



# 3th Performance Report of Elected Dutch Municipalities of BNG Bank Sustainability Bond of November 2018

December 2021

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## Executive summary

November 26, 2018, BNG Bank launched its fifth Sustainability Bond, a new EUR 750 million | 0.5%, 7-year benchmark. The Framework document for the BNG Bank Sustainability Bond 2018 was provided to BNG Bank by Telos -Tilburg University- on 4 October 2018, describing the selection process of best-in-class Dutch municipalities eligible for the bond. The same selection of sustainable best-in-class municipalities was used to issue another sustainability bond in 2019. This resulted in an AUD 400 million | 1.9% sustainability bond which is also due November 2025.

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 2019–2025, 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 117 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 third impact report of the 2018 Sustainability Bonds, covering the years 2018-2021.

The Elected Municipalities continued to outperform the total group of municipalities with 2.1 percentage points (54.2 vs 52.1), as listed in table 1. Both groups of municipalities show an improvement of the overall score with 2.0 percentage points. Largest improvements occurred this year for the economic capital (3.3/3.7 percentage points), while those for the ecological and socio-cultural capital were smaller (1.6/1.2 and 1.1/1.2 percentage points).

Table 1. Sustainability scores of 117 elected municipalities and of the total group of 352 Dutch municipalities in 2021 compared to 2018

Sustainability capital	Elected 2018	Total 2018	Elected 2021	Total 2021	Elected: Difference 2018-2021	Total: Difference 2018-2021
<b>Total</b>	<b>52.2</b>	<b>50.1</b>	<b>54.2</b>	<b>52.1</b>	<b>2.0</b>	<b>2.0</b>
Socio-cultural	52.5	50.3	53.5	51.5	1.1	1.2
Ecological	53.1	51.5	54.6	52.7	1.6	1.2
Economic	51.2	48.5	54.5	52.2	3.3	3.7 <sup>1</sup>

The analysis shows that more than 98% of Elected Municipalities realized the same or an improved total sustainability score compared to last year. Around 95% of the Elected Municipalities realized a reduction in CO2 emissions from 2018-2019. A closer look at the CO2 reductions shows that the group of Elected Municipalities realized a reduction in CO2 emissions over the last year; 4% less CO2 emissions on average. The other municipalities realized a reduction of CO2 emissions of 2.8.

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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 Woudenberg, Oldenzaal, Hattem and Leusden were able to improve their total sustainability score most, with 3.8 to 4.6 percentage points. The largest reduction in sustainability score among Elected Municipalities was detected in Oostzaan, Urk, Vlieland and Putten, with -0.3 to -1.6 percentage points.

Comparison over the years 2018 and 2021 makes clear that the performance of several sustainable development goals improved substantially (Goals 1, 4, 6, 7, 8, 9, 12, 15 and 16) , but others showed a (small) fallback (Goals 2, 3, 10, 11, and 13). 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 for 14 out of the 14 measured goals, but the differences become smaller.

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# 1 Introduction

At the request of BNG Bank, Telos -Tilburg University, has provided on 4 October 2018 a Framework document 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 2018. Telos developed this framework based on its National Monitor of Sustainable Municipalities 2018, from which the 5<sup>th</sup> edition was presented in October 2018. 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 26, 2018, BNG Bank launched its fifth Sustainability Bond, a new EUR 750 million, 7-year benchmark<sup>3</sup>. Additionally, a second AUD 400 million, 7-year bond was issued based on the same selection of sustainable municipalities in 2018. Both bonds are due November 26<sup>th</sup> 2025. 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 – 2025, 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 117 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 2019-2025 and report on the annual changes in scores of the Elected Municipalities. This is the third report on the 2018 bonds, covering the period 2018-2021. It describes how the performance is assessed, the general outcome of the comparison over the years 2018-2021, including the impact on CO2-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/Documents/Investors/Sustainability%20Framework%20202118.pdf>

<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 2018 was to update the database for the sustainability assessment of Dutch municipalities used in the National Monitor Sustainable Municipalities 2018. 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 2017<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 2018 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> Bastiaan Zoeteman, John Dagevos, Rens Mulder, Corné Wentink, Naomi Hoven, Christien Visser, 2017, Nationale Monitor Duurzame Gemeenten 2017, Document number 17.170, Telos, Tilburg University, 29 September; <http://www.telos.nl/publicaties/publicatiesrapporten/default.aspx#folder=894859>

3. Harmonization with national monitoring activities by third parties on theme specific issues such as climate, mobility, health, etc.
4. Adjustment to the outcome of municipality rearrangements, which are continuously resulting in larger municipalities and a lower total number of municipalities.

The National Monitor Sustainable Municipalities 2018 discerned 14 city types. These 14 types have been used for the Framework of the BNG Bank Sustainability Bond of 2018 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 117 Elected Municipalities in 2018 will be evaluated and discussed. The group of Elected Municipalities, described in the Framework of the BNG Bank Sustainability Bond of October 2018, 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 125 Elected Municipalities have been selected out of the total number of 380 municipalities in the Netherlands in 2018. Since 2018, the number of municipalities is decreasing due to rearrangements among the municipalities. In 2021 there are only 352 municipalities. This influenced the selection of 125 municipalities for the bond of 2018 as well. The municipalities of Nuth, Schinnen, Haren, Winsum, Molenwaard, Ferwerderadiel, Geldermalsen, and Zuidhorn are no longer independent entities. They are therefore no longer taken in consideration in this performance report. That means that the group of elected municipalities now consists of 117 municipalities.

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 126 in 2018. Such changes had to be included in the comparison between 2021 and 2018. Where needed new data for 2018 were separately collected and calculated. The reader is referred to the Method report for the 2021<sup>5</sup> BNG Bank Sustainability bond, for the details of the amendments made in the calculation of the sustainability scores and how comparability between the years 2018 and 2021 was ascertained.

This assessment includes:

1. A comparison of sustainability scores of Elected Municipalities with the total group of Dutch municipalities for 2018 and 2021.
2. A comparison of sustainability scores for Elected Municipalities between 2018 and 2021, including:
  - a. overall scores
  - b. capital scores, and a selection of:
  - c. stock scores and where useful

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

- d. indicator scores.
- 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 2018 and 2021.

