3th Performance Report of Elected Dutch Municipalities of BNG Bank Sustainability Bond of November 2019

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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 20th 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 third impact report of the 2019 Sustainability Bonds, covering the years 2019-2022.

The Elected Municipalities continued to outperform the total group of municipalities with 2.4 percentage points (53.0 vs 50.6), as listed in table 1. Both groups of municipalities show an improvement of the overall score with 1.6 percentage points. Largest improvements occurred this year for the economic capital (2.5/2.8 percentage points) and the ecological capital (2.0/1.8 percentage points), while those socio-cultural capital were relatively small (0.3 percentage points).

Table 1. Sustainability scores of 114 elected municipalities and of the total group of 344 Dutch municipalities in 2022 compared to 2019

Sustainability capital	Elected 2019	Total 2019	Elected 2022	Total 2022	Elected: Difference 2019-2022	Total: Difference 2019-2022
Total	51.3	48.9	53.0	50.6	1.6	1.6[1]
Socio-cultural	52.8	50.3	53.1	50.6	0.3	0.3
Ecological	49.9	47.7	52.0	49.4	2.0	1.8
Economic	51.3	48.9	53.8	51.7	2.5	2.8

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 13.2%.

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 Leusden, Rheden, Oisterwijk, Amersfoorrt

[1] 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.

and Eindhoven were able to improve their total sustainability score most with at least 3.0 percentage points. The largest reduction in sustainability score among Elected Municipalities was detected in Urk, Putten, Vlieland and Waterland.

Comparison over the years 2019 and 2022, as shown in table 6.1, makes clear that the performance of twelve goals improved slightly or substantially (Goals 1, 3, 4, 5, 7, 8, 9, 10, 12, 13, 14 and 16), but other showed a small fallback or stayed the same (Goals 2, 11 and 15). 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 15 measured goals, but the differences become smaller.

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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[2] 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 6th 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[3]. 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 20th 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 344 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 thirth of such reports on the 2019 bonds, covering the period 2019-2022. It describes how the performance is assessed, the general outcome of the comparison over the years 2019-2022, 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).

[2] 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] 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 2022 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 2022. 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[4], 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.

[4] 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 2022, there were only 344 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 139 indicators now, compared to 132 in 2019. Such changes had to be included in the comparison between 2022 and 2019. Where needed new data for 2019 were separately collected and calculated. The reader is referred to the Method report for the 2022 BNG Bank Sustainability bond[5], for the details of the amendments made in the calculation of the sustainability scores and how comparability between the years 2019 and 2022 was ascertained.

This assessment includes:

1. A comparison of sustainability scores of Elected Municipalities with the total group of Dutch municipalities for 2019 and 2022.
2. A comparison of sustainability scores for Elected Municipalities between 2019 and 2022, including:
    a. overall scores
    b. capital scores, and a selection of:
    c. stock scores and where useful
    d. indicator scores.

[5] www.hetpon-telos.nl/methodreport2022

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 2022.

In the next chapters, the outcome of these activities is presented. Finally, the overall changes observed for reporting period 2019-2022 will be discussed.

3 Outcome of updating exercise and comparison of 2019 and 2022

3.1 National Monitor Sustainable Municipalities 2022

In November 2022, Het PON & Telos has completed the data collection for the National Monitor Sustainable Municipalities 2022. The major outcome is shown in table 3.1:

Table 3.1 Sustainability performance of the total group of Dutch municipalities in 2019-2022

Sustainability capital	2019	2020	2021	2022
Total	48.95	49.24	50.40	50.56
Socio-cultural	50.25	50.30	50.96	50.58
Ecological	47.65	47.94	49.57	49.42
Economic	48.93	49.49	50.67	51.69

From 2019 to 2022 the average overall sustainability score improved from 48.95 till 50.56 percentage. This was due to improvements of all three capitals. The socio-cultural capital improved only marginally the past years from 50.25 to 50.58. The ecological improved from 47.65 to 49.42 percentage. The economic capital showed the largest increase in sustainability score from 48.93 till 51.69

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	254 (73.8%)	83 (72.8%)
50,000-100,000	58 (16.9%)	15 (13.2%)
More than 100,000	32 (9.3%)	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 de 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 2022 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 1.6 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 2022 (percentage points)

Sustainability capital	Elected 2019	Total 2019	Elected 2022	Total 2022	Elected: Difference 2019-2022	Total: Difference 2019-2022
Total	51.3	48.9	53.0	50.6	1.6	1.6
Socio-cultural	52.8	50.3	53.1	50.6	0.3	0.3
Ecological	49.9	47.7	52.0	49.4	2.0	1.8
Economic	51.3	48.9	53.8	51.7	2.5	2.8

The Elected Municipalities continued to outperform the total group of municipalities with 2.4 percentage points (53.0 vs 50.6), as listed in table 1. Both groups of municipalities show an improvement of the overall score with 1.6 percentage points. Largest improvements occurred this year for the economic capital (2.5/2.8 percentage points) and the ecological capital (2.0/1.8 percentage

points), while those socio-cultural capital were relatively small (0.3 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 2022 for the group of elected Municipalities and all Dutch municipalities

