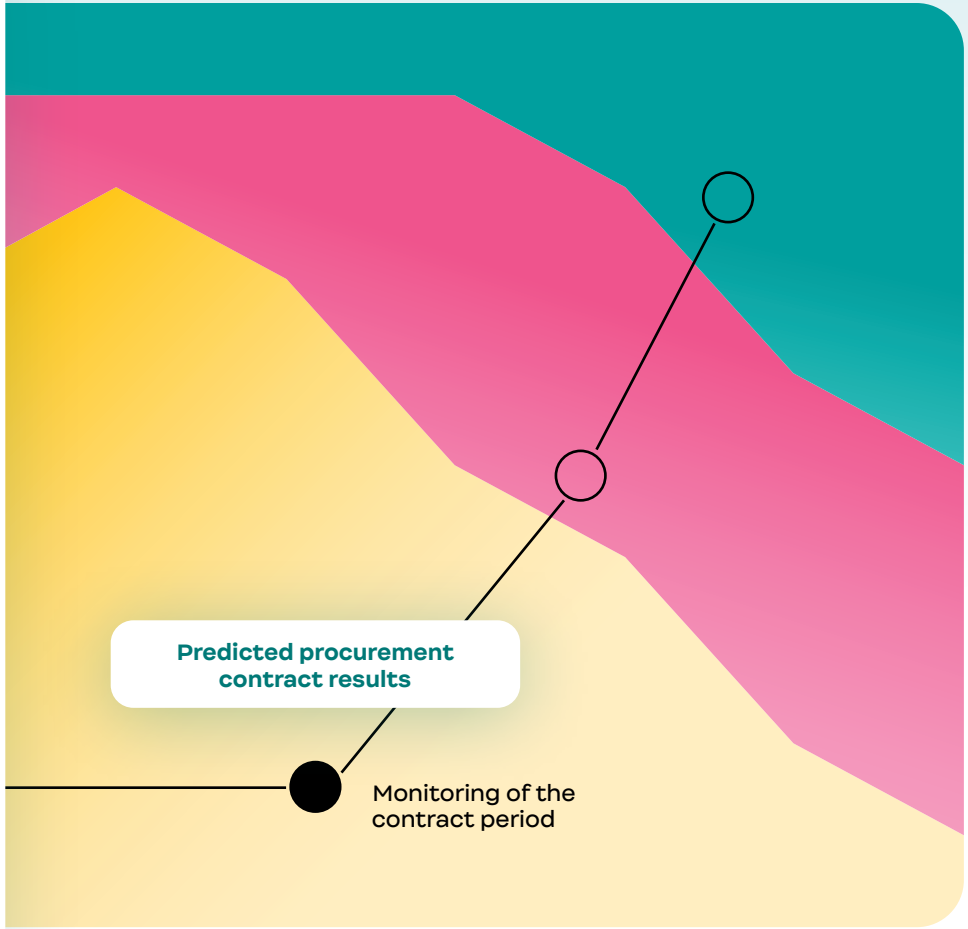


PHASE 4: PREDICTED PROCUREMENT CONTRACT RESULTS

25% under the responsibility of the expert

Examples of places of danger:

- Monitoring the achievement of objectives; setting goals, the implementation or effectiveness of which cannot be monitored or for which there is not sufficient time to monitor them.
- The organisation does not have sufficient expertise for defining the object of the procurement and preparing the invitation to tender. Problems may arise, for example, related to the selection of the criteria by which the supplier is selected.
- The monitoring systems do not deliver the intended benefits due to possible resistance to change and insufficient implementation training.

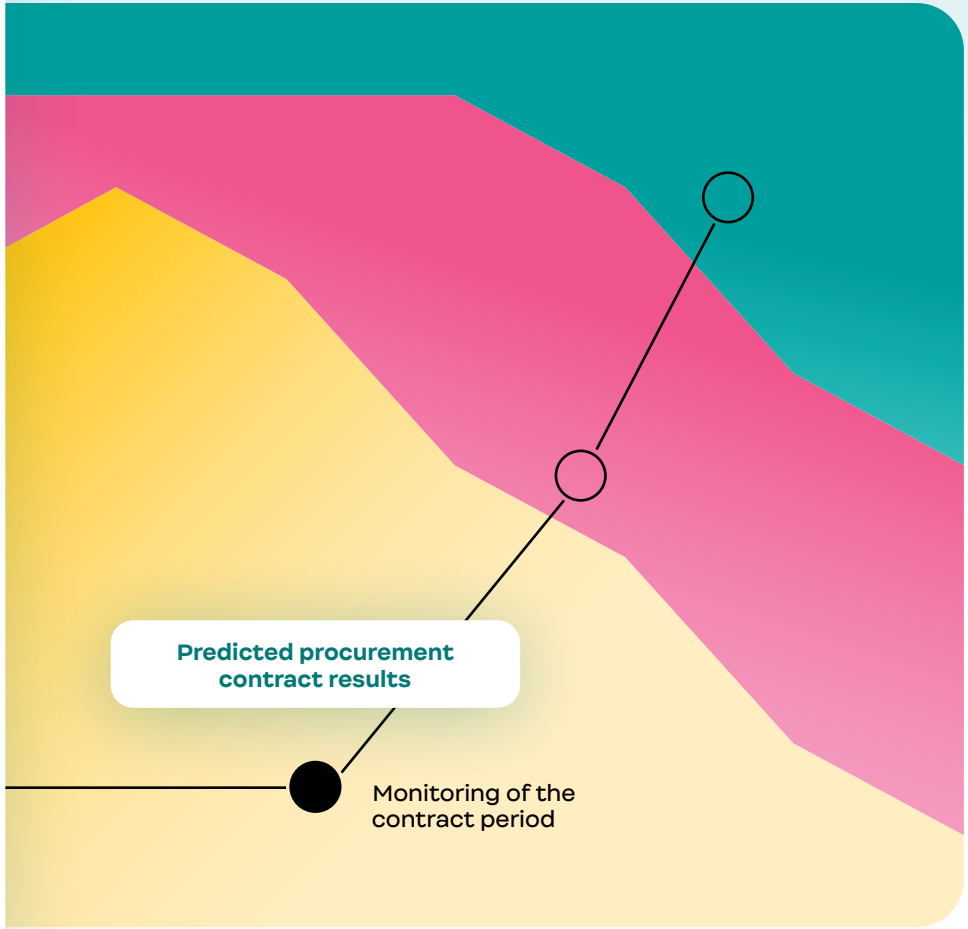


PHASE 4: PREDICTED PROCUREMENT CONTRACT RESULTS

25% under the responsibility of the expert

Examples of the preconditions for success:

- Adding a possible incentive reward to the contract price as a condition for the completion of the contract within a certain timeframe.
- The tenderer is also left with risks to achieve and verify effectiveness.
- The service provider has an incentive to produce information on effectiveness itself. A genuinely common goal.
- Sufficient client resources for the implementation and monitoring of the procurement.



PHASE 5: CONTRACT MONITORING AND COOPERATION

20% under the responsibility of the expert

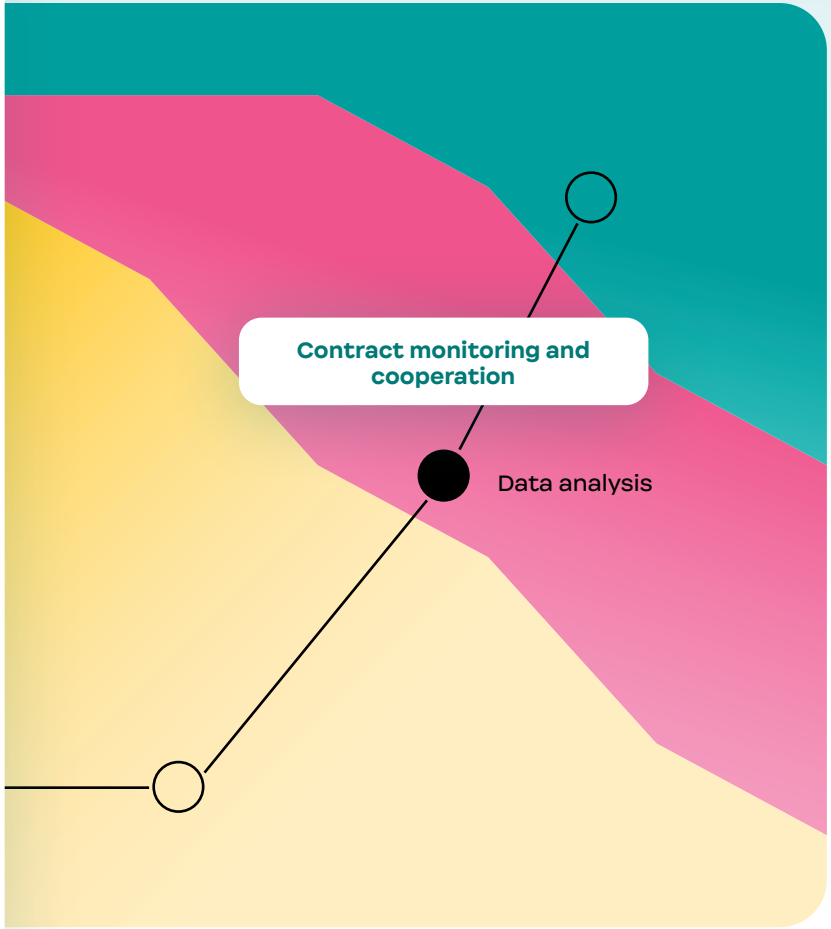
The fifth phase is the monitoring of the procurement and the analysis of the data. The risk is typically that the monitoring and data related to the procurement contract are not systematically monitored. The data collected should be analysed in a way that is natural for the client and the supplier when monitoring the contract, and the results of the analysis should be discussed with subject matter experts and managers.