In the next chapters, the outcome of these activities is presented. Finally, the overall changes observed for reporting period 2018-2021 will be discussed.

### 3 Outcome of updating exercise and comparison of 2018 and 2021

#### 3.1 National Monitor Sustainable Municipalities 2021

In November 2021, Telos has completed its 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 2018-2021

Sustainability capital	2018	2019	2020	2021
<b>Total</b>	<b>50.10</b>	<b>50.94</b>	<b>51.42</b>	<b>52.14</b>
Socio-cultural	50.26	51.02	51.54	51.51
Ecological	51.51	51.22	51.43	52.72
Economic	48.53	50.57	51.29	52.20

In the period 2018-2021, the average overall sustainability score improved from 50.10 till 52.14 percentage points. This was due to improvements in all three capitals. The socio-cultural capital decreased slightly the past year from 51.54 to 51.51. The ecological capital improved from 51.43 to 52.72 percentage. And economic capital increased from 51.29 till 52.20.

#### 3.2 General characteristics of Elected Municipalities for the BNG Bank Sustainability Bond 2018

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%)	85 (72.6%)
50,000-100,000	56 (15.9%)	16 (13.7%)
More than 100,000	32 (9.1%)	16 (13.7%)

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 and 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 2018 and 2021 for the total group of Dutch municipalities and the group of Elected Municipalities. It shows that the general trend, an improvement of the overall score with 2.0 percentage points, are similar in both groups.

Table 3.3 Sustainability performance of Elected Municipalities and of the total group of Dutch municipalities in 2018 compared to 2021 (percentage points)

Sustainability capital	Elected 2018	Total 2018	Elected 2021	Total 2021	Elected: Difference 2018-2021	Total: Difference 2018-2021
<b>Total</b>	<b>52.2</b>	<b>50.1</b>	<b>54.2</b>	<b>52.1</b>	<b>2.0</b>	<b>2.0</b>
Socio-cultural	52.5	50.3	53.5	51.5	1.1	1.2
Ecological	53.1	51.5	54.6	52.7	1.6	1.2
Economic	51.2	48.5	54.5	52.2	3.3	3.7

The Elected Municipalities continued to outperform the total group of municipalities with 2.1 percentage points (54.2 vs 52.1), as listed in table 1. Both groups of municipalities show an improvement of the overall score with 2.0 percentage points. Largest improvements occurred this year for the economic

capital (3.3/3.7 percentage points), while those for the ecological and socio-cultural capital were smaller (1.6/1.2 and 1.1/1.2 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 2018 and 2021 for the group of elected Municipalities and all Dutch municipalities

Sustainability stock	Difference 2018-2021 of 117 Elected Municipalities	Difference 2018-2021 of all 352 municipalities
<b>Socio-cultural</b>		
Arts & culture	0.59	0.14
Economic participation	12.13	12.79
Education	0.02	0.27
Health	-1.27	-0.70
Housing	3.47	3.20
Lifestyle & health	-3.33	-1.46
Political Participation	2.36	1.67
Residential environment	-1.92	-2.12
Safety	1.90	1.71
Social participation	-3.19	-2.89
<b>Ecological</b>		
Air	2.81	2.63
Annoyance and external safety	-0.14	-0.30
Energy	5.68	5.65
Nature & landscape	0.00	0.00
Soil	1.13	-0.42
Resources & waste	2.40	2.24
Water	-0.92	-1.33
<b>Economic</b>		
Competitiveness	6.00	6.53
Infrastructure & mobility	4.98	5.00
Knowledge	4.26	4.90
Labor	3.02	3.19
Spatial location conditions	-1.49	-1.27

### Socio-cultural stocks

Among socio-cultural stocks, differences between both groups of municipalities were small. Most striking is the improvement in 'economic participation' in the both groups of municipalities. The decline in both groups in 'residential environment', 'social participation', and 'lifestyle and health' is not what can be expected in a thriving society. However, it is likely that these differences are (partly) caused by the recent 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', 'air' and 'resources and waste'. These are priorities of the national government: climate change and circular economy. The decline in 'soil' is only a trend in the total group of municipalities.

### Economic stocks

Elected Municipalities improved practically as much as the total group of municipalities. The biggest improvement is seen for 'competitiveness', but all stocks, except from 'spatial location conditions' have shown quite large improvements.

## 4 Elected Municipalities showing largest improvement or reduction in sustainability score in 2018–2021 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 2018: 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 2018 have in this assessment been corrected for additional indicators used in 2021 to make them comparable with the 2021 data. The results are therefore sometimes differing from those given in the 2018 Framework document.

### 4.1 Elected agricultural municipalities

Table 4.1 presents the 15 best-in-class municipalities of the agricultural type, their reconstructed 2018 scores and the 2021 scores for total sustainability. All municipalities improved over the past three years. Eemnes, Dinkelland and Raalte improved the most in the period 2018-2021. Overall, the score of the group of elected agricultural municipalities improved 2.1 percentage point since 2018.

Table 4.1 Improvements and reductions in total sustainability scores of elected agricultural municipalities over 2018-2021

Agricultural municipality	Sustainability score 2018	Sustainability score 2021	Difference
Eemnes	50.6	54.3	3.7
Dinkelland	54.6	58.3	3.7
Raalte	52.3	55.0	2.7
Montfoort	50.8	53.4	2.6
Voorst	53.6	56.1	2.5
Dalfsen	54.9	57.2	2.3
Wierden	53.1	55.2	2.1
Eijsden-Margraten	51.2	53.2	2.0
Zwartewaterland	53.3	55.1	1.8
Olst-Wijhe	51.6	53.4	1.8
Staphorst	54.9	56.6	1.7
Bunnik	52.3	53.8	1.5
Oost Gelre	53.3	54.6	1.3

Midden-Delfland	56.5	57.7	1.2
Zoeterwoude	52.3	53.3	1.0
<b>Average</b>	<b>53.0</b>	<b>55.1</b>	<b>2.1</b>

## 4.2 Elected center municipalities

As table 4.2 shows, one elected municipalities did not improve its sustainability score over the past three years. Zwolle improved the most with 2.9 percentage points, followed by Castricum and Deventer.

