2nd Performance Report of Elected Dutch Municipalities of BNG Bank Sustainability Bond of November 2020

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Executive summary

November 2020, BNG Bank launched its seventh Sustainability Bond, a new USD 1 billion | 0.05%, 5-year benchmark. The bond is due November 2025. The Framework document for the BNG Bank Sustainability Bond 2020 was provided to BNG Bank by Telos -Tilburg University- on 24 November 2020, 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 2022–2025, 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 111 Elected Municipalities compared to the total group of 344 municipalities of the Netherlands. BNG Bank asked Telos -Tilburg University- to provide the yearly impact reports for this bond, based on its yearly National Monitor Sustainable Municipalities. This performance report is the second impact report of the 2020 Sustainability Bonds, covering the years 2020-2022.

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 1.3 percentage points. Largest improvements occurred this year for the economic capital (2.0/2.2 percentage points for both groups). The ecological capital increased as well, with 1.6 and 1.5 percentage points, while the socio-cultural capital slightly increased with 0.3 percentage points for both the elected group and the total group.

Table 1. Sustainability scores of 111 elected municipalities and of the total group of 344 Dutch municipalities in 2022 compared to 2020

Sustainability capital	Elected 2020	Total 2020	Elected 2022	Total 2022	Elected: Difference 2020-2022	Total: Difference 2020-2022
Total	51.7	49.2	53.0	50.6	1.3	1.3[1]
Socio-cultural	52.6	50.3	52.9	50.6	0.3	0.3
Ecological	50.9	47.9	52.5	49.4	1.6	1.5
Economic	51.7	49.5	53.6	51.7	2.0	2.2

A closer look at the CO_2 reductions shows that the group of Elected Municipalities realized a reduction in CO_2 emissions over de last year; the CO_2 emissions decreased with 6.5%. The other municipalities realized CO_2 emissions reduction of 6.2%. The outcome of this analysis is shown in table 5.3.

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[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.

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 Ermelo, Oisterwijk, Heeze-Leende and Best were able to improve their total sustainability score most. The largest reduction in sustainability score among Elected Municipalities was detected in Veere, followed by Urk, Almere and Hendrik-Ido-Ambacht.

Comparison over the years 2020 and 2022 for the elected group, as shown in table 6.1, makes clear that the performance of several SDG's improved slightly or substantially (Goals 1, 4, 5, 7, 8, 9, 10, 12, 13, 14 and 16) but other showed a small fallback or stayed the same. (Goals 2, 3, 11 and 16). The elected municipalities still outperforms the total group on all of the 15 measured goals, but the differences become smaller. On 14 of the 15 goals the total group showed a higher increase or smaller decline over the reported period than the elected group. There are no many differences in the development of the scores between the two groups. They almost always had the same amount of percentage points decrease or increase.

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1   Introduction

At the request of BNG Bank, Telos -Tilburg University, has provided a Framework document on 24 November 2020 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 2020. Telos developed this framework based on its National Monitor of Sustainable Municipalities 2020, from which the 7th edition was presented in November 2020. 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 24, 2020, BNG Bank launched its seventh Sustainability Bond, a new USD 1 billion, 5-year benchmark[3]. The bond is due November 24th 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 2022 – 2025, 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 111 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 2022-2025 and report on the annual changes in scores of the Elected Municipalities. This is the second of such reports on the 2020 bonds, covering the period 2020-2022. It describes how the performance is assessed, the general outcome of the comparison over the years 2020-2022, 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).

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[2] https://www.bngbank.com/-/media/Project/CBB/BNG-Bank-COM/Documents/Sustainability-Framework-2020.pdf?la=en&rev=25c3308f8f824ddd91923f9c5b9e792d&hash=25CC7B4587058F7AABF537F45330AC39

[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 2020 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 2017[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 2020 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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[4] 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. 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 municipality rearrangements, which are continuously resulting in larger municipalities and a lower total number of municipalities.