Success starts from the fact that the client's organisation agrees already at the preparation stage on clear rules for collecting and utilising data in the future, and a clear model has been created in advance for this, so that the data obtained can be analysed and utilised in the future also at the expert level. In the monitoring phase of the contract, it should be ensured that the client has the resources to monitor the effectiveness, as required in the procurement contract. It should also be ensured that the supplier has the ability to produce the required information. The follow-up phase (as well as the preparatory phase) of the contract should be invested in at least as much as in the competitive tendering.

In addition, there may be a risk that the time span for obtaining effectiveness information is so long that monitoring effectiveness is somewhat impossible.

Success starts from the fact that procurement contracts indicate unambiguous scales for measuring effectiveness and measures related to the monitoring of the contract for the duration of the contract period.

In addition, the motivational contract model would be more successful if the service provider itself had an incentive to produce data on effectiveness.

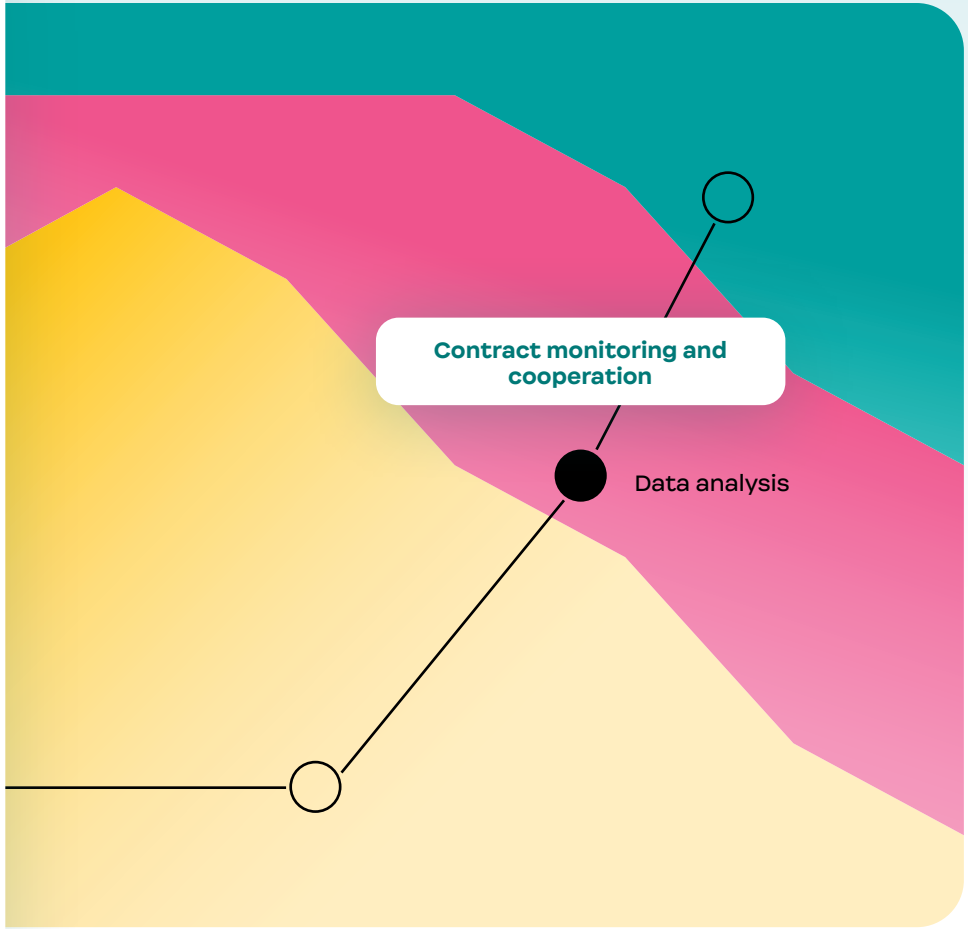


PHASE 5: CONTRACT MONITORING AND COOPERATION

20% under the responsibility of the expert

Examples of places of danger:

- Monitoring of the realisation of the objectives. Setting goals, the implementation or effectiveness of which cannot be monitored or for the monitoring of which there is not enough time.
- The organisation does not have sufficient expertise for defining the object of the procurement and preparing the invitation to tender. Problems may arise, for example, related to the selection of the criteria by which the supplier is selected.
- The monitoring systems do not deliver the intended benefits due to possible resistance to change and insufficient implementation training.

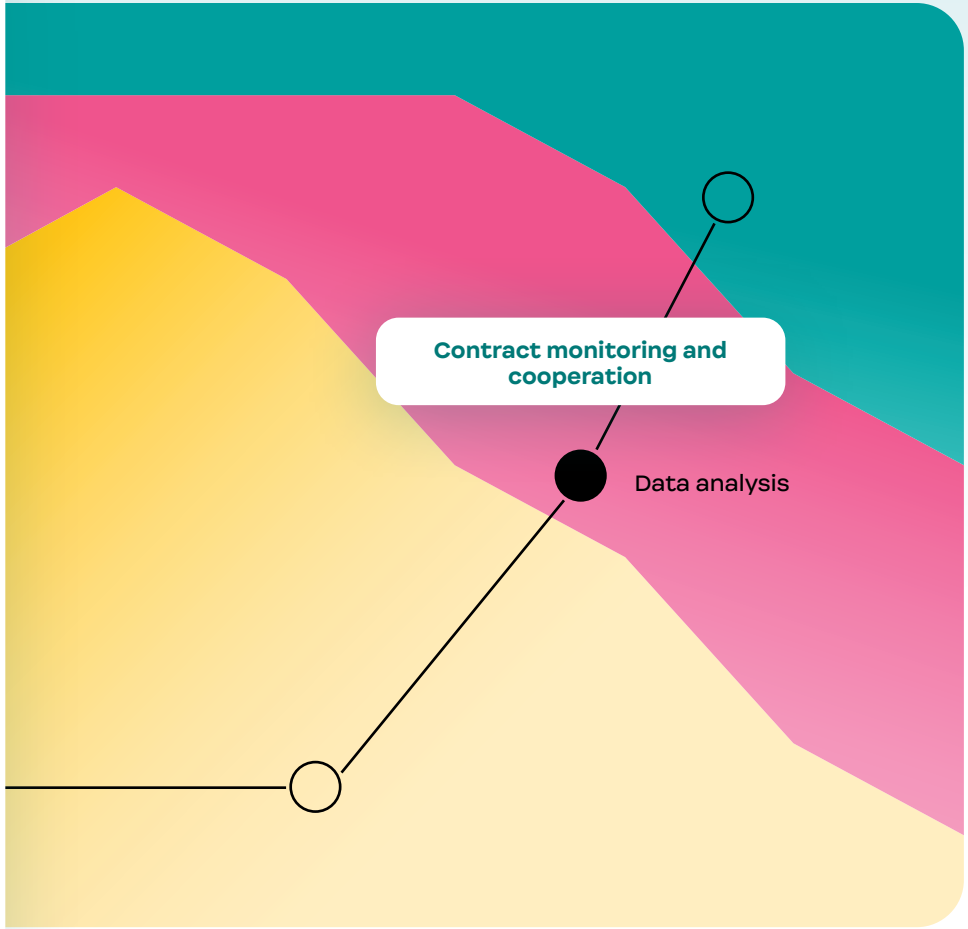


PHASE 5: CONTRACT MONITORING AND COOPERATION

20% under the responsibility of the expert

Examples of the preconditions for success:

- The realisation of risk can be reduced by informing and planning the commissioning training at the beginning of the contract period in extensive cooperation.
- The use of the electronic monitoring and ordering system must be monitored and, if necessary, further training on the use of the system must be provided.
- Communicate the successful implementation in partnership with service providers at local, provincial and possibly national level, in order to adhere to the positive spin principle.
- Comprehensive and detailed reporting of actual deliverables or services provided, for example, client numbers, kilometres driven, actual CO_2 emissions, usage volumes of the electronic transport system.
- Detailed itemised reports on, for example, the life cycle costs of an electric vehicle.



