

Manual for climate budgets as a governance tool



Oslo



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The project participants came together for a workshop in Trondheim in winter 2020

1. About the manual

This manual has been compiled by the municipalities of Oslo, Hamar and Trondheim. The municipalities received support from the Norwegian Environment Agency's Klimasats subsidy scheme to compile a manual for climate budgets as a governance tool. The City of Oslo's Agency for Climate is project-managing the project, which runs from October 2019 to November 2021.

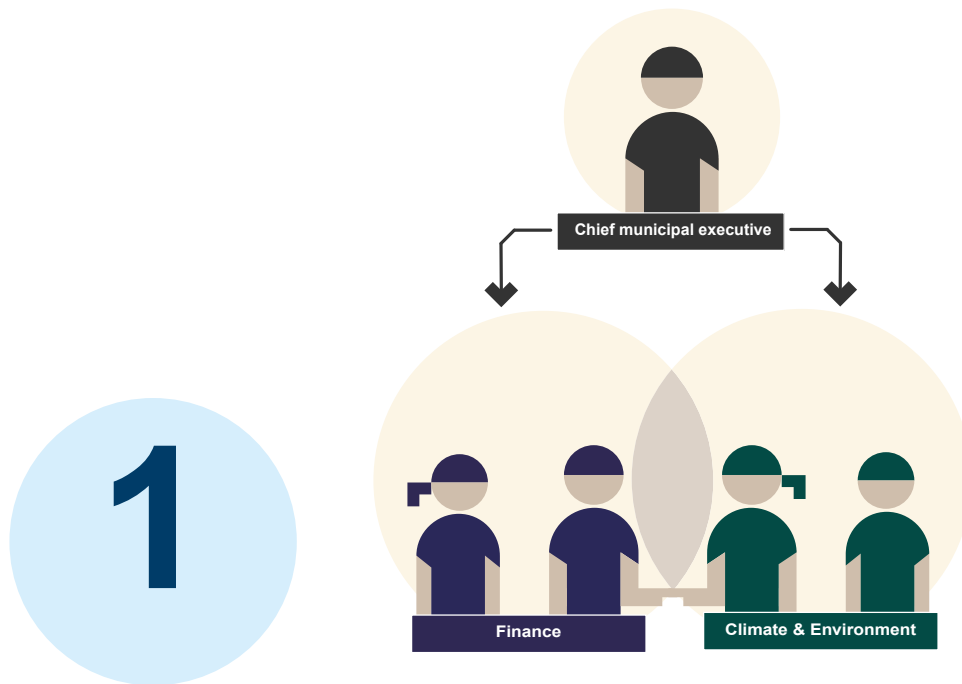
Developing climate budgets remains ground-breaking work. Experiences to date vary significantly from municipality to municipality, and from county municipality to county municipality.

The project guided a group of municipalities and county municipalities in their work on preparing climate budgets for 2021. These were Arendal, Sarpsborg, Vågan and Alta municipalities, and Viken and Vestland county municipalities. We were able to discuss all the various methodological issues that arise, and use this as a basis for recommendations in the manual. Accordingly, the manual provides concrete and practical advice on how municipalities and county municipalities should proceed in developing climate budgets.

The manual can be used by all municipalities and county municipalities that are to prepare climate budgets. In spring 2021, we will hold courses in climate budgets for any interested municipalities and county municipalities in Norway. The project group comprised Astrid Ståledotter Landstad (Agency for Climate, City of Oslo), Reidun Kristina Malvik (formerly of the Agency for Climate, City of Oslo), Lise Urset (Hamar Municipality), Simon Loveland (Trondheim Municipality) and Linn Hege Aune (Trondheim Municipality).

2. Climate budget work in 4 steps

The work on climate budgets can be divided into four phases:
1) Start-up, 2) Draw up and calculate the effect of measures,
3) Prepare the climate budget and 4) Reporting and follow-up.



Start up work on the climate budget

1. Organise the work on the climate budget.

- The climate budget is owned by the senior administrative manager, often the chief municipal executive.
- The process of preparing a climate budget is owned by the people who own the budget process, i.e. the chief financial officer or equivalent.
- Appoint a working group with a mix of representatives from Finance and Climate & Environment.

2. Demarcate the climate budget. To which system boundaries is the climate budget to apply:

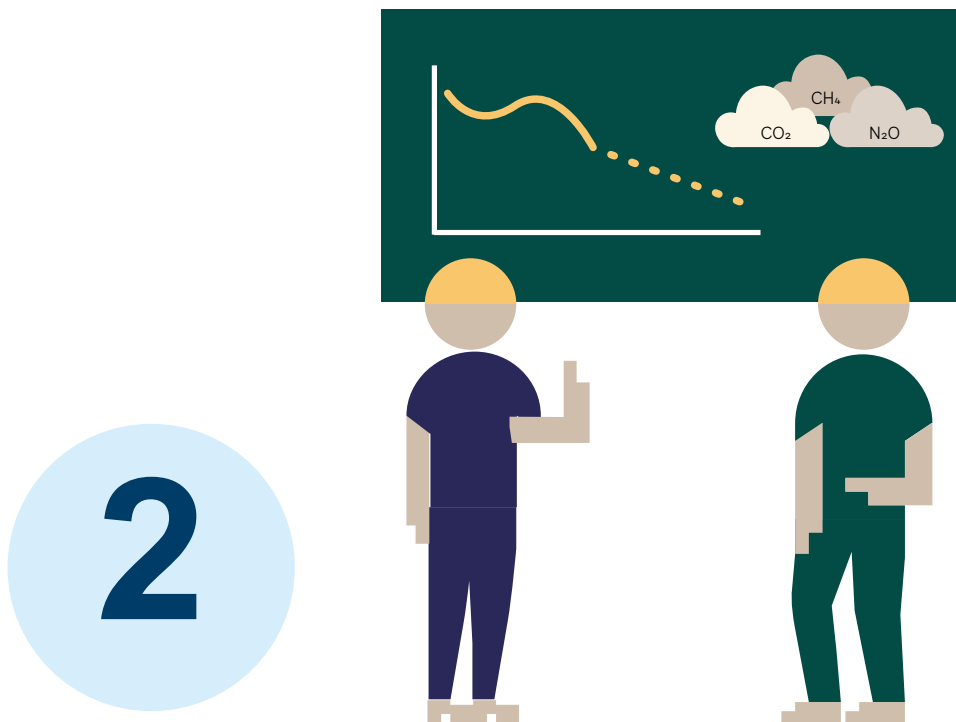
- The municipality's geographical area or the municipality's activities?
- To which climate targets is the climate budget to apply? Emissions reduction targets or other climate targets as well? Direct emissions and/or indirect emissions?

3. Integrate the climate budget in the municipality's financial budget or action & economic plan (A&EP).

- Ensure that the process of preparing a climate budget becomes part of the budget process
- Ensure that steering documents for preparing and following up the municipal budget include provisions stating:
 - that all entities in the municipality must notify climate measures within their areas
 - how and when the people responsible for measures are required to report on them

Tips for municipalities starting work on their first climate budget:

Demarcate the climate budget to cover direct emissions within the municipal boundary. The Norwegian Environment Agency has compiled greenhouse gas (GHG) inventories at municipal level and calculation templates for these system boundaries. By demarcating the climate budget to areas that can be quantified, you ensure that the climate budget becomes an effective governance system for measuring progress against a target.

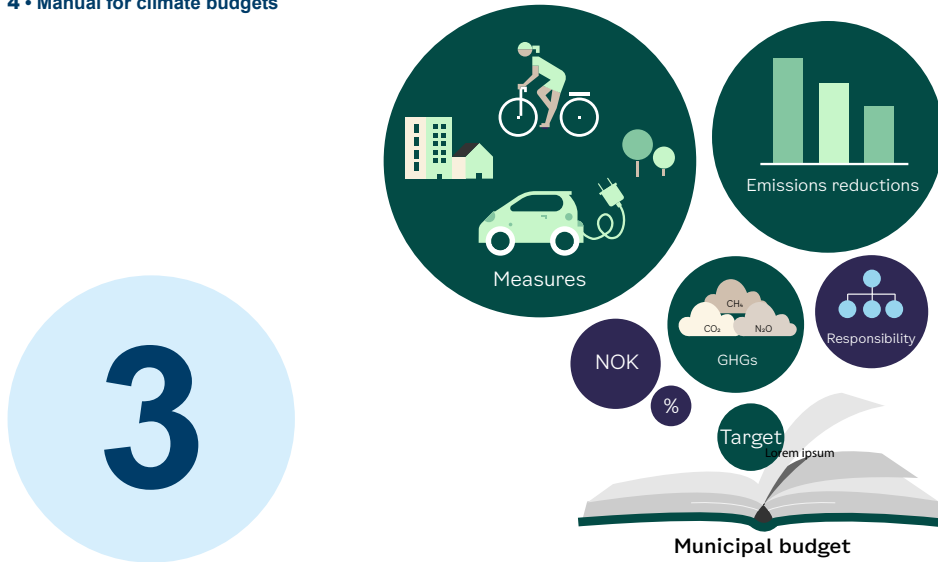


Draw up measures and calculate their effects

1. **Map the biggest emissions sectors and sources** within the selected system boundaries
 - Use the Norwegian Environment Agency's GHG inventory at municipal level for an overview of the direct emissions.
2. **Draw up a baseline** showing the trend if no new measures are taken.
3. **Draw up an emissions limit** showing the emissions targets in the period up to the target year, and thus the level of emissions reductions required in the A&EP period to achieve the target in the target year.
4. **Calculate the effect of the measures proposed in the climate budget.**
 - Use the Norwegian Environment Agency's methodology and calculation templates to calculate emissions reductions.
 - Be transparent: State all assumptions and conditions.
 - Describe the uncertainty inherent in the calculation.
5. **Develop result indicators** against which those responsible for measures will report. Indicators can also be developed to assess the emissions trend.
6. **Aggregate the effects of the measures and analyse the results.**
 - Prepare a measure trajectory showing the total effect of all the measures in the climate budget
 - What is the trend in the measure trajectory relative to the emissions limit?
 - Is more stringent action needed? Within which areas in the municipality and the business community are new climate measures needed?