Table 4.2 Improvements in total sustainability scores of elected center municipalities over 2018-2021

Center municipality	Sustainability score 2018	Sustainability score 2021	Difference
Zwolle	53.5	56.4	2.9
Castricum	53.0	55.7	2.7
Deventer	52.9	55.2	2.3
Hilversum	51.0	53.2	2.2
Apeldoorn	52.7	54.9	2.2
Middelburg	49.5	51.4	1.9
Nijmegen	53.1	55.0	1.9
Ede	51.9	53.7	1.8
Groningen	53.2	54.8	1.6
Westland	50.2	51.7	1.5
Utrecht	53.9	55.0	1.1
Delft	54.0	55.0	1.0
Katwijk	52.9	53.7	0.8
Gooise Meren	52.7	53.3	0.6
Leiden	52.9	53.0	0.1
Amsterdam	51.1	51.1	0.0
<b>Average</b>	<b>52.4</b>	<b>53.9</b>	<b>1.5</b>

## 4.3 Elected green municipalities

Elected green municipalities improved on average 2.1 percentage points over the last years. Barneveld and Putten did not improved their score since 2018, as shown in Table 4.3. Leusden improved the most with 3.8 percentage points.

Table 4.3 Improvements and reductions in total sustainability scores of elected green municipalities over 2018-2021

Green municipality	Sustainability score 2018	Sustainability score 2021	Difference
Leusden	53.5	57.3	3.8
Rozendaal	50.0	53.4	3.4
Baarn	50.5	53.9	3.4
Utrechtse Heuvelrug	51.4	54.5	3.1
Heeze-Leende	54.5	57.5	3.0
Mook en Middelaar	53.6	56.4	2.8
Nunspeet	53.5	56.0	2.5
Bloemendaal	55.2	57.6	2.4
Elburg	54.2	56.2	2.0
Ermelo	53.5	55.4	1.9
Ede	51.9	53.7	1.8
Wassenaar	53.4	54.2	0.8
Waalre	55.0	55.7	0.7
Barneveld	53.5	53.4	-0.1
Putten	53.3	53.0	-0.3
<b>Average</b>	<b>53.1</b>	<b>55.2</b>	<b>2.1</b>

#### 4.4 Elected growth municipalities

The elected growth municipalities showed on average an improvement of 2.2 percentage points since 2018. All municipalities improved their score. Woudenberg improved the most with 4.6 percentage points.

Table 4.4 Improvements and reductions in total sustainability scores of elected growth municipalities over 2018-2021

Growth municipality	Sustainability score 2018	Sustainability score 2021	Difference
Woudenberg	51.5	56.1	4.6
Heeze-Leende	54.5	57.5	3.0
Scherpenzeel	49.4	52.1	2.7
Bladel	53.0	55.5	2.5
Bloemendaal	55.2	57.6	2.4
Dalfsen	54.9	57.2	2.3
Oegstgeest	54.6	56.8	2.2
Ameland	53.9	55.9	2.0
Wageningen	54.7	56.6	1.9
Staphorst	54.9	56.6	1.7
Bunnik	52.3	53.8	1.5
Houten	54.8	56.3	1.5

Voorschoten	54.2	55.7	1.5
Midden-Delfland	56.5	57.7	1.2
<b>Average</b>	<b>53.9</b>	<b>56.1</b>	<b>2.2</b>

## 4.5 Elected historic municipalities

One elected municipalities did not improve its sustainability score since 2018, which is Vlieland. Bronckhorst improved its score the past three years the most, with 2.8 percentage points. The average score improved last year with 1.4 percentage points, as presented in Table 4.5.

Table 4.5 Improvements and reductions in total sustainability scores of elected historic municipalities over 2018-2021

Historic municipality	Sustainability score 2018	Sustainability score 2021	Difference
Bronckhorst	53.6	56.4	2.8
Oudewater	49.0	51.7	2.7
Schiermonnikoog	51.7	54.4	2.7
Lopik	51.5	53.7	2.2
Eijsden-Margraten	51.2	53.2	2.0
Ameland	53.9	55.9	2.0
Staphorst	54.9	56.6	1.7
Utrecht	53.9	55.0	1.1
Delft	54.0	55.0	1.0
Kampen	53.0	53.7	0.7
Waterland	54.2	54.4	0.2
Leiden	52.9	53.0	0.1
Vlieland	55.2	54.6	-0.6
<b>Average</b>	<b>53.0</b>	<b>54.4</b>	<b>1.4</b>

## 4.6 Elected mid-sized municipalities

All municipalities improved their sustainability scores in the past two years, except from Amstelveen. Table 4.6 shows that mid-sized municipalities improved their sustainability scores on average with 1.8 percentage points since 2018. Heereveen and Krimpenerwaard improved their scores the most, with 3.0 percentage points.

Table 4.6 Improvements and reductions in total sustainability scores of elected mid-sized municipalities over 2018-2021

Mid-sized municipality	Sustainability score 2018	Sustainability score 2021	Difference
Heerenveen	50.7	53.7	3.0
Krimpenerwaard	52.0	55.0	3.0
Doetinchem	50.5	53.3	2.8
Woerden	52.8	55.4	2.6
Meerijstad	49.6	52.2	2.6
Zeist	49.1	51.7	2.6
Hardenberg	50.4	52.9	2.5
Deventer	52.9	55.2	2.3
Hilversum	51.0	53.2	2.2
Veenendaal	49.8	51.5	1.7
Pijnacker-Nootdorp	52.8	53.9	1.1
Katwijk	52.9	53.7	0.8
Kampen	53.0	53.7	0.7
Gooise Meren	52.7	53.3	0.6
Amstelveen	54.4	54.8	0.4
Barneveld	53.5	53.4	-0.1
<b>Average</b>	<b>51.8</b>	<b>53.6</b>	<b>1.8</b>

## 4.7 Elected New Town municipalities

Elected New Town municipalities improved their score with on average 1.6 percentage points (see table 4.7). Eemnes is on top of the list of improvement, followed by Duiven and Best.

