



# 2nd Performance Report of Elected Dutch Municipalities of BNG Bank Sustainability Bond of November 2019

December 2021

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## Executive summary

November 2019, BNG Bank launched its sixth Sustainability Bond, a new EUR 750 million | 0.05%, 10-year benchmark. Additionally, a second AUD 400 million, 10-year bond was issued based on the same selection of sustainable municipalities in 2019. Both bonds are due November 20<sup>th</sup> 2029. The Framework document for the BNG Bank Sustainability Bond 2019 was provided to BNG Bank by Telos -Tilburg University- on 7 October 2019, describing the selection process of best-in-class Dutch municipalities eligible for the bond.

An important quality indicator of the bond is the ‘Use of proceeds reporting (UPR)’. BNG Bank intends to include in the UPR a yearly impact report, during the period 2019–2029, based on updated data for the sustainability scores of all Dutch municipalities. The update will give insight in the changes in sustainability scores of the group of 114 Elected Municipalities compared to the total group of 352 municipalities of the Netherlands. BNG Bank asked Telos -Tilburg University- to provide the yearly impact reports for this bond, based on its yearly National Monitor Sustainable Municipalities. This performance report is the second impact report of the 2019 Sustainability Bonds, covering the years 2019-2021.

The Elected Municipalities continued to outperform the total group of municipalities with 2.3 percentage points (54.4 vs 52.1), as listed in table 1. Both groups of municipalities show an improvement of the overall score with 1.1-1.2 percentage points. Largest improvements occurred this year for the economic capital (1.4/1.6 percentage points) and the ecological capital (1.8/1.5 percentage points), while those socio-cultural capital were relatively small (0.3/0.5 percentage points).

Table 1. Sustainability scores of 114 elected municipalities and of the total group of 352 Dutch municipalities in 2021 compared to 2019

Sustainability capital	Elected 2019	Total 2019	Elected 2021	Total 2021	Elected: Difference 2019-2021	Total: Difference 2019-2021
<b>Total</b>	<b>53.2</b>	<b>50.9</b>	<b>54.4</b>	<b>52.1</b>	<b>1.1</b>	<b>1.2</b>
Socio-cultural	53.1	51.0	53.4	51.5	0.3	0.5
Ecological	53.6	51.2	55.4	52.7	1.8	1.5
Economic	53.0	50.6	54.4	52.2	1.4	1.6 <sup>1</sup>

The analysis shows that 92% of Elected Municipalities realized past year a stable or improved total sustainability score and a bit more then 94% of Elected Municipalities reduced or stabilized their CO<sub>2</sub>-emissions. A closer look at the CO<sub>2</sub> reductions shows that the group of Elected municipalities realized a reduction in CO<sub>2</sub> emissions of 4.5%, while the other municipalities realized a reduction of -2.7%.

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<sup>1</sup> The calculated differences can be 0.1 percentage point higher or lower due to rounding during the calculation. This is the case for all calculated differences in the report.

Scores of municipalities are rather dynamic from year to year, although major differences and advantages among municipalities are of a structural nature. In the reporting period Elected Municipalities Rheden, Winterswijk, Eindhoven, Leusden and Oldenzaal were able to improve their total sustainability score most with at least 2.5 percentage points. The largest reduction in sustainability score among Elected Municipalities was detected in Urk, Putten, Vlieland and Waterland.

Comparison of the years 2019 and 2021, as shown in table 6.1, makes clear that the performance of several goals improved substantially (Goals 1, 3, 7, 8, 9, 11, 12, 15 and 16) , but other showed a small fallback (Goals 2, 4, 6, 10, and 13). The elected municipalities still outperforms the total group on all measured goals, but the differences become smaller. The total group shows a higher improvement on goals 3, 7, 9, 10, 11 and 12 than the elected municipalities.



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# 1 Introduction

At the request of BNG Bank, Telos -Tilburg University, has provided a Framework document on 7 October 2019 to BNG Bank<sup>2</sup> that describes the sustainability criteria and selection process of best-in-class Dutch municipalities eligible for a BNG Bank Sustainability Bond 2019. Telos developed this framework based on its National Monitor of Sustainable Municipalities 2019, from which the 6<sup>th</sup> edition was presented in November 2019. The National Monitor of Sustainable Municipalities was produced for the first time in 2014 on behalf of the Dutch Ministry for Infrastructure and Environment. November 20, 2019, BNG Bank launched its sixth Sustainability Bond, a new EUR 750 million, 10-year benchmark<sup>3</sup>. Additionally, a second AUD 400 million, 10-year bond was issued based on the same selection of sustainable municipalities in 2019. Both bonds are due November 20<sup>th</sup> 2029. An important quality indicator of these bonds is the 'Use of proceeds reporting (UPR)'. BNG Bank intends to include in the UPR a yearly impact report, during the period 2019 – 2029, based on updated data for the sustainability scores of all the 352 Dutch municipalities. The update will give insight in the changes in sustainability scores of the group of 114 Elected Municipalities. Besides this impact report, other aspects are relevant for UPR, such as types of investment projects, governance aspects in relation to the sustainability performance of municipalities, etc. These other aspects are not included in this assessment by Telos, because such data are not yet available in sufficient detail. BNG Bank has asked Telos to provide the yearly updating of the database over the years 2019-2029 and report on the annual changes in scores of the Elected Municipalities. This is the second of such reports on the 2019 bonds, covering the period 2019-2021. It describes how the performance is assessed, the general outcome of the comparison over the years 2019-2021, including the impact on CO<sub>2</sub>-emissions. Additionally, this reports gives insights in the development of the elected municipalities on the UN Sustainable Development Goals (SDGs).

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<sup>2</sup> <https://www.bngbank.com/-/media/Project/CBB/BNG-Bank-COM/Documents/Sustainability-Bond-for-Dutch-municipalities-Framework-2019.PDF?la=en&rev=5b6abc3cbf8c4aa0b39f4022444093b3&hash=BC6D295FAEE031CA6C4C65CDD977BD73>

<sup>3</sup> <https://www.bngbank.com/funding/sustainability-bond>

## 2 Description of activities

### 2.1 Update of database

The main activity to be able to produce an impact report for 2021 on the municipalities elected for the BNG Bank sustainable municipalities bond of 2019 was to update the database for the sustainability assessment of Dutch municipalities used in the National Monitor Sustainable Municipalities 2021. The monitor is basically designed on the basis of the UN and EU concept of sustainable development, which implies that three dimensions of development are considered of equal importance: economic, socio-cultural and ecological. Each of these three 'capitals' are subdivided into themes, called 'stocks', which are operationalized by measuring 'indicators'. Indicator values are assessed against sustainability goals, as described in more detail in the National Monitor report. These sustainability goals have been designed independently from the later agreed UN Sustainable Development Goals (SDGs) or Global Goals in 2015. A detailed analysis of the comparability and differences by Telos, as described in the National Monitor of 2019<sup>4</sup>, has shown that these goals have a wide similarity.

The United Nations SDGs include a set of 17 Global Goals that cover, more categorized from a policy than from a scientific point of view, urgent tasks to be addressed by national governments, local authorities and private actors. A detailed analysis of the differences and overlaps between the triple P approach, used in this framework, and the 17 Goals of the SDGs shows that a large part of the indicators are the same but for some goals clear differences occur. Goal 14 on seas and oceans is for example not included because this is not relevant for municipalities. Governance issues, as implemented by partnerships, have explicitly not yet been included in the triple P approach, amongst others because of the different nature of this domain and because comparable data are difficult to collect. The basic structure of the triple P model will be kept as leading in this impact report, as it better represents a structure that can be founded and explored scientifically. Like in the 2019 framework report, the relevant indicators will also be used to assess the progress on the SDGs for the municipalities.