Sustainability stock	Difference 2019-2022 of 114 Elected Municipalities	Difference 2019-2022 of all 344 municipalities
Socio-cultural		
Arts & culture	0.2	0.3
Economic participation	1.2	1.2
Education	0.5	0.3
Health	0.3	0.6
Housing	0.4	1.2
Lifestyle and health	2.2	2.4
Political Participation	-1.1	-1.2
Residential environment	-1.6	-1.7
Safety	2.5	1.9
Social participation	-1.8	-1.6
Ecological		
Air	2.4	2.1
Annoyance and External safety	-0.7	-0.6
Energy	5.7	5.8
Nature & landscape	0.0	0.0
Soil	4.8	2.6
Resources & waste	-1.6	-0.8
Water	3.7	3.2
Economic		
Competitiveness	4.8	5.1
Infrastructure & mobility	4.7	5.0
Knowledge	2.5	2.6
Labor	2.7	2.7
Spatial location conditions	-2.1	-1.5

Socio-cultural stocks

Among socio-cultural stocks, differences between both groups of municipalities are small. For both groups, the stocks ‘Housing’ and ‘Safety’ improved the most. The biggest declines for both groups of municipalities can be found in the stocks ‘Political participation’, ‘Residential environment’ and ‘Social participation’.

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 2019-2022 for the stocks of ‘energy’, ‘water’ and ‘air’. Both groups also show an increase in ‘soil’. However, the change is bigger for the elected municipalities. ‘Resources and waste’ and ‘Annoyance and external safety’ decreased for both groups.

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 2019-2022 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 2022 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 2022 scores for total sustainability. Two municipalities decreased its sustainability score over the past two years, while fourteen municipalities improved their score. Eemnes improved the most in the period 2019-2022. Overall, the score of the group of elected agricultural municipalities improved 1.5 percentage point since 2019.

Table 4.1 Improvements and reductions in total sustainability scores of elected agricultural municipalities over 2019-2022

Agricultural municipality	Sustainability score 2019	Sustainability score 2022	Difference
Eemnes	50.5	53.1	2.6
Winterswijk	51.8	54.3	2.5
Raalte	51.2	53.6	2.4
Lochem	52.4	54.6	2.2
Hof van Twente	52.4	54.3	1.9
Oost Gelre	52.8	54.5	1.7
Dalfsen	53.2	54.8	1.6
Voorst	52.2	53.7	1.5
Staphorst	52.9	54.3	1.4
Bunnik	51.7	53.0	1.3
Wijk bij Duurstede	51.5	52.8	1.3
Tynaarlo	52.9	54.1	1.2
Dinkelland	54.5	55.7	1.2

Midden-Delfland	55.2	55.1	-0.1
Kampen	52.3	51.9	-0.4
Average	52.5	54.0	1.5

4.2 Elected center municipalities

As table 4.2 shows, all municipalities improved their score last year. Deventer improved the most (2.7 percentage point), followed by Utrecht and Ede.

Table 4.2 Improvements in total sustainability scores of elected center municipalities over 2019-2022

Center municipality	Sustainability score 2018	Sustainability score 2022	Difference
Deventer	51.2	53.9	2.7
Utrecht (gemeente)	52.0	54.5	2.5
Ede	51.4	53.8	2.4
Zwolle	53.0	55.0	2.0
Leiden	51.3	53.2	1.9
Groningen (gemeente)	51.1	53.0	1.9
Hilversum	49.9	51.5	1.6
Apeldoorn	52.2	53.5	1.3
Nijmegen	52.9	54.0	1.1
Delft	53.1	54.1	1.0
Haarlem	51.2	51.8	0.6
Gooise Meren	50.9	51.4	0.5
Castricum	53.7	54.2	0.5
Huizen	51.4	51.7	0.3
Amsterdam	50.1	50.3	0.2
Average	51.7	53.1	1.4

4.3 Elected green municipalities

Elected green municipalities on average improved with 1.9 percentage points. Zero municipalities show a decrease in their sustainability score between 2019-2022, as shown in Table 4.3. Leusden improved most with 3.4 percentage points.

Table 4.3 Improvements and reductions in total sustainability scores of elected green municipalities over 2019-2022

Green municipality	Sustainability score 2019	Sustainability score 2022	Difference
Leusden	52.8	56.2	3.4
Vlieland	53.2	56.2	3.0
Bloemendaal	52.6	55.3	2.7
Heeze-Leende	54.1	56.5	2.4
Hellendoorn	50.4	52.7	2.3
Soest	50.7	52.9	2.2
Schiermonnikoog	50.0	51.9	1.9
Heerde	51.0	52.9	1.9
Hilversum	49.9	51.5	1.6
Ermelo	52.0	53.6	1.6
Nunspeet	52.7	54.3	1.6
Ameland	52.5	53.7	1.2
Waalre	54.7	55.9	1.2
Mook en Middelaar	54.1	55.2	1.1
Rozendaal	52.8	53.8	1.0
Average	52.2	54.2	1.9

4.4 Elected growth municipalities

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

Table 4.4 Improvements and reductions in total sustainability scores of elected growth municipalities over 2019-2022

Growth municipality	Sustainability score 2019	Sustainability score 2022	Difference
Leusden	52.8	56.2	3.4
Houten	53.1	55.9	2.8
Bloemendaal	52.6	55.3	2.7
Heeze-Leende	54.1	56.5	2.4
Zwolle	53.0	55.0	2.0
Wageningen	54.6	56.5	1.9
Dalfsen	53.2	54.8	1.6
Bunnik	51.7	53.0	1.3
Ameland	52.5	53.7	1.2
Nijmegen	52.9	54.0	1.1
Rozendaal	52.8	53.8	1.0
Delft	53.1	54.1	1.0

