

Impact of the CO₂ Performance Ladder on municipalities



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Summary

CE Delft has been commissioned by SKAO and VNG to study the CO₂ Performance Ladder for municipalities. The central question of this report is:

What is the quantitative and qualitative impact of the implementation of the CO₂ Performance Ladder on municipalities?

In order to answer this question, we conducted a desk study of data from eighteen municipalities with CO₂ Performance Ladder certification as at December 2021. Of these, we interviewed six municipalities.

The study shows that the most important aspects of the impact of the CO₂ Performance Ladder on municipalities are:

- By obtaining CO₂ Performance Ladder certification, municipalities set and meet targets for CO₂ reduction. All municipalities are on track to meet their targets.
- Certification gives municipalities insight into their CO₂ reduction. As a result, they are better able to discuss target ranges and identify measures.
- The Plan-Do-Check-Act cycle of the CO₂ Performance Ladder firmly embeds CO₂ reduction targets and monitoring into the municipal organisation, ensuring that CO₂ reduction remains a long term focus.

It is very likely that the Ladder will have a positive impact on CO₂ reduction by municipalities. We are unable to determine from the available data to what extent the Ladder contributes to additional CO₂ reduction.

Participation in the CO₂ Performance Ladder does require considerable effort from the municipalities. Some municipalities find complying with the Ladder complex or the administrative burden high. In general, however, the municipalities feel that the CO₂ Performance Ladder has added value for the organisation. All the municipalities we spoke to therefore want to continue with the Ladder, and half of the interviewed municipalities have aspirations to progress to a higher level on the CO₂ Performance Ladder.

CO₂ reduction

Between 2018 and 2020, the municipalities studied reduced CO₂ emissions by an average of 23.9% (12.8% per year). Most of the reduction is realised through direct emissions (Scope 1). All municipalities are on track to meet the reduction targets. Many municipalities realised a strong decrease in CO₂ emissions in the year of certification or the year after.

Other sustainability effects

In addition to CO₂ reduction within the municipal organisation, we observed an impact on awareness and sustainable procurement and purchasing. Several municipalities organise awareness-raising activities that go beyond that required by the Ladder. For instance, these municipalities try to encourage employees to increase sustainability in their own households.



The effectiveness of having a CO₂ Performance Ladder certificate on sustainable procurement and purchasing is diverse. The CO₂ Performance Ladder does not impose any requirements in this respect up to Level 3. Nevertheless, this is already being addressed by some municipalities. Four of the six municipalities interviewed indicated that it is already common practice for them to ask about the CO₂ Performance Ladder during the tendering process for civil engineering contracts. The fact that the municipality itself is also certified is seen by other municipalities as a prerequisite for being able to ask for certification on the CO₂ Performance Ladder in tenders. In other types of tendering processes, sustainable procurement does not take place or only to a limited extent. Municipalities often lack the knowledge and resources to apply sustainable procurement in a structured manner.

Effect on processes within the municipalities

The interviews show that over time, the Plan-Do-Check-Act cycle becomes increasingly integrated, ensuring that CO₂ reduction targets and monitoring are firmly embedded in the organisation. By monitoring CO₂ emissions for the CO₂ Performance Ladder, municipalities gain more insight into where the most CO₂ emissions can be saved, which departments are performing well, and which departments still have room for improvement. As a result, they are better able to have the internal discussion and identify measures. Interviewees from the municipalities also indicated that the CO₂ Performance Ladder contributes to drawing the attention of other colleagues to the theme of sustainability and involves the entire organisation.

Costs and effort involved in certification

The costs involved for the Ladder consist of the annual contribution to SKAO, certification costs and implementation costs. The municipalities indicate that most of the certification costs are incurred in the first year of certification, or when the municipality wants to progress to a higher level of certification. The interviews show that an employee at the municipality spends about four hours a week on the CO₂ Performance Ladder.

It is striking that almost all municipalities engage an external consultant for the Ladder. They do this in a variety of ways. Some municipalities perform many tasks themselves because they have the knowledge or would like to build up this knowledge, or in order to save costs. Municipalities that outsource monitoring and/or reporting are generally positive about this and find it cost-effective.

Recommendation

We recommend repeating the study once several municipalities have completed a full period from reference year to target year. We also recommend working with a control group in a follow-up study. This way, more insight can be gained into the additional impact of the Ladder.

We also advise SKAO to make information and procedures simpler for municipalities, without reducing the substantive requirements, and to enter into discussions with municipalities about the objections concerning Guarantees of Origin (GoOs) and to adopt a position on this.

1 Introduction

The CO₂ Performance Ladder is both a CO₂ management system to assist companies and governments to reduce CO₂ and a procurement tool. In this study, we look at the CO₂ management system. In 2016, the first municipalities were certified on the CO₂ Performance Ladder. By becoming certified, municipalities commit to monitoring municipal CO₂ emissions and to set targets for the reduction of CO₂ emissions. An increasing number of municipalities currently have a CO₂ Performance Ladder certificate. At the start of our study in January 2022, eighteen municipalities were certified. By March 2022, twenty-four municipalities were certified and quite a few municipalities are in the process of becoming certified.

This report is based on our study into the impact and application of the CO₂ Performance Ladder on municipalities, and is commissioned by the Foundation for Climate Friendly Procurement and Business (Stichting Klimaatvriendelijk Aanbesteden en Ondernemen, SKAO) and the Association of Netherlands Municipalities (Vereniging van Nederlandse Gemeenten, VNG).

1.1 Targets

SKAO and VNG would like to know what the effects are of the implementation of the CO₂ Performance Ladder in the municipal organisation. The purpose of this study is to gain a better understanding of the impact of the CO₂ Performance Ladder. We look at both quantitative results (such as reduction of the CO₂ footprint, setting concrete reduction targets, etc.) and qualitative results (such as effect on the organisation, awareness, etc.).

Research question

The main question we answer in this report is as follows:

What is the quantitative and qualitative impact of the implementation of the CO₂ Performance Ladder on municipalities?

The municipalities that were certified prior to January 2022 can provide a great deal of insight when answering this question. They have all gone through a process to become and remain certified. During this process, a lot of data was collected regarding CO₂ emissions. In addition, each municipality has gained experience of what it means for the organisation to be certified.

In order to answer the main question, we will address the following sub-questions:

1. How much CO₂ reduction has been realised?
2. What other sustainability impacts have been realised?
3. What is the effect on the processes of the municipalities?
4. What costs and efforts have been made to achieve CO₂ Performance Ladder certification?



1.2 Overview

In **Chapter 2** we describe the methodology of the study. In **Chapter 3** we describe the characteristics of the group of certified municipalities that we studied. The impact of the CO₂ Performance Ladder in terms of CO₂ reduction, sustainable procurement and tendering and other sustainability effects is shown in **Chapter 4**. In **Chapter 5**, we take a closer look at how the process at municipalities has changed as a result of the Plan-Do-Check-Act cycle of the CO₂ Performance Ladder. **Chapter 6** provides insight into the costs incurred and efforts undertaken by municipalities for certification. The conclusions, discussion and recommendations of the study are set out in **Chapter 7**.



2 Methodology

The study broadly consists of two parts: a desk study in which we analysed the information reported by municipalities for the CO₂ Performance Ladder and six interviews with certified municipalities. In this chapter, we will elaborate on the methodology.

2.1 Desk study of reported information

CE Delft sent out an information request to the eighteen municipalities listed as certificate holders on the CO₂ Performance Ladder website in December 2021. Thirteen municipalities have, at our request, shared the information they have collected and submitted for the final audit for the CO₂ Performance Ladder. We used data that is publicly available from the municipalities' websites with regard to the municipalities that did not share any information. We specifically looked at:

- CO₂ emissions and realised CO₂ reduction;
- measures taken;
- other sustainability impact;
- any information on sustainable procurement.

We have reported the data of municipalities anonymously. We assign municipalities a label (1-18), where Municipality 1 has the highest emissions in its reference year and Municipality 18 the lowest.

Three types of CO₂ emissions

CO₂ emissions are classified into three scopes based on the Greenhouse Gas Protocol (Greenhouse gas protocol, 2022) (see Figure 1).

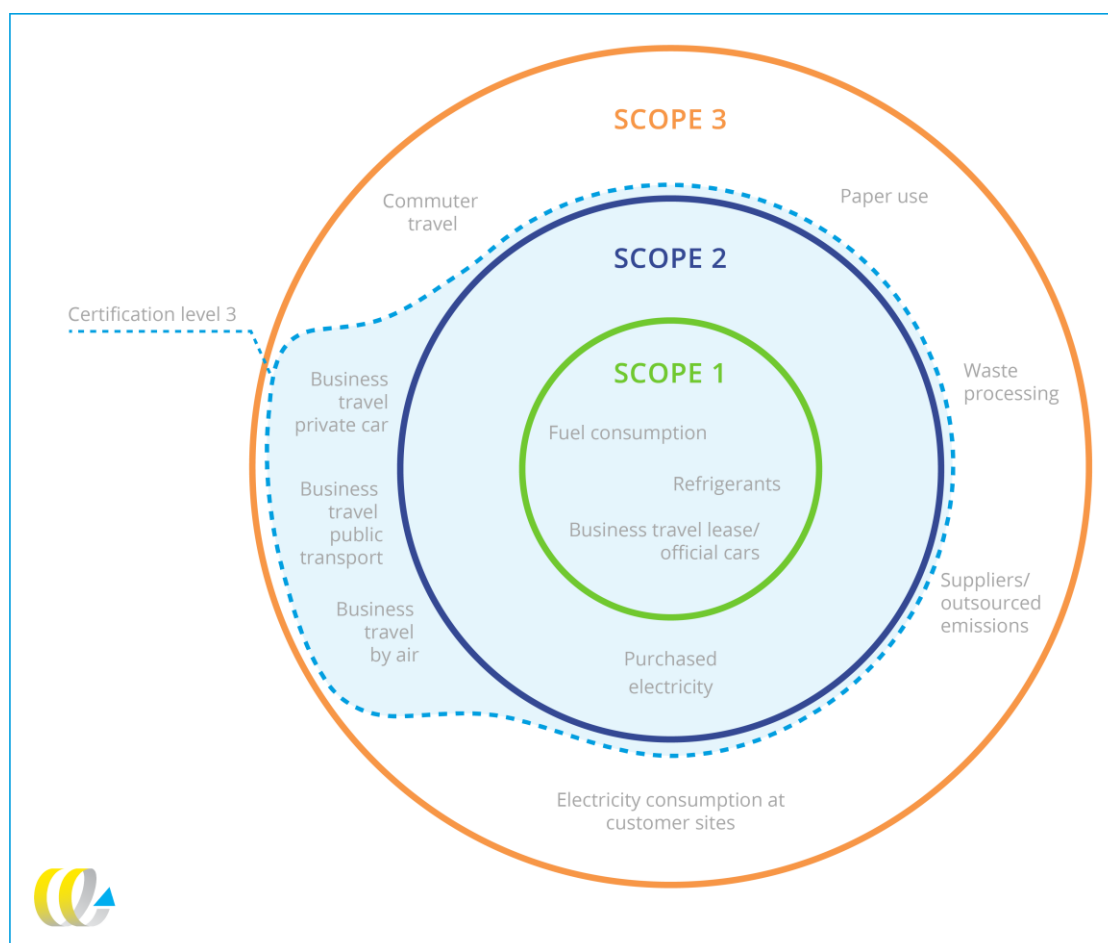
Scope 1 emissions are direct emissions of the municipal organisation, such as gas consumption in a building or petrol consumption by cars.

Indirect emissions, such as emissions related to electricity consumption, fall under **Scope 2 emissions**. Electricity is used within the municipal boundaries, but its production, and therefore the emission of greenhouse gases, usually takes place at a power plant outside the municipality. Emissions from heat supply via a heat grid are also included in Scope 2.