PHASE 6: ESTABLISHED EFFECTIVENESS

15% under the responsibility of the expert

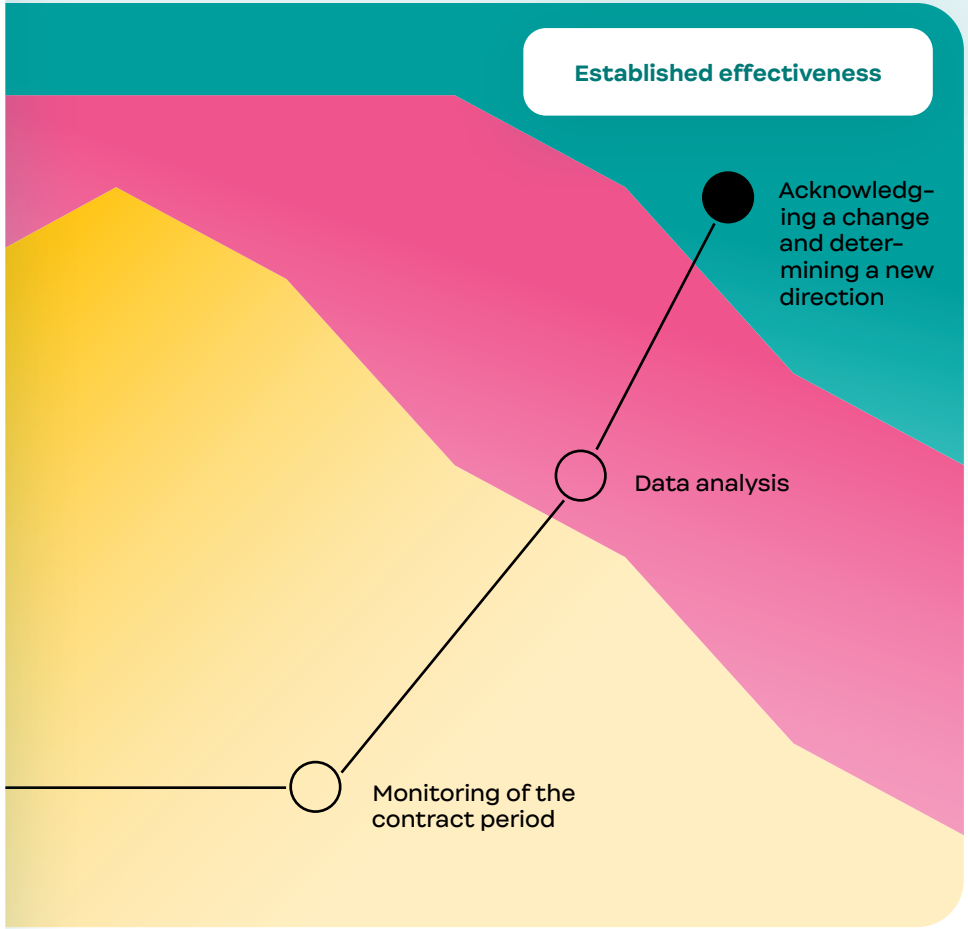
The sixth phase is to acknowledge the change and determine a new direction. The expert and the manager cooperate in this, so that it is possible to produce reliable and relevant information for decision-making on the achievement of the objectives of the contract.

The risk is typically that all the data available on effectiveness, which would be useful both in terms of monitoring the contract and for new procurements, are not utilised.

During the contract period, close monitoring of the contract and cooperation must be maintained to ensure success.

There is also a risk that so-called tacit knowledge is not transferred within the client's organisation, so that, for example, the departure of an expert from the client's service leaves a significant gap in effectiveness expertise.

Success starts from finding good, successful practices in cooperation and utilising them in future effectiveness-oriented competitive tendering (for example, an incentive model, a good contract monitoring model, etc.). This way, for example, good effectiveness-oriented contract templates and models can be utilised in future competitive tendering.

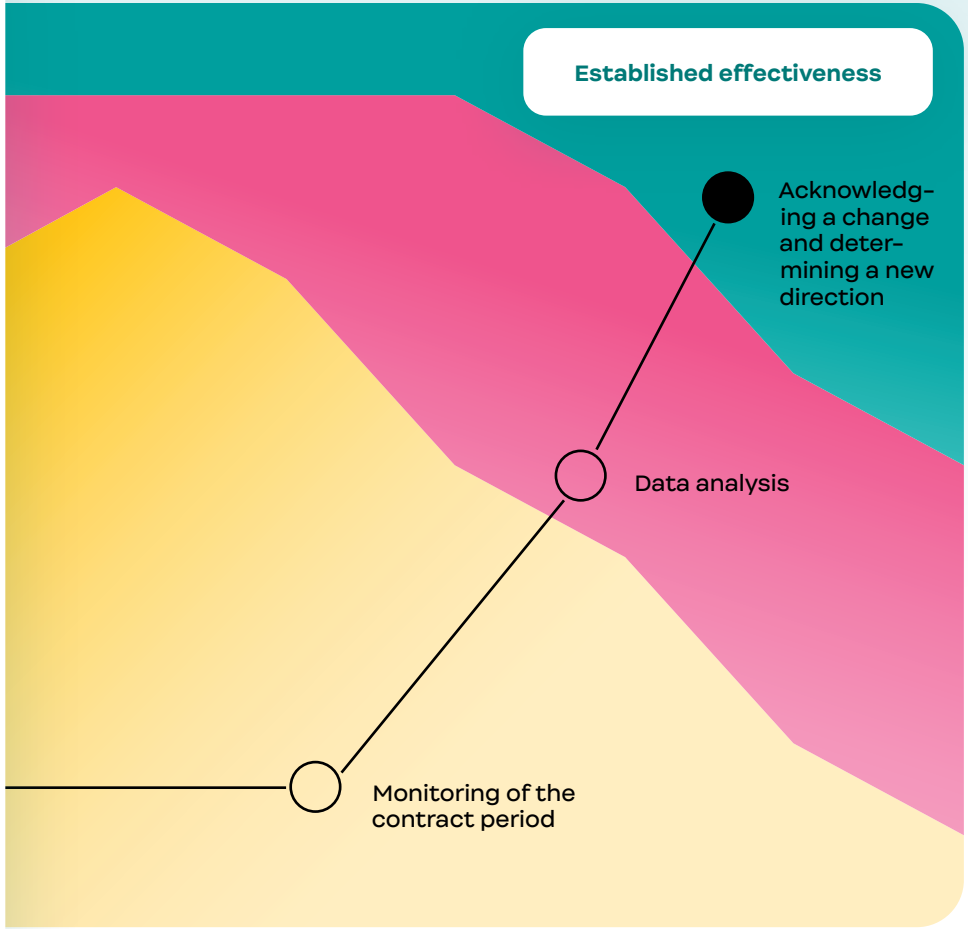


PHASE 6: ESTABLISHED EFFECTIVENESS

15% under the responsibility of the expert

Examples of places of danger:

- Effects are noted, but they do not lead to action. The process of continuous development is not defined.
- The content of the cooperation between the manager and the expert has remained at the top level, without the right tools and indicators.
- The expert and the manager do not have sufficient authority to take the necessary measures.

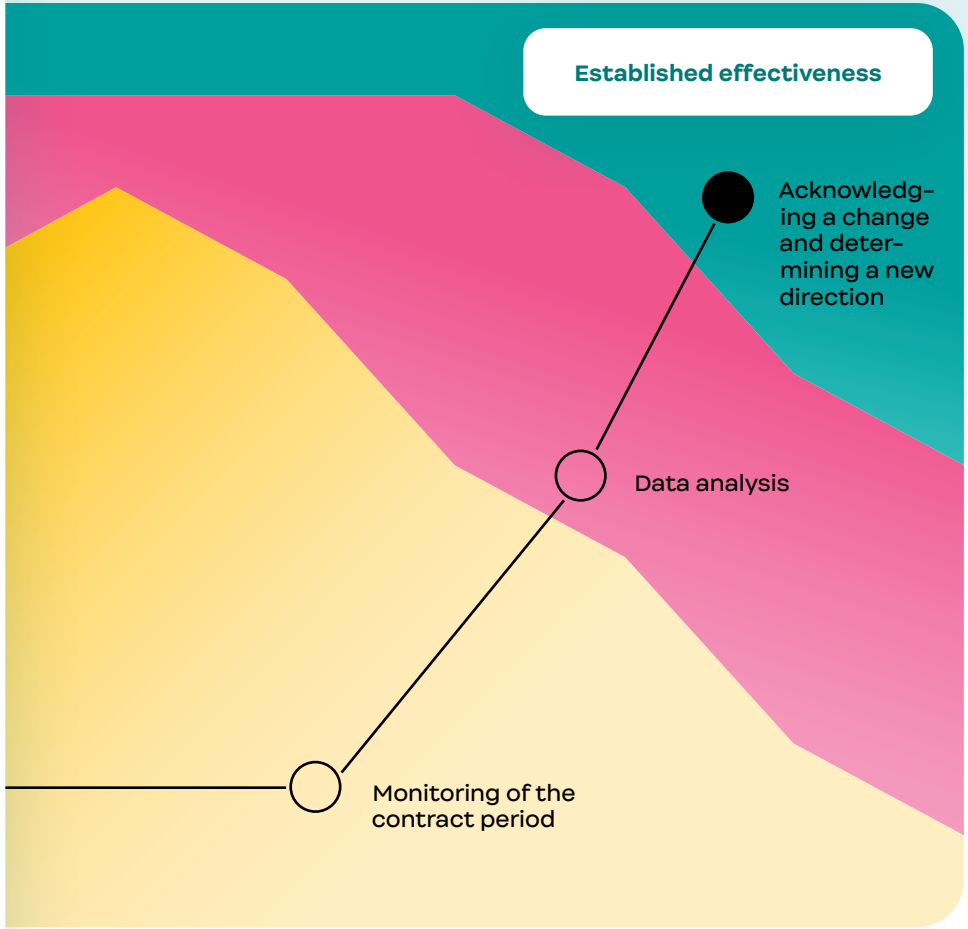


PHASE 6: ESTABLISHED EFFECTIVENESS

15% under the responsibility of the expert

Examples of the preconditions for success:

- A clear process has been defined for measuring the impacts and utilising the results of the evaluation in the organisation, i.e., a plan for continuous development has been drawn up.
- A clear operating model has been created for internal communication and cooperation, and interaction between different units and actors is carried out systematically.



2.5. SUMMARY OF WAYS TO SUCCEED AND PLACES OF DANGER THROUGH PROGRAMME CASE EXAMPLES

Six procurement units participated in the low-carbon procurement development programme in order to better take low carbon into account in their procurement and to receive assistance in the preparation of the current object of procurement. In this section, we present both the hazards that emerged in the cases and the preconditions for success.

2.5.1. THE PLACES OF DANGER RELATED TO LOW-CARBON PROCUREMENT

In the Hankintaluotsi workshops, the participating organisations consider concrete development measures to promote low carbon in their procurement.