Tips for municipalities starting work on their first climate budget:

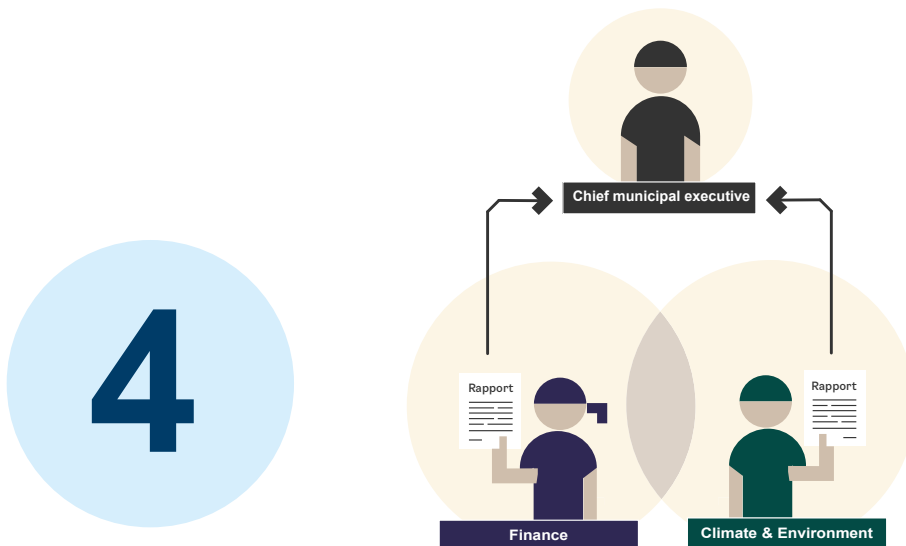
You do not need to develop a baseline to prepare a climate budget. The climate budget can be presented graphically using graphs for historical emissions, baselines, emissions limits (target trajectory) and measure trajectories. A simpler option is to present the results numerically in tables.



Prepare a climate budget

Draw up the climate budget chapter of the municipal budget. This may include:

- A presentation of the municipality's climate targets.
- Historical emissions. The Norwegian Environment Agency's GHG inventory for the municipality.
- A situation description. Which measures have already been started, and estimated emissions reductions for existing climate measures.
- A baseline. How would the emissions develop if no new measures were introduced?
- A measure trajectory. Estimated annual emissions reductions for the budget year and the entire action & economic plan (A&EP) period. This makes it possible to assess the effect of measures against the municipalities' climate targets.
- Tables of measures. Tables showing existing and proposed climate measures and estimated emissions-reducing effect.
- Description of financing and responsibility for implementing climate measures.



Reporting and follow-up

1. Follow up the municipality's reporting on climate measures

- Are the measures being implemented as planned?
- Are there deviations? Is a change in focus of the measure needed?

2. Evaluate the climate budget

- Use the information from reporting on result indicators and general indicators as a basis for preparing next year's climate budget
- Is more stringent action or a change of course needed?

3. What is a climate budget?

Norway has notified an enhanced climate target under the Paris Agreement, which will involve reducing emissions by at least 50% and up to 55% compared with the 1990 level. Several municipalities have adopted even more ambitious climate targets. A climate budget is a useful tool in the work to achieve these targets.

We have chosen to define a climate budget as a governance tool to achieve GHG reductions and other climate targets adopted.

The climate budget presents measures to reduce emissions and the estimated effect of these measures, and assigns responsibility for their implementation.

Central government planning guidelines (CGPG) for climate and energy planning and climate change adaptation state that the municipality should incorporate measures and instruments in its overall planning in order to reduce GHG emissions. Among other things, the municipality's climate plans should:

- encompass ambitious targets for emissions reductions, efficient energy use and switching to environmentally friendly energy.
- include measures and instruments to reduce GHG emissions, and promote efficient energy use and switching to environmentally friendly energy.
- have a clear division of responsibilities for following up energy and climate plans.

Matching ambitious targets with action has been challenging in several municipalities. The climate change challenge requires cross-sector cooperation – both within and outside the municipality's own organisation – as well as deploying resources in new areas. In addition, the timeframe for climate measures is short, which makes it difficult to achieve the necessary impact using a traditional action plan.

A climate budget is an attempt to solve these challenges by linking targets and measures more closely together in the municipalities' most important steering document: their financial budget, often called **the action and economic plan (A&EP)**. There are several similarities between a climate budget and the action part of a climate and energy plan. The climate budget's strength is that it is directly integrated in the municipal budget and is therefore followed up in the same way as other budget chapters in the municipality. The climate budget can be seen as a process tool in the municipality's work on climate and energy planning.

The climate budget provides the municipality with a tool to steer towards the emissions targets. The climate budget ensures that the municipality initiates and funds measures to reduce the emissions. Responsibility for following up the measures is clearly defined. Regular reporting on the measures means results and progress are measured against the emissions reduction targets. The climate budget shows whether the measures adopted are sufficient to achieve the target or whether efforts need to be stepped up. Annual updating of the climate budget provides an opportunity to adjust course. The climate budget is transparent and visualises to decision-makers and stakeholders the challenge faced and how the municipality is prioritising efforts to achieve the target.

Climate budgets and the UN Sustainable Development Goals



The climate budget makes a systematic contribution to following up the UN Sustainable Development Goals (SDGs).

Goal 13 – Take urgent action to combat climate change and its impacts

13.2 – Integrate climate change measures into national policies, strategies and planning

The challenges of climate change cut across both sectors and different actors, and complete climate transition requires a holistic societal change. If we look at which measures and activities need to be implemented to achieve the energy and climate targets, we have to work systematically and in line with a number of other SDGs, e.g. goals 7, 11, 12, 14, 15 and 17 and their associated targets are extremely important in this work.



A manual for all municipalities and county municipalities

Preparing climate budgets is still ground-breaking work. The experiences and challenges vary from municipality to municipality, and from county municipality to county municipality. Municipalities and county municipalities have different areas of responsibility and decision-making powers, and the climate budget will therefore cover different needs.

This manual is intended to be usable by all – whatever the size of the municipality or county municipality and how far it has progressed in its climate budget work.

The role of the municipality and county municipality in reducing GHG emissions

In their various roles, the municipalities and county municipalities (hereafter 'municipalities') are able to influence various climate measures, either as prime movers or facilitators. Klimakur 2030 (report in Norwegian) describes the role of the municipalities as follows:

To a large degree, the municipalities can themselves influence emissions from their own activities, for example emissions from their own vehicles and building and construction projects, and by setting climate requirements for their own procurements. However, the municipality's greatest potential for contributing to emissions reductions lies in influencing the implementation of climate measures by other actors. The municipality fulfils various roles that are relevant in the climate work:

- **social developer** – prime mover, facilitator, and collaborator with residents and the business community
- **exerciser of authority** – planning authority, including for land and transport, grant administrator
- **service provider** – supplier of services such as education, health, care and public transport
- **owner and operator** – buildings, infrastructure, forests, own transport, municipal undertakings, investments
- **buyer** – goods and services

Specific to county municipalities

As an exerciser of authority, the county municipalities are the regional planning authority, and the regional plans set out provisions for municipal land-use plans. Regional plans are particularly important to safeguard transport and settlement patterns.

As service providers, and thus buyers, the county municipalities have specific responsibility for public transport. County municipalities can use procurements to realise zero-emissions solutions for buses, ferries and express boats. With their responsibility for public transport, the county municipalities can also contribute to transport solutions that support integrated land use.

As owner and operator of several public-facing entities, upper-secondary schools and office workplaces, the county municipalities are responsible for locating these so that they contribute to a reduction in car travel; more walking, cycling and use of public transport; and an improved urban environment in line with central government planning guidelines for housing, land-use and transport planning. As road owners, the county municipalities are responsible for building, operating and maintaining roads.

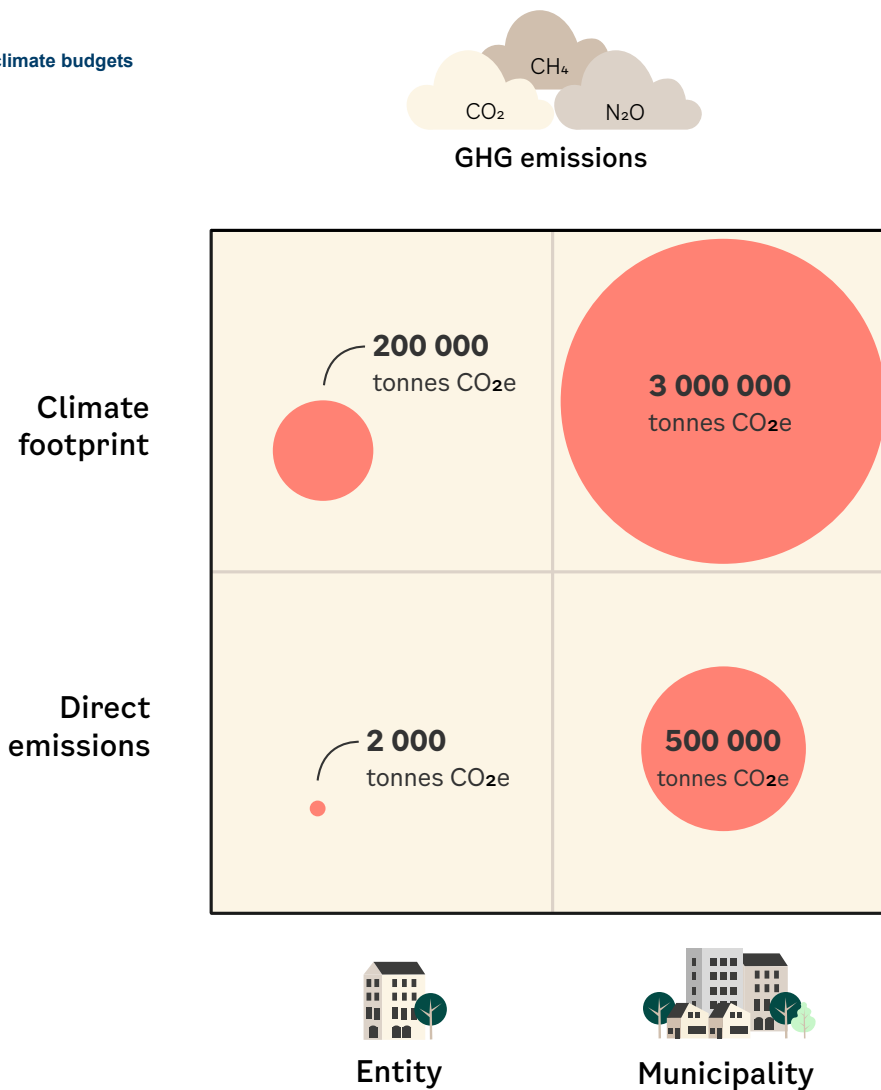


Figure 1: The graphic illustrates how the level of emissions varies depending on the system boundaries for the GHG inventory and the climate budget. The indirect emissions will often be greater than the direct GHG emissions. The figures in the graphic are notional.