Scope 3 emissions are indirect emissions and are also called chain emissions. These may include emissions that occur during the production and transport of consumer goods or food. These goods are consumed within the municipality, but are often produced elsewhere.

The CO₂ Performance Ladder focuses first on Scope 1 and Scope 2 emissions and emissions from business travel. From certification Level 4, the rest of the Scope 3 emissions also play a role in the CO₂ Performance Ladder.

Figure 1 - Scope 1, Scope 2 and Scope 3 emissions. Gas consumption for heating is included under fuel consumption (Scope 1)



2.2 Interviews

Based on the information from the desk study, we determined in consultation with SKAO which municipalities we should approach to answer the research questions. We have also taken into account the municipalities from which we expect to be able to collect the most information.

We interviewed six municipalities. These municipalities are a mix of large, medium and small in terms of CO₂ emissions.

Most municipalities have Level 3 certification. This also applies to the municipalities we approached. In addition, we interviewed one of the two municipalities with Level 4 certification.

All municipalities engage a consulting firm. The municipalities differ with regard to which part of the process they engage a consultant for. We will discuss this in more detail in Section 6.1. One of the municipalities has completely outsourced the implementation of the CO₂ Performance Ladder to an external consulting firm. We interviewed the contact person of the consulting firm for this municipality.

The interviews covered at least the following topics:

- the targets and how they are formulated;
- the realised CO₂ reduction;
- the measures;
- other sustainability impacts of certification;
- costs and effort involved in certification;
- the level of certification.

2.3 Interpretation of the results

In order to identify the sustainability impact of certification, we can quantitatively compare the CO₂ emissions and other sustainability indicators at the start of certification with the current situation in a municipality. This clearly shows the progress made since certification. However, based on this, we cannot say with certainty what part of the CO₂ reduction is attributable to the use of the CO₂ Performance Ladder. Municipalities applying for certification are probably committed to sustainability and would probably have done so to some extent without using the CO₂ Performance Ladder. However, because we conduct six interviews with the municipalities, we can make a qualitative estimate of the extent to which the Ladder has helped municipalities.

3 Features of certified municipalities

We focus in this study on municipalities that are CO₂ Performance Ladder certified. Table 1 provides an overview of the eighteen municipalities that were certified by December 2021 and that we included in the study. We outline some important features of each municipality and explain how we obtained the documentation.

Table 1 - Response regarding reporting information 1 February 2022

Municipality	Size of organisation in terms of CO ₂ emissions ¹ (SKAO, 2022)	Ladder level (SKAO, 2022)	Date of certification (SKAO, 2022)	Number of inhabitants (CBS, 2021)	Method of obtaining documentation
Alkmaar	Medium-sized	3	08-12-2021	109,896	Received
Altena	Medium-sized	3	17-12-2021	56,352	Received
Amersfoort	Medium-sized	3	27-06-2021	157,462	Received
Arnhem	Large	4	21-12-2021	162,424	Received
Barneveld	Large	3	29-06-2021	59,992	Received
Berkelland	Small	3	17-01-2020	43,846	Received
Bronckhorst	Small	3	04-10-2019	36,087	Received
Den Helder	Medium-sized	3	03-12-2021	51,778	Received
Ede	Large	3	09-12-2021	56,582	Received
Ermelo	Small	3	03-01-2020	118,530	Partly found on website
Fryske Marren	Small	3	20-09-2021	27,016	Received
Haarlem	Medium-sized	3	12-03-2021	162,543	Received
Harderwijk	Medium-sized	3	27-05-2019	48,726	Received
Hilversum	Medium-sized	3	26-03-2021	91,235	Received
Renkum	Small	4	17-02-2022	31,417	Found on website
Soest	Small	3	26-04-2021	46,906	Partly found on website
Veenendaal	Medium-sized	3	30-03-2021	66,912	Partly found on website
Zaanstad	Large	3	26-04-2021	156,901	Partly found on website

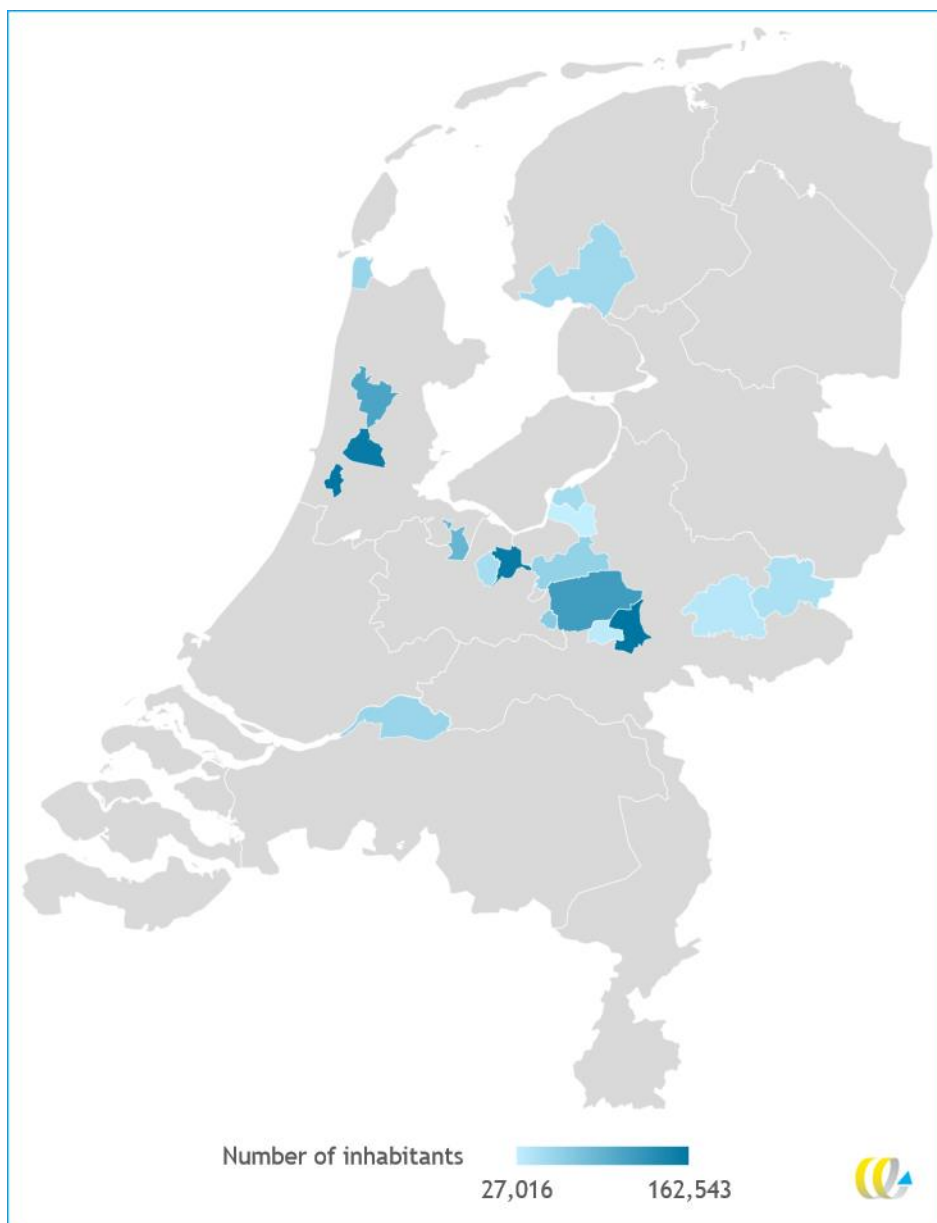
Almost all municipalities are certified at Level 3 of the CO₂ Performance Ladder. This means that they have insight into the CO₂ emissions of their own organisation and projects, and take measures to reduce these emissions. Two municipalities have Level 4 certification. Indirect emissions are also included at this level (Scope 3, see Figure 1).

Figure 2 shows the analysed municipalities and their population on the map. The municipalities currently using the CO₂ Performance Ladder are mostly located in Gelderland, Utrecht and North Holland. The interviews showed that municipalities regularly exchange experience with nearby municipalities that also use the Ladder.

¹ Municipalities are classified on the CO₂ Performance Ladder when they are certified, based on the initial CO₂ emissions in the organisation and not on the number of inhabitants. For the sake of completeness, we have included the number of inhabitants in Table 1.



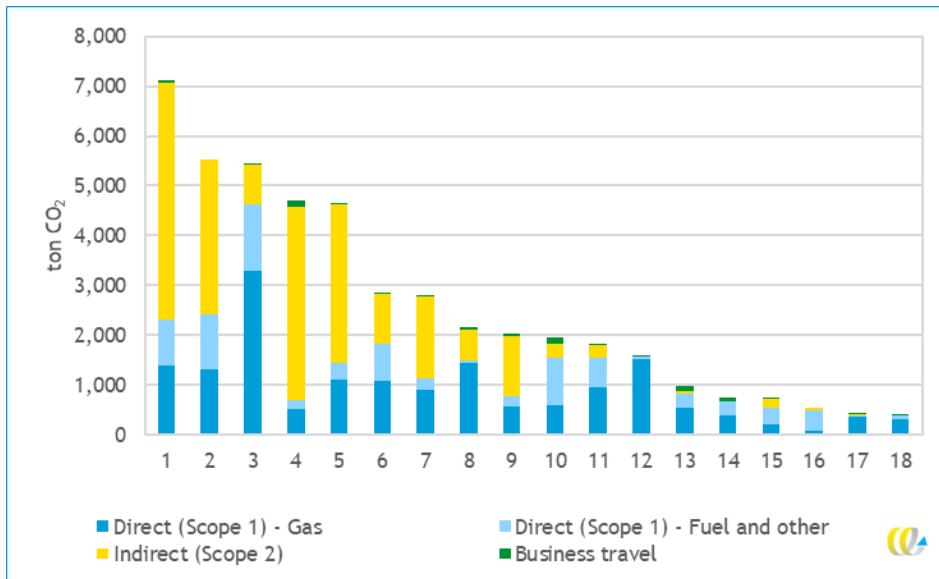
Figure 2 - Location of municipalities analysed



3.1 CO₂ footprint

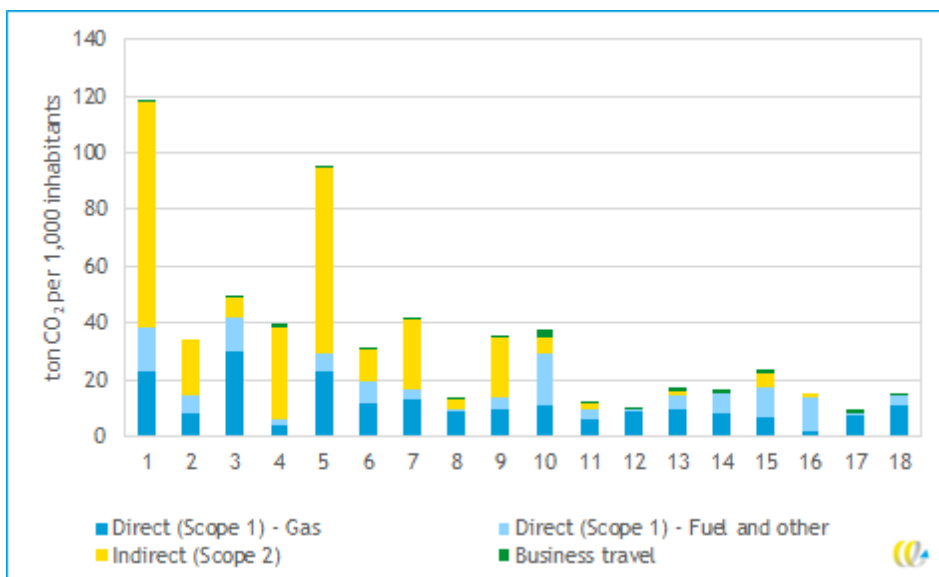
In Figure 3 shows the level and composition of Scope 1 and Scope 2 emissions of municipalities. We have divided the emissions into four categories based on the energy flows gas, fuel, electricity and fuel for business transport. We show the emissions from the reference year chosen by the municipalities. The figure indicates that the composition of emissions varies greatly from one municipality to another. Municipalities with higher emissions report this to a large extent in indirect Scope 2 emissions (mainly electricity consumption), while medium-sized and small municipalities report lower emissions.