Table 4.7 Improvements and reductions in total sustainability scores of elected New Town municipalities over 2018-2021

New Town municipality	Sustainability score 2018	Sustainability score 2021	Difference
Eemnes	50.6	54.3	3.7
Duiven	48.4	51.6	3.2
Best	50.7	53.6	2.9
Culemborg	52.1	54.6	2.5
Tubbergen	52.7	55.1	2.4
Zeewolde	52.1	54.4	2.3
Renswoude	50.7	52.8	2.1
Langedijk	52.0	53.8	1.8
Houten	54.8	56.3	1.5

Hendrik-Ido-Ambacht	51.8	53.1	1.3
Midden-Delfland	56.5	57.7	1.2
Koggenland	49.9	50.1	0.2
Heumen	54.7	54.7	0.0
Barneveld	53.5	53.4	-0.1
Urk	53.9	52.7	-1.2
<b>Average</b>	<b>52.3</b>	<b>53.9</b>	<b>1.6</b>

#### 4.8 Elected old industrial municipalities

Elected old industrial municipalities scored on average 2.0 percentage points higher over the reporting period, as shown in Table 4.8. The scores of two municipalities decreased since 2018, these municipalities are Putten and Oostzaan. Hattem improved the most with 3.8 percentage points.

Table 4.8 Improvements and reductions in total sustainability scores of elected old industrial municipalities over 2018-2021

Old industrial municipality	Sustainability score 2018	Sustainability score 2021	Difference
Hattem	51.3	55.1	3.8
Heusden	49.7	53.3	3.6
Oisterwijk	49.4	52.4	3.0
Best	50.7	53.6	2.9
Landsmeer	50.4	53.1	2.7
Losser	52.1	54.8	2.7
Bladel	53.0	55.5	2.5
Rijssen-Holten	52.0	54.3	2.3
Wierden	53.1	55.2	2.1
Bergeijk	54.2	56.1	1.9
Hellendoorn	52.9	54.8	1.9
Nuenen, Gerwen en Nederwetten	53.5	55.2	1.7
Brummen	52.3	53.8	1.5
Waalre	55.0	55.7	0.7
Putten	53.3	53.0	-0.3
Oostzaan	52.6	51.0	-1.6
<b>Average</b>	<b>52.2</b>	<b>54.2</b>	<b>2.0</b>

## 4.9 Elected residential municipalities

Residential municipalities are a well performing elected group of municipalities when comparing the scores in 2018 with those of 2021, resulting in an average increased score of 2.0 percentage points (Table 4.9). Heusden improved most with 3.6 percentage points in the sustainability score.

Table 4.9 Improvements and reductions in total sustainability scores of elected old industrial municipalities over 2018-2021

Residential municipality	Sustainability score 2018	Sustainability score 2021	Difference
Heusden	49.7	53.3	3.6
Rozendaal	50.0	53.4	3.4
Mook en Middelaar	53.6	56.4	2.8
Grave	50.7	53.5	2.8
Castricum	53.0	55.7	2.7
Bloemendaal	55.2	57.6	2.4
Buren	50.4	52.8	2.4
Heiloo	51.0	53.2	2.2
Eijsden-Margraten	51.2	53.2	2.0
Voorschoten	54.2	55.7	1.5
Wijk bij Duurstede	52.7	54.0	1.3
Waalre	55.0	55.7	0.7
Waterland	54.2	54.4	0.2
Heumen	54.7	54.7	0.0
Average	52.5	54.5	2.0

## 4.10 Elected shrink municipalities

The elected shrink municipalities improved with 2.3 percentage points on average the last three years (see Table 4.10). None of the municipalities decreased in its sustainability score. Voerendaal improved the most with 3.6 percentage points.

Table 4.10 Improvements and reductions in total sustainability scores of elected shrink municipalities over 2018-2021

Shrink municipality	Sustainability score 2018	Sustainability score 2021	Difference
Voerendaal	49.4	53.0	3.6
Mook en Middelaar	53.6	56.4	2.8
Bronckhorst	53.6	56.4	2.8
Berkelland	52.7	55.5	2.8
Grave	50.7	53.5	2.8

Aalten	52.4	54.9	2.5
Valkenburg aan de Geul	50.4	52.7	2.3
Leudal	49.2	51.2	2.0
Gulpen-Wittem	49.2	50.7	1.5
Bergen	52.3	53.8	1.5
Meerssen	50.5	50.8	0.3
<b>Average</b>	<b>51.3</b>	<b>53.5</b>	<b>2.3</b>

#### 4.11 Elected small municipalities

The group of small municipalities has improved its score in 2021 by 1.8 percentage points on average. Rozendaal leads this group by improving 3.4 percentage points, while Vlieland lost some of its earlier score.

Table 4.11 Improvements and reductions in total sustainability scores of elected old industrial municipalities over 2018-2021

Small municipality	Sustainability score 2018	Sustainability score 2021	Difference
Rozendaal	50.0	53.4	3.4
Heeze-Leende	54.5	57.5	3.0
Mook en Middelaar	53.6	56.4	2.8
Bladel	53.0	55.5	2.5
Bloemendaal	55.2	57.6	2.4
Dalfsen	54.9	57.2	2.3
Oegstgeest	54.6	56.8	2.2
Ameland	53.9	55.9	2.0
Bunnik	52.3	53.8	1.5
Houten	54.8	56.3	1.5
Voorschoten	54.2	55.7	1.5
Wijk bij Duurstede	52.7	54.0	1.3
Midden-Delfland	56.5	57.7	1.2
Heumen	54.7	54.7	0.0
Vlieland	55.2	54.6	-0.6
<b>Average</b>	<b>54.0</b>	<b>55.8</b>	<b>1.8</b>

## 4.12 Elected tourist municipalities

The sustainability score of the elected tourist type of municipalities has improved on average with 1.4 percentage points. (see Table 4.12). The biggest improvement over time was found for Noordwijk, while two municipalities decreased their score.

Table 4.12 Improvements and reductions in total sustainability scores of elected tourist municipalities over 2018-2021

Tourist municipality	Sustainability score 2018	Sustainability score 2021	Difference
Noordwijk	53.2	56.1	2.9
Mook en Middelaar	53.6	56.4	2.8
Landsmeer	50.4	53.1	2.7
Schiermonnikoog	51.7	54.4	2.7
Hilvarenbeek	53.5	56.0	2.5
Eijsden-Margraten	51.2	53.2	2.0
Ameland	53.9	55.9	2.0
Bergeijk	54.2	56.1	1.9
Groningen	53.2	54.8	1.6
Veere	54.1	55.1	1.0
Wassenaar	53.4	54.2	0.8
Terschelling	54.0	54.7	0.7
Waterland	54.2	54.4	0.2
Vlieland	55.2	54.6	-0.6
Oostzaan	52.6	51.0	-1.6
Average	53.2	54.7	1.4

## 4.13 Elected work municipalities

Elected work municipalities performed well with an improvement of 1.8 percentage points on average, as illustrated in table 4.13. Oldenzaal showed a large improved of 4.6 percentage points.