The development measures that emerged in the Hankintaluotsi workshops can be divided into four entities:

1. Setting of targets

- Setting low-carbon targets (elected representatives, senior officials, markets).
- Goals for promoting low carbon and their monitoring will be included in corporate governance.
- Communicating the low-carbon goals and future investments and procurements as early as possible to operators and markets in the region.
- Setting concrete targets for procurement categories, for example
  - Moving to non-fossil motive power in vehicles and machinery by XX or making a gradual procurement plan.
  - Switching to electricity and district heating produced from renewable energy sources.
  - Possible combinations of transport services across organisational and service product boundaries will be investigated.
  - Creating an operating model for better energy management to manage energy use and consumption.
  - Low-carbon discussion as part of supplier management with the largest suppliers that emit carbon dioxide by calculation.
  - Moving to low-emission construction sites.

2. Funding

- The allocation of funding for the implementation of investments that reduce carbon dioxide emissions already at the budgeting stage.
- Exploring funding options to promote low carbon.

3. Development of operating models

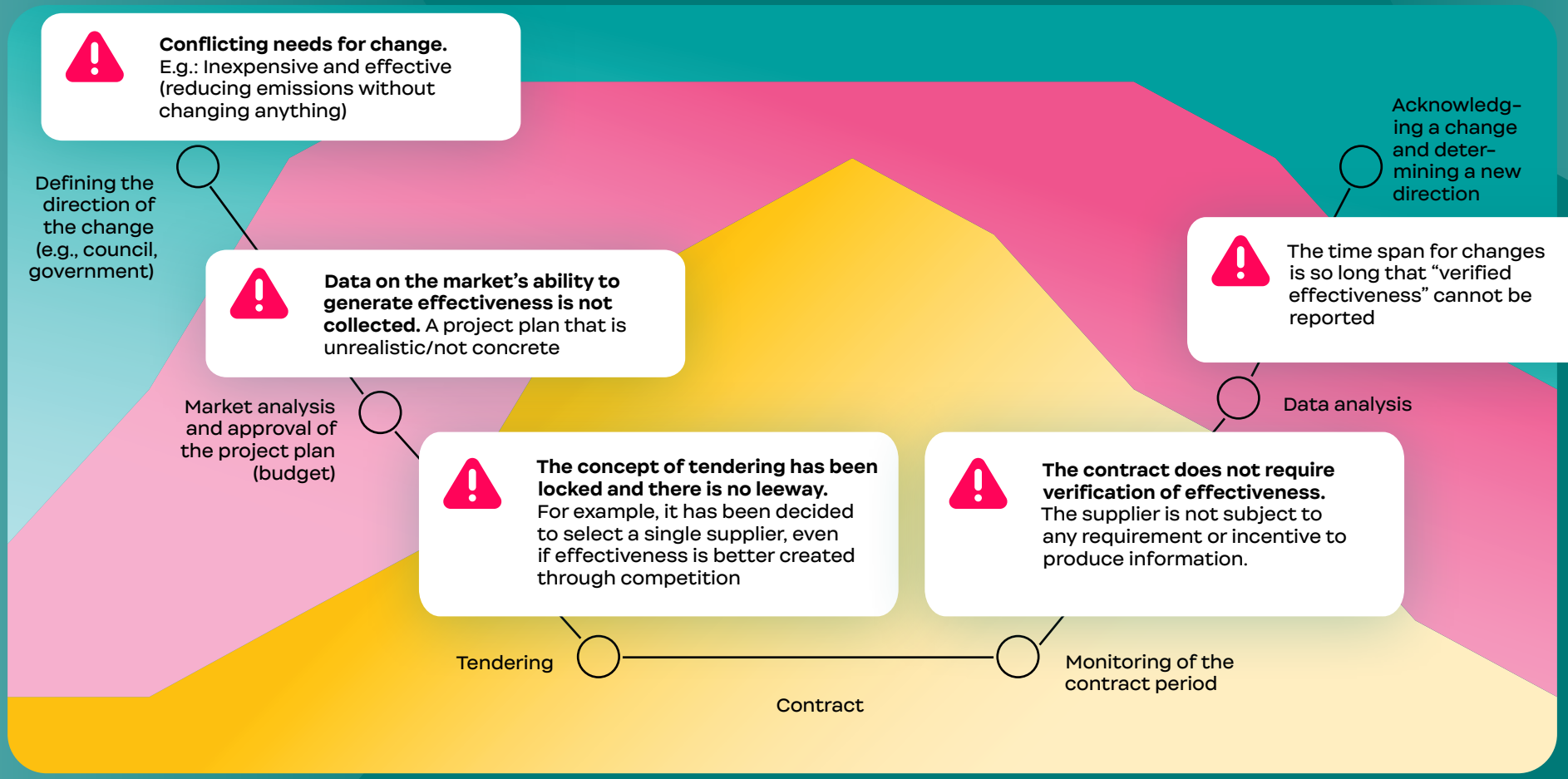
- Creating a low-carbon procurement roadmap for emission-sensitive procurement categories, which will be communicated to market players:
  - Exploring alternative solutions that are less carbon-intensive by using market mapping.
- Identify the most strategically important suppliers to invest in in terms of leadership, risk management, monitoring and joint development.
- Systematic consideration of sustainability and innovation in procurement:
  - The operating model is developed together with the market and the client organisation's domains.
  - Use of criteria/criteria libraries in the applicable procurements.
- The potential for innovative procurement has been identified early (where there is a need to develop new, better solutions).

4. Competence

- Ensuring competence in low-carbon procurement: Training, networking and advice on climate, energy efficiency and other environmental aspects.
- Scaling and benchmarking of good practices.

2.5.1. THE PLACES OF DANGER RELATED TO LOW-CARBON PROCUREMENT

The life cycle of low-carbon procurement, places of danger



2.5.2. THE PRECONDITIONS FOR SUCCESSFUL LOW-CARBON PROCUREMENT

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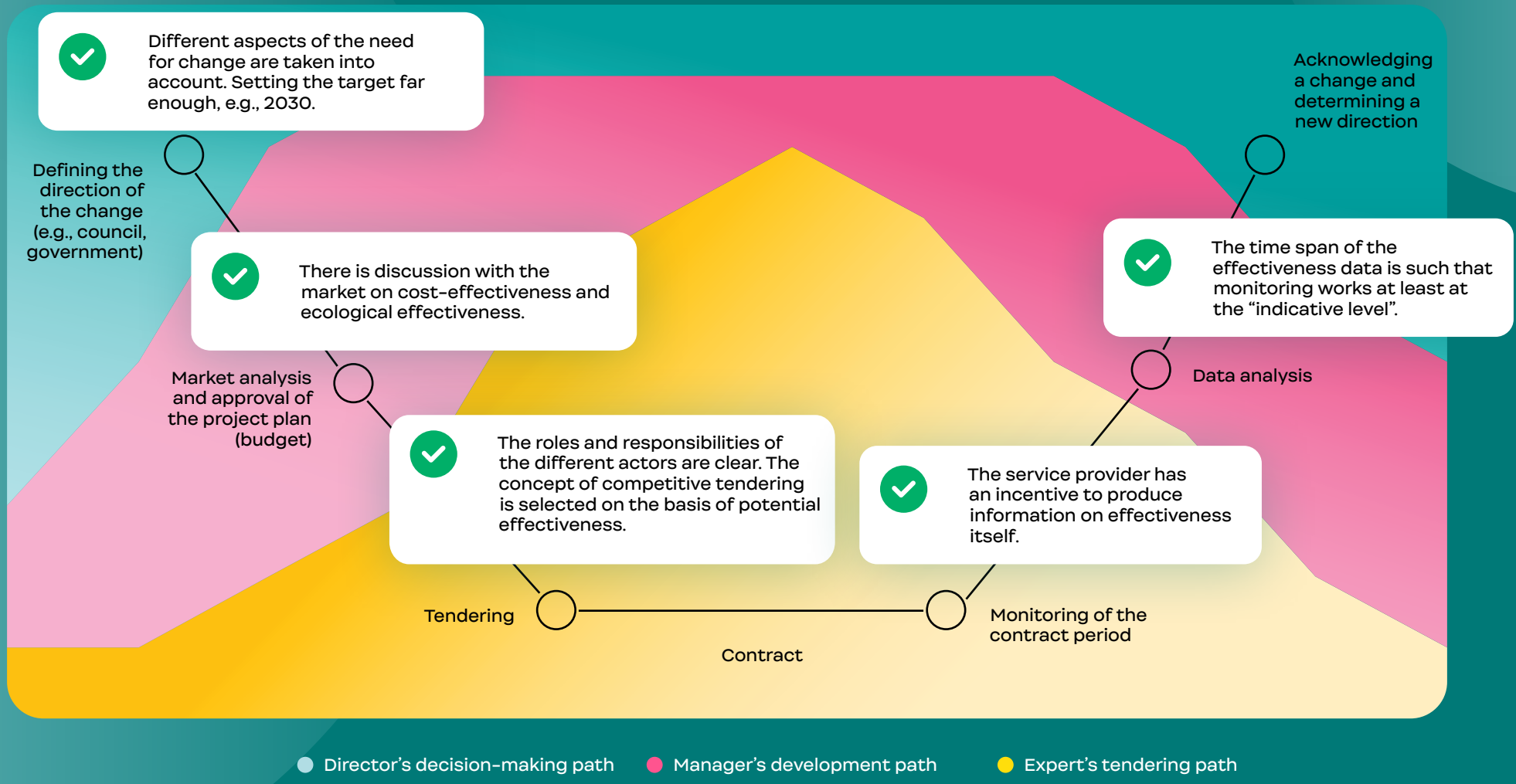
2.5.2. THE PRECONDITIONS FOR SUCCESSFUL LOW-CARBON PROCUREMENT

The life cycle of low-carbon procurement, windows of opportunity



3. QUICK GUIDE TO LOW-CARBON ASSESSMENT AND MONITORING

The carbon footprint of procurements can be analysed by utilising the Hankintapulssi tool at the product group level, by commissioning an expert organisation to calculate the carbon footprint of an organisation's procurements or an individual procurement or by using appropriate calculators.