Figure 3 - Reported CO₂ footprint of municipalities in the reference year



In Figure 4 we show the same emissions per 1,000 inhabitants. This shows that a number of municipalities with a large absolute footprint also have a relatively large footprint per inhabitant. In this respect, the organisational boundary plays a particularly important role. The organisational boundary indicates which activities and buildings fall within the organisational boundaries of the municipalities. Everything within the organisational boundary is included in the CO₂ footprint of the municipality. Municipalities with a large footprint often have a large organisational boundary because they include, for example, waste services and social workshops within the organisational boundary, while other municipalities do not. Municipalities with many inhabitants have these activities within their organisational boundary more often than municipalities with few inhabitants.

Figure 4 - Reported CO₂ footprint per 1,000 inhabitants of municipalities in the reference year



We aggregated the municipal emission data in Figure 5 by the three size categories (Table 2) in terms of CO₂ emissions. Small municipalities emitted on average around 800 tonnes of CO₂ in their reference year, medium-sized municipalities 2,800 tonnes and large municipalities 4,800 tonnes. The size of the organisation is determined on the basis of its emissions at the time of certification. The footprint of a number of municipalities changed after certification to such an extent that the emissions are now lower than those of the organisational size in which they are classified².

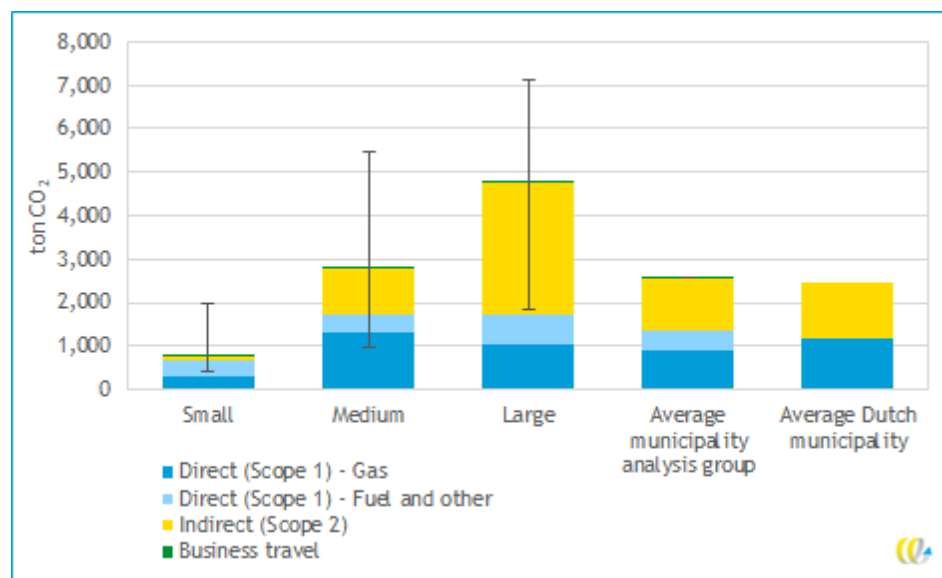
Table 2 - Organisation size categories CO₂ Performance Ladder

Size category	Definition (SKAO, 2020)
Small organisation	Total CO ₂ emissions do not exceed (\leq) 500 tonnes per year
Medium-sized organisation	Total CO ₂ emissions do not exceed (\leq) 2,500 tonnes per year
Large organisation	Total CO ₂ emissions exceed (\leq) 2,500 tonnes per year

The uncertainty bars show that there is a large variation between the municipalities. There are municipal organisations with a ‘medium-sized’ footprint classification that have a much larger footprint than an average ‘large’ municipality. Vice versa there are also large municipalities with a smaller footprint than the average medium-sized municipality.

When we compare the average municipality in the analysis group in the reference year³ with the footprint of an average Dutch municipality (data from 2017), we see that they are very similar (de Bruyn, et al., 2020). The ratio of Scope 1 to Scope 2 emissions is about one to one in both the analysed group and nationally.

Figure 5 - Average CO₂ footprint in reference year, by size category

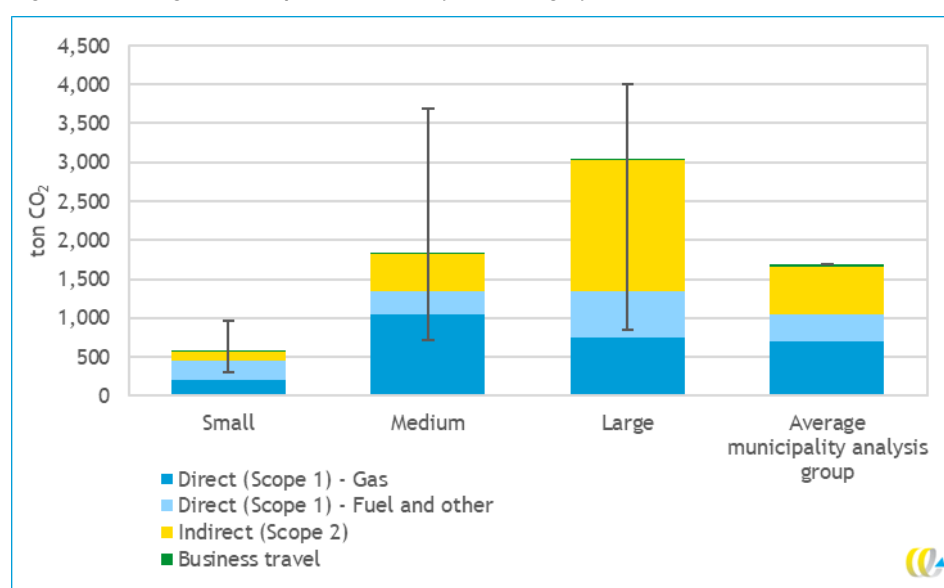


² Organisations may be assigned to another category if the CO₂ reduction gives cause to do so. For municipalities certified at Level 3, the size of the organisation has no effect on the requirements of the CO₂ Performance Ladder and therefore, in most cases, the category is not adjusted in the interim. After all, the same requirements apply to all organisations. From Level 4 onwards, there are exemptions for small and medium-sized organisations.

³ Almost all municipalities have a reference year between 2017 and 2019.

If we compare the footprint of the municipalities in the reference year with the footprint in 2020 (Figure 6), we see that it has decreased on average. Whereas emissions in the reference year averaged 2,580 tonnes of CO₂ per year, in 2020 they were only 1,820 tonnes. Although this 30% reduction is partly due to the measures taken by the municipality, there are other factors, such as making electricity more sustainable, that explain the reduction. There is no data available on the emissions of an average Dutch municipality in 2020, so we cannot compare the CO₂ reduction of certified municipalities with non-certified municipalities. We will discuss the development in CO₂ emissions in certified municipalities in more detail in Chapter 4.

Figure 6 - Average CO₂ footprint in 2020, by size category



3.2 Difference between companies and municipal organisations

The CO₂ Performance Ladder focuses on both municipal organisations and companies. In the interviews, several municipalities described differences between companies and municipal organisations that are relevant to the CO₂ Performance Ladder.

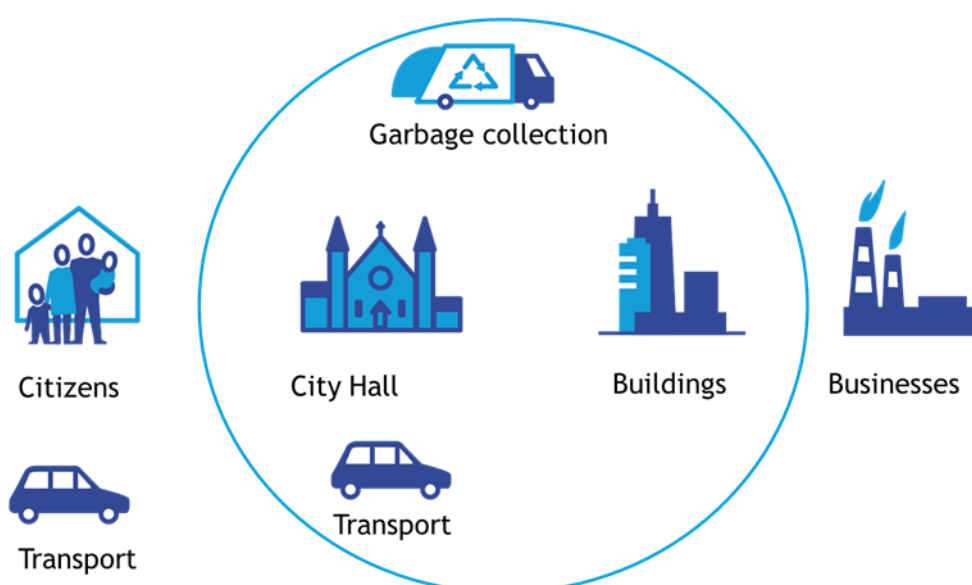
The boundary of a municipal organisation

A municipality uses an organisational boundary to indicate which buildings and organisations do and do not fall within the scope of the CO₂ Performance Ladder. Determining the organisational boundary is different for municipalities than for companies. The boundaries are often less clear for municipalities. An example of this is that municipalities often only partially own a building, sometimes even together with other municipalities. It can be difficult for municipalities to determine which buildings they should or should not include in their own organisation. A municipality may also be a shareholder but have no control. SKAO provides guidelines for municipalities on how they can best deal with this. For example, one guideline is that municipalities consider a related party to be part of the organisation if the municipality has 20% or more voting rights (SKAO, 2021). Nevertheless, several municipalities indicate that they find it difficult to determine the organisational boundary. That can also have a positive side. One municipality indicated that determining the

organisational boundary was a difficult but useful exercise, because it gave the municipality insight into what it can and cannot influence.

The organisational boundary can change, for instance when waste collection is outsourced or a building is bought or sold. In this case, the municipality must adjust the CO₂ reduction target to the new organisational boundary. This makes it difficult to compare figures between municipalities and sometimes between years within one municipality. It is then also necessary to recalibrate the historical emissions figures for the reduction target. It is not clear from the documents and interviews whether and how this was done by the municipalities.

Figure 7 - Example of an organisational boundary



Interaction between public officials and politicians

Within a municipality, the management and the municipal council both have influence on the decision-making and allocation of financial resources. As a result, politics can sometimes take decisions that are at odds with the CO₂ reduction goals of the municipal organisation. A point of attention for municipalities is that the council is also included in the certification process.

Communication policy

Municipalities are public organisations and therefore have to comply with certain requirements. One of these requirements is that documents on a municipality's website must be comprehensible to everyone. One municipality indicated that the documents they have to put on their website for the audit of the CO₂ Performance Ladder often do not comply with these requirements and that adjusting the documents takes a lot of time.

4 Impact of the CO₂ Performance Ladder

We looked at the quantitative and qualitative effects of the CO₂ Performance Ladder on municipalities. We looked at the impact on four areas:

- CO₂ reduction;
- sustainable purchasing and procurement;
- organisational effects;
- other sustainability impact.

In this chapter, we describe the impact of the CO₂ Performance Ladder on these four areas.