4. System boundaries for the climate budget

The system boundary of a climate budget analysis can be restricted to a entity's activities, to a specific sector, a geographical area, or to measures and instruments that the relevant governing body has control over.

The climate budget can include climate measures to reduce direct and indirect emissions, climate change mitigation measures or energy measures. Which measures to include in the climate budget depends on how the climate work is organised in the municipality. Several municipalities have chosen to apply climate budgets as a governance tool in order to quantify and measure progress against an emissions reduction target. In these cases, target achievement for other climate targets in the climate strategy is followed up via other steering documents.

This manual focuses on climate budgets as a governance tool for achieving emissions reduction targets. Setting clear system boundaries helps ensure that the climate budget becomes an effective governance tool for measuring progress against a target.

When working on climate budgeting to achieve emissions reduction targets, it is important to define the system boundaries for the GHG emissions that are to be reduced. In a municipal context, there are two fundamental decisions to make. Firstly, you need to choose whether to focus on the municipality as an entity or also to include emissions from the municipality's residents and business community. Secondly, you need to choose whether to focus on direct emissions within the municipality's boundaries or also to include indirect emissions from the entire life cycle of products and services used in the municipality. The consequences of these choices are significant for the level of emissions, use of instruments and to what degree the climate budget becomes a governance tool in order to visualise the effect of measures and target achievement.

Entity or geographical area

Setting the system boundaries of the climate budget to cover emissions within a geographical area is in accordance with central government planning guidelines for climate and energy planning and climate change adaptation.

Examples of municipal climate budgets demarcated to a geographical area

City of Oslo: [Climate budget 2021, Chapter 2 of Oslo City Government's budget proposal 2021 and appendix \(in English\)](#)

Trondheim Municipality: [Climate budget 2021 \(in Norwegian\)](#)

Bodø Municipality: [Climate budget 2021 \(in Norwegian\)](#)

Fredrikstad Municipality: [Climate budget 2021 \(in Norwegian\)](#)

Hamar Municipality: [Climate budget 2021 \(in Norwegian\)](#)

For county municipalities, climate budgets can be prepared for the emissions linked to either:

- a) activities over which the county municipality has authority within its geographical area
- b) the county municipality's geographical area

In the case of option a, the climate budget covers emissions linked to activities over which the county municipality has authority, e.g. public transport, regional planning, construction and operation of public-facing entities, educational buildings and roads. In the case of option b, the climate budget covers all emissions within the county municipality's boundaries.

Examples of climate budgets for a county municipality's activities

Nordland county municipality: [Climate budget 2021 for Nordland county municipality \(in Norwegian\)](#)

Agder county municipality: [Climate budget 2021 for Agder county municipality \(in Norwegian\)](#)

Innlandet county municipality: [Climate budget 2021 for Innlandet county municipality \(in Norwegian\)](#)

Direct and indirect emissions

Direct emissions are those that physically occur within a geographical area. Indirect emissions cover emissions that arise outside the geographical area as a consequence of consumption of goods and services within the geographical area.

The Norwegian Environment Agency's GHG inventory at municipal level covers direct emissions of GHGs within the boundaries of a municipality or county municipality. The inventory is transparent, updated annually and under continuous improvement. It is publicly accessible on the Norwegian Environment Agency's website. Also available on the same website are calculation templates (Excel spreadsheets) developed to calculate the effect of measures implemented to reduce the municipality's direct emissions.

The indirect emissions in a municipality are many times greater than the direct emissions. Among other things, the municipality purchases goods, services, building materials and energy, and through its role as a public-sector buyer can help to reduce the indirect emissions in the municipality. The municipality can play an important role in reducing emissions – both as a buyer and as a prime mover in reducing consumption of emissions-intensive goods and services.

Scope 1 to 3

Discussions concerning system boundaries for GHG emissions often use the term 'scope' to distinguish between direct and indirect emissions. Figure 2 is inspired by the definitions of GHG emissions developed by the Greenhouse Gas Protocol*. In a municipal context, the scopes break down as follows:

Scope 1 – Direct emissions: Emissions of GHGs from sources within a geographical area

Scope 2 – Indirect emissions from energy production outside the geographical area: Emissions of GHGs that arise as a consequence of consumption of grid-based electricity, heating and cooling within the geographical area

Scope 3 – Indirect emissions: All other GHG emissions that arise outside the geographical area as a consequence of consumption of goods and services within the geographical area.

* Greenhouse Gas Protocol has developed global standards and methodologies for calculating GHG emissions for the private and public sectors. Separate guidelines have been drawn up for local authorities: [Global Protocol for Community-Scale Greenhouse Gas Emission Inventories](#).

Unfortunately, there are no publicly accessible GHG inventories for indirect emissions. Some consultants offer calculations of a municipality's indirect emissions or climate footprint, but this is something that the municipality must procure itself. The methodologies used are also subject to significant uncertainty. Nevertheless, these climate inventories can provide useful information and make it easier to prioritise measures in order to reduce indirect emissions where there is greatest potential.

When a municipality is preparing a climate budget for the first time, it may be appropriate to demarcate the climate budget to direct emissions. Such a demarcation is in line with central government planning guidelines for climate and energy planning and climate change adaptation.

Measures to reduce indirect emissions, for example prioritising low-carbon materials in municipal building projects, can also be anchored via the climate budget. They can be followed up through the budget process in the same way as measures linked to direct emissions, but cannot be linked to a climate target for direct GHG emissions.

One way of distinguishing different categories of measures from one another is to present them in different tables in the climate budget. For example, there could be tables for measures to reduce direct emissions for which effect has been calculated, non-quantifiable measures to reduce direct emissions and measures to reduce indirect emissions. Tables can also be produced for measures within energy use and other climate areas, such as emissions from and carbon capture by forests and other land use, and climate change mitigation.

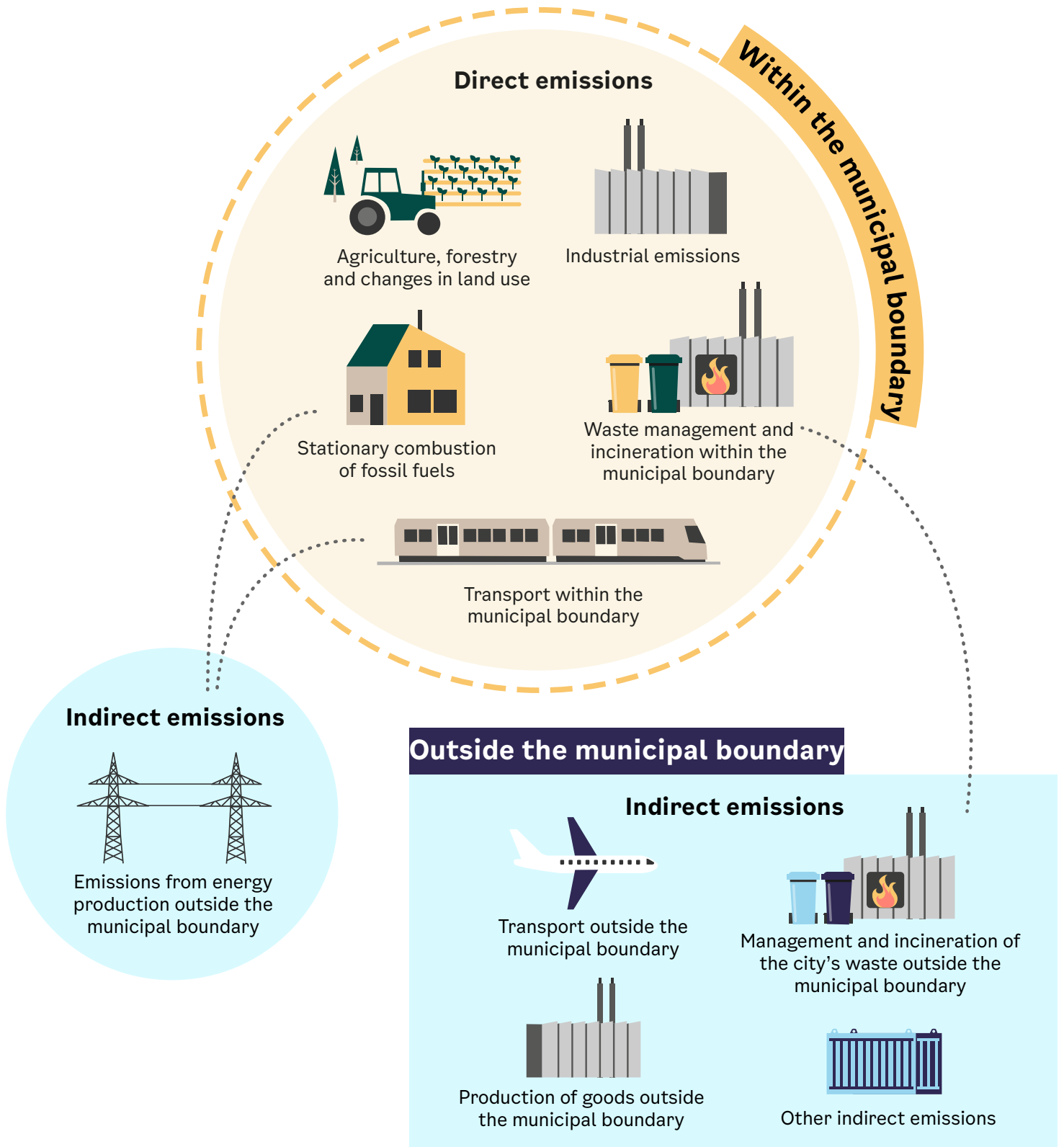


Figure 2: Illustration of direct and indirect emissions.