In principle, the carbon footprint can be assessed for all procurements, product groups and/or individual procurements of the organisation. At the strategic level, determining the level of the carbon footprint of all the procurements of the organisation and monitoring the development will implement the organisation's low-carbon targets.

Carbon footprint assessments and the collection of monitoring data usually take place at the operational level of the organisation, but external experts are often needed to help with more specific calculations.

3.1. FOCUSING AND RESOURCING

Resources are often limited in terms of budget, resource availability and skills, and time available. In the carbon footprint calculation report of the Canemure project,[3] the taking into account of these aspects has been described as follows:

"It is a good idea to think about the meaningfulness of using carbon footprint calculation in public procurement from the perspective of effectiveness, available resources and competence. In most procurements, greater effectiveness is achieved through criteria and contract terms derived from carbon footprint data instead of carbon footprint calculation, such as requiring lower-emission raw materials and products, utilising renewable energy, increasing energy efficiency, optimising logistics and moving to a lower-emission equipment. Using research-based carbon footprint data, the object of the procurement can be examined by reducing the use of activities with significant climate impacts or by replacing it with a low-carbon solution."

3.2. EMISSIONS PER PRODUCT GROUP

The carbon footprint data for each product group of procurements reflects which of the organisation's procurement categories cause the most greenhouse gas emissions. At the procurement category level, the carbon footprint is calculated using greenhouse gas emission factors and procurement volume data generated for different product groups. For example, the Hankintapulssi tool[4] features a carbon footprint analysis of life cycle emissions. For procuring entities that have participated in the KEINO Academy[5], the TOIMI project[6] or in a low-carbon procurement development programme, this product group-specific carbon footprint analysis based on purchase invoice data calculated by procurement category has been carried out.

A large amount of greenhouse gas emissions can be caused either by the high volume of procurements in the product group or by the high emission factor in the group, even if the volume is smaller. On the basis of the information, it is possible to identify from the organisation's procurements the product groups from which the majority of the emissions are formed. In particular, the organisation's low-carbon activities and green procurement should be directed to these product groups, where the emission reduction potential is most likely to be found. However, two things must be taken into account. First, the amount of emissions does not directly equal the emission reduction potential, as it can vary greatly even in product groups with similar emissions, depending on what kinds of implementation solutions can be found within them. Secondly, the figures of the Hankintapulssi tool provide information on the emissions of the product group at the average level, and therefore do not tell the greenhouse gas emissions data of an individual procurement by an individual organisation or a possible comparison of different product options. A comparison of the different options must be made on the basis of product-specific carbon footprint data. Such information can be found, for example, in environmental product descriptions and market analyses.

3.3. EMISSIONS OF AN INDIVIDUAL PROCUREMENT

It is often not sensible to try to accurately assess the carbon footprint of an individual procurement, but rather to identify the critical points, the so-called "hot spots", from which the emission impact of the procurement arises. Research-based carbon footprint data from different implementation options can be used in this. For example, in construction projects, energy solutions, the level of energy efficiency or building material solutions, and the criteria and requirements directed at them, most effectively direct to a low-carbon solution. In principle, a low-carbon assessment is carried out for a longer period of time than for the contract period alone.

The Ministry of the Environment has prepared a method for assessing the life cycle emissions of a building, which will become part of the low-carbon construction legislation. According to the method, a climate report must be drawn up for the buildings and the carbon footprint must be calculated. In addition, by 2025, a carbon footprint limit value will be introduced for different building types, which can also be used in competitive tendering. However, carbon footprint calculation can already be used in construction procurement, and low-carbon criteria can be set on the basis of it. During 2021, the Ministry of the Environment is preparing an update of the procurement criteria for low-carbon construction. In addition, the Emissions database for construction, CO2data.fi, developed by the Finnish Environment Institute, has collected average data on the emissions of construction products, construction processes and services.

Reducing emissions is often not the primary goal of procurement, as procurement has many other goals as well. However, from a low-carbon perspective, it is usually appropriate to assess the emissions of different implementation options in order to choose effective and cost-effective solutions. In this case, cost-effectiveness can also be viewed as the ratio of life cycle costs and emission reductions (EUR/reduced tonne of emissions). This provides information on the cost-effectiveness of reducing emissions from different procurements and procurement categories. An external expert is often used to do the work.

In the life cycle of energy-using products, such as vehicles, machinery and equipment, emissions occur mainly during the use phase, so in most cases the assessment is at a reasonably good level, even if the entire life cycle is not taken into account. The Ecodesign Directive (2009/125/EC) guides the design of energy-related products, reducing life cycle impacts.

As a result of the directive, the weakest products no longer even enter the market, and the requirements have been tightened from time to time. In their case, market information and tools for comparison are often also quite easily available, in which case it can be examined what kind of emission effects, for example, different propulsion forces and energy forms as well as energy efficiency class requirements have. The Finnish Environment Institute has compiled various emission calculators[7] on their website that have been applied, for example, in the Canemure project (e.g., for the calculation of the carbon footprint of food services[8] and the life cycle calculation of workwear procurement[9]).

3.3.2 Utilisation of carbon footprint data

Described above are approaches to the calculation of the carbon footprint, i.e., greenhouse gas emissions. Carbon footprint data has been used, for example, in different procurement criteria, for example, in Motiva's public procurement information service[10]. The Nordic Ecolabel (the Nordic Swan Ecolabel) and the EU Ecolabel (the EU Flower) have also included requirements for energy consumption in some product categories.

The criteria can be used in procurement, for example, by setting minimum requirements for low carbon, which all tenders must meet. They can also be used to compare tenders and as part of contractual terms and conditions, to which the bonus sanction model can also be tied.

One source of comparative information is the Environmental Product Declaration (EPD) drawn up in accordance with the standards. The use of environmental declarations is already well established on the construction side, but initiatives have also been made in other sectors.

3.4. MONITORING

During the contract period, compliance with the low-carbon contract terms is monitored: Have the products and services delivered met the set low-carbon requirements?

It is important to determine the means of monitoring already at the planning stage of the projects and to have a discussion with potential tenderers. The methods of carrying out the monitoring must also be determined at an early stage, and it must be examined in particular whether the client has the opportunity to carry out the monitoring themselves or not, or whether external implementers are needed.

In some procurements, such as construction projects, it is necessary to continue monitoring on a permanent basis, as careful energy management together with operation and maintenance will ensure optimal operation of the building also in the future. Only long-term monitoring shows how the objectives set for the building were finally achieved in real operating conditions. Similar monitoring can also be carried out, for example, on vehicles and machinery.

EXAMPLE: METSÄHALLITUS

The main objective of the nature services' energy project of Metsähallitus is to replace oil heating systems with renewable energy solutions. A secondary objective is to improve the energy efficiency of buildings and to reduce greenhouse gas emissions. The project is divided into two parts. The building-specific energy studies based on energy optimisation will be completed at the end of 2021. Hepacon Oy and Granlund Oy were selected through competitive tendering to implement them. Based on their results, the most cost- and emission-optimal measures are selected for each building, which are commissioned to be designed and built. Initially, it seems that the most effective measures affecting the energy efficiency of buildings (e.g., replacement of windows, additional insulation of walls, installation of air heat pumps) are such that they cannot be implemented due to the protection of buildings. In non-protected locations, the focus is on own emission-free energy production, especially by adding photovoltaic systems. Water-air heat pumps and geothermal heat are proposed as replacements for oil heating. The contract planning phase will be reached in early 2022.

4. LOW-CARBON PROCUREMENT CHECKLIST FOR EVERYONE

It is essential for making and monitoring the low-carbon nature of procurements:

1. To understand what the CO_2 emission reduction potential consists of.
2. To identify those procurement categories with significant CO_2 emission reduction potential.
3. To identify significant procurements from these categories and set an order of magnitude target for CO_2 emissions reduction in consultation with experts and companies.
4. To decide on the budget, which includes the cost estimate of the procurement, as well as the necessary work input for the preparation and competitive tendering of the procurement.
5. To find out what the so-called low-carbon hotspots are and try to define, with a description of the object of procurement, solutions that may already be known, which have a significant effectiveness on reducing emissions.
6. To conduct a diverse market dialogue at different stages of procurement preparation and communicate the objectives clearly.
7. To select the appropriate procurement method.
8. To prepare tender documents that make the most of the minimum requirements (eases the administrative burden).
9. To prepare a draft contract with clear monitoring and reporting methods and metrics as well as bonuses and sanctions.
10. To allocate sufficient resources to contract monitoring and cooperation during the contract period.
11. Evaluate the “success” of the contract and the invitation to tender – to collect feedback from the companies participating in the tender, as well as from the procurement team and the users of the contract.
12. To build an operating model that enables systematic utilisation of the resulting knowledge and competence, including the introduction of contract monitoring metric data into management decision-making.

5. TOOLS FOR UTILISING MARKET AND PROCUREMENT DATA TO IMPLEMENT LOW-CARBON PROCUREMENT

The chapter introduces the tools used in the development programme to utilise market and procurement data. The results obtained with the tools and the way of utilising them as part of the development program are also introduced.

YTJ-HILMA interface experiment
The aim of the experiment was to test a search tool for procurement entities, compiling external data sources, which would facilitate information retrieval during the planning and market survey phase of the procurement.