4.1 Realised CO₂ reduction

The availability of data on CO₂ emissions for different years differs between municipalities. We received or found data on the CO₂ emissions of eighteen municipalities. For most municipalities (twelve out of eighteen), the emissions for the years 2018, 2019 and 2020 are known. Data from previous years is limited⁴. We are therefore mainly looking at 2018, 2019 and 2020.

It is noticeable that one municipality had a significant increase in emissions between 2018 and 2020. There is a clear explanation for this and we will discuss it further in Section 5.4. We will leave this municipality out of the analysis of the total figures, as this deviating municipality has too great an influence on the total.

We refer to these different groups below by the following names:

- **Available data group**
The eighteen municipalities from which we have received or found data.
- **2018-2020 group**
The twelve municipalities for which data is available for 2018, 2019 and 2020.
- **Analysis group**
The eleven municipalities on which we base most of our analyses. This group corresponds to the 2018-2020 group, but without the municipality with the large increase in emissions between 2018 and 2020.

In the eleven municipalities of the analysis group, the total CO₂ reduction in the period 2018-2020 is 23.9%. This corresponds to an average annual saving of 12.8%. Municipalities indicate that CO₂ emissions may be lower in 2020 due to the corona crisis. Only when the CO₂ emissions for 2021 and later years are also available, will the effect of the corona crisis on CO₂ emissions be apparent.

We can show from the available data how much CO₂ has been reduced in the certified municipalities, but we cannot draw a conclusion about how much of this CO₂ reduction is due to certification on the CO₂ Performance Ladder. A study in 2016 (Rietbergen, et al.,

⁴ For two municipalities only the emissions in 2019 and 2020 are known and for one municipality the emissions are known for 2017, 2019 and 2020. For the years before 2018, we have data on CO₂ emissions from up to five municipalities.



2016) did look at the additional impact of the CO₂ Performance Ladder on companies. In this study, the annual CO₂ reduction was 3.2%, adjusted for macroeconomic effects, of which 1-1.6% could be attributed to the CO₂ Performance Ladder.

Table 3 - The total and average CO₂ reduction for ten municipalities in the analysis group

Description	Value
Total CO ₂ emissions 2018 (tonne CO ₂)	26,000
Total CO ₂ reduction 2018-2020 (tonne CO ₂)	6,213
Percentage of CO ₂ reduction 2018-2020 (%)	23.9%
Annual percentage CO ₂ reduction 2018-2020 (%/year)	12.8%

The municipalities set a target for a period of their own choosing; how long this period is is up to them. Municipalities must publish reports on their most significant emissions every three years. Municipalities may choose to align the reference and target year with this three-year cycle. However, we do not see municipalities doing this. The period between the reference and target year varies between four and nine years, and is on average almost six years.

The target years are between 2022 and 2028 and the reference years are between 2015 and 2019. Because for all municipalities the period for which they have set a reduction target is still ongoing, we cannot show the CO₂ reduction for a full period.

Most emissions are realised in Scope 1

Most CO₂ reduction takes place in direct emissions (Scope 1). Indirect emissions (Scope 2) are decreasing. These are emissions from the consumption of electricity. A number of municipalities report emissions for business transport separately. In percentage terms, this is where most reductions are achieved, but as the total emissions in this category are relatively low, these reductions contribute less to the total. An overview of the savings in Scope 1, Scope 2 and for business travel can be found in Table 4.

Table 4 - Overview of the CO₂ reduction between 2018 and 2020 by category for the eleven municipalities in the analysis group

	Total emissions in 2018 (tonne CO ₂)	Total saving (tonne CO ₂)	Average percentage saving (%/year)
Scope 1 - gas and fuels	15,327	4,220	14.9%
Scope 2 - electricity	10,142	1,746	9.0%
Business transport	538	247	26.5%

Figure 8 provides an overview of how CO₂ emissions have developed for the municipalities in the available data group. The years for which data is available vary from municipality to municipality. The figure also shows the year the municipality started using the CO₂ Performance Ladder. For a number of municipalities (1, 2, 4, 8, 10, 15, 16 and 18), emissions decreased significantly in the starting year or the year after. It is likely that this decrease is partly a result of CO₂ Performance Ladder certification. For the other municipalities, it is still too early to draw a conclusion about the decrease in CO₂ emissions, because the starting year is 2020 or 2021.

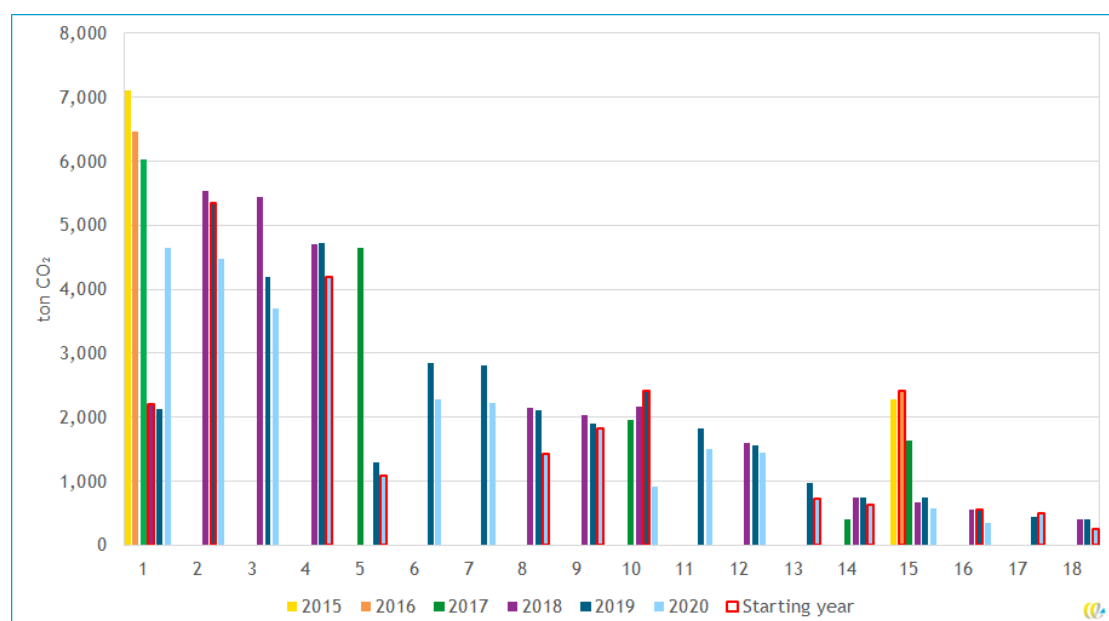


Most municipalities generally show a declining trend. In some cases, there are occasional years when emissions increase, but the general trend is downwards.

It is noticeable that Municipality 1 had much lower emissions in 2018 and 2019, but that emissions increased again in 2020. This fluctuation is due to a change in the green power purchasing policy. We describe this in more detail in Section 5.4.

Emissions in 2020 are lower than in 2019 for almost all municipalities. A number of municipalities indicate that this is also due to the corona crisis that began in March 2020. One of the results is that offices were used less and there was less business travel. We cannot make any statements about how large the effect of the corona crisis has been on CO₂ emissions based on the available data. In a few of the municipalities we do see an exceptionally large reduction in 2020 compared to other years. This may be an effect of the corona crisis, but it may also be due to the measures that were taken.

Figure 8 - The CO₂ emissions of the municipalities in the available data group between 2015 and 2020 per municipality. The year with the red outline is the year in which the municipality started using the CO₂ Performance Ladder



Note: The availability of the data per year varies from one municipality to another. If no starting year is indicated, this means that the municipality started using the CO₂ Performance Ladder in 2021.

Most municipalities are on track to achieve the fixed reduction target

We cannot yet make firm statements on whether municipalities are achieving their targets, as the period for which they have set a target has not yet ended. However, we do show in Figure 9 whether municipalities are on track to achieve their target. If we assume that municipalities save the same amount of CO₂ each year, then we can obtain an indicative reduction target for each year. This indicative reduction target shows what the CO₂ emissions would have to be in that year to achieve the final reduction target. These indicative targets are indicated in Figure 9 by dark blue dashes. In practice, CO₂ reduction is not as gradual as indicated. The reduction may pause for a while and then take a big step



all at once. However, the indicative targets do give an idea of whether a municipality is on course to achieve its target.

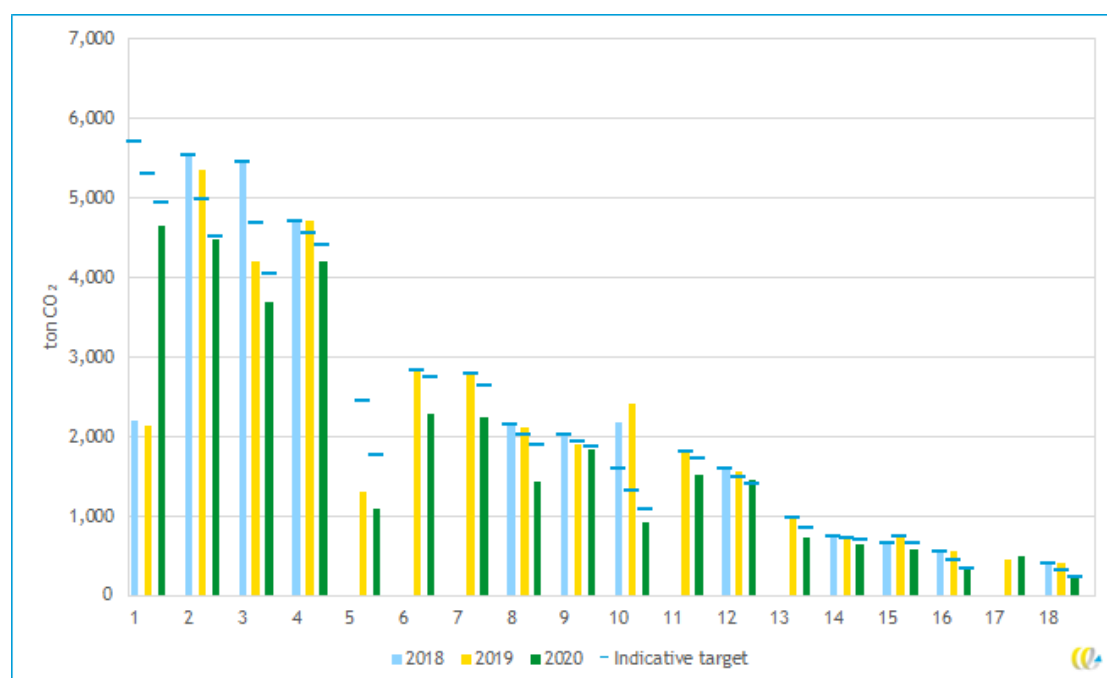
Emissions for the years 2018, 2019 and 2020 are shown in Figure 9. For each year, a blue line indicates the indicative target for that year. If the emissions for a year are lower than the indicative target, the municipality is on track to achieve this target. However, this is not a guarantee. As mentioned earlier, CO₂ emissions do not decrease linearly.

For a number of municipalities the target and the realisation in 2018 are exactly the same: in such case, 2018 is the reference year for the target. It is also striking that for Municipality 1, the emissions are much lower than the target in 2018 and 2019. This is due to the purchase of green electricity. We will discuss this in more detail in Section 5.4.

Figure 9 gives an indication of whether municipalities are on track to achieve the reduction target. All municipalities will reach or be close to reaching the indicative target by 2020. The reduction target for one municipality is unknown. It should be noted that several municipalities did not obtain the certificate until 2020 or 2021 and were therefore already on course to achieve their target. Some of the municipalities were already working on reducing CO₂ emissions well before they were certified. Since the targets are set at the time of certification, it is likely that the CO₂ reduction already achieved since the reference year was taken into account when setting the target.