5. Preliminary work on a climate budget

Before preparing a climate budget for a municipality, it is useful to have the following in place:

- a political resolution to prepare a climate budget
- a GHG reduction target adopted by politicians
- a historical GHG inventory

It is important that the system boundary selected for the climate budget also applies to the emissions reduction target and the GHG inventory.

Political resolution to prepare a climate budget

If a municipality is to start work on preparing a climate budget, this work should be based on a political resolution. The initiative for the resolution may come from the municipal council, the administrative management or from others in the municipal administration, for example an environmental or climate adviser. It is the politicians who adopt the annual budget/ action and economic plan, of which the climate budget is an integrated part.

A GHG reduction target adopted by politicians

In order for a climate budget to be able to function as a governance tool, clear targets should be set for emissions reductions. In most municipalities and county municipalities, the climate targets will be set and adopted via political planning processes. Some have climate targets only in the municipal master plan, while others have adopted climate targets in thematic plans, municipal sector plans or other plans that cover climate.

Targets for GHG emissions reductions must be concrete and measurable to be able to be used in a climate budget. The targets must define:

- which GHG emissions are covered by the target (indirect/direct emissions, the entity's emissions or the area's emissions)
- reference year – the year used as the starting point for calculating the emissions target
- target year – when the target is to be achieved.

The Norwegian Environment Agency's [website](#) (in norwegian) provides guidance on setting different types of climate targets

Setting relative or percentage targets for emissions reductions is expedient in a climate budget. The methodology used to calculate the GHG inventory at municipal level is under continuous development, and historical emissions figures from the Norwegian Environment Agency are restated each time the methodology is improved. If emissions targets are formulated in absolute tonnes, it will be necessary to adjust the target each time the GHG inventory is updated so that the targets represent

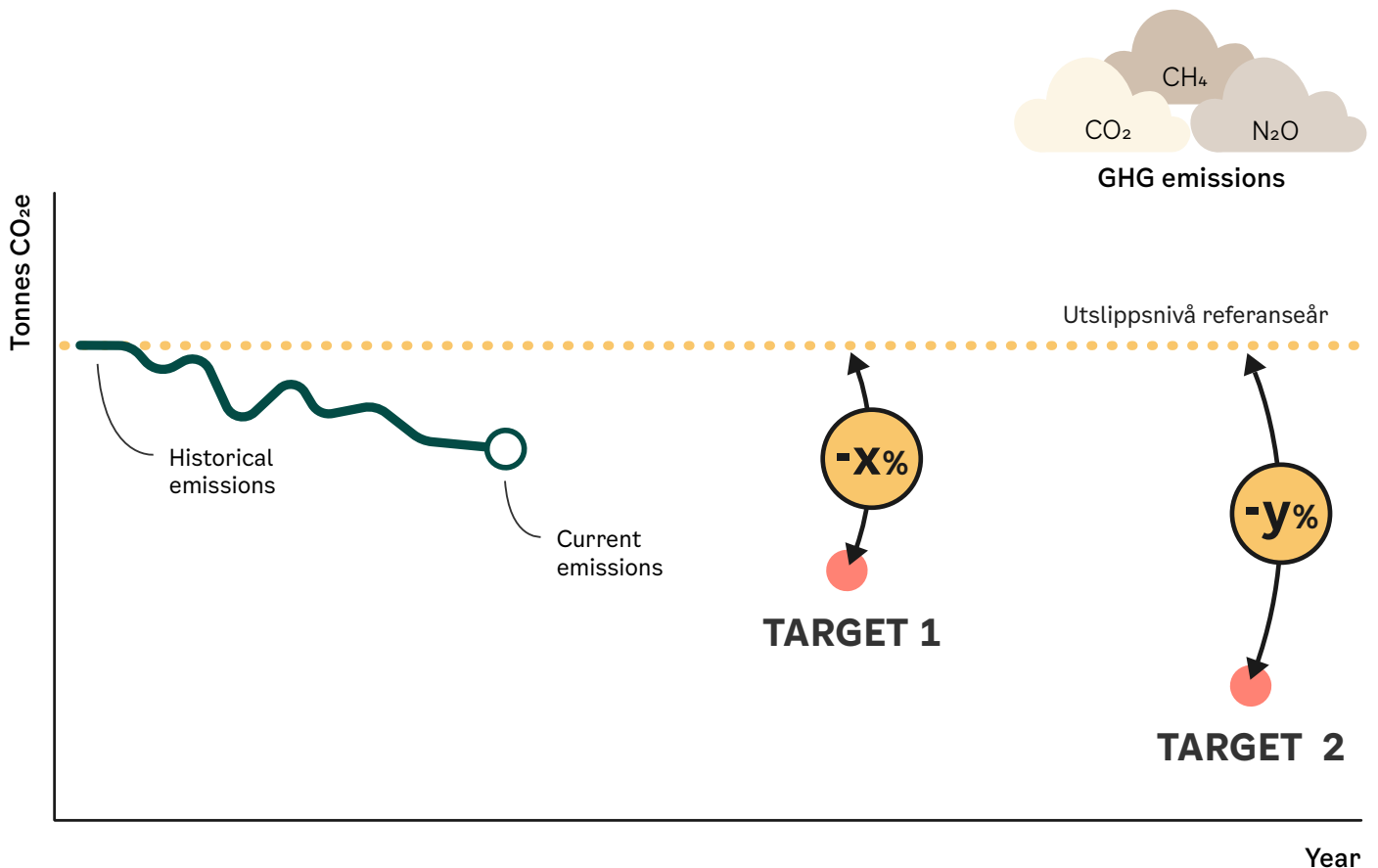


Figure 3: Illustration of emissions limits. Target 1 and target 2 specify the climate budget's emissions limit.

the same decrease in emissions in relative terms. By setting a percentage target for the reduction in emissions from the reference year to the target year, the target is unaffected by changes in the GHG inventory.

A GHG inventory in line with selected demarcations and system boundaries

A GHG inventory shows historical GHG emissions for a specified period of time. In a climate budget context, GHG inventories are used:

- to prioritise measures
- as a basis for calculating or estimating the effect of climate measures
- to draw up a baseline and other projections of emissions
- to set targets or a limit for emissions for a specified period

A GHG inventory is usually calculated based on activity data and emission intensities or factors.

$$\text{Emissions} = \sum \text{activity data} \times \text{emission factor}$$

The accuracy of a GHG inventory largely depends on the activity data and emission factors used. For example, the emissions from a vehicle fleet can be calculated using the total quantity of fuel (activity data) and the emission factor for the type of fuel the vehicle fleet uses (CO₂e/litre). The alternative is to calculate the emissions based on number of kilometres driven and an emission factor for CO₂e/km. There are several uncertainties – gradient, driving style, temperature, queueing, etc. – inherent in this emission factor, making the calculation less accurate.

The Norwegian Environment Agency's GHG inventory broken down by municipality and county municipality

The Norwegian Environment Agency publishes annual updates to its GHG inventory broken down by municipality and county municipality. The GHG inventory covers the direct emissions that occur within the municipality's geographical boundary. This shows emissions of the three greenhouse gases carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O), broken down into nine sectors in Norwegian municipalities and counties. The nine sectors are:

- industry, oil and gas
- energy supply
- heating
- road transport
- waterborne navigation
- aviation
- other mobile combustion
- agriculture
- waste and wastewater

These nine sectors are broken down into several subsectors/sources. For example, the road transport sector comprises the sources passenger cars, vans, heavy vehicles and buses. The same methods and data sources are used for all the years in the GHG inventory. The first year for which emissions have been calculated is 2009. This is either because no input data was available before then or because the input data is not of adequate quality. Pre-2009 emissions figures are not available at municipal level, and the reference year for municipal emissions reduction targets should therefore be set at 2009 or later. The GHG inventory contains emissions figures for 2009, 2011, 2013 and every year from 2015.

[Link to the Norwegian Environment Agency's GHG inventory broken down by municipality and county municipality \(in Norwegian\)](#)

The GHG inventory uses data sources that show the trend at local level wherever possible. The data sources, and the sum total of GHG emissions, may therefore vary from the national GHG inventory. The calculation methodology mainly follows the principles applied in the national GHG inventory.

The Norwegian Environment Agency's GHG inventory is under constant development. The entire time series is recalculated each time the annual GHG inventory is published if new methodology or new input data has been applied. Historical emissions, target figures and projections, which are stated in absolute tonnes, must therefore be updated in the climate budget if the time series in the Norwegian Environment Agency's GHG inventory has been recalculated.

[Methodology memorandum for the Norwegian Environment Agency's GHG inventory broken down by municipality and county municipality \(in Norwegian\)](#)

In addition, the Norwegian Environment Agency has developed GHG inventories for forestry and other land use broken down by municipality and county municipality. These can be used as a knowledge base for reducing emissions and increasing capture of GHGs from land use and changes in land use.

[Link to GHG inventory for forestry and other land use \(in Norwegian\)](#)

GHG inventory for indirect emissions

If the climate budget covers measures for areas other than those covered by the Norwegian Environment Agency's GHG inventory broken down by geographical area, it is expedient to prepare a GHG inventory for these system boundaries. For example, this could involve looking at the climate footprint (direct and indirect emissions) for the municipal entity or for the

municipality's geographical area. The municipality must draw up such an inventory itself, as no GHG inventory for indirect emissions broken down by municipality or county municipality is currently prepared at national level.

Calculating indirect emissions is subject to greater uncertainty than direct emissions. Nevertheless, such calculations may be useful if the municipality wants to work actively on reducing the climate footprint of its activities or work to raise awareness among local residents. Having a picture of the breakdown of the climate footprint makes it easier to prioritise where measures should be implemented.

6. Draw up measures and calculate their effects

One important purpose of the climate budget is to show decision-makers to what extent the measures and instruments are helping to reduce GHG emissions.

Baseline

A baseline with projections of emissions in the period up to a target year makes it possible to calculate the future effect of measures in an implementation phase or budget period. A baseline comprises historical emissions and a rough estimate of how the GHG emissions might develop without the measures in the climate budget. In other words, the projection in a baseline is a scenario for how the emissions will develop in future unless further measures are implemented.