Voorschoten	53.5	54.5	1.0
Midden-Delfland	55.2	55.1	-0.1
Urk	52.1	50.9	-1.2
Average	53.1	54.6	1.5

4.5 Elected historic municipalities

Rheden, Vlieland and Utrecht showed the largest improvement in their score over the last two years, with improvements of at least 2.5 percentage points. Two municipalities have decreased their sustainability score since 2019. 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 2019-2022

Historic municipality	Sustainability score 2019	Sustainability score 2022	Difference
Rheden	49.7	53.0	3.3
Vlieland	53.2	56.2	3.0
Utrecht (gemeente)	52.0	54.5	2.5
Leiden	51.3	53.2	1.9
Bronckhorst	53.3	55.2	1.9
Schiermonnikoog	50.0	51.9	1.9
Molenlanden	51.2	53.0	1.8
Hilversum	49.9	51.5	1.6
Staphorst	52.9	54.3	1.4
Ameland	52.5	53.7	1.2
Delft	53.1	54.1	1.0
Eijsden-Margraten	49.8	50.2	0.4
Amsterdam	50.1	50.3	0.2
Kampen	52.3	51.9	-0.4
Waterland	51.8	50.6	-1.2
Average	51.5	52.9	1.4

4.6 Elected mid-sized municipalities

Table 4.6 shows that mid-sized municipalities improved their sustainability score on average with 1.7 percentage points over the last two years. Only one municipality did not improve its score (Kampen). Barneveld, Woerden and Deventer improved their score most.

Table 4.6 Improvements and reductions in total sustainability scores of elected mid-sized municipalities over 2019-2022

Mid-sized municipality	Sustainability score 2019	Sustainability score 2022	Difference
Barneveld	50.7	53.6	2.9
Deventer	51.2	53.9	2.7
Woerden	51.8	54.4	2.6
Heerenveen	50.3	52.7	2.4
Assen	49.3	51.7	2.4
Westerkwartier	50.5	52.9	2.4
Katwijk	51.0	53.1	2.1
Doetinchem	48.6	50.4	1.8
Gouda	51.0	52.7	1.7
Stichtse Vecht	49.2	50.9	1.7
Hilversum	49.9	51.5	1.6
Krimpenerwaard	51.7	52.6	0.9
Gooise Meren	50.9	51.4	0.5
Amstelveen	52.4	52.5	0.1
Kampen	52.3	51.9	-0.4
Average	50.7	52.4	1.7

4.7 Elected New Town municipalities

Elected New Town municipalities improved on average their score with 1.7 percentage points (see table 4.7). Amersfoort and Houten both improved their score the most with 3.1 and 2.8 percentage points respectively. Two municipalities (Midden-Delfland and Urk) did not improve their score.

Table 4.7 Improvements and reductions in total sustainability scores of elected New Town municipalities over 2019-2022

New Town municipality	Sustainability score 2019	Sustainability score 2022	Difference
Amersfoort	51.3	54.4	3.1
Houten	53.1	55.9	2.8
Eemnes	50.5	53.1	2.6
Culemborg	52.4	54.6	2.2
Overbetuwe	48.4	50.6	2.2
Woudenberg	52.1	54.3	2.2
IJsselstein	50.6	52.7	2.1
Nijkerk	51.5	53.4	1.9
Heumen	52.0	53.7	1.7
Tubbergen	51.8	53.5	1.7
Harderwijk	51.6	53.1	1.5
Aalsmeer	50.3	51.8	1.5

Zeewolde	51.3	52.1	0.8
Midden-Delfland	55.2	55.1	-0.1
Urk	52.1	50.9	-1.2
Average	51.6	53.3	1.7

4.8 Elected old industrial municipalities

Elected old industrial municipalities scored on average 2.1 percentage points higher over the reporting period, as shown in Table 4.8. Oisterwijk improved the most with 3.1 percentage points, followed by Wierden. One municipality decreased their score over time.

Table 4.8 Improvements and reductions in total sustainability scores of elected old industrial municipalities over 2019-2022

Old industrial municipality	Sustainability score 2019	Sustainability score 2022	Difference
Oisterwijk	49.4	52.5	3.1
Wierden	51.3	54.3	3.0
Oldenzaal	52.6	55.3	2.7
Hattem	52.4	55.0	2.6
Losser	51.2	53.8	2.6
Best	51.0	53.4	2.4
Hellendoorn	50.4	52.7	2.3
Rijssen-Holten	51.9	54.2	2.3
Borne	51.3	53.6	2.3
Culemborg	52.4	54.6	2.2
Haaksbergen	52.2	54.4	2.2
Bladel	51.5	52.9	1.4
Waalre	54.7	55.9	1.2
Bergeijk	52.8	53.9	1.1
Putten	51.8	51.7	-0.1
Average	51.8	53.9	2.1

4.9 Elected residential municipalities

Residential municipalities on average improved its score with 1.1 percentage points since 2019, as can be seen in Table 4.9. Bloemendaal, Borne, Heumen and Sint-Michielsgestel all increased their score with more than 1.5 percentage points over the past two years.