We can conclude that the municipalities are on course to meet the reduction target. Based on the interviews, it appears that it is a consequence of the CO₂ Performance Ladder that municipalities have a concrete CO₂ reduction target and monitor CO₂ emissions. In addition, as many municipalities experience a strong decrease in the starting year or the year thereafter, it is likely that the CO₂ emissions are lower as a result of certification than they would have been if the municipalities had not been certified.

Figure 9 - Overview of realised emissions and emissions according to the CO₂ reduction target per municipality



Note: For Municipality 5, the CO₂ emissions in 2018 are unknown and for Municipality 17, the target is unknown.



4.2 Sustainable procurement and tendering

When a municipality wants to certify itself to Level 4 or Level 5 of the CO₂ Performance Ladder, it must identify which Scope 3 emissions are dominant within the organisation (the dominance analysis). Sustainable procurement and tendering regularly emerge from this. Most municipalities have Level 3 certification. We investigated to what extent they are already engaged in activities in the field of sustainable procurement and tendering.

In the documents we received from the municipalities, we found little information about sustainable procurement and tendering. We asked the six municipalities we interviewed about the extent of sustainable procurement⁵.

Four of the six municipalities interviewed indicated that it is already common practice to ask for the CO₂ Performance Ladder in civil engineering tenders. The fact that the municipality itself is also certified is seen by some municipalities as a condition to include the CO₂ Performance Ladder as a requirement⁶ in tenders (by valuing a higher target level for CO₂ and energy management).

In other procurement areas, sustainable procurement does not take place or only to a limited extent. Neither with regard to the Ladder or any other instrument. Municipalities also indicate that they do not often ask about the CO₂ Performance Ladder, because not all companies are familiar with it. One municipality indicated that it thought that asking for the CO₂ Performance Ladder would exclude too many local parties, which is against the municipality's procurement policy. SKAO indicates that this need not be a problem. Based on the SKAO Guide to Tendering (SKAO, 2021), it is possible for a company to obtain a certificate up to Level 3 within one year after the award of the contract. This means that even if companies have not yet obtained a certificate, there are still opportunities for municipalities to ask about the CO₂ Performance Ladder. By doing so, the municipality does require a significant effort from local businesses.

Many municipalities indicate that they find sustainable procurement difficult. Although there is increasing awareness of it within organisations, municipalities often do not yet have the knowledge and resources to apply sustainable procurement on a structural basis. It currently often creates a lot of work and yields very little. In addition, the methodology of the CO₂ Performance Ladder - with the exception of civil engineering - is often not used for sustainable procurement. Departments that are pioneering sustainable procurement tend to look more broadly at the various options and often prefer different methods.

One municipality that has already been certified at Level 4 indicates that more and more attention is being paid to sustainable procurement, especially by the purchasing department.

4.3 Other sustainability impact

We investigated whether having a CO₂ Performance Ladder certificate also resulted in knock-on effects for other sustainability themes, such as biodiversity, climate adaptation or air quality. However, sustainability impact other than direct or indirect CO₂ reduction are largely absent from reports and interviews. Circularity is mentioned by a few in the reports: for example, one municipality mentions a recycling measure.

⁵ Another commonly used term for 'sustainable procurement' is 'socially responsible procurement (SRP)'.

⁶ See www.mvicriteria.nl/nl/webtool?criterion=2880#prestatieladder/other////nl



However, both in the reports and in the interviews, municipalities do mention that the CO₂ Performance Ladder creates more awareness. The two municipalities certified at Level 4 use the CO₂ Performance Ladder to reduce chain emissions.

Raising awareness

There are awareness-raising activities in several municipalities that go beyond what the Ladder requires. The reports of municipalities focus on the monitoring of emissions and the targets for reducing energy and CO₂, as well as on concrete measures to achieve these reductions. In addition, the reports always pay attention to the quality of the monitoring and communication of the policy within the organisation. A number of municipalities are attempting to encourage their employees to become more sustainable in their own homes. These efforts are along the lines of competitions between employees to reduce energy consumption or buying green electricity for their homes.

Supply chain emissions

Two municipalities have Level 4 certificates and the others all have Level 3 certificates. We therefore see that these two municipalities use the Ladder to reduce chain emissions and report on this. At the moment, however, no concrete results of this are available.

4.4 Conclusions of the impact of the CO₂ Performance Ladder

We looked at the quantitative and qualitative effects of the CO₂ Performance Ladder on municipalities. We looked at the impact on four areas:

- CO₂ reduction;
- sustainable purchasing and procurement;
- organisational effects;
- other sustainability impact.

CO₂ reduction

The municipalities achieved an average CO₂ reduction of 12.8% per year between 2018 and 2020. Most CO₂ reduction takes place in the direct emissions (Scope 1).

The municipalities are on track to achieve their reduction targets:

- all municipalities will achieve or be close to achieving the indicative target by 2020;
- the reduction target for one municipality is unknown.

Based on the interviews, it appears that it is a consequence of the CO₂ Performance Ladder that municipalities have a concrete CO₂ reduction target and monitor CO₂ emissions. In addition, since many municipalities experience a strong decrease in the starting year or the year thereafter, it is likely that the CO₂ emissions are lower as a result of certification than they would have been if the municipalities had not been certified.

Two municipalities with Level 4 certificates use the Ladder to reduce chain emissions.

Sustainable procurement and tendering

Municipalities are paying attention to and are interested in sustainable procurement and tendering, but generally have insufficient capacity and knowledge about this. For municipalities with Level 3 certification, the CO₂ Performance Ladder does not require them to be engaged in sustainable procurement and tendering. The interviews show that sustainable procurement using the Ladder is already practised in civil engineering.

Other sustainability impact

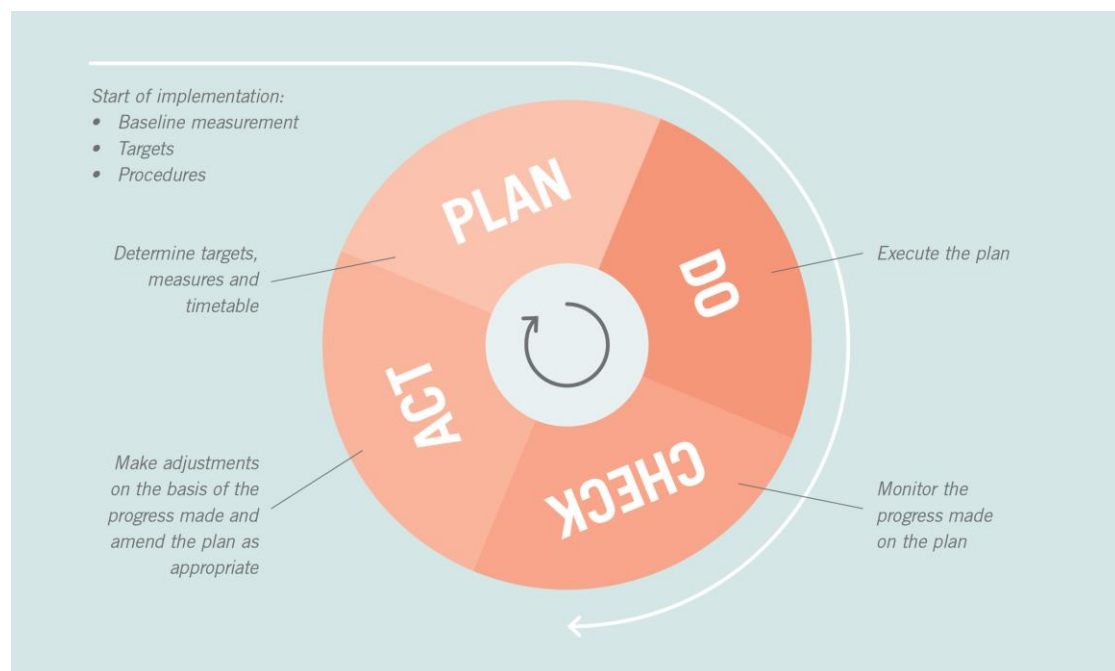
Municipalities indicate that the CO₂ Performance Ladder creates awareness of CO₂ emissions within the municipal organisation.



5 Process (PDCA cycle)

The Ladder system is based on the Plan-Do-Check-Act (PDCA) cycle or Deming's quality circle. This cycle is a form of quality management that focuses on the continuous improvement of processes. When municipalities start implementing the Ladder, they first identify their own emissions. They then set reduction targets and select measures to implement. This implementation is monitored and, based on this, the policy is adjusted and new plans are made. In this chapter we describe, based on the interviews and reports, how municipalities go through the PDCA cycle.

Figure 10 - Plan-Do-Check-Act cycle CO₂ Performance Ladder. *Plan*: set reduction targets, measures and make a planning. *Do*: execute plan. *Check*: Monitor implementations. *Act*: Adjust policy and make new plans



Source: (SKAO, 2020).

5.1 Reason for using the Ladder (Plan)

The municipalities interviewed indicated that the reason for using the Ladder is often political. Municipalities often want to do more with energy and sustainability in this way. Municipalities see the Ladder as an instrument to get a clear picture of their own energy data and organisational boundary. Because the audit is carried out by an external party, the Ladder is also seen by politicians as a quality seal.

In addition, municipalities are implementing the Ladder in order to stimulate the discussion on CO₂ reduction and to increase awareness of their own emissions among management and the municipal executive. Finally, municipalities often start implementing the Ladder because it allows them to demonstrate compliance with the EED audit obligation for municipalities.

5.2 Determination of CO₂ reduction targets (Plan)

Based on requirement 3.B of the (SKAO, 2020) manual, an organisation is required to formulate an ambitious and substantiated target for CO₂ reduction.

All municipalities participating in the CO₂ Performance Ladder have therefore formulated a CO₂ reduction target. All but one municipality interviewed had no reduction target for the organisation before obtaining the certificate or at most for the municipality as a whole. The fact that municipalities set a target is thus the result of obtaining a CO₂ Performance Ladder certificate.

The municipalities want to achieve a certain percentage reduction in the target year compared to a reference year. The average CO₂ reduction target for the eighteen municipalities in the available data group is 10.4% per year. This concerns Scope 1 and Scope 2 emissions, as well as emissions for business travel. For the eleven municipalities in the analysis group, this is 9.7%. On average, the eleven municipalities in the analysis group save 12.8% per year and have thus far exceeded the average target per year.

The manual gives room to set the target in different ways. The interviews show that the targets are set and justified in different ways by municipalities:

- In some municipalities, an inventory of measures that could be taken is drawn up. The target is then based on this.
- Other municipalities have looked at what the intermediate target should be to become energy neutral⁷ in the long term.
- One municipality did market research and looked at what other municipalities' targets were in order to set a realistic target for itself.

Sub-targets

Many municipalities have set sub-targets in addition to the main target for CO₂ reduction:

- twelve municipalities have a separate scope-specific target;
- three municipalities have an energy-saving target;
- two municipalities have a target for generating renewable energy;
- six municipalities have other sub-targets, for example for business travel, being energy or climate neutral, or electrifying the municipal vehicle fleet.

The interviews showed that municipalities pay particular attention to the scope-specific sub-targets, which are separate targets for Scope 1 or Scope 2 emissions, or emissions from business travel. Other sub-targets are often not easily measurable, and therefore not well monitored. Scope-specific sub-targets are set to make the process more transparent and monitoring easier. In addition, sub-targets that have a shorter timeframe create an increased sense of urgency, which makes them more likely to receive attention. We found no relationship between having sub-targets and performance with regard to CO₂ reduction.

⁷ Energy neutral is not necessarily CO₂ neutral. One can be energy neutral, but still emit CO₂.