The updating activities include:

1. Motivation of new sustainability stocks, indicators and goals for indicators to meet new scientific insights and practical developments.
2. Generating most recent data for the indicators used in the National Monitor Sustainable Municipalities from open public sources or by acquiring them.

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<sup>4</sup> <https://www.bngbank.com/-/media/Project/CBB/BNG-Bank-COM/Documents/Sustainability-Bond-for-Dutch-municipalities-Framework-2019.PDF?la=en&rev=5b6abc3cbf8c4aa0b39f4022444093b3&hash=BC6D295FAEE031CA6C4C65CDD977BD73>

3. Eventual reassessment of city typology (this was not needed in the recent version of the Monitor).
4. Harmonization with national monitoring activities by third parties on theme specific issues such as climate, mobility, health, etc.
5. Adjustment to the outcome of rearrangements, which are continuously resulting in larger municipality municipalities and a lower total number of municipalities.

The National Monitor Sustainable Municipalities 2019 discerned 14 city types. These 14 types have been used for the Framework of the BNG Bank Sustainability Bond of 2019 and are the basis for the performance report at hand.

## 2.2 Assessment of performance of Elected Sustainable Municipalities

Based on the updated Database, sustainability performance of 114 Elected Municipalities in 2019 will be evaluated and discussed. The group of Elected Municipalities, described in the Framework of the BNG Bank Sustainability Bond of October 2019, has been selected by identifying the 15 best scoring municipalities for each of 14 types of cities, such as ‘agricultural’, ‘old industrial’, ‘shrinking’, etc. municipalities. The 114 Elected Municipalities have been selected out of the total number of 355 municipalities in the Netherlands in 2019. In 2021, there were only 352 municipalities left due to rearrangements. However, the total group of elected municipalities remained the same as none of the rearranged municipalities were elected in 2019.

Furthermore, the number of indicators was partially expanded due to new possibilities but also reduced due to lack of continued data collection, resulting in 137 indicators now, compared to 132 in 2019. Such changes had to be included in the comparison between 2021 and 2019. Where needed new data for 2019 were separately collected and calculated. The reader is referred to the Method report for the 2021 BNG Bank Sustainability bond<sup>5</sup>, for the details of the amendments made in the calculation of the sustainability scores and how comparability between the years 2019 and 2021 was ascertained.

This assessment includes:

1. A comparison of sustainability scores of Elected Municipalities with the total group of Dutch municipalities for 2019 and 2021.
2. A comparison of sustainability scores for Elected Municipalities between 2019 and 2021, including:
  - a. overall scores
  - b. capital scores, and a selection of:
  - c. stock scores and where useful
  - d. indicator scores.

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<sup>5</sup> [www.hetpon-telos.nl/methodreport2021](http://www.hetpon-telos.nl/methodreport2021)

3. A list of Elected Municipalities, which show the largest improvement or reduction in overall score and in CO2 emissions.
4. An overview of the development on the Sustainable Development Goals (SDGs) of the elected municipalities between 2019 and 2021.

In the next chapters, the outcome of these activities is presented. Finally, the overall changes observed for reporting period 2019-2021 will be discussed.

### 3 Outcome of updating exercise and comparison of 2019 and 2021

#### 3.1 National Monitor Sustainable Municipalities 2021

In November 2021, Telos has completed the data collection for the National Monitor Sustainable Municipalities 2021. The major outcome is shown in table 3.1:

Table 3.1 Sustainability performance of the total group of Dutch municipalities in 2019-2021

Sustainability capital	2019	2020	2021
<b>Total</b>	<b>50.94</b>	<b>51.42</b>	<b>52.14</b>
Socio-cultural	51.02	51.54	51.51
Ecological	51.22	51.43	52.72
Economic	50.57	51.29	52.20

From 2019 to 2021 the average overall sustainability score improved from 50.94 till 52.14 percentage. This was due to improvements of all three capitals. The socio-cultural capital improved only marginally the past years from 51.02 to 51.51. The ecological improved from 51.22 to 52.72 percentage. The economic capital showed the largest increase in sustainability score from 50.57 till 52.20.

#### 3.2 General characteristics of Elected Municipalities for the BNG Bank Sustainability Bond 2019

The group of Elected Municipalities represents the sum of highest scoring municipalities in each of the 14 types of municipalities considered. They are therefore not a representative sample of the total group of Dutch municipalities. This is illustrated in table 3.2, using municipality size as criterion.

Table 3.2 Distribution of municipality sizes in the Netherlands and in the group of Elected

Municipality size (number of inhabitants)	Total number of municipalities in the Netherlands	Total number of municipalities in elected group
Less than 50,000	264 (75%)	83 (72.8%)
50,000-100,000	56 (15.9%)	15 (13.2%)
More than 100,000	32 (9.1%)	16 (14.0%)

As table 3.2 shows, the size distribution of the elected group of municipalities differs from the average distribution in the country. The small and midsize municipalities are underrepresented, while the large municipalities are overrepresented in the elected group. In case the outcome for the elected group is compared with the total group of municipalities this has to be taken into account.

### 3.3 General performance of Elected Municipalities compared to total group of Dutch Municipalities

BNG Bank has chosen to allocate the proceeds of the Sustainability Bond to the best performing municipalities in their class as instrument for several reasons. These include:

- Highlighting the importance of sustainable development to municipalities,
- Enabling investors that want to see their capital used for investments in municipalities that have experience in improving sustainability, and
- Increasing awareness of successful strategies used in high scoring municipalities, etc.

It would be welcome, against this background, if the comparison between performance of the group of Elected Municipalities and the total group of Dutch municipalities would show that the Elected Municipalities outperform the others over the years. Yet, it may not be as simple as that. Best performing municipalities may not have as much opportunities left for further improvement as low performing municipalities, which can more easily improve their performance.

Table 3.3 gives a summary of the overall differences between 2019 and 2021 for the total group of Dutch municipalities and the group of Elected Municipalities. It shows that general trends, an improvement of the overall score with 1.1-1.2 percentage points, are similar in both groups.

Table 3.3 Sustainability performance of Elected Municipalities and of the total group of Dutch municipalities in 2019 compared to 2021 (percentage points)

Sustainability capital	Elected 2019	Total 2019	Elected 2021	Total 2021	Elected: Difference 2019-2021	Total: Difference 2019-2021
<b>Total</b>	<b>53.2</b>	<b>50.9</b>	<b>54.4</b>	<b>52.1</b>	<b>1.1</b>	<b>1.2</b>
Socio-cultural	53.1	51.0	53.4	51.5	0.3	0.5
Ecological	53.6	51.2	55.4	52.7	1.8	1.5
Economic	53.0	50.6	54.4	52.2	1.4	1.6

The Elected Municipalities continued to outperform the total group of municipalities with 2.3 percentage points (54.4 vs 52.1), as listed in table 1. Both groups of municipalities show an improvement of the overall score with 1.1-1.2 percentage points. Largest improvements occurred this year for the economic capital (1.4/1.6 percentage points) and the ecological capital (1.8/1.5 percentage

points), while those socio-cultural capital were relatively small (0.3/0.5 percentage points).

In the next paragraph, the more detailed stock scores are considered.

### 3.4 Changes in stock scores of Elected and the total group of municipalities

A closer look at the level of stocks, see table 3.4, shows that differences between the years show a similar pattern in both groups of municipalities.