Table 4.13 Improvements and reductions in total sustainability scores of elected work municipalities over 2018-2021

Work municipality	Sustainability score 2018	Sustainability score 2021	Difference
Oldenzaal	51.1	55.7	4.6
Duiven	48.4	51.6	3.2
Zwolle	53.5	56.4	2.9
Veldhoven	51.0	53.9	2.9
Best	50.7	53.6	2.9

Noordwijk	53.2	56.1	2.9
Apeldoorn	52.7	54.9	2.2
Son en Breugel	51.0	52.8	1.8
Groningen	53.2	54.8	1.6
Westland	50.2	51.7	1.5
Ouder-Amstel	52.7	54.1	1.4
Utrecht	53.9	55.0	1.1
Amstelveen	54.4	54.8	0.4
Leiden	52.9	53.0	0.1
Amsterdam	51.1	51.1	0.0
Barneveld	53.5	53.4	-0.1
<b>Average</b>	<b>52.1</b>	<b>53.9</b>	<b>1.8</b>

#### 4.14 Elected 100,000plus municipalities

The, for Dutch dimensions, relative large elected 100,000plus performed well with an average improvement of 1.7 percentage points from 2018 to 2021. Eindhoven improved most followed by Amersfoort and Zwolle.

Table 4.14 Improvements and reductions in total sustainability scores of elected 100,000plus over 2018-2021

100,000plus municipality	Sustainability score 2018	Sustainability score 2021	Difference
Eindhoven	51.1	54.2	3.1
Amersfoort	52.1	55.1	3.0
Zwolle	53.5	56.4	2.9
Arnhem	49.9	52.8	2.9
Apeldoorn	52.7	54.9	2.2
's-Hertogenbosch	50.2	52.2	2.0
Nijmegen	53.1	55.0	1.9
Ede	51.9	53.7	1.8
Groningen	53.2	54.8	1.6
Westland	50.2	51.7	1.5
Utrecht	53.9	55.0	1.1
Delft	54.0	55.0	1.0
Breda	51.3	52.1	0.8
Leiden	52.9	53.0	0.1
Amsterdam	51.1	51.1	0.0
<b>Average</b>	<b>52.1</b>	<b>53.8</b>	<b>1.7</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. Highest improvements in percentage points were found in shrink municipalities, with 2.3 percentage points. Highest sustainability scores were measured in small and growth municipalities (55.8/56.1 percentage points).

Table 4.15 Changes in total sustainability scores of 14 types of elected municipalities over 2018-2021

Type of municipality	Sustainability score 2018	Sustainability score 2021	Difference
Small municipalities	54.0	55.8	1.8
Mid-sized municipalities	51.8	53.6	1.8
100.000plus municipality	52.1	53.8	1.7
Agricultural municipality	53.0	55.1	2.1
Center municipality	52.4	53.9	1.5
Former industrial municipality	52.2	54.2	2.0
Green municipality	53.1	55.2	2.1
Growth municipalities	53.9	56.1	2.2
Historic municipalities	53.0	54.4	1.4
New Town municipality	52.3	53.9	1.6
Residential municipalities	52.5	54.5	2.0
Shrink municipality	51.3	53.5	2.3
Touristic municipalities	53.2	54.7	1.4
Work municipality	52.1	53.9	1.8

## 5 Overall outcome for Elected Municipalities including their CO2-emission scores in 2018–2021

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 CO<sub>2</sub>-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 more than 98% had similar or higher sustainability scores in 2021 compared to 2019 (see also Annex 1).

Tables 5.1 and 5.2 show Elected Municipalities for which its sustainability score changed most or least favorably. The best performing municipality in this respect among Elected Municipalities is Woudenberg, followed by Oldenzaal and Hattem.

Table 5.1 Ten Elected Municipalities improving sustainability score most in the period 2018–2021

Elected municipality	Typology	Total score 2018	Total score 2021	Difference
Woudenberg	Small, Growth	51.5	56.1	4.6
Oldenzaal	Small, Former industrial, Work	51.1	55.7	4.6
Hattem	Small, Former industrial	51.3	55.1	3.8
Leusden	Small, Green	53.5	57.3	3.8
Dinkelland	Small, Agricultural	54.6	58.3	3.7
Eemnes	Small, Agricultural, New town	50.6	54.3	3.7
Voerendaal	Small, Agricultural, Former industrial, Residential, Shrink, Tourist	49.4	53.0	3.6
Heusden	Small, Former industrial, Residential	49.7	53.3	3.6
Baarn	Small, Green	50.5	53.9	3.4
Rozendaal	Small, Green, Residential	50.0	53.4	3.4

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

Table 5.2 Ten Elected Municipalities with largest declining sustainability score in the period 2018-2021

Municipality	Typology	Total score 2018	Total score 2021	Difference
Oostzaan	Small, Former industrial, Growth, Tourist	52.6	51.0	-1.6
Urk	Small, Growth, New town	53.9	52.7	-1.2
Vlieland	Small, Historic, Tourist	55.2	54.6	-0.6
Putten	Small, Former industrial, Green	53.3	53.0	-0.3
Barneveld	Medium, Green, Growth, New town, Work	53.5	53.4	-0.1
Amsterdam	Large, Centre, Growth, Historic, Tourist, Work	51.1	51.1	0.0
Heumen	Small, New town, Residential	54.7	54.7	0.0
Leiden	Large, Centre, Growth, Historic, Tourist, Work	52.9	53.0	0.1
Waterland	Small, Historic, Residential, Tourist	54.2	54.4	0.2
Koggenland	Small, Agricultural, Growth, New town	49.9	50.1	0.2

## 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 years; the CO2 emissions decreased with 4.0%. The other municipalities realized a smaller reduction of 2.8%. 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 (117)	-18.8%	-22.5%	-4.0%
Others	7.1%	-10.1%	-2.8%
Total (352)	0.7%	-12.8%	-3.1%