The search engine was technically implemented by VXT Research Oy. The tool uses a semantic search using machine learning, which allows longer and more natural texts to be used as search terms.

The sources of information on the supplier market were the company information of the Finnish Patent and Registration Office, Hilma's supplier information and the companies' websites. With the help of the search, it was possible to search for potential suppliers of the object of procurement in the whole country or region.

In the tool, it was also possible to make searches in Hilma's procurement notice data, which allow the procurement entity to familiarise itself with the invitations to tender made by other procurement entities.

The aim was also to utilise the innovation data of companies funded by Business Finland, but due to the restrictions on the use of data, this could not be implemented.

The use of the search engine was presented in the Low-carbon Procurement workshops, and organisations were encouraged to carry out procurement notice and supplier searches related to their own procurement objects. In addition, the information retrieval process and needs of one organisation were mapped to determine further development needs.

The tool proved useful but requires further development. In addition, in the future, search results should be increasingly focused on new products and services entering the market. The usability of the information should be ensured so that the information can be utilised in this service and other services.

Development of the Hankintaluotsi tool
The Hankintaluotsi tool is a free-of-charge tool for procurement units for the preparation and operationalisation of procurement objectives. Hankintaluotsi opens up the possibility for procurement operations to bring added value to the planning process at an earlier stage of procurement planning through participatory work.

Hankintaluotsi was used in the Low-Carbon Procurements workshops to assess the organisations' low-carbon policies and to brainstorm measures. With the help of the tool, it was also possible to easily involve the organisation's management and other stakeholders in the selection of targets. To achieve the targets, an electronic action plan was prepared in the service, in which the main users can monitor in real time the achievement of various targets. For example, for uncompleted tasks, Hankintaluotsi sends email reminders to those in charge in the organisation.

In Hankintaluotsi, in addition to the low-carbon theme, it is easy to assess the suitability of other objectives of the Hankinta-Suomi strategy for the procurement activities of one's own organisation. In addition to the targets, Hankintaluotsi can be used to plan and evaluate the objectives, measures and criteria of individual competitive tendering, and evaluate the realisation of these after the competitive tendering. If desired, the organisation can share and receive procurement information from other procurement units to support procurement planning. All procurement entities can utilise Hankintaluotsi free of charge in the public procurement service Hilma[11].

6. DEVELOPMENT PROGRAMME FOR LOW-CARBON PROCUREMENT 2021 AS PART OF THE ECOLOGICAL AIM OF THE HANKINTA-SUOMI PROCUREMENT STRATEGY – WHAT WAS DONE?

The Development programme for low-carbon procurement is a measure of the ecological sustainability theme group of Hankinta-Suomi, which supports Finland's national carbon neutrality target. Six procurement units were selected for the development programme implemented in 2021 to develop a low-carbon procurement object.

The low-carbon public procurement development programme helped procurers achieve the low-carbon targets they set for themselves through procurement. The development program identified the most effective procurement categories for each organisation in terms of climate goals and prepared organisation-level implementation plans. Expert support and help with market analysis and determining the low-carbon potential were provided for the preparation of the procurement objects. The development programme was implemented by Motiva, Hansel, VTT and SYKE with their experts.

The outputs and experiences of the development programme concretise the drafting and implementation of national low-carbon goals in the most effective procurement categories. The results of co-development and peer learning have been compiled in this Low-Carbon Procurement Playbook in order to achieve wider effectiveness.

For more information on the development programme, please contact: salla.koivusalo@motiva.fi

"It's been a great journey. The biggest insight has been having the courage to develop and learn. We have received new information about opportunities, how procurements can be carried out, what the overall situation is and in which directions we should go. That's the biggest insight from the development programme." **Marita Melkko, Procurement Specialist, Kouvola Innovation Oy**

"We would like to thank the KEINO organisation. We have immediately received tangible benefits from the programme."

Jukka Talvi, Director of Municipal Infrastructure, Vaasa

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4 Hankintapulssi tool

5 KEINO Academy

6 TOIMI project

7 Emission calculators compiled by SYKE

8 Carbon footprint calculator for food services

9 Canemure – life cycle impact calculator for workwear procurement

10 Motiva's public procurement information service

11 Hilma public procurement service

CASE EXAMPLES

LOW-EMISSION SCHOOL TRANSPORT

OBJECT OF THE PROCUREMENT

Tornio is acquiring school transport as low-carbon as possible by defining route optimisation and vehicle emission requirements. The goal is a 20% reduction in CO2 emissions, which is the minimum requirement under the current directives. The procurement concerns school transport in the area of the City of Tornio, including the transport of Finnish children to the Haparanda Language School.

CONTACT PERSON
Keijo Tuisku, City of Tornio

Effectiveness objective and starting point:
The aim of the procurement is to reduce emissions caused by school transport. When drawing up school schedules, the aim is to take into account the combination of school transport and to create a centralised coordination of school timetables.

Procurement process:
The planned contract period is 1 August 2022–31 May 2026. The possible option periods are 1 June 2026–31 May 2027 and 1 June 2027–31 May 2028. The estimated value of the procurement during the contract period, including the options, is EUR 8.0–8.5 million.

- The procurement is carried out through an open procedure using Cloudia's electronic procurement system. The invitation to tender will be published by the end of February 2022. The procurement decision is made by the Education Committee. The signatory of the agreement is the head of the industry.
- In connection with the preparation process of the invitation to tender, an information session on the changed legislation will be organised for local companies. An announcement of the market dialogue will be made in Hilma, and local companies will be invited to participate in the event. The draft invitation to tender is sent to the service providers for a statement. Finally, a call for tenders is published and a procurement decision is made.
- During the contract period, the monitoring of service production is based on the electronic transport monitoring and ordering system provided by the selected service provider. The system can be used to monitor actual CO_2 emissions. Regular contract reviews are held during the autumn and spring semesters. Possible deviations are actively monitored and feedback is given to the service providers. Complaints are made in writing, and the implementation of the measures required by them is monitored. The cooperation with the transported children and their parents, as well as teachers and the transport supervisor, is active.
- It is hoped to achieve significant success by means of an open dialogue with transport companies. A possible increase in costs is perceived as a challenge. Is the procurement achieving the emission reduction target set by law? Is it possible to create a genuine competitive situation with the invitation to tender?

LOW-EMISSION SCHOOL TRANSPORT

Total value of procurements:
EUR 73.5 million (2020)

Carbon footprint and maximum emission reduction potential of procurements:
19.32 million CO_2 eq/kg

The highest emissions occur from the following categories: Purchases of customer services and maintenance of buildings and areas, in particular in the subcategories heating, electricity and gas, food products, beverages and tobacco, and other travel and transport services. *

Strengths and development areas of low-carbon procurement management in the organisation: **
Low carbon has not been mentioned in the current urban strategy, but Tornio is still carrying out commendable climate work. Tornio is involved in the climate management ILMAVA training. The preparatory work for the new urban strategy has begun. The new urban strategy sets more specific targets for low-carbon.

The City Group's procurement policies and procurement guidelines have been renewed. The city has also switched to electronic procurement procedures. Next, development activities focus on the functionalisation of procurement policies and procurement guidelines, as well as creating indicators for monitoring procurements.

Partnership agreements could be signed with the largest suppliers and long-term cooperation (e.g. low carbon) could be developed together.

Measures for the development of low-carbon procurements: ***
Taking sustainable development and innovation systematically into account in procurements: by developing together with the market.
Promoting low carbon in corporate governance: Low-carbon promotion objectives and their monitoring will be included in corporate governance.
Promoting low-carbon transport services and vehicle procurement means: In vehicle procurements, in compliance with the minimum obligations of the law, switching to vehicles with renewable motive power and the use of renewable fuel, and taking into account the obligations set by law in other transport procurements.

Low carbon is also taken into account in other procurements.

*The figures based on a Spend analysis of purchase invoice data by SYKE and Hansel.
** Based on meetings during the programme.
* **The measures are based on the Luotsi work on procurements carried out during the programme.

SUOMEN ERILLISVERKOT OY

ACHIEVING LOW-CARBON THROUGH SERVER PROCUREMENT

CONTACT PERSON
Sven Forsell, Suomen Erillisverkot Oy

OBJECT OF THE PROCUREMENT

Procurement of energy-efficient servers for the existing data room. The procurement is carried out as part of a framework agreement with Hansel Ltd.

Effectiveness target and baseline:
Increase the energy efficiency of the purchased servers, and thereby their low-carbon nature. Suomen Erillisverkot Oy's procurement strategy includes a carbon-neutrality objective. The development of procurement is part of the implementation of the target.

Mini-competition of the Hansel framework agreement:
During the winter and spring 2021, the energy efficiency of data center servers was assessed.

The tendering process has not been completed due to an internal resource shortage

The servers do not have supplier-independent energy consumption measurement (cf. WLTP consumption measurement of vehicles). The only requirement remains to meet the EU-level Lot9 life cycle requirement, which is in fact the minimum requirement for access to the EU market

Total value of procurements:
EUR 102.9 million (2020)

Carbon footprint and maximum emission reduction potential of procurements:
29.6 million CO_2 eq/kg

In the sub-category construction, repair and maintenance, the highest calculated emissions are 11.2 million. CO_2eq.kg (38%). In addition, significant calculated emissions in the following subcategories: Other materials, supplies and goods, rents of buildings and apartments, electricity and gas, and ICT services.*

The calculated emission reduction potential varies from year to year, e.g. 2020, was a year of large investments in construction, which is also reflected in purchase invoices. Purchase invoices, on the other hand, do not indicate the "greenness" of the investments made, e.g., the selected materials used in construction.