Table 3.4 Differences in sustainability scores (percentage points) of stocks between 2019 and 2021 for the group of elected Municipalities and all Dutch municipalities

Sustainability stock	Difference 2019-2021 of 114 Elected Municipalities	Difference 2019-2021 of all 352 municipalities
<b>Socio-cultural</b>		
Arts & culture	-0.49	0.19
Economic participation	8.68	8.70
Education	0.08	0.32
Health	-0.70	0.05
Housing	2.92	3.20
Lifestyle and health	-4.00	-3.29
Political Participation	-0.11	-0.21
Residential environment	-1.32	-1.46
Safety	0.97	0.27
Social participation	-3.16	-2.88
<b>Ecological</b>		
Air	3.58	3.38
Annoyance and External safety	0.07	-0.02
Energy	4.50	4.61
Nature & landscape	0.00	0.00
Soil	3.96	2.41
Resources & waste	0.86	1.34
Water	-0.68	-1.22
<b>Economic</b>		
Competitiveness	3.04	3.81
Infrastructure & mobility	3.55	3.97
Knowledge	1.64	1.75
Labor	-0.11	-0.27
Spatial location conditions	-1.28	-1.14



## Socio-cultural stocks

Among socio-cultural stocks, differences between both groups of municipalities are small. Most striking is the improvement in 'economic participation' and 'housing' in the both groups of municipalities. The biggest decline for both groups of municipalities can be found for 'lifestyle and health' and for 'social participation'. It is possible that part of the decline for both of these stocks are caused by the Covid19 pandemic.

## Ecological stocks

Also here, the group of Elected Municipalities shows a similar pattern as the total group of municipalities, with large improvements over the period 2018-2021 for the stocks of 'energy' and 'air'. Both groups also show an increase in 'soil'. However, the change is bigger for the elected municipalities.

## Economic stocks

Elected Municipalities improved practically as much as the total group of municipalities. The biggest improvement is found in 'competitiveness' and 'infrastructure & mobility', while 'spatial location conditions' shows a decline.

## 4 Elected Municipalities showing largest improvement or reduction in sustainability score in 2019–2021 depending on city typology

In this chapter, a closer examination of the improvements or reductions in total sustainability score of individual Elected Municipalities will be discussed. The assessment will be presented for each of the 14 types of municipalities that are discerned in the Framework for the BNG Bank Sustainability Bond of 2019: agricultural-, center-, green-, growth-, historic-, old industrial-, mid-sized-, New Town-, shrink-, small, residential, tourist, work- and 100,000plus municipalities. The list of best-in-class municipalities in each type of municipalities will be presented as described in the framework document. The scores for 2019 have in this assessment been corrected for additional indicators used in 2021 to make them comparable with the 2019 data. The results are therefore sometimes differing from those given in the 2019 Framework document.

### 4.1 Elected agricultural municipalities

Table 4.1 presents the 15 best-in-class municipalities of the agricultural type, their reconstructed 2019 scores and the 2021 scores for total sustainability. One municipality decreased its sustainability score over the past two years, while fourteen municipalities improved their score. Winterswijk improved the most in the period 2019–2021. Overall, the score of the group of elected agricultural municipalities improved 1.2 percentage point since 2019.

Table 4.1 Improvements and reductions in total sustainability scores of elected agricultural municipalities over 2019–2021

Agricultural municipality	Sustainability score 2019	Sustainability score 2021	Difference
Winterswijk	54.3	57.0	2.7
Eemnes	51.9	54.3	2.4
Raalte	52.6	55.0	2.4
Dalfsen	55.7	57.2	1.5
Lochem	54.0	55.5	1.5
Tynaarlo	55.6	56.8	1.2
Oost Gelre	53.5	54.6	1.1
Hof van Twente	54.9	55.9	1.0
Wijk bij Duurstede	53.0	54.0	1.0
Dinkelland	57.5	58.3	0.8
Staphorst	55.9	56.6	0.7
Bunnik	53.1	53.8	0.7
Midden-Delfland	57.2	57.7	0.5

Voorst	55.7	56.1	0.4
Kampen	54.0	53.7	-0.3
<b>Average</b>	<b>54.6</b>	<b>55.8</b>	<b>1.2</b>

## 4.2 Elected center municipalities

As table 4.2 shows, one municipality did not improve its score last years. Deventer improved the most (1.8 percentage point), followed by Huizen.

Table 4.2 Improvements in total sustainability scores of elected center municipalities over 2019-2021

Center municipality	Sustainability score 2018	Sustainability score 2021	Difference
Deventer	53.4	55.2	1.8
Huizen	53.0	54.7	1.7
Hilversum	51.8	53.2	1.4
Zwolle	55.0	56.4	1.4
Castricum	54.5	55.7	1.2
Apeldoorn	53.7	54.9	1.2
Haarlem	51.6	52.7	1.1
Groningen (gemeente)	53.7	54.8	1.1
Delft	54.0	55.0	1.0
Nijmegen	54.0	55.0	1.0
Utrecht (gemeente)	54.1	55.0	0.9
Leiden	52.1	53.0	0.9
Ede	52.9	53.7	0.8
Gooise Meren	52.8	53.3	0.5
Amsterdam	51.4	51.1	-0.3
<b>Average</b>	<b>53.2</b>	<b>54.2</b>	<b>1.0</b>

## 4.3 Elected green municipalities

Elected green municipalities on average improved with 1.1 percentage points. Two municipalities show a decrease in their sustainability score between 2019-2021, as shown in Table 4.3. Leusden improved most with 2.6 percentage points.

Table 4.3 Improvements and reductions in total sustainability scores of elected green municipalities over 2019-2021

Green municipality	Sustainability score 2019	Sustainability score 2021	Difference
Leusden	54.7	57.3	2.6
Mook en Middelaar	54.2	56.4	2.2
Heeze-Leende	55.5	57.5	2.0
Soest	52.1	54.1	2.0
Bloemendaal	55.9	57.6	1.7
Ermelo	53.9	55.4	1.5
Hilversum	51.8	53.2	1.4
Hellendoorn	53.5	54.8	1.3
Heerde	53.2	54.1	0.9
Ameland	55.2	55.9	0.7
Nunspeet	55.4	56.0	0.6
Schiermonnikoog	54.1	54.4	0.3
Rozendaal	53.3	53.4	0.1
Waalre	55.8	55.7	-0.1
Vlieland	55.5	54.6	-0.9
<b>Average</b>	<b>54.3</b>	<b>55.4</b>	<b>1.1</b>

#### 4.4 Elected growth municipalities

The elected growth municipalities showed an improvement of 0.9 percentage points over the last two years. One municipality (Urk) did not improve its score. The highest improvement was found for Leusden, followed by Heeze-Leende and Bloemendaal.

Table 4.4 Improvements and reductions in total sustainability scores of elected growth municipalities over 2019-2021

Growth municipality	Sustainability score 2019	Sustainability score 2021	Difference
Leusden	54.7	57.3	2.6
Heeze-Leende	55.5	57.5	2.0
Bloemendaal	55.9	57.6	1.7
Dalfsen	55.7	57.2	1.5
Zwolle	55.0	56.4	1.4
Houten	54.9	56.3	1.4
Delft	54.0	55.0	1.0
Nijmegen	54.0	55.0	1.0
Voorschoten	54.8	55.7	0.9
Ameland	55.2	55.9	0.7
Bunnik	53.1	53.8	0.7
Midden-Delfland	57.2	57.7	0.5

Wageningen	56.2	56.6	0.4
Rozendaal	53.3	53.4	0.1
Urk	54.5	52.7	-1.8
<b>Average</b>	<b>54.9</b>	<b>55.9</b>	<b>0.9</b>

#### 4.5 Elected historic municipalities

Rheden, Bronckhorst, and Eijsden-Margraten showed the largest improvement in their score over the last two years, with improvements of at least 1.8 percentage points. Four municipalities have decreased their sustainability score since 2019. The average score improved last year with 0.7 percentage points, as presented in Table 4.5.