You do not need to prepare a baseline to prepare a climate budget. The advantage of a baseline is that it provides a picture of future emissions (if no new measures are taken) within the different sectors. The baseline visualises that emissions may increase in the future (if no new measures are taken), for example as a result of economic growth and/or population growth. A baseline thus visualises whether the need for emissions reductions will increase or decrease within the individual sectors in the future compared with today. This provides a basis for dimensioning the measures correctly. In the same way as an economic budget is based on estimated income and expenditure, future emissions reductions are based on estimates of future emissions. An emissions projection is also expected as part of municipal climate planning under the central government planning guidelines for climate and energy planning and climate change adaptation.

A baseline may comprise emissions projections based on the national climate policy implemented. This makes it easier to distinguish between the effect of national and local instruments. A baseline is not an exact science. Arguments can be made for different conditions and assumptions, and thus different ways of preparing such a baseline. The baseline can also visualise the effect of the national targets adopted. For example, it can include the national target that only zero-emissions light vehicles will be sold from 2025.

However, including political targets increases the uncertainty in the baseline, as the route from general political targets to instruments, action and results has not been decided.

To date, no national standards have been established for preparing baselines at local level. As well as the guidance in the sections below, you can see how other municipalities and county municipalities have drawn up baselines (in Norwegian):

- City of Oslo – [report on project to develop a baseline for the climate budget](#)
- Østfold county municipality – [project report 'What does the Paris Agreement mean for the Østfold region? \(the findings in the report refer to a baseline\)](#)
- Trondheim Municipality – [basis of calculation for climate budget 2021, including baseline](#)

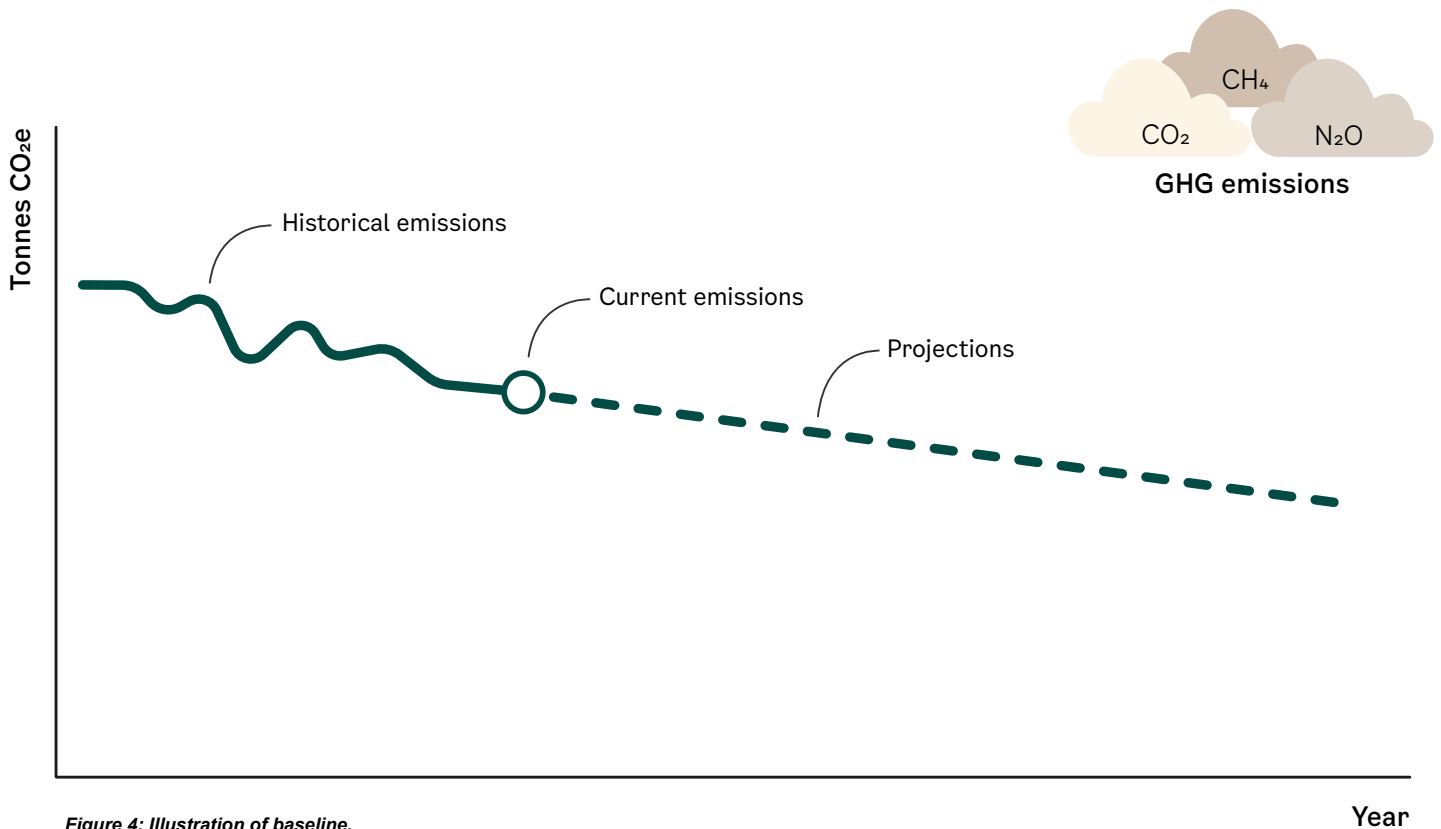


Figure 4: Illustration of baseline.

Drawing up a baseline

Emissions projections are prepared at international and national level, among other things to estimate likely emissions trends under different scenarios for economic and technological development. These calculations involve varying degrees of complexity but the principles are the same: emissions develop as a result of the trend in underlying driving forces, for example population size, economic development, technological development and/or energy use. These driving forces can be used to model and estimate future emissions. In principle, this kind of approach can be transferred to the municipal level, but in many cases it will be neither relevant nor necessary to use resources on complex projections of this nature. The principle of trying to identify the most important driving forces for future emissions is, nevertheless, important.

Start from historical emissions

A baseline comprises both historical emissions and an estimate of how the GHG emissions may develop if no new measures are implemented beyond those already started at the time the baseline is prepared. This means the starting point for a municipal emissions projection will often be the most recent year of emissions in the Norwegian Environment Agency's GHG inventory at municipal level. For some emissions sources, the historical development will provide a basis for entering estimates of future development. For example, if emissions from the wastewater system have stayed relatively constant or follow the population trend, this may be relevant to use as a basis for estimating future emissions. Aligning an assessment of historical trends with local knowledge will often give an indication of a likely emissions trajectory going forward.

Are there existing sources that can be used?

The emissions projections at national level may also be a starting point for developing projections at local level. Scaling these projections down to local level using e.g. population as a distribution key will not reflect the local industrial structure and should therefore be adapted to the local context. An example of a baseline produced at national level can be found in the [four-year Long-term Perspectives on the Norwegian Economy 2021](#). This is adjusted annually based on the macroeconomic calculations in the national budget – see [budget propositions from the Ministry of Climate and Environment \(in Norwegian\)](#). A technical calculating committee for climate was established in 2018. The committee is to [propose methodologies \(in Norwegian\)](#) for calculating the climate effect of the central government budget, including baselines and other types of projections. Klimakur 2030 (in Norwegian) also contains emissions projections based on implemented national policy and technological development.

For some emissions sources, existing data sources can be used to estimate future emissions at local level. For example, studies of expected traffic growth have been carried out in many municipalities. These can be used to adjust estimates of emissions from road transport. Data published at national level can also be used. For example, Statistics Norway (SSB) produces population forecasts at municipal level. Regional projections of growth in number of zero-emissions vehicles have been produced in connection with the National Transport Plan.

Focus on the most important emissions sources

In many municipalities, some emissions sectors or sources will be more relevant to include than others. To limit resource use, it may therefore be expedient to focus on a few specific sectors or sources when preparing an emissions projection. Emissions trends or national growth rates can be used as a starting point for the remaining sources or sectors. If industry is a source of emissions in the municipality, it may be worth asking local industrial actors if there are any production forecasts or similar that can be used to estimate the emissions level going forward. Correspondingly, it may be relevant for coastal municipalities to obtain an overview of maritime businesses' plans and forecasts for waterborne navigation.

[More information on emissions projections and a description of trends can be found on the Norwegian Environment Agency's website \(in Norwegian\)](#)

Evaluating and prioritising measures

A baseline is useful for evaluating and prioritising which new measures and instruments should be implemented to reduce GHG emissions. Historical trends, the current situation and likely future development should all be taken into consideration in prioritising measures.

Most municipalities set targets covering the entire geographical area of the municipality (see demarcations above). As a rule, the municipality's own activities contribute a small share of the overall GHG emissions at local level. In many cases, it will therefore be natural to visualise measures that are to be implemented by other public-sector actors and the business community. One example is measures within public transport. In this case, overall responsibility usually lies with the county municipality. For example, electrification of buses or ferries may be relevant for municipal climate budgets, as this results in GHG reductions that contribute to the municipal climate targets. Another example is planned large-scale measures by local industrial companies or other economic actors.

Presenting measures that will be implemented by actors other than the municipality will be informative for the elected representatives who have adopted the climate targets, as well as motivational for those who are to implement the measures. Measures of this kind can be included in the climate budget, and the municipality should then conduct a dialogue with these actors on description of the measures, calculation of effect, implementation plan and follow-up.

Calculating the effect of measures

A climate budget should show the expected emissions reduction from each individual measure or several measures combined. The latter is relevant if calculating the climate effect of each individual measure is challenging in a situation where several measures and instruments are aimed at the same emissions source or sector.

The starting point for calculating the effect of a measure is the level of emissions from the activity if the measure is not implemented (a 'zero alternative'). Changes in the activity as a result of the measure being implemented are also estimated, as a starting point for calculating the level of emissions when the measure is implemented. The effect of the measure is then the difference between the two emissions calculations.

The methodology for calculating the effects of measures can be either bottom-up or top-down. In this context, bottom-up means that the effect of the measure has been calculated as a change in activity (activity data) and emissions per unit of the activity (emission factor).