The highest reduction was found for Hilvarenbeek, Ameland and Amsterdam. Table 5.4 shows that Brummen, Westland and Pijnacker-Nootdorp 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		Westland	6.9
Amsterdam	-9.8		Pijnacker-Nootdorp	5.2
Utrecht (gemeente)	-7.4		Zoeterwoude	4.1
Montfoort	-7.0		Midden-Delfland	2.7
Meerijstad	-6.7		Putten	0.8
Middelburg (Z.)	-6.2		Woerden	0.4
Hardenberg	-5.9		Katwijk	0.3
Groningen (gemeente)	-5.9		Zwartewaterland	0.3
Nunspeet	-5.7		Leiden	0.1

## 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 2018 and 2021, as shown in table 6.1, makes clear that the performance of several goals improved substantially (Goals 1, 7, 8, 9, 12, 15 and 16), but others showed a (small) fallback (Goals 2, 3, 10, 11, and 13).

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<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)

Table 6.1 SDG scores for all (n=352) municipalities and the elected municipalities (n=117) for 2018-2021

SDG	All municipalities (n=352)					Elected municipalities (n=117)				
	2018	2019	2020	2021	Difference 2018-2021	2018	2019	2020	2021	Difference 2018-2021
1. No Poverty	62.2	62.5	63.4	63.6	1.4	66.7	67.3	68.3	68.3	1.6
2. Zero Hunger	40.2	40.2	34.8	34.8	-5.5	47.2	47.2	41.8	41.8	-5.4
3. Good Health and Well-being	47.8	46.7	48.9	47.9	0.1	50.0	48.8	51.1	49.9	-0.1
4. Quality Education	62.5	64.5	63.8	63.2	0.7	65.0	66.8	65.8	65.4	0.4
5. Gender Equality										
6. Clean Water and Sanitation	53.7	53.5	53.2	53.2	-0.5	53.6	53.4	53.9	53.9	0.3
7. Affordable and Clean Energy	32.0	33.2	35.2	38.0	6.0	33.1	34.3	36.4	39.1	6.0
8. Decent Work and Economic Growth	50.7	53.6	54.5	53.9	3.2	54.1	56.6	57.3	56.9	2.8
9. Industry, Innovation and Infrastructure	38.1	39.7	41.5	43.8	5.7	41.5	43.1	44.8	47.2	5.7
10. Reduced Inequalities	51.1	51.7	51.4	51.2	0.1	55.5	56.0	55.2	54.7	-0.7
11. Sustainable Cities and Communities	51.2	50.9	50.5	51.1	-0.1	51.8	51.5	51.2	51.5	-0.3
12. Responsible Consumption and Production	53.4	54.5	55.4	56.3	2.8	55.1	56.9	57.7	57.8	2.7
13. Climate Action	64.1	64.1	64.0	64.0	-0.2	66.7	66.7	66.7	66.6	-0.1
14. Life below Water										
15. Life on Land	48.8	48.1	46.5	50.5	1.7	49.7	49.2	47.7	52.8	3.1
16. Peace, Justice and Strong Institutions	48.0	51.4	52.4	52.8	4.8	50.8	54.9	56.3	56.5	5.7
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 for 14 out of the 14 measured goals, but the differences become smaller.

There are, however, some differences in the development of the scores between the two groups. For example, for goal 16 (peace, justice and strong institutions) the difference between the groups was already quite large in 2018 (2.8 percentage points), and grew even larger over the last years to 4.1 percentage points. The same holds for goal 1 (No poverty) and goal 15 (Life on Land). The total group shows a higher improvement on goals 4 (Quality education), 8 (Decent work and economic growth), goal 10 (Reduced inequalities) and Goal 12 (Responsible Consumption and Production) than the elected municipalities.

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

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

## 7 Discussion and overview of outcome of assessment period 2018–2021

The general trend, an improvement of the overall score with 2.0 percentage points, are similar in both groups. The Elected Municipalities continued to outperform the total group of municipalities with 2.1 percentage points (54.2 vs 52.1), as listed in table 1. Both groups of municipalities show an improvement of the overall score with 2.0 percentage points. Largest improvements occurred this year for the economic capital (3.3/3.7 percentage points), while those for the ecological and socio-cultural capital were smaller (1.6/1.2 and 1.1/0.7 percentage points).

The analysis shows that more than 98% of Elected Municipalities realized the same or an improved total sustainability score compared to last year. A closer look at the CO2 reductions shows that the group of Elected Municipalities realized a reduction in CO2 emissions over the last years; the CO2 emissions decreased with 4.0%. The other municipalities realized a smaller reduction of 2.8%.

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 Woudenberg, Oldenzaal, Hattem and Leusden were able to improve their total sustainability score most, with 3.8 to 4.6 percentage points. The largest reduction in sustainability score among Elected Municipalities was detected in Oostzaan, Urk, Vlieland and Putten with -0.3 to -1.6 percentage points.

Comparison over the years 2018 and 2021 makes clear that the performance of several sustainable development goals improved substantially (Goals 1, 7, 8, 9, 12, 15 and 16), but others showed a (small) fallback (Goals 2, 3, 10, 11, and 13). 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 for 14 out of the 14 measured goals, but the differences become smaller.