Table 4.5 Improvements and reductions in total sustainability scores of elected historic municipalities over 2019-2021

Historic municipality	Sustainability score 2019	Sustainability score 2021	Difference
Rheden	50.9	53.8	2.9
Bronckhorst	54.5	56.4	1.9
Eijsden-Margraten	51.4	53.2	1.8
Hilversum	51.8	53.2	1.4
Delft	54.0	55.0	1.0
Utrecht (gemeente)	54.1	55.0	0.9
Leiden	52.1	53.0	0.9
Molenlanden	53.6	54.5	0.9
Staphorst	55.9	56.6	0.7
Ameland	55.2	55.9	0.7
Schiermonnikoog	54.1	54.4	0.3
Amsterdam	51.4	51.1	-0.3
Kampen	54.0	53.7	-0.3
Waterland	55.2	54.4	-0.8
Vlieland	55.5	54.6	-0.9
<b>Average</b>	<b>53.6</b>	<b>54.3</b>	<b>0.7</b>

#### 4.6 Elected mid-sized municipalities

Table 4.6 shows that mid-sized municipalities improved their sustainability score on average with 1.2 percentage points over the last two years. Only one municipality did not improve its score. Doetinchem, Woerden and Deventer improved their score most.

Table 4.6 Improvements and reductions in total sustainability scores of elected mid-sized municipalities over 2019-2021

Mid-sized municipality	Sustainability score 2019	Sustainability score 2021	Difference
Doetinchem	50.9	53.3	2.4
Woerden	53.4	55.4	2.0
Deventer	53.4	55.2	1.8
Stichtse Vecht	50.2	51.9	1.7
Heerenveen	52.2	53.7	1.5
Gouda	51.6	53.1	1.5
Hilversum	51.8	53.2	1.4
Assen	51.9	53.3	1.4
Westerkwartier	52.8	54.1	1.3
Krimpenerwaard	53.8	55.0	1.2
Katwijk	52.6	53.7	1.1
Gooise Meren	52.8	53.3	0.5
Barneveld	53.0	53.4	0.4
Amstelveen	54.6	54.8	0.2
Kampen	54.0	53.7	-0.3
<b>Average</b>	<b>52.6</b>	<b>53.8</b>	<b>1.2</b>

#### 4.7 Elected New Town municipalities

Elected New Town municipalities improved on average their score with 0.9 percentage points (see table 4.7). Eemnes and Amersfoort both improved their score the most with 2.4 and 2.0 percentage points respectively.

Table 4.7 Improvements and reductions in total sustainability scores of elected New Town municipalities over 2019-2021

New Town municipality	Sustainability score 2019	Sustainability score 2021	Difference
Eemnes	51.9	54.3	2.4
Amersfoort	53.1	55.1	2.0
Woudenberg	54.6	56.1	1.5
Houten	54.9	56.3	1.4
Overbetuwe	50.1	51.5	1.4
Culemborg	53.7	54.6	0.9
Nijkerk	53.7	54.6	0.9
IJsselstein	52.1	53.0	0.9
Harderwijk	53.1	54.0	0.9
Aalsmeer	51.9	52.8	0.9
Zeewolde	53.6	54.4	0.8
Midden-Delfland	57.2	57.7	0.5
Heumen	54.2	54.7	0.5

Tubbergen	54.9	55.1	0.2
Urk	54.5	52.7	-1.8
<b>Average</b>	<b>53.6</b>	<b>54.5</b>	<b>0.9</b>

#### 4.8 Elected old industrial municipalities

Elected old industrial municipalities scored on average 1.1 percentage points higher over the reporting period, as shown in Table 4.8. Oldenzaal improved the most with 2.5 percentage points, followed by Hattem. Two municipalities decreased their score over time.

Table 4.8 Improvements and reductions in total sustainability scores of elected old industrial municipalities over 2019-2021

Old industrial municipality	Sustainability score 2019	Sustainability score 2021	Difference
Oldenzaal	53.2	55.7	2.5
Hattem	53.2	55.1	1.9
Best	51.8	53.6	1.8
Haaksbergen	54.0	55.8	1.8
Wierden	53.6	55.2	1.6
Losser	53.2	54.8	1.6
Bladel	54.0	55.5	1.5
Oisterwijk	51.0	52.4	1.4
Hellendoorn	53.5	54.8	1.3
Borne	53.8	55.0	1.2
Bergeijk	55.2	56.1	0.9
Culemborg	53.7	54.6	0.9
Rijssen-Holten	53.7	54.3	0.6
Waalre	55.8	55.7	-0.1
Putten	54.7	53.0	-1.7
<b>Average</b>	<b>53.6</b>	<b>54.8</b>	<b>1.1</b>

#### 4.9 Elected residential municipalities

Residential municipalities on average improved its score with 1.0 percentage points since 2019, as can be seen in Table 4.9. Sint-Michielsgestel, Landsmeer and Mook en Middelaar all increased their score with 2.2 percentage points over the past two years.



Table 4.9 Improvements and reductions in total sustainability scores of elected old industrial municipalities over 2019-2021

Residential municipality	Sustainability score 2019	Sustainability score 2021	Difference
Sint-Michielsgestel	53.0	55.2	2.2
Landsmeer	50.9	53.1	2.2
Mook en Middelaar	54.2	56.4	2.2
Eijsden-Margraten	51.4	53.2	1.8
Bloemendaal	55.9	57.6	1.7
Borne	53.8	55.0	1.2
Castricum	54.5	55.7	1.2
Wijk bij Duurstede	53.0	54.0	1.0
Hendrik-Ido-Ambacht	52.1	53.1	1.0
Voorschoten	54.8	55.7	0.9
Heumen	54.2	54.7	0.5
Rozendaal	53.3	53.4	0.1
Waalre	55.8	55.7	-0.1
Reusel-De Mierden	54.7	54.2	-0.5
Waterland	55.2	54.4	-0.8
<b>Average</b>	<b>53.8</b>	<b>54.8</b>	<b>1.0</b>

#### 4.10 Elected shrink municipalities

As far as elected shrink municipalities are concerned, it can be noticed that they improved 1.3 percentage points on average the last two years (see Table 4.10). Mook and Middelaar improved the most with 2.2 percentage points, and one municipality shows an overall decrease in sustainability score since 2019.

Table 4.10 Improvements and reductions in total sustainability scores of elected shrink municipalities over 2019-2021

Shrink municipality	Sustainability score 2019	Sustainability score 2021	Difference
Mook en Middelaar	54.2	56.4	2.2
Berkelland	53.4	55.5	2.1
Laren (NH.)	50.0	52.1	2.1
Bronckhorst	54.5	56.4	1.9
Beekdaelen	49.1	50.7	1.6
Brummen	52.2	53.8	1.6
Voerendaal	51.5	53.0	1.5
Roerdalen	49.0	50.5	1.5
Leudal	49.8	51.2	1.4
Gulpen-Wittem	49.4	50.7	1.3
Stein (L.)	49.1	50.1	1.0
Bergen (NH.)	53.0	53.8	0.8

Valkenburg aan de Geul	52.0	52.7	0.7
Westervoort	49.2	49.9	0.7
Meerssen	51.3	50.8	-0.5
<b>Average</b>	<b>51.2</b>	<b>52.5</b>	<b>1.3</b>

#### 4.11 Elected small municipalities

The group of small municipalities has improved its score over the period 2019-2021 by 0.8 percentage points, as shown in Table 4.11. Leusden leads this group by improving 2.6 percentage points, followed by Mook en Middelaar and Bloemendaal.