Change in emissions per year = \sum change in emissions (activity data * emission factor)

Bottom-up calculations require good data on the change in activity or emission factor that the measure will produce. Top-down calculations are often more general in that they are based on total emissions and assess by what percentage the measure can reduce the emissions. Calculations using bottom-up methodology are considered to provide more accurate estimates than top-down methodology.

An example of a bottom-up calculation can be found in Example 1 below. This uses activity data (fuel consumption) in combination with emission factors (GHG emissions per unit of fuel) to calculate the emissions reduction. For an example of a top-down calculation, look at emissions from the Other mobile combustion sector and make an assumption of the percentage of the emissions that comes from municipal building and construction projects. You can then estimate the effect of introducing requirements for fossil-free and/or zero-emissions construction sites in municipal projects going forward.

Estimating the emissions can seem a challenging exercise. Quantified measures in the climate budget are calculated based on best available knowledge and methodology. There will therefore be uncertainty regarding both the size of emissions reductions and the timing of implementation of the measures (phasing-in rate). In many cases, there will not be any definite figures, so you will have to make some assumptions. What is important is that you visualise and describe the conditions and assumptions underlying the calculations. The uncertainty associated with the calculations of each individual measure can be described and visualised in the climate budget, for example in a separate table.

Example 1: 80% of the municipality's fleet is to be zero-emissions vehicles by 2025

Remember that the activity at which the measure is aimed may increase. We can illustrate this using an example measure. The municipality has decided that 80% of the vehicles in its own fleet are to be zero-emissions vehicles by 2025. In 2020, all 100 municipal vehicles ran on fossil fuels.

Calculating the effect of the measure

The municipality maps the need to increase the number of municipal vehicles in the period up to 2025, arriving at a requirement of approximately 150 vehicles in 2025. 80% of this figure equates to 120 zero-emissions vehicles. 30 vehicles will still run on fossil fuels.

Effect of measure = (changes in activity as a result of the measure) x (emission factor for the activity)

Effect of measure = phasing out 120 diesel vehicles that drive 10,000 km per year * 183.4 g CO₂e/km

Effect of measure in 2025 = 220 tonnes CO₂e per year

Compared with the reference in 2025, the emissions will have been reduced by 80%. Compared with 2020, the emissions will have been reduced by 70%.

Example 2: Better facilities for pedestrians

The climate budget may also contain measures for which we are not able to quantify the effect. Providing better facilities for pedestrians may, for example, involve building and making visible more shortcuts. This may be an important measure in promoting emissions reductions in the municipality, but it may be difficult to comment on the emissions-reducing effect of the measure in isolation.

Non-quantifiable measures

Quantifying the emissions reductions will be difficult for some climate measures. Measures and instruments may have a facilitating function, without there being a reliable way to calculate the emissions-reducing effect of this directly. This applies, for example, to climate measures that concern changing public attitudes and measures that facilitate walking and cycling, and expanding charging infrastructure for electric vehicles. It is difficult to calculate the climate effect of measures of this kind, but they can still be presented in the climate budget.

It may be expedient to distinguish between quantifiable and non-quantifiable climate measures in the climate budget, for example by systematising the different climate measures in separate tables.

Measures to reduce indirect emissions

The climate budget can also be used as a governance tool for achieving targets within indirect emissions. Correspondingly, you may decide to include measures within other areas, for example targets involving reducing energy use, climate change mitigation and facilitating the circular economy.

There is currently no well-established framework for calculating the effect of measures intended to reduce indirect emissions within a geographical area. Measures that help to reduce indirect emissions can still be included, but without specifying the level of reductions they can achieve. Facilitating increased reuse can reduce indirect emissions if it leads to fewer people buying new goods.

Using Environmental Product Declarations to calculate the effect of measures

Third-party Environmental Product Declarations (EPD) and Life Cycle Assessments (LCA) can be used if you wish to calculate the effect of measures to reduce indirect emissions. For example, a threshold requirement can be included in the specification of requirements when procuring goods with a stated climate footprint. By comparing this with the climate footprint of standard goods, it is possible to estimate the effect of switching product. But these calculations are challenging, often requiring assistance from consultants. Neither are EPDs standard within all product categories, but are widely used in particular in the building and construction sector.

If calculating the effect of measures within indirect emissions, these must not be viewed in relation to measures targeting direct emissions for which effects have been calculated. There is a high level of uncertainty linked to the methodologies for calculating indirect emissions, as well as different system boundaries underlying the GHG inventories for direct and indirect emissions.

You can view example tables by clicking here (in Norwegian)

Table for measures with [quantifiable effect](#).

Table for [non-quantifiable measures](#) expected to achieve emissions reductions.

Table for activities that lay the foundations for [further emissions reductions](#).

Table for [measures to reduce indirect emissions](#).

The Norwegian Environment Agency's tools for calculating the effects of measures

The Norwegian Environment Agency has produced [tools for calculating the emissions effect of various climate measures](#) (in Norwegian) with the same demarcations as the GHG inventory at municipal level. These calculation templates can be used to calculate the effect of measures targeting direct emissions. The templates also contain information on how the measure will be captured in the GHG inventory at municipal level and how the effect of the measures can be verified. The information and the emission factors in the templates can also be used in preparing a projection, for example. [Klimakur 2030](#) (in Norwegian) – The Norwegian Environment Agency's report on measures and instruments to achieve national climate targets can also be used for inspiration.

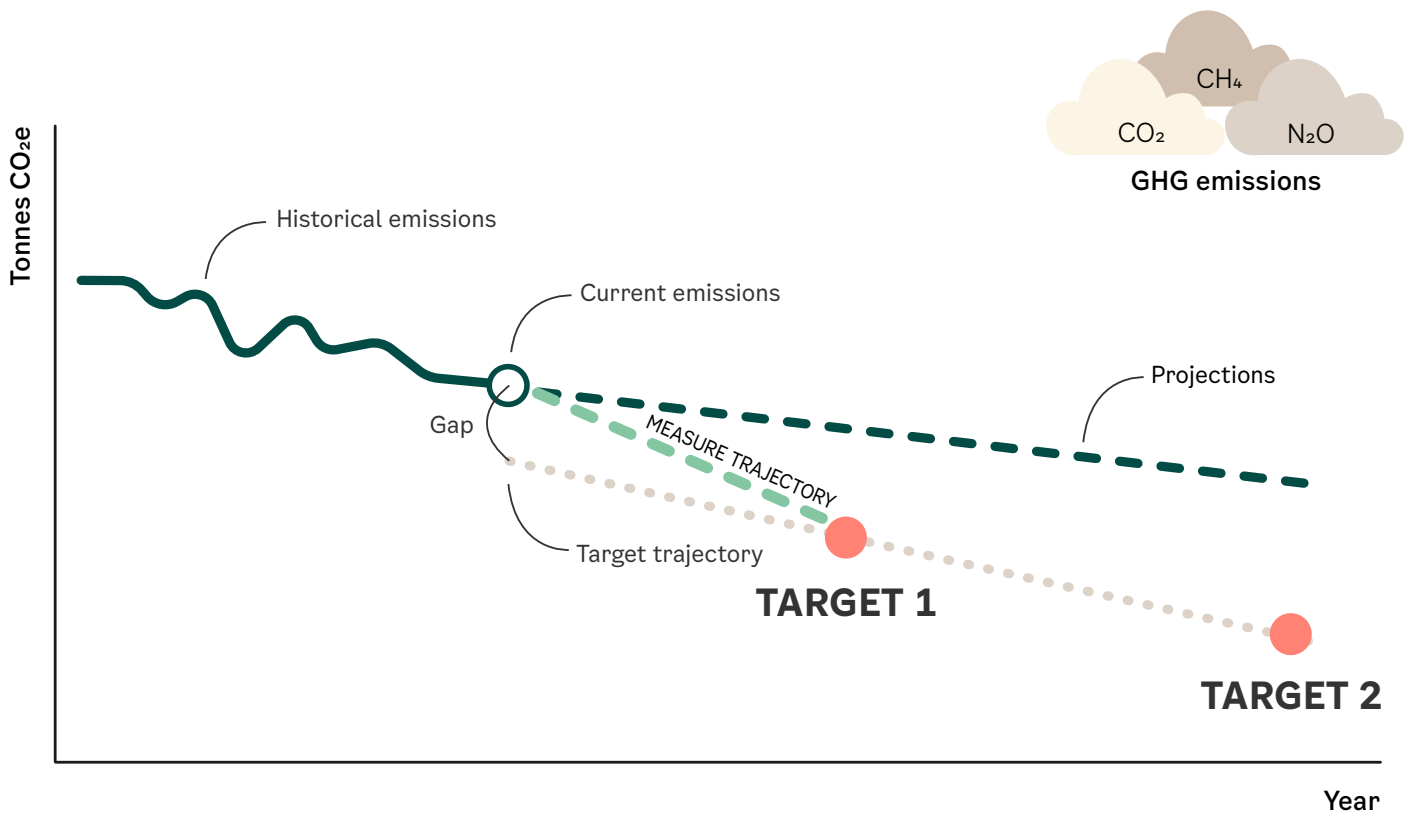


Figure 5: Illustration of measure trajectory in the period up to target 1

Analysing the effect of the measures

The difference between the climate budget's baseline and emissions limit or target trajectory (read more about emissions limits in Setting emissions targets) shows the need for measures. The climate budget also establishes which measures are to be implemented in the current economic plan period. One important purpose of the climate budget is therefore to present the aggregated emissions-reducing effect of all the measures in the economic plan period. The calculated emissions-reducing effect of the measures in the period up to the target year (e.g. 2030) can also be presented in the climate budget.

The aggregated effect of the measures in the climate budget can be used to prepare a measure trajectory. The projection describes a development where the measures in the climate budget are implemented and have the expected effect. In a given year, total emissions in the measure trajectory are equal to the level of emissions in the baseline minus the aggregated effect of the measures. This analysis can be presented in various ways, either as figures in tables and/or graphic representations.