There are, however, some differences in the development of the scores between the two groups. For example, for goal 16 (peace, justice and strong institutions) the difference between the groups was already quite large in 2018 (2.8 percentage points), and grew even larger over the last years to 4.1 percentage points. The same holds for goal 1 (No poverty) and goal 15 (Life on Land). The total group shows a higher improvement on goals 4 (Quality education), 8 (Decent work and economic growth), goal 10 (Reduced inequalities) and Goal 12 (Responsible Consumption and Production) 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 2018 and 2021 for all 117 Elected Municipalities

Municipality	Total sustainability score 2018	Total sustainability score 2021	Difference 2018-2021
Woudenberg	51.5	56.1	4.6
Oldenzaal	51.1	55.7	4.6
Hattem	51.3	55.1	3.8
Leusden	53.5	57.3	3.8
Dinkelland	54.6	58.3	3.7
Eemnes	50.6	54.3	3.7
Voerendaal	49.4	53.0	3.6
Heusden	49.7	53.3	3.6
Baarn	50.5	53.9	3.4
Rozendaal	50.0	53.4	3.4
Duiven	48.4	51.6	3.2
Utrechtse Heuvelrug	51.4	54.5	3.1
Eindhoven	51.1	54.2	3.1
Heeze-Leende	54.5	57.5	3.0
Amersfoort	52.1	55.1	3.0
Krimpenerwaard	52.0	55.0	3.0
Heerenveen	50.7	53.7	3.0
Oisterwijk	49.4	52.4	3.0
Zwolle	53.5	56.4	2.9
Best	50.7	53.6	2.9
Noordwijk	53.2	56.1	2.9
Arnhem	49.9	52.8	2.9
Veldhoven	51.0	53.9	2.9
Mook en Middelaar	53.6	56.4	2.8
Berkelland	52.7	55.5	2.8
Grave	50.7	53.5	2.8
Bronckhorst	53.6	56.4	2.8
Doetinchem	50.5	53.3	2.8
Castricum	53.0	55.7	2.7
Oudewater	49.0	51.7	2.7
Scherpenzeel	49.4	52.1	2.7
Raalte	52.3	55.0	2.7
Landsmeer	50.4	53.1	2.7
Schiermonnikoog	51.7	54.4	2.7
Losser	52.1	54.8	2.7
Montfoort	50.8	53.4	2.6
Zeist	49.1	51.7	2.6

Meerijstad	49.6	52.2	2.6
Woerden	52.8	55.4	2.6
Aalten	52.4	54.9	2.5
Bladel	53.0	55.5	2.5
Culemborg	52.1	54.6	2.5
Voorst	53.6	56.1	2.5
Hilvarenbeek	53.5	56.0	2.5
Nunspeet	53.5	56.0	2.5
Hardenberg	50.4	52.9	2.5
Bloemendaal	55.2	57.6	2.4
Buren	50.4	52.8	2.4
Tubbergen	52.7	55.1	2.4
Valkenburg aan de Geul	50.4	52.7	2.3
Dalfsen	54.9	57.2	2.3
Deventer	52.9	55.2	2.3
Rijssen-Holten	52.0	54.3	2.3
Zeewolde	52.1	54.4	2.3
Lopik	51.5	53.7	2.2
Hilversum	51.0	53.2	2.2
Heiloo	51.0	53.2	2.2
Oegstgeest	54.6	56.8	2.2
Apeldoorn	52.7	54.9	2.2
Wierden	53.1	55.2	2.1
Renswoude	50.7	52.8	2.1
Ameland	53.9	55.9	2.0
Eijsden-Margraten	51.2	53.2	2.0
Leudal	49.2	51.2	2.0
Elburg	54.2	56.2	2.0
's-Hertogenbosch	50.2	52.2	2.0
Nijmegen	53.1	55.0	1.9
Middelburg (Z.)	49.5	51.4	1.9
Hellendoorn	52.9	54.8	1.9
Wageningen	54.7	56.6	1.9
Ermelo	53.5	55.4	1.9
Bergeijk	54.2	56.1	1.9
Ede	51.9	53.7	1.8
Zwartewaterland	53.3	55.1	1.8
Langedijk	52.0	53.8	1.8
Son en Breugel	51.0	52.8	1.8
Olst-Wijhe	51.6	53.4	1.8
Veenendaal	49.8	51.5	1.7
Nuenen, Gerwen en Nederwetten	53.5	55.2	1.7

Staphorst	54.9	56.6	1.7
Groningen (gemeente)	53.2	54.8	1.6
Gulpen-Wittert	49.2	50.7	1.5
Westland	50.2	51.7	1.5
Bergen (NH.)	52.3	53.8	1.5
Bunnik	52.3	53.8	1.5
Voorschoten	54.2	55.7	1.5
Houten	54.8	56.3	1.5
Brummen	52.3	53.8	1.5
Ouder-Amstel	52.7	54.1	1.4
Oost Gelre	53.3	54.6	1.3
Hendrik-Ido-Ambacht	51.8	53.1	1.3
Wijk bij Duurstede	52.7	54.0	1.3
Midden-Delfland	56.5	57.7	1.2
Pijnacker-Nootdorp	52.8	53.9	1.1
Utrecht (gemeente)	53.9	55.0	1.1
Veere	54.1	55.1	1.0
Delft	54.0	55.0	1.0
Zoeterwoude	52.3	53.3	1.0
Katwijk	52.9	53.7	0.8
Breda	51.3	52.1	0.8
Wassenaar	53.4	54.2	0.8
Terschelling	54.0	54.7	0.7
Kampen	53.0	53.7	0.7
Waalre	55.0	55.7	0.7
Gooise Meren	52.7	53.3	0.6
Amstelveen	54.4	54.8	0.4
Meerssen	50.5	50.8	0.3
Koggenland	49.9	50.1	0.2
Waterland	54.2	54.4	0.2
Leiden	52.9	53.0	0.1
Heumen	54.7	54.7	0.0
Amsterdam	51.1	51.1	0.0
Barneveld	53.5	53.4	-0.1
Putten	53.3	53.0	-0.3
Vlieland	55.2	54.6	-0.6
Urk	53.9	52.7	-1.2
Oostzaan	52.6	51.0	-1.6