Table 4.11 Improvements and reductions in total sustainability scores of elected old industrial municipalities over 2019-2021

Small municipality	Sustainability score 2019	Sustainability score 2021	Difference
Leusden	54.7	57.3	2.6
Mook en Middelaar	54.2	56.4	2.2
Bloemendaal	55.9	57.6	1.7
Dalfsen	55.7	57.2	1.5
Houten	54.9	56.3	1.4
Tynaarlo	55.6	56.8	1.2
Ameland	55.2	55.9	0.7
Bunnik	53.1	53.8	0.7
Heumen	54.2	54.7	0.5
Midden-Delfland	57.2	57.7	0.5
Wageningen	56.2	56.6	0.4
Noordenveld	54.4	54.8	0.4
Schiermonnikoog	54.1	54.4	0.3
Rozendaal	53.3	53.4	0.1
Urk	54.5	52.7	-1.8
<b>Average</b>	<b>54.9</b>	<b>55.7</b>	<b>0.8</b>

#### 4.12 Elected tourist municipalities

The sustainability score of the elected tourist type of municipalities has improved on average 0.7 percentage points (see Table 4.12). The biggest improvement came from Mook en Middelaar and Eijsden-Margraten. Three municipalities show a decrease in their sustainability score since 2019.

Table 4.12 Improvements and reductions in total sustainability scores of elected tourist municipalities over 2019-2021

Tourist municipality	Sustainability score 2019	Sustainability score 2021	Difference
Mook en Middelaar	54.2	56.4	2.2
Eijsden-Margraten	51.4	53.2	1.8
Westerveld	53.0	54.4	1.4
Hilvarenbeek	54.9	56.0	1.1
Groningen (gemeente)	53.7	54.8	1.1
Leiden	52.1	53.0	0.9
Bergeijk	55.2	56.1	0.9
Steenwijkerland	54.7	55.6	0.9
Bergen (NH.)	53.0	53.8	0.8
Ameland	55.2	55.9	0.7
Terschelling	54.3	54.7	0.4
Schiermonnikoog	54.1	54.4	0.3
Amsterdam	51.4	51.1	-0.3
Waterland	55.2	54.4	-0.8
Vlieland	55.5	54.6	-0.9
<b>Average</b>	<b>53.9</b>	<b>54.6</b>	<b>0.7</b>

### 4.13 Elected work municipalities

Elected work municipalities improved on average with 1.1 percentage points over the period 2019-2021, as illustrated in table 4.13. Oldenzaal improved the most with 2.5 percentage points, followed by Woerden and Deventer.

Table 4.13 Improvements and reductions in total sustainability scores of elected work municipalities over 2019-2021

Work municipality	Sustainability score 2019	Sustainability score 2021	Difference
Oldenzaal	53.2	55.7	2.5
Woerden	53.4	55.4	2.0
Deventer	53.4	55.2	1.8
Hilversum	51.8	53.2	1.4
Zwolle	55.0	56.4	1.4
Oost Gelre	53.5	54.6	1.1
Groningen (gemeente)	53.7	54.8	1.1
Delft	54.0	55.0	1.0
Nijmegen	54.0	55.0	1.0
Leiden	52.1	53.0	0.9
Utrecht (gemeente)	54.1	55.0	0.9
Nunspeet	55.4	56.0	0.6
Rijssen-Holtén	53.7	54.3	0.6

Ouder-Amstel	53.9	54.1	0.2
Amsterdam	51.4	51.1	-0.3
<b>Average</b>	<b>53.5</b>	<b>54.6</b>	<b>1.1</b>

#### 4.14 Elected 100,000plus municipalities

The, for Dutch dimensions, relative large elected 100,000plus cities, on average improved their score with 1.2 percentage point. Eindhoven improved most, followed by Amersfoort and Arnhem.

Table 4.14 Improvements and reductions in total sustainability scores of elected 100,000plus over 2019-2021

100,000plus municipality	Sustainability score 2019	Sustainability score 2021	Difference
Eindhoven	51.6	54.2	2.6
Amersfoort	53.1	55.1	2.0
Arnhem	50.8	52.8	2.0
's-Hertogenbosch	50.4	52.2	1.8
Zwolle	55.0	56.4	1.4
Apeldoorn	53.7	54.9	1.2
Haarlem	51.6	52.7	1.1
Groningen (gemeente)	53.7	54.8	1.1
Delft	54.0	55.0	1.0
Nijmegen	54.0	55.0	1.0
Utrecht (gemeente)	54.1	55.0	0.9
Leiden	52.1	53.0	0.9
Almere	52.2	53.1	0.9
Ede	52.9	53.7	0.8
Amsterdam	51.4	51.1	-0.3
<b>Average</b>	<b>52.7</b>	<b>53.9</b>	<b>1.2</b>

#### 4.15 Summary of score changes of Elected Municipalities and their typology

Table 4.15 gives an overview of the average performance of the 14 groups of municipalities. The largest improvement in percentage points was found in shrink municipalities. Highest sustainability scores were measured in growth municipalities (55.9 percentage points) and lowest in shrink municipalities (52.5 percentage points).

Table 4.15 Changes in total sustainability scores of 14 types of elected municipalities over 2019-2021

Type of municipality	Sustainability score 2019	Sustainability score 2021	Difference
Small municipalities	54.9	55.7	0.8
Mid-sized municipalities	52.6	53.8	1.2
100.000plus municipality	52.7	53.9	1.2
Agricultural municipality	54.6	55.8	1.2
Center municipality	53.2	54.2	1.0
Former industrial municipality	53.6	54.8	1.1
Green municipality	54.3	55.4	1.1
Growth municipalities	54.9	55.9	0.9
Historic municipalities	53.6	54.3	0.7
New Town municipality	53.6	54.5	0.9
Residential municipalities	53.8	54.8	1.0
Shrink municipality	51.2	52.5	1.3
Touristic municipalities	53.9	54.6	0.7
Work municipality	53.5	54.6	1.1

## 5 Overall outcome for Elected Municipalities including their CO2-emission scores in 2019–2021

This chapter presents a final overview of the performance of the Elected Municipalities, independent from their typology.

The green bonds were started by the World Bank to help promote the transition to a low carbon economy, in order to slow down further climate change. Considering this background, this chapter includes a description of the performance of the Elected Municipalities in relation to CO2-emissions. Although they are included as indicator in the ecological capital, this aspect will be highlighted as an element of special interest, being often the key factor for green bond and sustainability bond investors.

### 5.1 General outcome of improving and regressing Elected Municipalities

Among Elected Municipalities 92% had similar or higher sustainability scores in 2021 compared to 2019 (see also Annex 1).

Tables 5.1 and 5.2 show the elected Municipalities that showed the largest improvement or decrease in their sustainability score over time. The best performing municipality in this respect among Elected Municipalities is Rheden, followed by Winterswijk, Eindhoven and Leusden.