Dedicated networks have a development plan for improving the maturity of procurements. The organisation wants to ensure that procurement development work is not overtaken by ad-hoc activities.

*The figures are based on a Spend analysis of purchase invoice data by SYKE and Hansel.

CITY OF KOUVOLA

PROCUREMENT OF A LOW-CARBON WOODEN SCHOOL

OBJECT OF THE PROCUREMENT

Kouvola is procuring a new building for 700 pupils for the use of the Kuusankoski elementary school. The aim is to make the Kuusankoski elementary school a low-carbon wooden school, which would implement the sustainable development goals set in the procurement and environmental programme to promote ecological, social and economic sustainability. The building must be safe, healthy and accessible for users.

CONTACT PERSON
Anneli Vartiainen, City of Kouvola

Effectiveness objective and starting point:
The aim is to take into account the life cycle carbon footprint and the energy efficiency of the building. Low-carbon choices must be acknowledged, and the construction project must be consciously led towards the sustainable development goals. The goals should be implemented through the entire chain, even so that after years, the visitor to the building can perceive the ideas of sustainability.

Procurement process:
A competitive procurement procedure has been the starting point for project planning, but all options are reviewed before the publication of the invitation to tender. The aim is to make the contract form as functional as possible for the client and the contractor. The form of the contract must also enable innovations and the development of operations. The form of the contract has not been selected yet. Utilising the competence of local contractors plays a key role in procurement. Market dialogues have started in September 2021. The aim is to map contractors' readiness for low-carbon construction. The purpose of the market dialogue is also to provide the procurement entity with information on the requirements and precise objectives that can be set for the project. The first market dialogue revealed, among other things, the exact definition of building materials. The client must provide precise specifications for the structures of the future school. This will definitely be further defined in the project plan. The reference requirements to be recorded in the invitation to tender must be considered carefully in order to specifically support the objectives of this procurement.

- Finding a local contractor would be the most significant success for the procurement. At the same time, this sets a challenge for the procurement. A local operator may not be found to carry out such a large project. Also, wood construction has not been carried out on such a large scale in Kouvola before.
- Procurement unit: Facility services
- Contract period: Design-construction warranty period (48 months), 2022–2029
- Cost estimate: EUR 17.6 million. The contract could also have a target price. The rise in the price of wood materials may pose a challenge.

PROCUREMENT OF A LOW-CARBON WOODEN SCHOOL

Total value of procurements:
EUR 436.8 million (2019)

Carbon footprint and maximum emission reduction potential of procurements:
100.18 million CO_2 eq/kg

The category of buildings and area maintenance has the highest calculated emissions (26.7% of procurement emissions).

Strengths of low-carbon procurement management and development targets in the organisation:
The City's strategy, the environmental programme and the procurement programme support low-carbon procurement. In addition, the procurement instructions will be updated in the near future.

The client organisation has little previous experience of similar projects.

Measures for the development of low-carbon procurements:
Developing contract management (collecting contracts and metadata in one database), systematically taking sustainable development into account in procurements, procurements for low-carbon construction (low-emission contracts and construction sites) and carbon neutral electricity contracts and district heating.

*The figures are based on a Spend analysis of purchase invoice data by SYKE and Hansel.

REAL ESTATE STOCK ENERGY EFFICIENCY PROCUREMENT

CONTACT PERSONS
Teemu Ruotsala and Olli Surakka, Metsähallitus

OBJECT OF THE PROCUREMENT

Procurements that improve the energy efficiency of Metsähallitus' property portfolio for nature services. Simulation-based optimisation is ordered for the design of energy repairs. The optimisation takes into account energy consumption, total costs, the payback period of the investment, the return on investment, the increase in the return value of the property and the emissions of repair options, including the replacement of heating systems.

Effectiveness objective and starting point:
Reduction of emissions caused by properties. The total area of the nature services' properties is about 9,628.3 m^2. The potential emission reduction is 22–176 tonnes of CO_2/year.

Procurement process:
The procurement will be carried out as a contract procurement. The total cost estimate for energy renovations is EUR 3.0 million. 26 different real estate properties around Finland with special potential for achieving emission reductions have been selected.

In the first phase, the preparation of energy reports to selected locations has been put out to tender, the assessments will be completed by 10/2021. In the second phase (11–12/2021), energy renovation contracts selected on the basis of energy studies will be tendered out as planning and implementation contracts.

Market mapping was used in the tendering of energy studies. On the basis of the market mapping, competitive tendering was carried out for the preparation of the assessments.

On the basis of the energy studies, a final invitation to tender for energy efficiency procurement will be prepared. Energy renovation contracts are tendered out as an open procedure.

During the contract period, the realisation of the energy efficiency of the selected locations is monitored using the indicators defined in the contract (for example, energy consumption).

The overall schedule for tendering and implementations is demanding. The diversity and geographical locations of the locations to be tendered may pose challenges to contract implementation (suitable tenderers, number of tenders, price level of tenders vs. budget allocated to the locations).

REAL ESTATE STOCK ENERGY EFFICIENCY PROCUREMENT

Total value of procurements:
EUR 213.3 million (2019)

Carbon footprint and maximum emission reduction potential of procurements:
80.9 million CO_2 eq/kg

The category of buildings and area maintenance has the highest calculated emissions (43.5% of procurement emissions). The category also includes emissions from harvesting.

Metsähallitus' climate programme was completed in 2020. The climate programme will contribute to achieving Finland's climate goals and carbon neutrality by 2035.

The Metsähallitus Code of Conduct contains the key principles of responsible and ethical operations, to which the organisation is strongly committed and which are followed in all operations.

Measures for the development of low-carbon procurement:

- Analysis and reporting: developing the principles of data collection.
- Systematic consideration of sustainability in procurement.
- Low-emission vehicles: switching to vehicles with renewable motive power.

STREET CONSTRUCTION PROCUREMENT WITH CIRCULAR ECONOMY PRINCIPLES

CONTACT PERSON
Petri Leppänen, City of Tampere

OBJECT OF THE PROCUREMENT

The City of Tampere is developing a street contract procurement that takes into account the aspects of the circular economy: optimising the recycling of material and land masses as well as avoiding virgin materials. The object is the contract procurement of Yliopistonkatu, which is carried out using the ST model for planning and implementation. The development is part of the KIEPPI project.

Effectiveness objective and starting point:
Street construction with circular economy principles. The circular economy criteria include factors that reduce emissions. In addition to achieving low carbon, it is essential to avoid virgin materials.

Planning and implementation contract for the construction of Yliopistonkatu with circular economy criteria:
Planning and implementation contract procurement. The winning tender is EUR 1.6 million.

- Street plan 06/2021, invitations to tender 08/2021, in the winner's tender, the duration of the project is 11 months from the signing of the contract to the completion of the project.
- Extensive dialogue with the market has been conducted in the KIEPPI project. Companies see a lot of potential in the circular economy, which procurement entities should respond to so that price is not the only decisive factor in competitive tendering. Companies are tired of pilots and have a lot of different solutions on offer, and they would like to be able to implement with a larger volume.
- In terms of construction, the terms and conditions of the contract are defined in the contract programme. The contractor is approved by the client of the quality plan. The fulfilment of the quality criteria is demonstrated by the contractor and the supervision is the responsibility of the client.
- The construction location is a conventional construction location for municipal engineering and public areas. Coordination as a challenge: Tampere Hall will be a central venue for the 2022 Ice Hockey World Championships in May. In terms of construction, the challenge is traffic arrangements and logistics in the urban environment, as is usually the case.

STREET CONSTRUCTION PROCUREMENT WITH CIRCULAR ECONOMY PRINCIPLES

Total value of procurements:
EUR 106.78 million (2019)

Carbon footprint and maximum emission reduction potential of procurements:
80.9 million CO_2 eq/kg

The construction, repair and maintenance services have the highest emissions (42.5% of infrastructure procurement emissions). *

The strengths and development areas of low-carbon procurement management in the organisation:**
Tampere is well on track with meeting the low-carbon targets. The object of development is the systematic implementation and inclusion in the everyday work.

In addition to industries, the management of climate targets can be developed at the group level (e.g., facility services).

Measures for the development of low-carbon procurement: ***
Implementation of climate objectives: Setting emission reduction targets by procurement category or procurement

Development of innovative procurement activities: for which locations there is a need to develop new, better solutions.

Promoting low carbon in corporate governance: Set emission reduction targets functionalised for procurement in group companies

The procurement model must be implemented if there is a will to influence emissions in construction projects.

*The figures are based on a Spend analysis of purchase invoice data by SYKE and Hansel.
**Based on meetings during the programme.
* **Based on the Luotsi work on procurements during the programme.

LOW-CARBON WINTER MAINTENANCE CONTRACTS AND SERVICE ALLIANCE PREPARATION TO PROMOTE CYCLING

OBJECT OF THE PROCUREMENT

The City of Vaasa tendered out the regional contracts for winter maintenance, taking low carbon into account. The procurement process was planned and implemented in the spring/summer of 2021. In addition, a service alliance will be developed for the comprehensive development of bicycle traffic. The alliance would include sub-assemblies: design, construction, maintenance and development.

CONTACT PERSON
Jukka Talvi, City of Vaasa

Effectiveness objective and starting point:
Increasing the transport share of cycling and improving the quality and low-carbon maintenance of the cycling network. The management of cycle paths is part of the City's own and private contractors' regional contracts. The quality level varies depending on the contractor. Maintenance equipment and methods have not been optimised for the cycle path network, and one bike trip may have sections with differently maintained conditions. There are hardly any emission targets set for the work machinery and methods. The cycling path network and other cycling infrastructure do not meet modern requirements that would promote cycling and support Vaasa's journey to carbon neutrality by the end of the decade.