5.3 Selecting measures (Plan)

Municipalities participating in the CO₂ Performance Ladder must draw up a list of measures to reduce the CO₂ emissions of the municipal organisation, based on requirement 2B of the (SKAO, 2020) manual. These measures are implemented in various departments within the municipality. Often the different departments are already working on one or more measures. For the CO₂ Performance Ladder, a municipality identifies what the various departments are doing, how much CO₂ reduction this is expected to produce, and whether any additional measures are needed. This makes it clear what is already happening within the municipal organisation. In most cases, the CO₂ Performance Ladder does not directly result in more measures, but it does provide a better overview.

In the interviews, most municipalities indicated that the initiative for the measures often came from the various departments themselves. The person responsible for the CO₂ Performance Ladder within the municipality identifies the issues and helps to bring together the various parties within the municipality, where necessary. The extra focus on CO₂-reducing measures also leads to more initiative from the various departments within the municipality to propose new measures.

5.4 Taking measures (Do)

All municipalities from which we received information indicate that they are taking or have already taken measures to reduce their emissions. These are usually concrete measures. Figure 11 shows how many measures are taken per category. Most of the measures focus on CO₂ reduction in real estate and mobility.

Figure 11 - Number of measures by category (total of all municipalities in the analysis group)

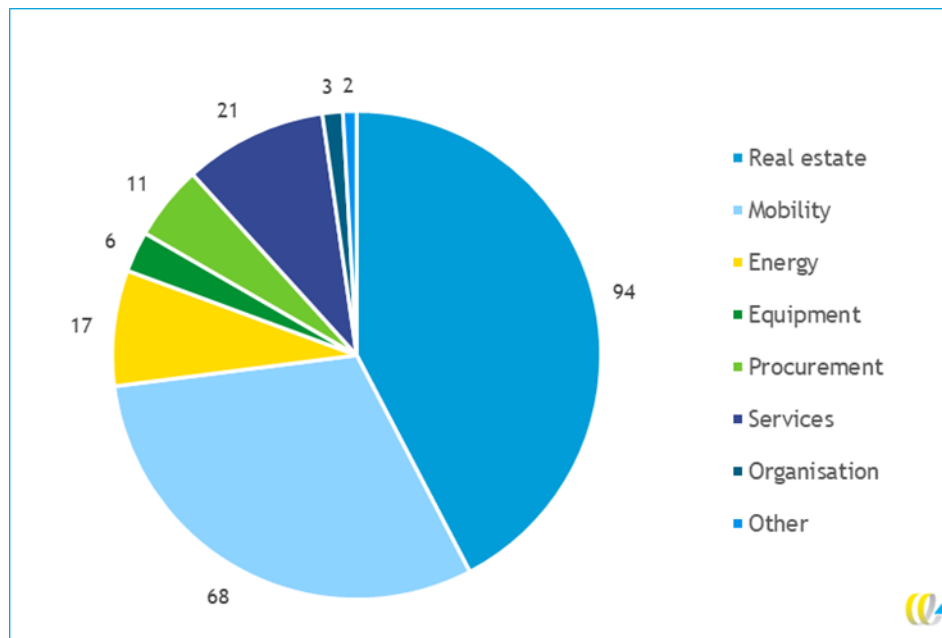
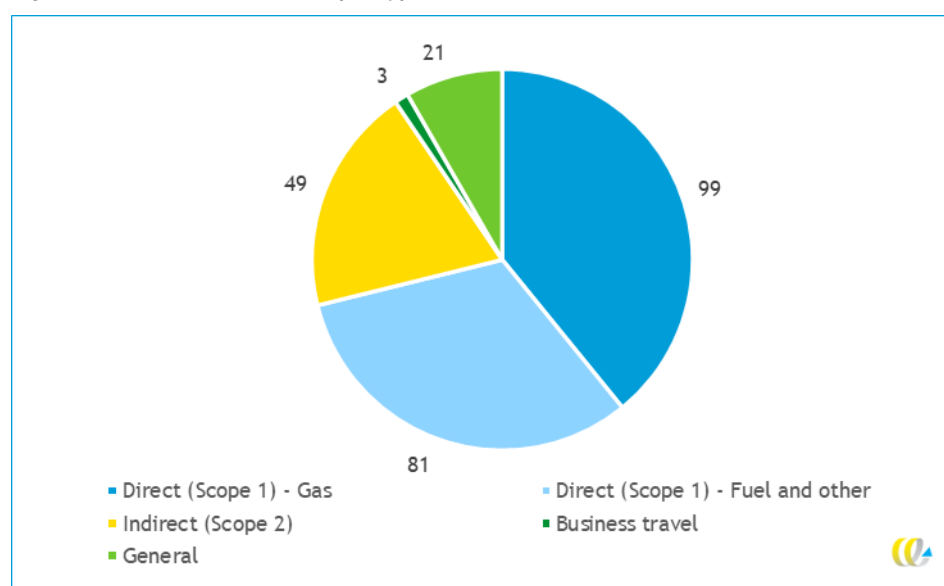


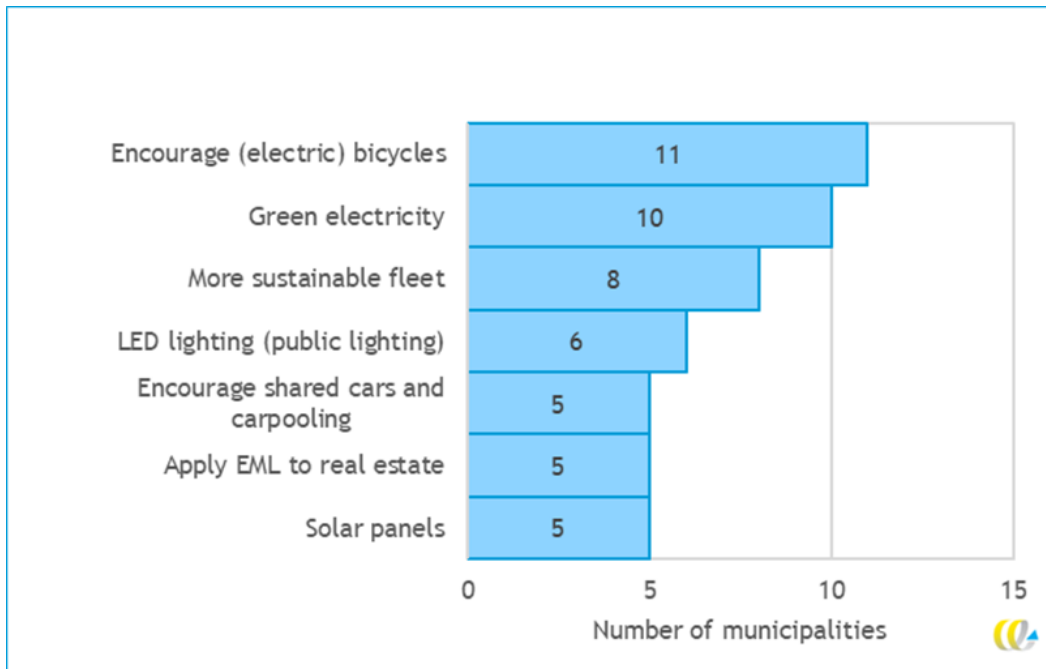
Figure 12 shows on what type of emissions (Scope 1, 2 and 3, see Figure 1) the different measures have an effect. For Scope 1 emissions, we have made a distinction between emissions from gas consumption and other emissions (mainly fuel consumption). Most of the measures are primarily aimed at reducing emissions in Scope 1 by saving on gas and fuel consumption. Approximately 20% of the measures are aimed at Scope 2 reduction, in particular by using less electricity. But three individual measures focus mainly on emissions from business transport. These are mainly air and train journeys, etc., which are procured externally. Fuel consumption of company-owned vehicles falls under Scope 1 emissions. Finally, about 10% of the reported measures fall into the 'other' category, because they do not fit into any of the emission categories. Examples include communication campaigns for employees and the separate certification of, for example, the municipal recycling centre.

Figure 12 - Number of measures per type of emission



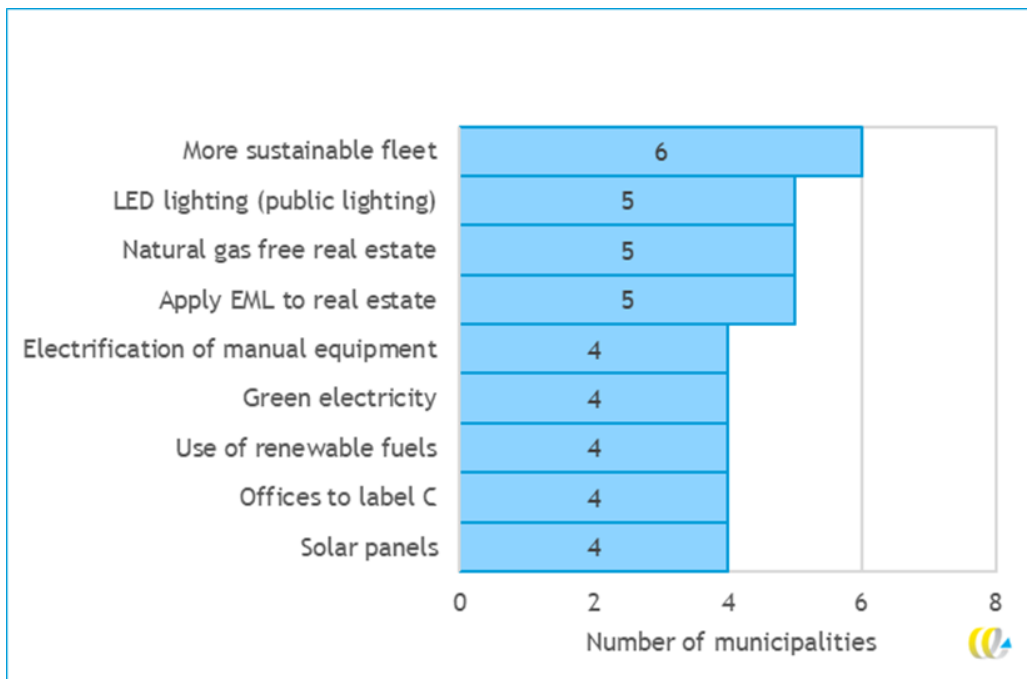
Many municipalities are taking the same or similar measures. Figure 13 and Figure 14 show that all fourteen municipalities in the available data group buy green electricity or plan to do so. Making the vehicle fleet sustainable is another common measure. Furthermore, the most popular measures regarding mobility are the stimulation of (electric) cycling, the partial or complete switch to renewable fuels and the stimulation of car sharing. Energy-saving measures such as LED lighting and other measures from the recognised energy-saving list (EML) are also popular. Six municipalities have indicated that they are working on sustainable procurement or are planning to do so. The most common measures are generally those that can be implemented relatively quickly.