Table 5.1 Ten Elected Municipalities improving sustainability score most in the period 2019–2021

Elected municipality	Typology	Total score 2019	Total score 2021	Difference
Rheden	Historic	50.9	53.8	2.9
Winterswijk	Agricultural	54.3	57.0	2.7
Eindhoven	Large	51.6	54.2	2.6
Leusden	Small, Green, Growth	54.7	57.3	2.6
Oldenzaal	Former industrial, Work	53.2	55.7	2.5
Eemnes	Agricultural, New town	51.9	54.3	2.4
Doetinchem	Medium	50.9	53.3	2.4
Raalte	Agricultural	52.6	55.0	2.4
Landsmeer	Residential	50.9	53.1	2.2
Sint-Michielsgestel	Residential	53.0	55.2	2.2

The largest reduction in sustainability score among Elected Municipalities was detected in Urk, Putten and Vlieland.

Table 5.2 Ten Elected Municipalities with largest declining sustainability score in the period 2019-2021

Municipality	Typology	Total score 2019	Total score 2021	Difference
Urk	Small, Growth, New town	54.5	52.7	-1.8
Putten	Former industrial	54.7	53.0	-1.7
Vlieland	Green, Historic, Tourist	55.5	54.6	-0.9
Waterland	Historic, Residential, Tourist	55.2	54.4	-0.8
Reusel-De Mierden	Residential	54.7	54.2	-0.5
Meerssen	Shrink	51.3	50.8	-0.5
Amsterdam	Large, Centre, Historic, Tourist, Work	51.4	51.1	-0.3
Kampen	Medium, Agricultural, Historic	54.0	53.7	-0.3
Waalre	Former industrial, Green, Residential	55.8	55.7	-0.1
Rozendaal	Small, Green, Growth, Residential	53.3	53.4	0.1

## 5.2 CO2-emission score performance of Elected Municipalities

Finally, the outcome of the CO2-emission assessment of Elected Municipalities will be discussed. This is one of the key transitions to which national governments have committed themselves in the framework of the UN Climate Change Convention and particularly since the 2015 Paris Agreement. But also individual municipalities have similar commitments, e.g. in the framework of the Covenant of Mayors to combat climate change. In the Netherlands the Association of Dutch Municipalities (VNG) has signed an agreement in 2013 with the national government and other parties to substantially reduce CO2-emissions the coming years. New agreements are underway.

Data on CO2 emissions are available for each municipality via the web-portal of the Dutch Emissions Authority . They calculate the CO2 emissions every five years, including the most recent two years. At this moment, data are available for 1990-2015 in a five-year interval, supplemented with the two most recent years in their database (2018 and 2019). In this impact report, the reduction over the two most recent years has been used.

A closer look at the CO2 reductions shows that the group of Elected Municipalities realized a reduction in CO2 emissions over the last two years; the CO2 emissions decreased with 4.5%. The outcome of this analysis is shown in table 5.3.



Table 5.3 CO2 reductions in different time periods of the Elected Municipalities and the total group of municipalities

Considered group of municipalities	1990-2019	2010-2019	2018-2019
Elected (114)	-24.9%	-24.1%	-4.5%
Others	9.5%	-9.7%	-2.7%
Total (352)	0.7%	-12.8%	-3.1%

The highest reduction was found Hilvarenbeek, followed by Ameland and Amsterdam. Table 5.4 shows that Brummen, Midden-Delfland and Putten noted the largest increase in CO2 emissions. CO2 emission changes for all municipalities over the last year are given in Annex 2.

Table 5.4 Ten Elected Municipalities with most and least reduction in CO2-emissions over the last year (equals measuring years 2018-2019)

Elected municipality	Emission change over measuring years 2018-2019	Elected municipality	Emission change over measuring years 2018-2019
Hilvarenbeek	-13.2	Brummen	7.1
Ameland	-11.9	Midden-Delfland	2.7
Amsterdam	-9.8	Putten	0.8
Utrecht (gemeente)	-7.4	Woerden	0.4
Reusel-De Mierden	-6.3	Katwijk	0.3
Groningen (gemeente)	-5.9	Aalsmeer	0.3
Nunspeet	-5.7	Leiden	0.1
Hattem	-5.6	Heerde	0.0
Tubbergen	-5.5	Kampen	-0.1
Barneveld	-5.3	Doetinchem	-0.6

## 6 SDGs scores

In the 2018 framework report, a method was introduced to measure the achievement of the 2015 UN Sustainable Development Goals (SDGs). Showing the impacts of societal activities in terms of their contribution to the SDGs, is recently becoming a must for many organizations and particularly for banks and pension funds. These have been active since 2015 to develop a so-called 'taxonomy on Sustainable Development Investments (SDIs)' that translates the SDGs into investable opportunities from the perspective of Asset Owners<sup>6</sup>.

An elaborated description of the methodology used to calculate the SDG scores can be found in the Method report 2021<sup>7</sup>. In essence it is based on aggregating elements of the sustainability scores in a way consistent with the definitions of the SDGs.

### 6.1 Progress of the elected municipalities towards the SDGs

Comparison over the years 2019 and 2021, as shown in table 6.1, makes clear that the performance of nine goals improved slightly or substantially (Goals 1, 3, 6, 7, 8, 9, 12, 15 and 16), but other showed a small fallback (Goals 2, 4, 10, 11 and 13).

In general, table 6.1 shows that the municipalities improved their performance between 2019 and 2021 for 9 of the 14 goals measured.

Table 6.1 SDG scores for elected (n=114) and all (n=352) municipalities 2019-2021

SDG	All municipalities (n=352)				Elected municipalities (n=114)			
	2019	2020	2021	Difference 2019-2021	2019	2020	2021	Difference 2019-2021
1. No Poverty	62.5	63.4	63.6	1.0	66.6	67.5	67.7	1.1
2. Zero Hunger	40.2	34.8	34.8	-5.5	46.1	40.6	40.6	-5.5
3. Good Health and Well-being	46.7	48.9	47.9	1.2	48.2	50.1	49.1	0.9
4. Quality Education	64.5	63.8	63.2	-1.2	66.4	66.0	65.2	-1.2
5. Gender Equality								
6. Clean Water and Sanitation	53.5	53.2	53.2	-0.3	54.4	55.1	55.1	0.7
7. Affordable and Clean Energy	33.2	35.2	38.0	4.8	34.0	36.0	38.6	4.7
8. Decent Work and Economic Growth	53.6	54.5	53.9	0.3	55.6	56.6	55.9	0.3
9. Industry, Innovation and Infrastructure	39.7	41.5	43.8	4.1	43.4	45.1	47.3	3.9

<sup>6</sup> [https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance\\_en](https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance_en)

<sup>7</sup> [www.hetpon-telos.nl/methodreport2021](http://www.hetpon-telos.nl/methodreport2021)

10. Reduced Inequalities	51.7	51.4	51.2	-0.6	54.7	53.9	53.5	-1.2
11. Sustainable Cities and Communities	50.9	50.5	51.1	0.3	52.6	52.2	52.5	-0.1
12. Responsible Consumption and Production	54.5	55.4	56.3	1.8	55.6	56.4	56.6	1.0
13. Climate Action	64.1	64.0	64.0	-0.1	68.6	68.5	68.4	-0.1
14. Life below Water								
15. Life on Land	48.1	46.5	50.5	2.4	50.2	48.7	54.2	4.0
16. Peace, Justice and Strong Institutions	51.4	52.4	52.8	1.3	54.1	55.6	56.0	1.9
17. Partnerships for the Goals								

As shown in table 6.1, 3 of the 17 SDGs could not be measured because of lack of data, or because they are not relevant for municipalities. These are nr. 5 (Gender equality), nr. 14 (Life below water) and nr.17 (Partnerships for the Goals).

## 6.2 Differences between the elected and the total group of municipalities on the SDGs

The performance of the group of elected municipalities deviates for some goals from the total group of municipalities. The elected municipalities still outperforms the total group on all 14 measured goals, but the differences become smaller.