Table 4.9 Improvements and reductions in total sustainability scores of elected old industrial municipalities over 2019-2022

Residential municipality	Sustainability score 2019	Sustainability score 2022	Difference
Bloemendaal	52.6	55.3	2.7
Borne	51.3	53.6	2.3
Heumen	52.0	53.7	1.7
Sint-Michielsgestel	50.0	51.7	1.7
Hendrik-Ido-Ambacht	50.7	52.2	1.5
Wijk bij Duurstede	51.5	52.8	1.3
Waalre	54.7	55.9	1.2
Mook en Middelaar	54.1	55.2	1.1
Rozendaal	52.8	53.8	1.0
Voorschoten	53.5	54.5	1.0
Landsmeer	49.5	50.3	0.8
Castricum	53.7	54.2	0.5
Reusel-De Mierden	51.9	52.4	0.5
Eijsden-Margraten	49.8	50.2	0.4
Waterland	51.8	50.6	-1.2
Average	52.0	53.1	1.1

4.10 Elected shrink municipalities

As far as elected shrink municipalities are concerned, it can be noticed that they improved 1.4 percentage points on average the last two years (see Table 4.10). Gulpen-Wittem improved the most with 2.2 percentage points, and zero municipalities show an overall decrease in sustainability score since 2019.

Table 4.10 Improvements and reductions in total sustainability scores of elected shrink municipalities over 2019-2022

Shrink municipality	Sustainability score 2019	Sustainability score 2022	Difference
Gulpen-Wittem	46.9	49.1	2.2
Brummen	51.0	53.1	2.1
Leudal	48.0	50.0	2.0
Bronckhorst	53.3	55.2	1.9
Berkelland	51.1	53.0	1.9
Beekdaelen	47.1	49.0	1.9
Bergen (NH.)	50.6	52.3	1.7
Stein (L.)	48.3	49.9	1.6
Voerendaal	48.6	49.9	1.3
Mook en Middelaar	54.1	55.2	1.1
Laren (NH.)	49.6	50.7	1.1
Roerdalen	47.5	48.4	0.9

Westervoort	47.0	47.6	0.6
Meerssen	49.6	50.1	0.5
Valkenburg aan de Geul	49.2	49.6	0.4
Average	49.5	50.9	1.4

4.11 Elected small municipalities

The group of small municipalities has improved its score over the period 2019-2022 by 1.4 percentage points, as shown in Table 4.11. Leusden leads this group by improving 3.4 percentage points, followed by Houten and Bloemendaal.

Table 4.11 Improvements and reductions in total sustainability scores of elected old industrial municipalities over 2019-2022

Small municipality	Sustainability score 2019	Sustainability score 2022	Difference
Leusden	52.8	56.2	3.4
Houten	53.1	55.9	2.8
Bloemendaal	52.6	55.3	2.7
Wageningen	54.6	56.5	1.9
Schiermonnikoog	50.0	51.9	1.9
Heumen	52.0	53.7	1.7
Dalfsen	53.2	54.8	1.6
Bunnik	51.7	53.0	1.3
Ameland	52.5	53.7	1.2
Tynaarlo	52.9	54.1	1.2
Mook en Middelaar	54.1	55.2	1.1
Rozendaal	52.8	53.8	1.0
Noordenveld	53.2	53.7	0.5
Midden-Delfland	55.2	55.1	-0.1
Urk	52.1	50.9	-1.2
Average	52.9	54.3	1.4

4.12 Elected tourist municipalities

The sustainability score of the elected tourist type of municipalities has improved on average 1.3 percentage points (see Table 4.12). The biggest improvement came from Vlieland, followed by Hilvarenbeek. One municipality shows a decrease in their sustainability score since 2019.

Table 4.12 Improvements and reductions in total sustainability scores of elected tourist municipalities over 2019-2022

Tourist municipality	Sustainability score 2019	Sustainability score 2022	Difference
Vlieland	53.2	56.2	3.0
Hilvarenbeek	52.3	54.5	2.2
Leiden	51.3	53.2	1.9
Schiermonnikoog	50.0	51.9	1.9
Groningen (gemeente)	51.1	53.0	1.9
Steenwijkerland	51.9	53.6	1.7
Bergen (NH.)	50.6	52.3	1.7
Westerveld	49.6	51.1	1.5
Ameland	52.5	53.7	1.2
Mook en Middelaar	54.1	55.2	1.1
Bergeijk	52.8	53.9	1.1
Terschelling	52.6	53.6	1.0
Eijsden-Margraten	49.8	50.2	0.4
Amsterdam	50.1	50.3	0.2
Waterland	51.8	50.6	-1.2
Average	51.6	52.9	1.3

4.13 Elected work municipalities

Elected work municipalities improved on average with 1.7 percentage points over the period 2019-2022, as illustrated in table 4.13. Oldenzaal improved the most with 2.7 percentage points, followed by Woerden and Deventer.