Figure 13 - The number of municipalities with this measure of the most popular measures *taken*



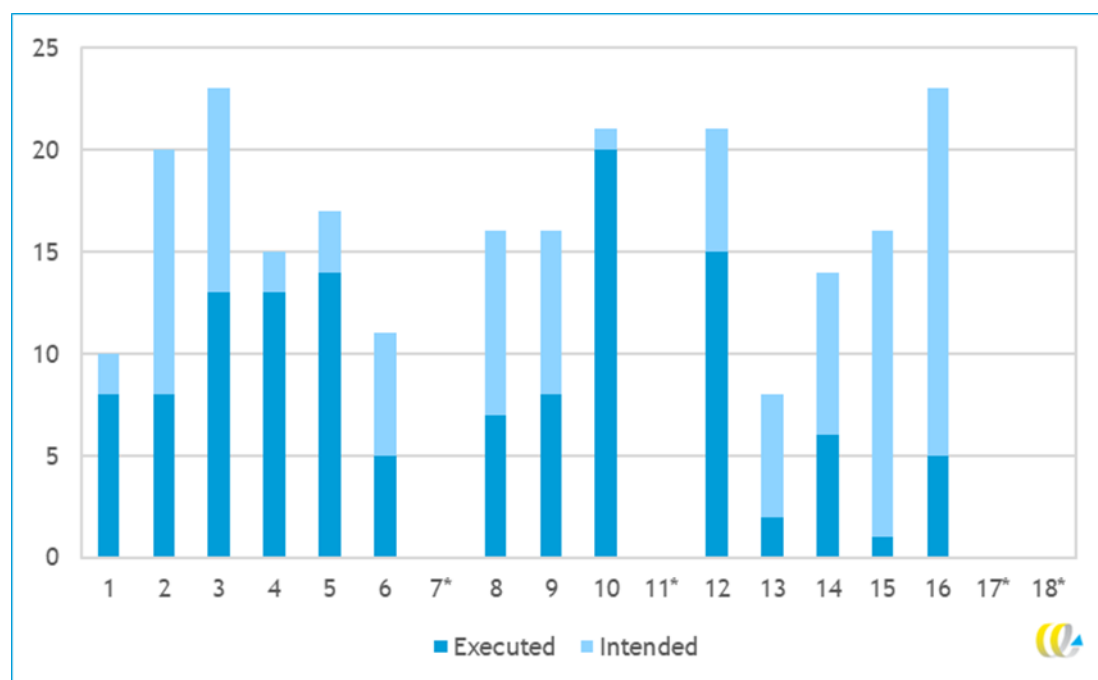
In the planned measures that have not yet been realised, we mainly see measures with a longer implementation period. Electrifying the vehicle fleet, applying LED lighting and major property modifications are measures that require more time. They can also not be implemented in one go. Many municipalities indicate that they are already implementing the measures, but that these have not yet been completed.

Figure 14 - The number of municipalities with this measure of the most popular *planned* measures



On average, each of the fourteen municipalities in the available data group takes seventeen measures. This varies between eight and twenty-three measures per municipality, as can be seen in Figure 15. Based on the data, no relation can be made between the number of measures and the realised CO₂ reduction.

Figure 15 - The number of measures per municipality



* For Municipalities 7, 11, 17 and 18, insufficient insight into the measures taken and planned was available to include in the chart.

Green power

Procuring Guarantees of Origin (GoO), also known as green certificates, is a popular way to reduce emissions from electricity use. At least ten of the municipalities using the Ladder buy GoOs and thus achieve significant reductions in their Scope 2 emissions. A 2016 study by CE Delft shows that the CO₂ Performance Ladder has a measurable effect on the choice of power product (Wielders & Afman, 2016).

Green power may only be considered CO₂-free for the purposes of the Ladder if the power originates in the Netherlands⁸ (SKAO, 2020). However, some of the municipalities find this approach unsatisfactory and would rather invest in local initiatives for sustainable generation. One municipality has even stopped buying GoOs (see box).

There are various reasons to criticise the reporting of a 'zero impact' for the procurement of electricity with GoOs. For example, assigning zero emission to procured green electricity takes away the incentive to make energy savings (such as LED lighting or installing switches on centrally controlled lighting). In addition, the purchaser of green electricity may attribute all the 'CO₂ benefit' to itself while many other parties, and money flows, are involved in the realisation of the renewable production facility (Wielders, et al., 2020).

⁸ Under certain conditions, the electricity may also originate from abroad; these conditions are set out in Chapter 5 of the SKAO manual.

Does Municipality 1 use green power?

Municipality 1 started to buy green power in 2018. As a result, the Scope 2 emissions of this municipality significantly reduced immediately. Due to internal discussions about the sustainability of green power, the municipality decided to stop buying green power in 2020. Instead, the municipality put extra money into a fund that is used to invest in local renewable generation. The intention is that the municipality will eventually be able to buy the power generated locally. As a result of this choice, the Scope 2 emissions of this municipality were much higher in 2020 than in 2018 and 2019.

Deviation from measures

The interviews show that the use of the CO₂ Performance Ladder increases the likelihood that measures will actually be implemented. This is because, within the methodology of the Ladder, municipalities must account for the measures taken and the CO₂ reduction of these measures. An example of this is a municipality where intended cutbacks in CO₂ reduction measures were not implemented because the Ladder target was in danger of not being achieved. However, there was also a municipality that indicated that when it comes down to it, cutbacks or other financial considerations often take precedence over the Ladder. This municipality is, however, on schedule to meet its target, so plans that go beyond the set target are particularly affected.

5.5 Monitoring (Check)

The manual (SKAO, 2020) sets requirements for the quality and continuity of emissions monitoring. The documents analysed for this study show that the same templates are often used for this that are not part of the requirements in the manual.

In all interviewed municipalities, monitoring has improved since the introduction of the Ladder, and the Ladder is becoming increasingly embedded in the organisation. Often, it is still a search process in the beginning, with new monitoring systems being developed or the monitoring steps being made more concrete. But after the first few years, monitoring increasingly becomes a standard part of processes. One municipality mentioned that initially policy departments did not know what to do with the monitoring, but that they gradually started to feel responsible for it themselves. In one municipality, where the monitoring of its CO₂ emissions has already taken place for a number of years, the responsible municipal official can retrieve all the necessary data at the push of a button. Most municipalities, especially those that have only been using the Ladder for one or two years, have not yet reached that point. Many municipalities indicate that the involvement of the entire organisation is important for the success of the CO₂ Performance Ladder and pay attention to it.

By monitoring the CO₂ emissions for the CO₂ Performance Ladder, municipalities gain more insight into where the most CO₂ emissions can be saved, which departments already do a lot and which departments still have room for improvement. Five of the six municipalities indicated during the interview that the CO₂ Performance Ladder ensures that data on CO₂ emissions and CO₂ reducing measures are more readily available than before certification. They also indicate that the CO₂ Performance Ladder helps to draw the attention of other colleagues to the topic of sustainability and to motivate them. A number of municipalities highlight departments that reduce CO₂ or have innovative ideas, for example by sharing articles about them on the intranet.



Yet the Ladder also brings challenges for municipalities. The effort required to meet the reporting requirements is felt to be substantial. Depending on the municipality, it is a lot of work to collect all the figures. Municipalities therefore often use an external consultant for this purpose. The Ladder also has snags in terms of decision-making. The municipal organisation has to report to both management and politics, and this creates tensions. Unlike in a company, the decision-making process is more complex and therefore slower. Moreover, while politicians want to know immediately how the organisation has performed, measurement figures are generally one year behind. Finally, a number of municipalities indicate that the Ladder is not always in line with communication and procurement policy. For instance, it may clash with existing policies on communication standards and local procurement.

5.6 Future plans involving the Ladder (Act)

All six municipalities we interviewed intend to continue with the Ladder. In almost all municipalities there is also talk of progressing to Level 4 or 5 certification.

Three of the six municipalities have indicated that they would like to progress to the next level, with one municipality even aiming for Level 5. However, the bottleneck mentioned is that there are not enough 'hands' to implement this properly. One of the municipalities indicated that the desire to progress to the next level provides meaningful discussions on subjects that were previously not on the agenda.

The other three municipalities want to continue with the Ladder, but have no concrete plans to progress to another level. One municipality indicates that it is already engaged in several Level 4 or Level 5 activities, but has no plans to be certified for them. A higher level of certification involves additional work and costs, which is a reason for deciding not to do this when considering the added value and feasibility. A number of interviewees indicated that the Ladder offers the most added value for municipalities at Level 3. At this level the municipality does not have to conduct an energy audit for the EED. Municipalities also think that the influence a municipality can exert on chain emissions (Levels 4 and 5) is more limited than that of a company. Although we did not explicitly ask about this in the interviews, four of the six interviewed municipalities mentioned this.

Levels 4 and 5 troublesome for municipalities

Municipalities indicate that they want to work on reducing their chain emissions, but it is clear from all interviews that they have only limited influence on their chain emissions. They can buy office supplies sustainably, but that has only a small effect on CO₂ emissions. Municipalities also find chain analyses complex. Sustainable procurement in civil engineering is already successful in many municipalities. But they find it more difficult in other sectors.

5.7 Conclusions from the PDCA cycle

Through interviews and reports we learned from the municipalities how they experience the PDCA cycle.

Plan

Municipalities often choose the CO₂ Performance Ladder because politicians are looking for a commonly accepted tool to help the organisation become more sustainable. The first reduction target is often based on the expected impact of measures already taken in different parts of the organisation. This target is around 10% CO₂ reduction per year on average. Some of the municipalities break down this target further into Scope 1 and Scope 2 emissions. Some also choose to include separate targets for aspects such as energy savings and energy generation.

Do

On average, the municipalities report taking or planning to take seventeen measures. These concern real estate, services, mobility and procurement among others. Three quarters of the measures involve sustainability in real estate or mobility, and mostly affect Scope 1 emissions. Procuring green power is a popular Scope 2 reduction measure. A number of municipalities choose to supplement this with their own generation, so that they are no longer dependent on the purchase of GoOs.

Check

Monitoring the progress of CO₂ reduction initially proved to be a major challenge for many municipalities. In particular, collecting data and knowing how to find the right people in the organisation require a lot of attention at the outset. In the interviews, municipalities indicated that the monitoring of energy consumption and CO₂ emissions has improved since they became certified to the CO₂ Performance Ladder, and that it provides useful insights. However, many municipalities continue to choose to use an external consultant to ensure that the monitoring and reporting comply with certification requirements. The CO₂ Performance Ladder further increases the focus on CO₂ reduction throughout the organisation.

Act

Municipalities generally meet their reduction targets, and many are currently setting new ones. All interviewed municipalities want to continue with the Ladder, and half of them want to progress to a higher level. Levels 4 and 5 are perceived as a big step compared to Level 3. Identifying chain emissions seems to be a major task, and the necessary capacity and financial resources are not always available.

6 Costs of the CO₂ Performance Ladder

Municipalities invest time and money to become certified on the CO₂ Performance Ladder. We have tried to gain insight into the costs and hours spent by municipalities to obtain and maintain the certificate. However, there is no one-size-fits-all answer. There are large differences between the municipalities, not only in terms of size, but also in the extent to which an external consultant is used. Most municipalities do not keep track of costs or hours spent. When data is available, the content of these data often varies. For example, some municipalities also include the cost of measures. Below we describe our insights based on the available data and interviews.

6.1 Costs of certification

Several municipalities do report on the costs and hours they budget for the CO₂ Performance Ladder, but the information is difficult to compare because each municipality reports differently. Below we outline what can be said about the costs on the basis of the available information.

Use of the CO₂ Performance Ladder involves roughly three types of costs for municipalities:

- Annual contribution to SKAO. The amount of the contribution depends on the number of inhabitants in a municipality.
- Certification costs, comprising:
 - One-time costs for certification or recertification;
 - annual audit costs.
- Implementation costs, comprising:
 - costs for the implementation capacity within the municipality (FTE);
 - costs of support by an external consulting firm (optional).

The CO₂ Performance Ladder can also provide revenue or cost reduction, for example through lower energy bills as a result of energy savings. This was not part of the scope of this study and we did not explicitly ask about it in the interviews.

Contribution to SKAO

The Ladder is a market initiative and, as such, it is not supported by any subsidy or government commitment. Participants jointly contribute on a proportional basis to the costs of maintaining the Ladder by paying contributions to SKAO (SKAO, 2022). The annual contribution to SKAO are reported in the current manual Table 5.

Table 5 - Scale of municipal contribution costs to SKAO

Number of inhabitants	< 25,000	25,000 to 50,000	50,000 to 100,000	100,000 to 300,000	> 300,000 (G4)
Annual contribution	€ 940	€ 1,385	€ 2,200	€ 4,675	€ 7,000

Source: (SKAO, 2022).