Procurement procedure, contract period, costs:
assessment based on total economics (price and quality assessment), contract period 3+2 years, cost estimate EUR 2.5 million with option years. The estimated cost of the service alliance in preparation is EUR 20–30 million, spread over 2022–2029.

- Description of the procurement decision-making process: preparation and invitations to tender in spring 2021, procurement decision in summer 2021, operations start in the winter season 2021–2022 and take 3+2 years.
- Description of the procurement process (market dialogue, invitation to tender, minimum requirements, etc.): Procurement definition in-house with the help of KEINO coaching programme experts, background discussions with contractors in the region, minimum requirement for standard winter maintenance, quality points for better maintenance and low carbon, including options.
- Description of the monitoring and operation during the contract period: Contract reviews, construction site meetings, reporting and spot checks
- The most significant success and challenge in the implementation of the procurement:
  - Successes: Smaller contractors in Vaasa succeeded in competitive tendering (business vitality, local economy). The cost level dropped from the previous one (cost-effectiveness, possibility to increase the quality level). The majority of contracts are managed using renewable fuels (low carbon). Bicycle paths are ploughed more often than before (ease of access, especially for persons with mobility issues and equipment with tires) . Plot connections will be opened in the future by the contractor (this will improve the conditions for living in a detached house, especially for the elderly).
  - The challenge was the division of the goal into two parts and a tight schedule. In Vaasa, it was decided to put the winter maintenance works out to tender immediately and to require unit prices for the maintenance of the main cycle path network, so that they can be decoupled from the cycling promotion under preparation.

CITY OF TAMPERE

STREET CONSTRUCTION PROCUREMENT WITH CIRCULAR ECONOMY PRINCIPLES

Total value of procurements:
EUR 314.6 million (2020)

Carbon footprint and maximum emission reduction potential of procurements:
105.08 million.CO_2 eq/kg

The category of buildings and area maintenance has the highest calculated emissions of 29.0 million CO_2 eq.kg (27.6%).*

The strengths and development areas of low-carbon procurement management in the organisation: **
Vaasa plays a major role as a regional driver from the perspective of promoting clean energy and low-carbon solutions.

The procurement strategy is not very well linked to the environmental strategy. A view of what procurements are coming would be needed. This is not just a task for the procurement unit – the substance unit must be active.

Roles: At what level and who drives low-carbon procurement as a whole?

Measures for the development of low-carbon procurement: ***
Development of contract management: Gathering contracts and metadata in a single database.

Systematic consideration of sustainability in procurement: for example, drawing up a roadmap for low-carbon procurement

*The figures are based on a Spend analysis of purchase invoice data by SYKE and Hansel.
** Based on meetings during the programme.
* **Based on the Luotsi work on procurements during the programme.

APPENDIX 1. GLOSSARY OF TERMS FOR LOW-CARBON PROCUREMENT

Public procurement:
Purchase and rental of goods and services or similar activities. In addition, procurement for a consideration between the procurement entity and the contractor.[10]

Effectiveness-based procurement:
Procurement aimed at achieving a specific sustainability objective, such as increasing low carbon or employment. In addition to the price, long-term benefits for the environment and society are taken into account.

Effectiveness:
Describes whether the procurement will achieve sustainable development in society and the environment. Effectiveness is often created in the medium to long term.

Impacts:
Consist of concrete changes that result from the procurement, for example, in people's behaviour, society, economy or environment, including the carbon footprint. Before making a procurement decision, information is needed especially about the types and magnitudes of impacts.

Low-carbon procurement:
A procurement whose preparation and market dialogue clarifies and defines in the requirements and contract conditions the factors affecting emission reductions. The implementation of these matters is monitored during the contract period.

Carbon footprint and carbon handprint of the procurement:
The carbon footprint describes how much the purchased product or service produces CO_2 emissions. The carbon handprint, on the other hand, describes the ability of a service or product to reduce emissions.

Innovative procurement:
May refer to the procurement of new and innovative products and services. It also means an innovative approach to procurement preparation and management in an inclusive dialogue with the market and end users.

Market mapping/dialogue:
Means the dialogue between the client and suppliers during and after the procurement process.

Procurement procedure:
The way in which public procurement is tendered and within which potential suppliers can submit their tenders (for example, an open, restricted, negotiated and competitive negotiated procedure, an innovation partnership, direct procurement and a design contest).

Procurement strategy:
A document outlining the organisation's procurement intentions, objectives and organisation. Synonymous with procurement guidelines.

Procurement category and category strategies:
In most organisations, the procurement package is divided into specific product or service groups. For example, central government procurements are divided into ten categories (for more information on central government procurement categories, see, for example, Chapter 10, Section 4.7 "Categorisation of procurements" of the Government Procurement Manual.

Category strategies:
Separate category strategies determine how these procurement entities achieve the objectives defined in the organisation's higher strategies, as well as how the implementation, monitoring and measurement of these procurements is organised. The development of category strategies can also be called procurement management or operationalisation of strategy.[10]

Strategic level of procurement management:
The strategic guidelines or the procurement strategy that guide procurement determine how the organisation manages and develops the implementation of the procurement as a whole, taking into account other strategies and objectives. At the top level, it includes procurement principles and general guidelines, such as what kind of things are produced independently in principle and what are

bought from the outside.[10]

Tactical level of procurements:
In most organisations, the procurement package is divided into specific product or service groups. Separate category strategies determine how these procurement entities achieve the objectives defined in the organisation's higher strategies, as well as how the implementation, monitoring and measurement of these procurements is organised. The development of category strategies is called the tactical level of procurement.[2]

Operational level of procurements:
The level related to individual procurements, which defines the procurement-specific objectives and on which the concrete implementation of procurements takes place.

Procurement contract:
A written contract between one or more procuring entities and one or more suppliers. Its purpose is the performance of a contract, the procurement of goods or the provision of a service against financial compensation. [6]

Procurement plan and tendering schedule:
Define what is planned to be procured during the planning period. The planning period can be 1–4 years, for example. A tendering schedule for tendering for the upcoming season can be drawn up from the plan. A separate project or procurement plan can be drawn up for an individual significant procurement of goods, which also includes the phasing of the project and the preliminary specification of the products to be procured. [6]

Suitability requirement for the tenderer:
A minimum requirement for the suitability of tenderers, which may relate to the candidate's or tenderer's registration, economic and financial situation or technical and professional competence. [6]

Requirement for the object of the procurement:
A requirement concerning the content, transport or packaging of the procurement object or other implementation of the procurement.[6]

Invitation to tender:
A procurement document prepared by the procuring entity that describes the subject and content of the procurement, provides instructions for the preparation of the tender and defines the minimum suitability requirements of the tenderer, the requirements for the product to be procured, the criterion of overall economic advantage and the comparison criteria. [6]

Criteria for comparison:
Have been defined in the invitation to tender as the basis for overall economic affordability, i.e., the best price-quality ratio. These criteria include, for example, technical merits, aesthetic and functional characteristics, accessibility, design that meets the requirements of all users, operating costs, cost-effectiveness, after-sales service and technical support, maintenance and delivery date or delivery or implementation time as well as other implementation conditions. The criteria may also take into account the qualifications and experience of the personnel, as well as the organisation of the personnel, if the quality of the assigned personnel may have a significant impact on the performance of the procurement contract. [1]

Framework agreement:
A contract between a procuring entity and suppliers, the purpose of which is to establish the terms governing procurements to be completed within a given period, such as prices and planned quantities. The framework agreement can be valid for a maximum of four years. [6]

Contract terms:
Refers to the terms and conditions defining the rights and obligations of the client and supplier set out in the contract or order to be drawn up for the procurement. The standard contract terms complementing and specifying the provisions of the Contracts Act (228/29) and the Sales of Goods Act (355/87) may be used in procurements. These include the General Terms and Conditions for Public Procurement (JYSE 2014 Supplies or JYSE 2014 Services), the General Terms and Conditions of Governmental IT Procurement (JIT 2015 Terms and Conditions), the General Conditions for Consulting (KSE 2013) and the General Conditions for Building Contracts (YSE 1998). [6]

Procurement life cycle and life cycle costs:
Life cycle refers to all successive or interrelated stages of the existence of the product, construction project or service to be procured. The concept covers steps from the purchase of raw materials or the pooling of resources to their reuse, recycling, utilisation or disposal. Life cycle costs are procurement costs, operating costs, maintenance costs, costs of the recycling and waste phases and other life cycle costs of construction work, supplies or services incurred by the procurement entity or other users of the object of procurement. For the comparison of life cycle costs, the invitation to tender must indicate what information must be provided in the tenders and the method by which the life cycle costs are calculated. Life cycle costs also include costs arising from external environmental impacts and related to the object of procurement during its life cycle (for example, costs arising from CO_2 emissions). [6]

Spend analysis:
A procurement cost analysis, which shows how much money is spent on procurements during the year in the organisation and its various units, for example, by industry or department. In addition, it also provides information on the number of suppliers and invoices with the desired separation factors. [10]

Contract procurement:
Construction contract refers to an economic or technical entity of building, civil engineering or hydraulic engineering works, which may be a new or renovation construction project. The construction project requires a contract, which is a procurement contract. This contract defines the implementation of a construction project or a construction contract related to the operation. Designing may also be included in the contract procurement.

Alliance model:
In collaborative project forms, such as the alliance model, the project parties, i.e., the client and suppliers, are integrated into one common organisation. This organisation has common goals, an agreement and a target price with incentives. The benefits and risks of the project have been shared between the parties of the alliance. Collaborative project forms enable innovation processes in projects and are well suited for complex projects where a lot of uncertainties have been identified.

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