Table 4.13 Improvements and reductions in total sustainability scores of elected work municipalities over 2019-2022

Work municipality	Sustainability score 2019	Sustainability score 2022	Difference
Oldenzaal	52.6	55.3	2.7
Deventer	51.2	53.9	2.7
Woerden	51.8	54.4	2.6
Utrecht (gemeente)	52.0	54.5	2.5
Rijssen-Holten	51.9	54.2	2.3
Zwolle	53.0	55.0	2.0
Leiden	51.3	53.2	1.9
Groningen (gemeente)	51.1	53.0	1.9
Oost Gelre	52.8	54.5	1.7
Hilversum	49.9	51.5	1.6
Nunspeet	52.7	54.3	1.6
Nijmegen	52.9	54.0	1.1
Delft	53.1	54.1	1.0

Amsterdam	50.1	50.3	0.2
Ouder-Amstel	52.5	52.5	0.0
Average	51.9	53.6	1.7

4.14 Elected 100,000plus municipalities

The, for Dutch dimensions, relative large elected 100,000plus cities, on average improved their score with 1.6 percentage point. Amersfoort improved most, followed by Eindhoven and Utrecht.

Table 4.14 Improvements and reductions in total sustainability scores of elected 100,000plus over 2019-2022

100,000plus municipality	Sustainability score 2019	Sustainability score 2022	Difference
Amersfoort	51.3	54.4	3.1
Eindhoven	50.6	53.7	3.1
Utrecht (gemeente)	52.0	54.5	2.5
Ede	51.4	53.8	2.4
Zwolle	53.0	55.0	2.0
Leiden	51.3	53.2	1.9
Groningen (gemeente)	51.1	53.0	1.9
Arnhem	49.6	51.0	1.4
's-Hertogenbosch	49.1	50.5	1.4
Apeldoorn	52.2	53.5	1.3
Nijmegen	52.9	54.0	1.1
Delft	53.1	54.1	1.0
Haarlem	51.2	51.8	0.6
Almere	50.0	50.3	0.3
Amsterdam	50.1	50.3	0.2
Average	51.3	52.9	1.6

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 former industrial municipalities. Highest sustainability scores were measured in growth municipalities (54.6 percentage points) and lowest in shrink municipalities (50.9 percentage points).

Table 4.15 Changes in total sustainability scores of 14 types of elected municipalities over 2019-2022

Type of municipality	Sustainability score 2019	Sustainability score 2022	Difference
Small municipalities	52.9	54.3	1.4
Mid-sized municipalities	50.7	52.4	1.7
100.000plus municipality	51.3	52.9	1.6
Agricultural municipality	52.5	54.0	1.5
Center municipality	51.7	53.1	1.4
Former industrial municipality	51.8	53.9	2.1
Green municipality	52.2	54.2	1.9
Growth municipalities	53.1	54.6	1.5
Historic municipalities	51.5	52.9	1.4
New Town municipality	51.6	53.3	1.7
Residential municipalities	52.0	53.1	1.1
Shrink municipality	49.5	50.9	1.4
Touristic municipalities	51.6	52.9	1.3
Work municipality	51.9	53.6	1.7

5 Overall outcome for Elected Municipalities including their CO2-emission scores in 2019-2022

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 2022 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 Leusden, followed by Rheden, Oisterwijk, Amersfoort and Eindhoven.

Table 5.1 Ten Elected Municipalities improving sustainability score most in the period 2019-2022

Elected municipality	Typology	Total score 2019	Total score 2022	Difference
Leusden	Large, Centre, Historic, Tourist, Work	52.8	56.2	3.4
Rheden	Large, Centre, Historic, Tourist, Work	49.7	53	3.3
Oisterwijk	Small, Growth	49.4	52.5	3.1
Amersfoort	Shrink, Tourist	51.3	54.4	3.1
Eindhoven	Residential	50.6	53.7	3.1
Vlieland	Medium	53.2	56.2	3
Wierden	Former industrial, Work	51.3	54.3	3
Barneveld	Medium, Centre, Green, Historic, Work	50.7	53.6	2.9
Houten	Large, Centre, Growth, Work	53.1	55.9	2.8
Oldenzaal	Medium, Work	52.6	55.3	2.7

The largest reduction in sustainability score among Elected Municipalities was detected in Urk, Waterland and Kampen.

Table 5.2 Ten Elected Municipalities with largest declining sustainability score in the period 2019-2022

Municipality	Typology	Total score 2019	Total score 2022	Difference
Urk	Shrink	52.1	50.9	-1.2
Waterland	Residential	51.8	50.6	-1.2
Kampen	Small, Agricultural	52.3	51.9	-0.4
Midden-Delfland	Former industrial	55.2	55.1	-0.1
Putten	Small	51.8	51.7	-0.1
Ouder-Amstel	Residential	52.5	52.5	0
Amstelveen	Agricultural	52.4	52.5	0.1
Amsterdam	Tourist	50.1	50.3	0.2
Almere	Tourist	50	50.3	0.3
Huizen	Former industrial, Residential	51.4	51.7	0.3

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 (2019 and 2020). 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 13.2%. 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	2019-2020	2019-2020
Elected (114)	-34,5%	-33,3%	-13,2%
Others	4,6%	-13,5%	-4,6%
Total (352)	-5,3%	-17,8%	-6,2%

The highest reduction was found in Amsterdam, followed by Leiden, Wageningen and Bergen. Table 5.4 shows that Westervoort, Reusel-De Mierden and Tynaarlo 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
Amsterdam	-36.4		Westervoort	4.0
Leiden	-18.0		Reusel-De Mierden	3.0
Wageningen	-15.7		Tynaarlo	2.0
Bergen (NH.)	-15.4		Haaksbergen	1.9
Landsmeer	-15.2		Noordenveld	1.6
Amstelveen	-14.7		Sint-Michielsgestel	0.1
Rijssen-Holten	-14.3		Lochem	-1.1
Hilversum	-14.3		Westerveld	-1.2
Nijmegen	-13.2		Steenwijkerland	-1.2
Woerden	-12.2		Borne	-1.3

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[6].