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

Elected municipality	Typology	% Difference 2018-2019
Hilvarenbeek	Small, Tourist	-13.2
Ameland	Small, Growth, Historic, Tourist	-11.9
Amsterdam	Large, Centre, Growth, Historic, Tourist, Work	-9.8
Utrecht (gemeente)	Large, Centre, Growth, Historic, Work	-7.4
Montfoort	Small, Agricultural	-7.0
Meerijstad	Medium, Work	-6.7
Middelburg (Z.)	Small, Centre, Historic	-6.2
Hardenberg	Medium, Agricultural	-5.9
Groningen (gemeente)	Large, Centre, Growth, Tourist, Work	-5.9
Nunspeet	Small, Green	-5.7
Scherpenzeel	Small, Growth	-5.6
Hattem	Small, Former industrial	-5.6
Tubbergen	Small, Agricultural, New town	-5.5
Barneveld	Medium, Green, Growth, New town, Work	-5.3
Bladel	Small, Former industrial, Growth	-5.2
Schiermonnikoog	Small, Historic, Tourist	-5.1
Bergeijk	Small, Former industrial, Tourist	-5.1
Delft	Large, Centre, Growth, Historic	-4.9
Lopik	Small, Agricultural, Historic	-4.4
Olst-Wijhe	Small, Agricultural	-4.2
Renswoude	Small, Agricultural, Growth, New town	-4.0
Oudewater	Small, Agricultural, Historic	-3.9
Ede	Large, Centre, Green, Growth	-3.8
Raalte	Small, Agricultural	-3.8
Oost Gelre	Small, Agricultural	-3.7
Best	Small, Former industrial, New town, Work	-3.6
Veere	Small, Tourist	-3.5
Leudal	Small, Centre, Shrink	-3.5
Berkelland	Small, Agricultural, Shrink	-3.4
Veenendaal	Medium, Former industrial, Growth	-3.4
Buren	Small, Agricultural, Residential	-3.3
Wijk bij Duurstede	Small, Residential	-3.3
Rijssen-Holten	Small, Former industrial	-3.3
Aalten	Small, Agricultural, Shrink	-3.3
Nuenen, Gerwen en Nederwetten	Small, Former industrial	-3.3

Hellendoorn	Small, Former industrial, Green	-3.2
Nijmegen	Large, Centre, Growth	-3.2
Elburg	Small, Green	-3.2
Mook en Middelaar	Small, Green, Residential, Shrink, Tourist	-3.2
Woudenberg	Small, Growth	-3.1
Dalfsen	Small, Agricultural, Growth	-3.1
Veldhoven	Small, Former industrial, Work	-3.0
Grave	Small, Residential, Shrink	-3.0
Heeze-Leende	Small, Green, Growth	-3.0
Heumen	Small, New town, Residential	-2.9
Dinkelland	Small, Agricultural	-2.9
Krimpenerwaard	Medium, Agricultural	-2.8
Wierden	Small, Agricultural, Former industrial	-2.8
Voorschoten	Small, Growth, Residential	-2.7
Waterland	Small, Historic, Residential, Tourist	-2.7
Heerenveen	Medium, Centre, Work	-2.7
Bloemendaal	Small, Green, Growth, Residential	-2.7
Bronckhorst	Small, Agricultural, Historic, Shrink	-2.7
Rozendaal	Small, Green, Residential	-2.7
Wageningen	Small, Growth	-2.7
Landsmeer	Small, Former industrial, Growth, Residential, Tourist	-2.6
Amersfoort	Large, Growth, New town	-2.6
Terschelling	Small, Tourist	-2.5
Eijsden-Margraten	Small, Agricultural, Historic, Residential, Tourist	-2.5
Voorst	Small, Agricultural	-2.4
Arnhem	Large, Centre, Green, Growth, Tourist, Work	-2.4
Bergen (NH.)	Small, Green, Shrink, Tourist	-2.4
Oisterwijk	Small, Former industrial	-2.4
Baarn	Small, Green	-2.4
Zwolle	Large, Centre, Growth, Work	-2.4
Zeist	Medium, Green, Work	-2.4
Hilversum	Medium, Centre, Green, Growth	-2.4
Urk	Small, Growth, New town	-2.3
Voerendaal	Small, Agricultural, Former industrial, Residential, Shrink, Tourist	-2.3
Deventer	Medium, Centre	-2.2
Eindhoven	Large, Centre, Former industrial, Growth, Work	-2.2
Utrechtse Heuvelrug	Small, Green	-2.2
Valkenburg aan de Geul	Small, Shrink, Tourist	-2.2
Leusden	Small, Green	-2.1

's-Hertogenbosch	Large, Centre, Growth, Work	-2.1
Castricum	Small, Centre, Residential	-2.1
Oegstgeest	Small, Growth	-2.1
Wassenaar	Small, Green, Tourist	-2.1
Waalre	Small, Former industrial, Green, Residential	-2.0
Staphorst	Small, Agricultural, Growth, Historic	-1.9
Meerssen	Small, Former industrial, Residential, Shrink, Tourist	-1.9
Oldenzaal	Small, Former industrial, Work	-1.9
Bunnik	Small, Agricultural, Growth	-1.8
Gulpen-Wittem	Small, Agricultural, Historic, Residential, Shrink, Tourist	-1.8
Culemborg	Small, Former industrial, New town	-1.8
Gooise Meren	Medium, Centre	-1.8
Oostzaan	Small, Former industrial, Growth, Tourist	-1.8
Heiloo	Small, Residential	-1.7
Noordwijk	Small, Green, Tourist, Work	-1.6
Vlieland	Small, Historic, Tourist	-1.6
Hendrik-Ido-Ambacht	Small, Former industrial, Growth, New town, Residential	-1.5
Zeewolde	Small, Growth, New town	-1.5
Apeldoorn	Large, Centre, Green, Work	-1.4
Losser	Small, Former industrial	-1.4
Amstelveen	Medium, Growth, Work	-1.4
Ouder-Amstel	Small, Work	-1.3
Langedijk	Small, Growth, New town, Residential	-1.3
Eemnes	Small, Agricultural, New town	-1.3
Houten	Small, Growth, New town	-1.1
Heusden	Small, Former industrial, Residential	-1.0
Ermelo	Small, Green	-0.9
Breda	Large, Centre, Growth, Work	-0.8
Doetinchem	Medium, Work	-0.6
Koggenland	Small, Agricultural, Growth, New town	-0.5
Duiven	Small, New town, Work	-0.3
Son en Breugel	Small, Growth, Work	-0.2
Kampen	Medium, Growth, Historic	-0.1
Leiden	Large, Centre, Growth, Historic, Tourist, Work	0.1
Zwartewaterland	Small, Agricultural	0.3
Katwijk	Medium, Centre, Growth	0.3
Woerden	Medium, Agricultural, Growth	0.4
Putten	Small, Former industrial, Green	0.8
Midden-Delfland	Small, Agricultural, Growth, New town	2.7
Zoeterwoude	Small, Agricultural	4.1

Pijnacker-Nootdorp	Medium, Growth, New town, Residential	5.2
Westland	Large, Centre, Growth, Work	6.9
Brummen	Small, Former industrial	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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