Aggregating the effects of the measures can be thought of as adding up the estimated emissions reduction for each individual measure in the climate budget. When aggregating the effects of the measures in the climate budget, it is important to consider the risk of **double-counting**. Some measures will impact the same source of emissions, so there may be a risk of the effects being counted twice and thus **overestimated**. Double-counting of effects is a particular issue within road transport. Measures within road transport may simultaneously impact the activity level (mileage), technological change (e.g. transition from fossil-fuel to electric car) and the fuel used (e.g. transition to biofuel). For example, it is not possible to calculate the emissions effect of a future reduction in transport using an emission factor based on the current vehicle fleet. This would overestimate the effect of the measure. When calculating the emissions effect of a future reduction in transport, you have to take account of other measures that affect the emissions from road transport in addition to the effect already incorporated in the projections of road transport emissions.

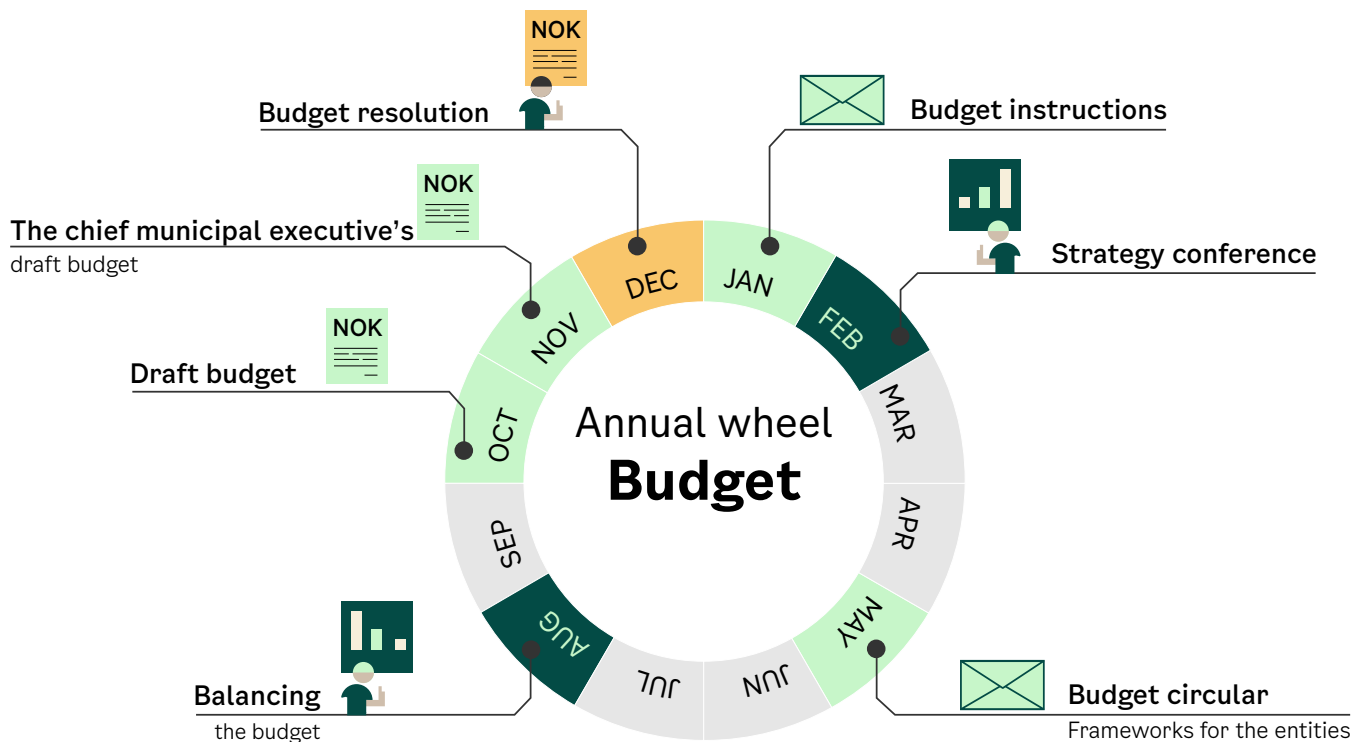


Figure 6: Illustration of how the work on the climate budget can be integrated in the budget cycle

7. Making the climate budget a governance tool

A climate budget can be a way for the municipality to demonstrate climate leadership. 'Climate leadership' refers to tools and ways of organising work that enable municipalities to take climate into consideration in all their decision-making processes.

The climate budget makes it possible to follow up the climate work within selected system boundaries, and continuously improve and adjust the focus of this work. A good climate budget process includes all the municipality's activities in the work to develop and follow up measures and instruments.

Roles and responsibilities in the climate budget work

The municipality's action and economic plan (A&EP) is its most important steering document. By integrating the climate budget in the A&EP, you ensure that the climate work is followed up through the budget process. This means that the climate budget is submitted as part of the A&EP and that the measures in the budget are reported on in connection with the ordinary reporting. Work on the climate budget thus follows the annual cycle for the municipality's A&EP process. Developing climate measures is a continuous process. Responsibility for this must be anchored at management level, and the process must be structured accordingly. Many municipalities find that analysing, calculating the effect of and anchoring climate measures involves a lot of work. The municipality has to have sufficient staff available for the climate budget work.

Ownership and division of responsibility

Responsibility for the climate budget should be anchored both at the highest administrative level and politically. The climate budget should be owned by the same body as the A&EP. For most municipalities, the chief municipal executive will be the owner of the climate budget. The chief municipal executive is responsible for the process of preparing a climate budget being included in the process of preparing the A&EP.

Responsibility for preparing the content of the climate budget should be clarified at an early stage. The climate budget should be prepared in close dialogue between the municipality's specialist adviser for the climate budget and the finance department. It is a good idea to establish a cross-disciplinary working group made up of climate/environmental advisers and financial advisers. In order to achieve ambitious climate targets, it is important that the entire municipality contributes to the work and that all the entities are responsible for proposing and implementing measures.

The climate budget process

The budget process varies from municipality to municipality. If the climate budget is to be integrated in the A&EP, it is worth mapping which milestones for the climate budget work need to be integrated in the A&EP annual cycle. You should also map which associated steering documents need to be updated with a description of how to prepare a climate budget.

Notifying new measures

The steering documents already used to prepare the A&EP can be used to mobilise the various entities in the municipality to propose climate measures in their areas. Many municipalities send out a letter that describes the A&EP process and sets out provisions for how the various entities should formulate their draft budgets. This document is often called the budget instructions or circular. The budget instructions can also include provisions – both general and specific – on the climate budget, so as to ensure that the entire municipality notifies its proposals for measures within its operational areas in good time.

An example of a general provision would be that all the entities are responsible for evaluating and submitting measures to limit climate change. This may be both measures that can be financed within existing budget frameworks and measures that require new operating assets or investment funds – either because they are completely new measures or because the measures entail additional costs.

An example of a specific provision would be that any light vehicles purchased for the entity's fleet must be zero-emissions vehicles, or that all building and construction projects under the auspices of the municipality must set minimum requirements regarding fossil-free operation of the construction site. If specific provisions of this kind are set out in the steering documents, this also visualises that the entities must take into account the need for resources to implement the measures.

It may be a good idea to hold workshops to brainstorm measures at which participants can evaluate which measures may be relevant and current.

It may be expedient to include in the budget instructions a description of how the entities should draw up climate measures. For example, the description may include:

- definition of what a climate measure is, in line with established system boundaries for the climate budget
- description of which sectors or sources give rise to the emissions in the municipality and which sectors or sources present the biggest challenges
- examples of which areas the municipality has authority over and within which it can thus formulate measures
- explanation of how to evaluate and prioritise different measures

[Click here for examples of climate provisions in budget instructions:](#)

Examples of climate provisions in [Trondheim Municipality's budget instructions](#).

Examples of climate provisions in [City of Oslo's budget instructions](#) with guidance and templates for climate assessment of additional proposals (in English)

Financing

Most measures require financing. In some cases, measures can be prioritised for funding from existing budget frameworks, while in other cases new allocations may be required. It is also possible to apply for funding through subsidy schemes such as the Klimasats initiative or the schemes run by Enova. An overview of financing of climate measures proposed for an economic plan period will normally only include the measures which the municipality manages itself. The climate budget may contain a number of measures for which actors other than the municipality are responsible, and it will not be as simple to present the financing for these measures, nor necessary. For this reason, we will only discuss different options for financing municipal measures in the climate budget in the following.

Financing climate measures

Financing climate measures can be described in various ways. A climate measure may involve carrying out a project in a more climate-friendly way than would otherwise have been the case, for example a school being built using zero-emissions construction machinery, or stipulating that school milk is to be delivered by zero-emissions vehicles. Doing something in a more climate-friendly way may cost more than it would otherwise have done – this is known as the measure's **additional cost**. The additional cost requires financing.

Determining how high a proportion of the costs contribute to reducing GHG emissions can be challenging. Here are some ways of doing it:

- A. Describe and itemise all the costs associated with the climate measure directly in the climate budget.
The advantages of this option are that all spending is rendered visible, providing an overview of total resource use for the municipality's climate work. The disadvantage is that it is challenging to map all items and measures that contribute to GHG reductions. Items within other areas in the budget could contribute to GHG reductions without being categorised as climate measures. This way of describing how climate measures are financed will therefore often only apply to the costs linked to the climate measures presented in the climate budget.
- B. Describe and itemise the additional costs.
The advantages of this option are that it provides a combined overview of the additional financing required for climate measures outside the existing budget framework. The disadvantage is that quantifying what is considered an additional cost of a climate measure can be difficult and involve a lot of work. Moreover, in some cases the additional costs in the investment phase will be recouped in the operational phase. Purchasing zero-emissions technology is a good example of this, with the investment cost often somewhat higher than fossil-fuel technology but the operating costs often significantly lower.
- C. Describe and itemise additional financing for climate investments.
The advantage of this option is that it renders visible what additional financing is put in place in relation to climate investments. The disadvantage is that it will be a question of defining what is classified as a climate investment, whether the entire investment is to be considered a climate investment or whether only elements of the investment are being highlighted. Municipalities carry out a number of other activities and investments that include energy and/or climate measures. Examples include requirements for fossil-free building sites or a target to reduce the climate footprint of all investment projects by a certain percentage. Another example is weighting climate in the awarding criteria for purchases. The costs associated with this are not particularly easy to determine, but it is entirely possible. For building projects, for example, it will be possible to separate out the 'green investment elements'. In any case, criteria should be drawn up for what is to be defined as a climate investment forming the basis for the categorisation. This option can give a skewed picture of the actual costs associated with measures in the climate budget, as it is not possible to show the whole picture.