An elaborated description of the methodology used to calculate the SDG scores can be found in the Method report 2022[7]. 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 2022, as shown in table 6.1, makes clear that the performance of twelve goals improved slightly or substantially (Goals 1, 3, 4, 5, 7, 8, 9, 10, 12, 13, 14 and 16), but other showed a small fallback or stayed the same (Goals 2, 11 and 15).

In general, table 6.1 shows that the municipalities improved their performance between 2019 and 2022 for 12 of the 15 goals measured.

Table 6.1 SDG scores for elected (n=114) and all (n=344) municipalities 2019-2022

[6] https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-fi-nance_en

[7] www.hetpon-telos.nl/methodreport2022

	All municipalities (n=344)					Elected municipalities (n=114)				
SDG	2019	2020	2021	2022	Difference 2019-2022	2019	2020	2021	2022	Difference 2019-2022
1. No Poverty	41.7	45.0	48.1	49.9	8.3	45.4	49.0	52.3	53.9	8.4
2. Zero Hunger	44.5	44.5	44.4	44.3	-0.2	45.5	45.5	45.5	45.4	-0.2
3. Good Health and Well-being	45.8	47.7	47.4	47.4	1.6	48.6	50.2	49.9	49.8	1.2
4. Quality Education	50.7	50.4	54.0	51.1	0.3	53.6	53.4	56.6	54.2	0.5
5. Gender Equality	67.0	68.1	67.2	69.1	2.1	67.9	68.9	67.4	69.6	1.8
6. Clean Water and Sanitation										
7. Affordable and Clean Energy	35.6	37.3	39.3	40.4	4.8	36.3	38.1	40.0	41.0	4.7
8. Decent Work and Economic Growth	50.9	51.5	51.1	52.3	1.3	52.3	52.9	52.4	53.2	0.9
9. Industry, Innovation and Infrastructure	41.2	41.0	44.8	45.9	4.7	43.4	43.0	46.9	47.9	4.4
10. Reduced Inequalities	44.9	45.1	45.1	45.3	0.4	45.2	43.7	43.7	45.7	0.5
11. Sustainable Cities and Communities	50.7	49.2	49.0	48.9	-1.8	52.0	50.5	50.3	50.2	-1.8
12. Responsible Consumption and Production	52.7	53.0	54.3	55.1	2.5	54.2	54.7	55.9	56.7	2.5
13. Climate Action	45.1	45.5	46.1	46.2	1.1	46.9	47.5	48.0	48.2	1.2
14. Life below Water	39.7	38.9	42.3	42.4	2.7	42.3	41.5	45.2	45.5	3.2
15. Life on Land	46.6	46.6	46.6	46.6	0.0	51.1	51.1	51.1	51.1	0.0
16. Peace, Justice and Strong Institutions	48.5	48.5	50.1	50.5	2.0	51.3	51.7	53.6	53.8	2.5
17. Partnerships for the Goals										

As shown in table 6.1, 2 of the 17 SDGs could not be measured because of lack of data, or because they are not relevant for municipalities. These are nr. 6 (Clean water and sanitation) 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 15 measured goals, but the differences become smaller.

On 5 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 3.2 percentage points on goal 14 (Life below water), while the elected group showed an increase of 2.7 percentage points on the same goal.

More information about the method of analyses on the SDGs can be found in the 2022 Method report for municipalities[8].

[8] www.hetpon-telos.nl/methodreport2022

7 Discussion and overview of outcome of assessment period 2019-2022

The end result shows that the Elected Municipalities continued to outperform the total group of municipalities with 2.4 percentage points (53.0 vs 50.6), as listed in table 1. Both groups of municipalities show an improvement of the overall score with 1.6 percentage points. Largest improvements occurred this year for the economic capital (2.5/2.8 percentage points) and the ecological capital (2.0/1.8 percentage points), while those socio-cultural capital were relatively small (0.3 percentage points).

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 13.2%.

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 Leusden, Rheden, Oisterwijk, Amersfoort and Eindhoven increased their score the most. The largest reduction in sustainability among Elected Municipalities was detected in Urk, Waterland and Kampen.

Comparison over the years 2019 and 2022, as shown in table 6.1, makes clear that the performance of twelve goals improved slightly or substantially (Goals 1, 3, 4, 5, 7, 8, 9, 10, 12, 13, 14 and 16), but other showed a small fallback or stayed the same (Goals 2, 11 and 15). 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 15 measured goals, but the differences become smaller. On 5 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 3.2 percentage points on goal 14 (Life below water), while the elected group showed an increase of 2.7 percentage points on the same goal.