On 6 of the 14 goals the total group of municipalities showed a greater improvement or a smaller decline in scores than the elected group. For example, the total group of municipalities showed an increase of 0.3 on goal 11 (Sustainable Cities and Communities), while the elected group showed a decline of 0.1 on the same goal.

More information about the method of analyses on the SDGs can be found in the 2021 Method report for municipalities<sup>8</sup>.

<sup>8</sup> [www.hetpon-telos.nl/methodreport2021](http://www.hetpon-telos.nl/methodreport2021)

## 7 Discussion and overview of outcome of assessment period 2019–2021

The end result shows that the 114 Elected Municipalities continued to outperform the total group of municipalities with 2.3 percentage points (54.4 vs 52.1), as listed in Table 1. . Both groups of municipalities show an improvement of the overall score with 1.1-1.2 percentage points. Largest improvements occurred this year for the economic capital (1.4/1.6 percentage points) and the ecological capital (1.8/1.5 percentage points), while those socio-cultural capital were relatively small (0.3/0.1 percentage points).

The analysis shows that 92% of Elected Municipalities improved in their total sustainability score over the past year and a bit more than 94% of Elected Municipalities reduced or stabilized their CO<sub>2</sub>-emissions. A closer look at the CO<sub>2</sub> reductions shows that the group of Elected municipalities realized a reduction in CO<sub>2</sub> emissions of 4.5%, while the other municipalities realized a reduction of -2.7%.

Scores of municipalities are rather dynamic from year to year, although major differences and advantages among municipalities are of a structural nature. In the reporting period Elected Municipalities Rheden, Winterswijk, Eindhoven, Leusden and Oldenzaal were able to improve their total sustainability score most with at least 2.5 percentage points. The largest reduction in sustainability score among Elected Municipalities was detected in Urk, Putten, Vlieland and Waterland.

Comparison of the years 2019 and 2021, as shown in table 6.1, makes clear that the performance of several goals improved substantially (Goals 1, 3, 7, 8, 9, 11, 12, 15 and 16) , but other showed a small fallback (Goals 2, 4, 6, 10, and 13). The elected municipalities still outperforms the total group on all measured goals, but the differences become smaller. The total group shows a higher improvement on goals 3, 7, 9, 10, 11 and 12 than the elected municipalities.

It is not always the best scoring municipality in a certain class that shows the biggest improvement of its score in the next year. The advantage of a high score on sustainability may turn into a (temporary) disadvantage under certain circumstances. Yet, the differences in position on a scoring list and the magnitude of improvement or fallback from year to year provide relevant incentives for municipalities to better understand their position, learn from each other, reduce vulnerabilities and develop new approaches to existing and new challenges. Impact reporting of Sustainability Bonds stimulates elected and other municipalities to invest proceeds from the bonds and other resources in most effective operational and innovative structural activities to improve sustainability.

## Annex A: Overview of the differences in total sustainability scores in 2019 and 2021 for all 114 Elected Municipalities

Municipality	Total sustainability score 2019	Total sustainability score 2021	Difference 2019-2021
Rheden	50.9	53.8	2.9
Winterswijk	54.3	57.0	2.7
Eindhoven	51.6	54.2	2.6
Leusden	54.7	57.3	2.6
Oldenzaal	53.2	55.7	2.5
Eemnes	51.9	54.3	2.4
Doetinchem	50.9	53.3	2.4
Raalte	52.6	55.0	2.4
Landsmeer	50.9	53.1	2.2
Sint-Michielsgestel	53.0	55.2	2.2
Mook en Middelaar	54.2	56.4	2.2
Berkelland	53.4	55.5	2.1
Laren (NH.)	50.0	52.1	2.1
Heeze-Leende	55.5	57.5	2.0
Amersfoort	53.1	55.1	2.0
Arnhem	50.8	52.8	2.0
Woerden	53.4	55.4	2.0
Soest	52.1	54.1	2.0
Hatterum	53.2	55.1	1.9
Bronckhorst	54.5	56.4	1.9
Best	51.8	53.6	1.8
Deventer	53.4	55.2	1.8
Eijsden-Margraten	51.4	53.2	1.8
's-Hertogenbosch	50.4	52.2	1.8
Haaksbergen	54.0	55.8	1.8
Bloemendaal	55.9	57.6	1.7
Huizen	53.0	54.7	1.7
Stichtse Vecht	50.2	51.9	1.7
Wierden	53.6	55.2	1.6
Beekdaalen	49.1	50.7	1.6
Losser	53.2	54.8	1.6
Brummen	52.2	53.8	1.6
Woudenberg	54.6	56.1	1.5
Voerendaal	51.5	53.0	1.5
Heerenveen	52.2	53.7	1.5
Bladel	54.0	55.5	1.5
Dalfsen	55.7	57.2	1.5

Ermelo	53.9	55.4	1.5
Gouda	51.6	53.1	1.5
Roerdalen	49.0	50.5	1.5
Lochem	54.0	55.5	1.5
Hilversum	51.8	53.2	1.4
Leudal	49.8	51.2	1.4
Oisterwijk	51.0	52.4	1.4
Zwolle	55.0	56.4	1.4
Houten	54.9	56.3	1.4
Assen	51.9	53.3	1.4
Overbetuwe	50.1	51.5	1.4
Westerveld	53.0	54.4	1.4
Gulpen-Wittem	49.4	50.7	1.3
Westerkwartier	52.8	54.1	1.3
Hellendoorn	53.5	54.8	1.3
Krimpenerwaard	53.8	55.0	1.2
Castricum	54.5	55.7	1.2
Borne	53.8	55.0	1.2
Apeldoorn	53.7	54.9	1.2
Tynaarlo	55.6	56.8	1.2
Hilvarenbeek	54.9	56.0	1.1
Oost Gelre	53.5	54.6	1.1
Katwijk	52.6	53.7	1.1
Haarlem	51.6	52.7	1.1
Groningen (gemeente)	53.7	54.8	1.1
Nijmegen	54.0	55.0	1.0
Hendrik-Ido-Ambacht	52.1	53.1	1.0
Wijk bij Duurstede	53.0	54.0	1.0
Delft	54.0	55.0	1.0
Hof van Twente	54.9	55.9	1.0
Stein (L.)	49.1	50.1	1.0
Voorschoten	54.8	55.7	0.9
Culemborg	53.7	54.6	0.9
Bergeijk	55.2	56.1	0.9
Utrecht (gemeente)	54.1	55.0	0.9
Leiden	52.1	53.0	0.9
Heerde	53.2	54.1	0.9
Nijkerk	53.7	54.6	0.9
Aalsmeer	51.9	52.8	0.9
Steenwijkerland	54.7	55.6	0.9
Harderwijk	53.1	54.0	0.9
Almere	52.2	53.1	0.9
IJsselstein	52.1	53.0	0.9