Different ways of presenting financing of climate budgets

Financing of the climate budget can be presented in various ways. One option is to describe the costs associated with the climate measures in a separate column in the tables for measures in the climate budget. In some cases, this will result in an altogether too detailed table. Another option is to refer to the various budget items for each climate measure so that the measure can easily be found, e.g. in the responsible entity's operating or investment budget. It is also possible to prepare a summary table showing climate measures without economic consequences and measures financed using municipal or external funds. This method provides a quick overview of the economic consequences of the measures in the climate budget.

Input at the right time

The financing requirement must be assessed and taken into consideration in the A&EP process at the right time. Clarify at an early stage how climate measures are to be financed. The main rule should be that the entities finance the climate measures by reallocating funds within their own budget frameworks. If this is not possible, the additional financing requirement must be notified at the right time in the A&EP process. The municipality can assess whether to establish a separate fund for climate measures and whether the fund can be used for both operating expenses and investments.

Climate fund

If building projects are financed using green loans, the saving achieved can be allocated to a fund to use for climate measures in the future. In the case of building projects, it is important to be involved at an early stage in the process to bring influence to bear. This often requires enquiries at an early stage (the concept phase), possibly using funds that have been set aside. To safeguard green building projects, the climate measures have to be evaluated at an early stage, and these measures must be included in the project before the building project is incorporated in the A&EP. When analysing building projects, it is important to visualise the operational cost savings the climate measures will achieve over the building's life time.

It can also be assessed whether a share of any parking or studded tyre revenue the municipality may receive should be allocated to a dedicated fund, which could be used to finance climate measures.

Evaluating notified measures and preparing the climate budget

All proposals for measures that have been notified via the budget process are evaluated and prioritised, including by means of a cost/benefit analysis. This phase also involves calculating the effect of the quantifiable measures. The person(s) responsible for preparing the climate budget collate(s) the measures and produce(s) a draft climate budget. The draft may include:

- A presentation of **the municipality's climate targets**.
- **Historical emissions.** The Norwegian Environment Agency's GHG inventory for the municipality.
- **A situation description.** Which measures have already been started, and estimated emissions reductions for existing climate measures.
- **A baseline.** How would the emissions develop if no new measures were introduced?
- **Tables of measures.** Tables showing existing and proposed climate measures and estimated emissions-reducing effect.
- **A measure trajectory.** Estimated percentage annual emissions reductions for the budget year and the entire action & economic plan period.
- **An uncertainty analysis.** A description of uncertainty in the phasing-in rate and double-counting of effect of measures.
- **An analysis of the climate budget.** An evaluation of the calculated effect of measures in the climate budget against the municipality's targets and explanation of any deviations.

The entire climate budget is included in the draft A&EP sent by the chief municipal executive for political discussion.

Political discussion of the climate budget

Political discussion of the climate budget varies between municipalities and from year to year. Some measures may have been discussed independently, while others are first presented to the politicians when the climate budget is submitted.

In some municipalities, the municipal council does not adopt each individual measure in the climate budget but endorses a table summarising the expected effects of the measures. In others, the climate budget is adopted by the municipal council each year as part of the action & economic plan. The municipal council can adjust the climate budget as part of the discussion process by removing or adding individual measures.

Developing a new climate budget each year would require a lot of work. Via the annual budget process, the climate budget is updated with the necessary revisions, such as situation description, tables of measures and analysis of measures.

8. Reporting and follow-up

One of the climate budget's greatest strengths is that responsibility for implementing climate measures is clearly defined.

Reporting on climate measures

The work on preparing the measures has already established what is to be achieved and by when. What information do we need to comment on what has actually been achieved at the reporting date? This is the information a result indicator can show.

There should be a clear connection between what is to be done and how it is to be measured, and indicators should be formulated to provide sufficient information on what has been achieved in a given period. There should be a link between the result indicator and how the climate effect of the measure has been calculated. In many cases it is expedient to find quantitative indicators, as this also makes it simple to set concrete requirements for results (target figures). Quantitative indicators do not measure tonnes CO₂e, but show the measure's rate of development and to what degree the measure has been implemented. There will also be cases where qualitative assessments are more suitable for commenting on the implementation of the measure. The advantage of a quantitative indicator is that it can be easier to understand and report on. Whatever the type of indicator, you should strive for simplicity. Remember, too, that using the same result indicator over time makes it easier to assess progress and development.

It is a good idea to prepare the result indicators in connection with calculating the effect of the measures. We further recommend presenting the result indicators in the climate budget, so that the methodology for reporting on the climate measures in the budget's reporting rounds does not come as a surprise.

Those responsible for implementing the measures should be involved in formulating the result indicator, as they will often be the people most familiar with the activity in question. This also ensures that the indicator can actually be reported on. In addition, all dialogue on measures and result indicators can contribute to increased ownership of the measure, which in turn increases the likelihood of successful implementation.

Execute the reporting

Most municipalities have several reporting rounds in the course of the year. If reporting is required at the end of Q1, it is natural that the target for the year will not yet have been achieved. This means there will often be a deviation between the target figure and what the result indicator shows as at 31 March. However, this will still provide an indication of how things stand. Alternatively, an estimate of where the municipality will be at the end of the year can be requested as part of the reporting, so as to provide a direct comparison with the target figure. This will of course increase the reporting burden and should therefore be weighed up against how important the information is for governance purposes.

Reporting on result indicators is useful in the work to follow up the climate budget and development of the climate work. Reporting provides information on whether the measures are being implemented as planned and whether there are other circumstances likely to influence the effect of the measure. If there are signs that the measures are not being implemented as planned, consideration should be given to whether and possibly how to follow up on this. The greater the effect the measure is assessed to have, the more important the measure is for reducing emissions in the municipality and succeeding in the climate work.



Figure 6: Climate budgeting is a continuous process

Climate budgeting – a continuous process

The Norwegian Environment Agency publishes an updated inventory of Norwegian municipalities' GHG emissions each year.

The GHG inventory is published as soon as the input data is available, the model calculations have been carried out and any methodological improvements incorporated, up to 12-18 months after the most recent year in the time series. The Norwegian Environment Agency's GHG inventory will give the municipality an overview of the extent of the GHG emissions in retrospect, and can serve as a general follow-up of the climate budget.

Indicators for assessing the emissions trend

Many indicators can be developed and assessments made as to how the GHG emissions will develop in the period up to the next issue of the Norwegian Environment Agency's GHG inventory. These indicators are not measure-specific but are designed to measure factors that influence the emissions trend in the municipality. The indicators can therefore serve as a complement to the Norwegian Environment Agency's GHG inventory and provide information on how measures and instruments in the climate budget impact the GHG emissions.

Examples of indicators for monitoring the emissions trend:

- Sales of new passenger cars, broken down by fuel technology
- Sales of construction diesel, litres
- Waste incineration, tonnes of incinerated waste

Evaluation and corrections for next year's climate budget

The indicators, both result indicators linked to individual measures and the indicators developed to monitor the emissions trend, provide information on whether the measures are being implemented as planned, as well as information on the emissions trend. Evaluation of the climate budget, by means of reporting on indicators, is useful in developing the next year's climate budget. In which areas is more stringent action needed? Within which areas in the municipality and the business community are new climate measures needed? This information provides important knowledge for preparing the next year's climate budget. The climate budget can thus be seen as a continuous process.

9. Glossary

TERM (NO)	TERM (EN)	EXPLANATION
Tiltak	Measure	'Measure' refers to physical actions that reduce emissions of greenhouse gases (GHG) and that are the result of a decision taken by a social actor: a company, household or public-sector entity (Klimakur 2030, 2020).
Virkemiddel	Instrument	In the context of climate budgets, 'instruments' are tools available to central government and municipal authorities, e.g. charges, subsidies, direct regulation and information (Klimakur 2030, 2020).
Direkte utslipp	Direct emissions	'Direct emissions' are those that physically occur within a geographical area.
Indirekte utslipp	Indirect emissions	'Indirect emissions' cover emissions associated with goods and services that are imported into the geographical area.
Scope 1	Scope 1	Emissions of GHGs from sources within the geographical area (direct emissions).
Scope 2	Scope 2	Emissions of GHGs that arise elsewhere as a consequence of consumption of grid-based electricity, heating and cooling within the geographical area.
Scope 3	Scope 3	All other GHG emissions that arise outside the geographical area as a consequence of consumption of goods and services within the geographical area.
Klimafotavtrykk	Climate footprint	'Climate footprint' is a calculation of the total climate impact – both direct and indirect emissions – e.g. for a country, a person or a municipality.
Referanseår	Reference year	Year chosen from which to calculate the emissions reduction target.
Målår	Target year	Year chosen for when the target is to be achieved.
Utslippsramme	Emissions limit	Defined for emissions reductions for a given year. Emissions limits can be drawn up for e.g. the budget year, economic plan period and the years up to the target year.
Framskrivninger av utslipp	Projection of emissions	A 'projection of emissions' is a forecast of how the emissions will develop unless further climate measures are implemented. Driving forces such as population growth, technological development and economic cycles, as well as climate policy implemented at national, regional and municipal level, can be used to prepare the projections in a baseline.
Referansebane	Baseline	A 'baseline' comprises both a time series for historical GHG emissions and a projection of emissions attributable to factors outside the climate budget. Driving forces such as population growth, technological development and economic cycles, as well as climate policy implemented at national, regional and municipal level, can be used to prepare the projections in a baseline.
Environmental Product Declaration (EPD)	Environmental Product Declaration (EPD)	An 'Environmental Product Declaration' (EPD) is a concise document summarising the environmental profile of a component, a finished product or a service in a standardised and objective way. The abbreviation EPD is used in both Norwegian and international contexts.
LCA	LCA	An LCA (Life Cycle Assessment) is a systematic mapping and assessment of the environmental and resource impacts a product/product system has throughout its life cycle.
Kommunedirektør	Chief municipal executive	Common designation for chief administrative officer, city finance officer, county executive (in a county) or other bodies that submit a matter for political discussion.
Resultatindikator	Result indicator	Indicator that provides information on what has been achieved over a given period.
Måltall	Target figure	Quantified requirements for results of measures.

The manual is developed by the project
Manual for climate budgets as a governance tool.



Oslo