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 2022 for all 114 Elected Municipalities

Municipality	Total sustainability score 2019	Total sustainability score 2022	Difference 2019-2022
Leusden	52.8	56.2	3.4
Rheden	49.7	53	3.3
Oisterwijk	49.4	52.5	3.1
Amersfoort	51.3	54.4	3.1
Eindhoven	50.6	53.7	3.1
Vlieland	53.2	56.2	3
Wierden	51.3	54.3	3
Barneveld	50.7	53.6	2.9
Houten	53.1	55.9	2.8
Oldenzaal	52.6	55.3	2.7
Bloemendaal	52.6	55.3	2.7
Deventer	51.2	53.9	2.7
Hattem	52.4	55	2.6
Eemnes	50.5	53.1	2.6
Woerden	51.8	54.4	2.6
Losser	51.2	53.8	2.6
Utrecht	52	54.5	2.5
Winterswijk	51.8	54.3	2.5
Heerenveen	50.3	52.7	2.4
Assen	49.3	51.7	2.4
Best	51	53.4	2.4
Heeze-Leende	54.1	56.5	2.4
Ede	51.4	53.8	2.4
Raalte	51.2	53.6	2.4
Westerkwartier	50.5	52.9	2.4
Rijssen-Holten	51.9	54.2	2.3
Hellendoorn	50.4	52.7	2.3
Borne	51.3	53.6	2.3
Culemborg	52.4	54.6	2.2
Gulpen-Wittem	46.9	49.1	2.2
Hilvarenbeek	52.3	54.5	2.2
Overbetuwe	48.4	50.6	2.2
Lochem	52.4	54.6	2.2
Woudenberg	52.1	54.3	2.2
Soest	50.7	52.9	2.2
Haaksbergen	52.2	54.4	2.2
Brummen	51	53.1	2.1

Katwijk	51	53.1	2.1
IJsselstein	50.6	52.7	2.1
Zwolle	53	55	2
Leudal	48	50	2
Bronckhorst	53.3	55.2	1.9
Leiden	51.3	53.2	1.9
Schiermonnikoog	50	51.9	1.9
Wageningen	54.6	56.5	1.9
Berkelland	51.1	53	1.9
Groningen	51.1	53	1.9
Hof van Twente	52.4	54.3	1.9
Nijkerk	51.5	53.4	1.9
Heerde	51	52.9	1.9
Beekdaelen	47.1	49	1.9
Doetinchem	48.6	50.4	1.8
Molenlanden	51.2	53	1.8
Tubbergen	51.8	53.5	1.7
Oost Gelre	52.8	54.5	1.7
Heumen	52	53.7	1.7
Gouda	51	52.7	1.7
Steenwijkerland	51.9	53.6	1.7
Sint-Michielsgestel	50	51.7	1.7
Bergen (NH.)	50.6	52.3	1.7
Stichtse Vecht	49.2	50.9	1.7
Hilversum	49.9	51.5	1.6
Ermelo	52	53.6	1.6
Stein	48.3	49.9	1.6
Nunspeet	52.7	54.3	1.6
Dalfsen	53.2	54.8	1.6
Voorst	52.2	53.7	1.5
Hendrik-Ido-Ambacht	50.7	52.2	1.5
Aalsmeer	50.3	51.8	1.5
Westerveld	49.6	51.1	1.5
Harderwijk	51.6	53.1	1.5
Staphorst	52.9	54.3	1.4
Arnhem	49.6	51	1.4
Bladel	51.5	52.9	1.4
's-Hertogenbosch	49.1	50.5	1.4
Bunnik	51.7	53	1.3
Voerendaal	48.6	49.9	1.3
Apeldoorn	52.2	53.5	1.3
Wijk bij Duurstede	51.5	52.8	1.3
Dinkelland	54.5	55.7	1.2

Ameland	52.5	53.7	1.2
Tynaarlo	52.9	54.1	1.2
Waalre	54.7	55.9	1.2
Mook en Middelaar	54.1	55.2	1.1
Bergeijk	52.8	53.9	1.1
Nijmegen	52.9	54	1.1
Laren	49.6	50.7	1.1
Rozendaal	52.8	53.8	1
Terschelling	52.6	53.6	1
Voorschoten	53.5	54.5	1
Delft	53.1	54.1	1
Krimpenerwaard	51.7	52.6	0.9
Roerdalen	47.5	48.4	0.9
Zeewolde	51.3	52.1	0.8
Landsmeer	49.5	50.3	0.8
Westervoort	47	47.6	0.6
Haarlem	51.2	51.8	0.6
Castricum	53.7	54.2	0.5
Meerssen	49.6	50.1	0.5
Gooise Meren	50.9	51.4	0.5
Noordenveld	53.2	53.7	0.5
Reusel-De Mierden	51.9	52.4	0.5
Eijsden-Margraten	49.8	50.2	0.4
Valkenburg aan de Geul	49.2	49.6	0.4
Huizen	51.4	51.7	0.3
Almere	50	50.3	0.3
Amsterdam	50.1	50.3	0.2
Amstelveen	52.4	52.5	0.1
Ouder-Amstel	52.5	52.5	0
Putten	51.8	51.7	-0.1
Midden-Delfland	55.2	55.1	-0.1
Kampen	52.3	51.9	-0.4
Waterland	51.8	50.6	-1.2
Urk	52.1	50.9	-1.2

Annex B: Overview of the changes in CO2-emissions in 2019-2020 for all Elected Municipalities