Certification costs

The situation regarding certification costs is less clear-cut. Only five municipalities state the costs of certification in their reports. The interviews show that the costs can vary greatly from year to year. The costs of certification seem to be structurally slightly higher for organisations with more emissions (larger category). This can possibly be explained by the auditor spending more time on an audit for organisations with more emissions. This is based on the audit day table (SKAO, 2019). It stipulates how much time an auditor must spend on an audit. We have only one data point for a Level 4 certified municipality and this reports costs as being significantly higher than the costs reported by Level 3 certified municipalities. However, we cannot draw any conclusions on the basis of one data point. The other four data points are between € 3,000 and € 12,000.

In the interviews, the municipalities indicated that most of the costs are incurred in the first year of certification, or when the municipality wants to obtain a higher level of certification. At these times, new systems have to be set up and this costs time and money. Two municipalities have provided information on this, indicating that in the first year they have budgeted € 10,000 and € 50,000 respectively for the contribution, certification and implementation capacity combined. These are both large municipalities that want to progress to Level 4. They expect the costs to become structurally lower after a number of years.

6.2 Efforts by municipalities

The implementation costs vary widely and are often intertwined with other sustainability programmes. A number of municipalities report the costs of implementing these programmes as well. Other municipalities have included the costs of taking sustainability measures, such as making real estate more sustainable. In the latter case, the costs are much higher. As a result, we are unable to provide typical indications of the implementation costs for the CO₂ Performance Ladder. The reported costs, based on seven data points, vary from € 1,250 to € 815,000. It is therefore not clear what costs are included. For the upper end of the range, it is very likely to include costs for implementing CO₂ saving measures.

However, we can give an indication of the time effort required for the Ladder. The interviews show that an employee at the municipality spends on average about 4 hours per week on the CO₂ Performance Ladder in a normal year. For instance, this time is spent collecting data within the organisation. This is not constant; there are peak moments during audits and quieter moments. Some municipalities indicate that they would have to spend these hours on monitoring even if they were not certified, while others indicate that certification creates additional effort on top of the existing work.

The interviews show that most municipalities (four out of six) designate someone from the sustainability department as responsible for the CO₂ Performance Ladder. One municipality has an energy coordinator who is responsible for the CO₂ Performance Ladder. This municipality indicated that much of the work for the Ladder corresponded to the work that was already part of work performed by this position anyway. One municipality has all the work for the CO₂ Performance Ladder performed by someone from an external consulting firm.



The interviews show that municipalities perceive some of the requirements for certification and audits as complicated and demanding. This is more common in smaller municipalities than in larger ones. Municipalities indicate that they need an external consultant in order to keep up with developments in the CO₂ Performance Ladder and to avoid errors. Small and medium-sized municipalities in particular find it difficult to provide sufficient capacity and financial resources to meet all the requirements.

6.3 Use of consultancy firms

All municipalities that are certified for the CO₂ Performance Ladder engage the services of a consulting firm. The way in which the consulting firm is involved varies greatly. This ranges from watching and giving advice to the full implementation of all the activities involved in the CO₂ Performance Ladder. Nearly all municipalities engage external help because they do not have sufficient knowledge of the Ladder and want to be sure that they meet the requirements for certification. Many also enlist help to formulate the targets and select measures. We have no information on the costs of engaging consulting firms.

The six municipalities we interviewed use a consulting firm for the following activities:

- **Consulting firm provides advice.** One municipality uses an external advisor as an expert resource and coach for the project leader of the municipality. The latter otherwise performs all the tasks himself as much as possible. The consulting firm is engaged under a framework contract.
- **Consulting firm supports certification.** One municipality used an external consultant for the initial certification and first audit. After this, the municipality assumed all the tasks for the Ladder. This is a small municipality that made this decision partly due to budget considerations.
- **Consulting firm prepares report and/or performs monitoring.** Two municipalities engaged a consultant for the report. They indicate that preparing reports for the CO₂ Performance Ladder is time-consuming work. Both municipalities say they are satisfied with this arrangement; it is perceived as cost-effective and offers municipal civil servants the scope to be involved with the content of the sustainability policy.
- **Consulting firm conducts project management.** One municipality uses a consultant for project management, due to a lack of capacity of the municipality.

6.4 Conclusions regarding the costs and effort involved in the CO₂ Performance Ladder

The costs for the Ladder consist of an annual contribution to SKAO, certification costs and implementation costs. Little data is available on certification and implementation costs. The reported costs vary widely. In the interviews, the municipalities indicated that most of the costs are incurred in the first year of certification, or when the municipality wants to obtain a higher level of certification.

The CO₂ Performance Ladder can also provide revenue or cost reduction, for example as a result of energy savings. We did not explicitly ask in the interviews for any research into the revenues or cost reductions as a result of certification.

The interviews show that an employee at the municipality spends on average about four hours per week on the CO₂ Performance Ladder.



It is striking that almost all municipalities engage an external consultant for the Ladder. They do this in a variety of ways. Some municipalities do a lot themselves because they have the knowledge or want to progress, but others do a lot themselves to save costs. Municipalities that outsource monitoring and/or reporting are generally positive about this and find it cost-effective.



7 Conclusion, discussion and recommendations

7.1 Conclusions

In this report, we have described the results of our research into the CO₂ Performance Ladder at municipalities. The research consists of a desk study in which we analysed the certification information of the eighteen municipalities certified in December 2021 and six interviews with certified municipalities.

The research question in this report was:

What is the quantitative and qualitative impact of implementing the CO₂ Performance Ladder at municipalities?

Based on the study, we can draw the following conclusions about the effects of the CO₂ Performance Ladder at municipalities:

By means of the CO₂ Performance Ladder, municipalities are setting targets for CO₂ reduction and they are sticking to them.

All but one of the interviewed municipalities had no target before they were certified. However, CO₂ reduction measures were often taken. Certification on the CO₂ Performance Ladder was the reason for municipalities to make their intentions concrete by means of an attainable target. The municipalities also take this target seriously and take sufficient measures to achieve it. Many municipalities saw a sharp drop in CO₂ emissions in the year of certification or the year afterwards. Moreover, achieving the target for the CO₂ Performance Ladder is used as an argument to continue certification when measures are under discussion.

All municipalities are on track to meet their reduction targets.

None of the municipalities analysed has completed a full audit period. However, based on the progress in CO₂ reduction, it is likely that the CO₂ reduction targets will be met. Several municipalities indicated that part of the CO₂ reduction in 2020 is due to the corona crisis that began in March 2020. We cannot draw any conclusions about how large the effect of the corona crisis has been on CO₂ emissions based on the available data.

Through certification, municipalities gain insight into their CO₂ reduction and are thus better able to discuss target ranges and identify measures they can take.

From the interviews, we conclude that certification with the CO₂ Performance Ladder gives municipalities more insight into their CO₂ reduction than they had before certification. As a result, they are better able to identify measures they are already taking or could take, and can better justify why certain CO₂ reduction measures are necessary.

The Plan-Do-Check-Act (PDCA) cycle of the CO₂ Performance Ladder firmly embeds CO₂ reduction targets and monitoring in the organisation, ensuring that CO₂ reduction will be a focus in the long term.

Based on these effects, we can conclude that it is very likely that the Ladder has a positive effect on the CO₂ reduction by municipalities.



Based on the available data, we cannot determine the extent of the additional reduction as a result of the Ladder.

Participation in the CO₂ Performance Ladder does require considerable effort by the municipality. Some municipalities find complying with the Ladder complex or the administrative burden high. In general, however, the municipalities feel that the CO₂ Performance Ladder has added value for the organisation. All the municipalities we spoke to intend to continue with the Ladder. Three of the six interviewed municipalities aspire to progress to a higher level on the CO₂ Performance Ladder.

7.2 Discussion

Although we gained considerable insight into the impact of the CO₂ Performance Ladder on municipalities, there were also various limitations in the available data. We will discuss this in more detail below.

The target year for CO₂ reduction has not yet been reached.

None of the municipalities we investigated has completed a full period from reference year to target year. Some of the municipalities will also be certified by 2021. For these municipalities, no data is available from the starting year or thereafter. Because CO₂ emissions decrease in stages rather than linearly as a measure is implemented, we cannot conclude with certainty that the targets can be achieved over the entire period.

No control group

In order to make statements or draw conclusions about the additional effect of the CO₂ Performance Ladder by municipalities, a control group that is not certified is needed. By comparing data from certified and non-certified municipalities, a statement can be made about the additional effect of the CO₂ Performance Ladder. A comparison with a control group was not part of the scope of this study. This study therefore does not answer the question of what the additional impact of the CO₂ Performance Ladder is for municipalities.

Effect of corona

The outbreak of the corona crisis in early 2020 has had an impact on CO₂ emissions. This makes the data difficult to interpret. The interviews show that the effect can be both positive and negative. Some municipalities indicate that energy consumption by offices has decreased because more work takes place at home. However, there was also a municipality that reported that the heating in the office was on, but fewer people (who produce heat themselves) were present. As a result, extra gas was consumed. Several municipalities indicate that less travel took place during the corona period, which resulted in CO₂ savings. However, many municipal activities such as waste collection, winter maintenance and landscaping have continued as usual.

Corona not only has a direct effect on CO₂ emissions, but it has also made coordination within the municipality or brainstorming sessions more difficult because of working from home. Measures have also been put on hold due to corona, such as in the area of municipal real estate. In most municipalities, however, the CO₂ reduction policy has continued.

The corona crisis probably had an effect on CO₂ emissions in 2020, but how much and in what way we cannot determine.

Data availability costs

Although municipalities do publish a budget here and there in their reports, the quality of the data is highly variable. The contribution is reported regularly, but this data can also be retrieved via the SKAO website. The costs of audits/certification and what municipalities spend on external advice are not usually properly reported. Due to the limited number of data points, we can only draw a rough conclusion about the costs of the CO₂ Performance Ladder.

Here and there, municipalities also report budgets for larger sustainability programmes, such as the RES, or the budget available for making real estate more sustainable. Although these are programmes that directly or indirectly contribute to the sustainability of the municipality(ies), they are not directly related to the costs of the Ladder.

The CO₂ Performance Ladder can also provide revenue or cost reduction, for instance through energy savings. We have not investigated the revenue or cost reduction as a result of certification.

7.3 Recommendation

Based on the conclusions and discussion, we offer a number of recommendations. In doing so, we make a distinction between recommendations for a follow-up study and recommendations for the interpretation of the CO₂ Performance Ladder for municipalities.

Recommendations for a follow-up study

Repeat the study when several municipalities have completed a full period from reference year to target year.

Then conclusions can be drawn about whether municipalities are achieving their targets.

In a follow-up study, compare the certified municipalities with a control group.

By comparing certified municipalities with a group of municipalities that are not CO₂ Performance Ladder certified. This will allow the additional impact of the CO₂ Performance Ladder to be identified. However, it is a challenge to find a properly comparable control group. Therefore, a comparison with the average of all Dutch municipalities can also be considered.

Recommendations for improving the CO₂ Performance Ladder

Make information and procedures easier for municipalities

Many municipalities find the Ladder complex and find it hard to understand the rules. We recommend looking critically at the procedures and the provision of information in order to simplify them without compromising the substantive requirements. For example, we advise caution with changes to the Ladder, as this is difficult for many municipalities to keep up with. We also recommend that standard templates be created specifically for



municipalities, in which, for example, parts that are not relevant to municipalities are omitted. Municipalities are currently engaging external consultants for this purpose.

Consider the objections of municipalities regarding Guarantees of Origin (GoOs) and take a position on them

Various municipalities have questions about the extent to which GoOs can guarantee the sustainability of energy production and use. We advise SKAO to take a closer look at the objections and to take a position and explain it. SKAO may consider introducing a dual auditing system. This is a system whereby the emissions from electricity are reported in two ways: using the emission factor according to the national electricity mix and using the emission factor taking into account GoOs. This keeps organisations motivated to reduce their electricity consumption, even if they buy GoOs.

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