Molenlanden	53.6	54.5	0.9
Ede	52.9	53.7	0.8
Dinkelland	57.5	58.3	0.8
Zeewolde	53.6	54.4	0.8
Bergen (NH.)	53.0	53.8	0.8
Valkenburg aan de Geul	52.0	52.7	0.7
Staphorst	55.9	56.6	0.7
Ameland	55.2	55.9	0.7
Bunnik	53.1	53.8	0.7
Westervoort	49.2	49.9	0.7
Nunspeet	55.4	56.0	0.6
Rijssen-Holten	53.7	54.3	0.6
Midden-Delfland	57.2	57.7	0.5
Gooise Meren	52.8	53.3	0.5
Heumen	54.2	54.7	0.5
Terschelling	54.3	54.7	0.4
Voorst	55.7	56.1	0.4
Wageningen	56.2	56.6	0.4
Barneveld	53.0	53.4	0.4
Noordenveld	54.4	54.8	0.4
Schiermonnikoog	54.1	54.4	0.3
Tubbergen	54.9	55.1	0.2
Ouder-Amstel	53.9	54.1	0.2
Amstelveen	54.6	54.8	0.2
Rozendaal	53.3	53.4	0.1
Waalre	55.8	55.7	-0.1
Kampen	54.0	53.7	-0.3
Amsterdam	51.4	51.1	-0.3
Meerssen	51.3	50.8	-0.5
Reusel-De Mierden	54.7	54.2	-0.5
Waterland	55.2	54.4	-0.8
Vlieland	55.5	54.6	-0.9
Putten	54.7	53.0	-1.7
Urk	54.5	52.7	-1.8

## Annex B: Overview of the changes in CO2-emissions in 2018-2019 for all Elected Municipalities

Elected municipality	Typology	% Difference 2018-2019
Hilvarenbeek	Tourist	-13.2
Ameland	Small, Green, Growth, Historic, Tourist	-11.9
Amsterdam	Large, Centre, Historic, Tourist, Work	-9.8
Utrecht (gemeente)	Large, Centre, Historic, Work	-7.4
Reusel-De Mierden	Residential	-6.3
Groningen (gemeente)	Large, Centre, Tourist, Work	-5.9
Nunspeet	Green, Work	-5.7
Hatterum	Former industrial	-5.6
Tubbergen	New town	-5.5
Barneveld	Medium	-5.3
Bladel	Former industrial	-5.2
Schiermonnikoog	Small, Green, Historic, Tourist	-5.1
Bergeijk	Former industrial, Tourist	-5.1
Hof van Twente	Agricultural	-5.1
Delft	Large, Centre, Growth, Historic, Work	-4.9
IJsselstein	New town	-4.5
Rheden	Historic	-4.4
Haaksbergen	Former industrial	-4.2
Gouda	Medium	-4.1
Ede	Large, Centre	-3.8
Lochem	Agricultural	-3.8
Raalte	Agricultural	-3.8
Winterswijk	Agricultural	-3.7
Oost Gelre	Agricultural, Work	-3.7
Best	Former industrial	-3.6
Roerdalen	Shrink	-3.6
Westervoort	Shrink	-3.5
Leudal	Shrink	-3.5
Molenlanden	Historic	-3.5
Berkelland	Shrink	-3.4
Wijk bij Duurstede	Agricultural, Residential	-3.3
Rijssen-Holten	Former industrial, Work	-3.3
Hellendoorn	Former industrial, Green	-3.2
Nijmegen	Large, Centre, Growth, Work	-3.2
Mook en Middelaar	Small, Green, Residential, Shrink, Tourist	-3.2
Tynaarlo	Small, Agricultural	-3.1
Woudenberg	New town	-3.1



Dalfsen	Small, Agricultural, Growth	-3.1
Noordenveld	Small	-3.0
Heeze-Leende	Green, Growth	-3.0
Heumen	Small, New town, Residential	-2.9
Dinkelland	Agricultural	-2.9
Krimpenerwaard	Medium	-2.8
Wierden	Former industrial	-2.8
Voorschoten	Growth, Residential	-2.7
Waterland	Historic, Residential, Tourist	-2.7
Heerenveen	Medium	-2.7
Bloemendaal	Small, Green, Growth, Residential	-2.7
Bronckhorst	Historic, Shrink	-2.7
Sint-Michielsgestel	Residential	-2.7
Rozendaal	Small, Green, Growth, Residential	-2.7
Assen	Medium	-2.7
Wageningen	Small, Growth	-2.7
Huizen	Centre	-2.6
Landsmeer	Residential	-2.6
Amersfoort	Large, New town	-2.6
Haarlem	Large, Centre	-2.5
Terschelling	Tourist	-2.5
Eijsden-Margraten	Historic, Residential, Tourist	-2.5
Stichtse Vecht	Medium	-2.4
Borne	Former industrial, Residential	-2.4
Voorst	Agricultural	-2.4
Westerveld	Tourist	-2.4
Arnhem	Large	-2.4
Bergen (NH.)	Shrink, Tourist	-2.4
Oisterwijk	Former industrial	-2.4
Beekdaelen	Shrink	-2.4
Zwolle	Large, Centre, Growth, Work	-2.4
Hilversum	Medium, Centre, Green, Historic, Work	-2.4
Stein (L.)	Shrink	-2.4
Urk	Small, Growth, New town	-2.3
Steenwijkerland	Tourist	-2.3
Voerendaal	Shrink	-2.3
Deventer	Medium, Centre, Work	-2.2
Eindhoven	Large	-2.2
Valkenburg aan de Geul	Shrink	-2.2
Almere	Large	-2.2
Leusden	Small, Green, Growth	-2.1
's-Hertogenbosch	Large	-2.1

Castricum	Centre, Residential	-2.1
Westerkwartier	Medium	-2.1
Waalre	Former industrial, Green, Residential	-2.0
Staphorst	Agricultural, Historic	-1.9
Laren (NH.)	Shrink	-1.9
Meerssen	Shrink	-1.9
Oldenzaal	Former industrial, Work	-1.9
Bunnik	Small, Agricultural, Growth	-1.8
Overbetuwe	New town	-1.8
Gulpen-Wittem	Shrink	-1.8
Culemborg	Former industrial, New town	-1.8
Harderwijk	New town	-1.8
Gooise Meren	Medium, Centre	-1.8
Soest	Green	-1.7
Vlieland	Green, Historic, Tourist	-1.6
Hendrik-Ido-Ambacht	Residential	-1.5
Zeewolde	New town	-1.5
Apeldoorn	Large, Centre	-1.4
Losser	Former industrial	-1.4
Amstelveen	Medium	-1.4
Nijkerk	New town	-1.3
Ouder-Amstel	Work	-1.3
Eemnes	Agricultural, New town	-1.3
Houten	Small, Growth, New town	-1.1
Ermelo	Green	-0.9
Doetinchem	Medium	-0.6
Kampen	Medium, Agricultural, Historic	-0.1
Heerde	Green	0.0
Leiden	Large, Centre, Historic, Tourist, Work	0.1
Aalsmeer	New town	0.3
Katwijk	Medium	0.3
Woerden	Medium, Work	0.4
Putten	Former industrial	0.8
Midden-Delfland	Small, Agricultural, Growth, New town	2.7
Brummen	Shrink	7.1

(Source: [www.emissieregistratie.nl](http://www.emissieregistratie.nl))

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## About Het PON & Telos

### Improving social decision-making

Het PON & Telos is a social knowledge organisation at the heart of society. We consider it our mission to improve social decision-making. We do this by linking scientific knowledge to practical knowledge. In this process every voice counts! We collect, investigate, analyse, and interpret opinions and facts using stimulating approaches and innovative methods. In doing so, we are always focused on sustainable development: the harmonious connection between social, environmental and economic objectives. In this way we contribute to the quality of society at large, now and in the future.

With a multidisciplinary and creative team of nearly 30 research consultants, we work mainly for local and regional authorities in the Netherlands, but also for corporate bodies, banks, care and welfare institutions, funds, and social organisations. We work closely with civic organisations and other knowledge institutions and are an official partner of Tilburg University. We use our knowledge and insights to advise initiators, policy-makers and managers. This enables them to make informed choices and give a positive impulse to the society of tomorrow.

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