Elected municipality	Typology	% Difference 2019-2020
Amsterdam	Large, Centre, Historic, Tourist, Work	-36.4
Leiden	Large, Centre, Historic, Tourist, Work	-18.0
Wageningen	Small, Growth	-15.7
Bergen (NH.)	Shrink, Tourist	-15.4
Landsmeer	Residential	-15.2
Amstelveen	Medium	-14.7
Rijssen-Holten	Former industrial, Work	-14.3
Hilversum	Medium, Centre, Green, Historic, Work	-14.3
Nijmegen	Large, Centre, Growth, Work	-13.2
Woerden	Medium, Work	-12.2
Deventer	Medium, Centre, Work	-12.1
Bergeijk	Former industrial, Tourist	-11.5
Putten	Former industrial	-11.4
Voorschoten	Growth, Residential	-11.2
Groningen	Large, Centre, Tourist, Work	-10.9
Amersfoort	Large, New town	-10.5
Katwijk	Medium	-10.1
Valkenburg aan de Geul	Shrink	-9.9
Woudenberg	New town	-9.7
Ouder-Amstel	Work	-9.2
Oldenzaal	Former industrial, Work	-9.1
Wijk bij Duurstede	Agricultural, Residential	-8.8
Zwolle	Large, Centre, Growth, Work	-8.8
Eindhoven	Large	-8.4
Arnhem	Large	-8.3
Castricum	Centre, Residential	-8.3
Leusden	Small, Green, Growth	-7.9
Ede	Large, Centre	-7.6
Heerenveen	Medium	-7.4
Apeldoorn	Large, Centre	-7.3
Barneveld	Medium	-7.3
Delft	Large, Centre, Growth, Historic, Work	-7.0
Culemborg	Former industrial, New town	-6.9
Nunspeet	Green, Work	-6.6
Voerendaal	Shrink	-6.1
Waterland	Historic, Residential, Tourist	-5.9

Meerssen	Shrink	-5.9
Hellendoorn	Former industrial, Green	-5.9
Dinkelland	Agricultural	-5.7
Ermelo	Green	-5.6
Eijsden-Margraten	Historic, Residential, Tourist	-5.0
Eemnes	Agricultural, New town	-4.9
Heeze-Leende	Green, Growth	-4.7
's-Hertogenbosch	Large	-4.6
Leudal	Shrink	-4.5
Terschelling	Tourist	-4.4
Waalre	Former industrial, Green, Residential	-4.4
Gulpen-Wittem	Shrink	-4.3
Tubbergen	New town	-4.1
Best	Former industrial	-4.1
Bladel	Former industrial	-4.1
Kampen	Medium, Agricultural, Historic	-3.9
Oisterwijk	Former industrial	-3.8
Urk	Small, Growth, New town	-3.8
Losser	Former industrial	-3.7
Bunnik	Small, Agricultural, Growth	-3.6
Hendrik-Ido-Ambacht	Residential	-3.5
Utrecht	Large, Centre, Historic, Work	-3.2
Bloemendaal	Small, Green, Growth, Residential	-2.9
Doetinchem	Medium	-2.7
Voorst	Agricultural	-2.6
Wierden	Former industrial	-2.5
Vlieland	Green, Historic, Tourist	-2.4
Heumen	Small, New town, Residential	-1.4
Staphorst	Agricultural, Historic	-1.4
Dalfsen	Small, Agricultural, Growth	-1.3
Gooise Meren	Medium, Centre	-1.1
Midden-Delfland	Small, Agricultural, Growth, New town	-1.0
Houten	Small, Growth, New town	-1.0
Bronckhorst	Historic, Shrink	-0.6
Berkelland	Shrink	-0.5
Raalte	Agricultural	0.0
Krimpenerwaard	Medium	0.2
Zeewolde	New town	0.2
Brummen	Shrink	2.0
Mook en Middelaar	Small, Green, Residential, Shrink, Tourist	2.6
Oost Gelre	Agricultural, Work	2.6
Hattem	Former industrial	3.2
Rozendaal	Small, Green, Growth, Residential	6.7

Hilvarenbeek	Tourist	10.0
Schiermonnikoog	Small, Green, Historic, Tourist	18.8
Ameland	Small, Green, Growth, Historic, Tourist	18.9
Haarlem	Large, Centre	-17.2
Assen	Medium	-15.2
Soest	Green	-12.3
Gouda	Medium	-11.1
Harderwijk	New town	-9.6
Huizen	Centre	-9.5
Winterswijk	Agricultural	-9.4
Aalsmeer	New town	-9.0
IJsselstein	New town	-8.7
Stichtse Vecht	Medium	-7.2
Almere	Large	-7.2
Stein	Shrink	-5.7
Rheden	Historic	-5.0
Roerdalen	Shrink	-4.9
Molenlanden	Historic	-4.9
Westerkwartier	Medium	-4.4
Overbetuwe	New town	-3.3
Laren	Shrink	-2.4
Beekdaelen	Shrink	-2.1
Nijkerk	New town	-1.6
Heerde	Green	-1.5
Hof van Twente	Agricultural	-1.4
Borne	Former industrial, Residential	-1.3
Steenwijkerland	Tourist	-1.2
Westerveld	Tourist	-1.2
Lochem	Agricultural	-1.1
Sint-Michielsgestel	Residential	0.1
Noordenveld	Small	1.6
Haaksbergen	Former industrial	1.9
Tynaarlo	Small, Agricultural	2.0
Reusel-De Mierden	Residential	3.0
Westervoort	Shrink	4.0

(Source: 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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