The National Monitor Sustainable Municipalities 2020 discerned 14 city types. These 14 types have been used for the Framework of the BNG Bank Sustainability Bond of 2020 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 2020 will be evaluated and discussed. The group of Elected Municipalities, described in the Framework of the BNG Bank Sustainability Bond of October 2020, 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 2020. Since 2022, rearrangements among the municipalities were made and there are now only 344 municipalities in the Netherlands. The municipalities of Grave, Langedijk and Boxmeer 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 111 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 139 indicators now, compared to 140 in 2020. Such changes had to be included in the comparison between 2022 and 2020. Where needed new data for 2020 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 2020 and 2022 was ascertained.

This assessment includes:
1. A comparison of sustainability scores of Elected Municipalities with the total group of Dutch municipalities for 2020 and 2022.
2. A comparison of sustainability scores for Elected Municipalities between 2020 and 2022, including:
    a. overall scores
    b. capital scores, and a selection of:
    c. stock scores and where useful

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

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 2020 and 2022.

In the next chapters, the outcome of these activities is presented. Finally, the overall changes observed for reporting period 2020-2022 will be discussed.

3 Outcome of updating exercise and comparison of 2020 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 2020-2022

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

In the last two years the average overall sustainability score improved from 49.24 to 50.56 percentage. This was due to improvements in all capitals. The ecological capital improved from 47.94 to 49.42 and the economic capital improved from 49.49 to 51.69. The socio-cultural capital slightly increased from 50.30 to 50.58 percentage.

3.2 General characteristics of Elected Municipalities for the BNG Bank Sustainability Bond 2020

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%)	81 (73.0%)
50,000-100,000	58 (16.9%)	15 (13.5%)
More than 100,000	32 (9.3%)	15 (13.5%)

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 2020 and 2022 for the total group of Dutch municipalities and the group of Elected Municipalities. It shows the general trend, which is an improvement of the overall score with 1.3 percentage points, for both groups.

Table 3.3 Sustainability performance of Elected Municipalities and of the total group of Dutch municipalities in 2020 compared to 2022 (percentage points)

Sustainability capital	Elected 2020	Total 2020	Elected 2022	Total 2022	Elected: Difference 2020-2022	Total: Difference 2020-2022
Total	51.7	49.2	53.0	50.6	1.3	1.3
Socio-cultural	52.6	50.3	52.9	50.6	0.3	0.3
Ecological	50.9	47.9	52.5	49.4	1.6	1.5
Economic	51.7	49.5	53.6	51.7	2.0	2.2

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. Largest improvements occurred this year for the economic capital (2.0/2.2 percentage points for both groups), and the ecological capital improved slightly with 1.5-1.6

percentage points for the elected and total group respectively. The socio-cultural capital showed a small increase of 0.3 for both the elected group and the total group. 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 2020 and 2022 for the group of elected Municipalities and all Dutch municipalities

Sustainability stock	Difference 2020-2022 of 111 Elected Municipalities	Difference 2020-2022 of all 344 municipalities
Socio-cultural		
Arts & culture	0.3	0.3
Economic participation	0.7	0.6
Education	1.1	0.8
Health	-1.4	-1.2
Housing	0.0	0.0
Lifestyle and health	0.2	0.3
Political Participation	-1.0	-1.2
Residential environment	-0.1	-0.1
Safety	2.3	2.0
Social participation	1.2	1.2
Ecological		
Air	1.4	1.3
Annoyance and External safety	-0.4	-0.2
Energy	3.7	3.8
Nature & landscape	0.0	0.0
Soil	6.0	4.3
Resources & waste	-2.5	-1.6
Water	3.3	2.8
Economic		
Competitiveness	4.1	4.7
Infrastructure & mobility	5.5	5.5
Knowledge	1.0	1.0
Labor	0.6	0.6
Spatial location conditions	-1.4	-0.9

Socio-cultural stocks

Among socio-cultural stocks, differences between both groups of municipalities were small. The stocks 'Safety' and 'Social participation' improved for both groups of municipalities. The stocks 'Health', 'Political participation' and 'Residential environment' show (small) increases.

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 2020-2022 for the stocks of 'energy', 'water' and 'soil'. 'Nature and landscape' stayed the same, while the stocks 'Annoyance and external safety' and 'Resources and waste' showed small decreases.

Economic stocks

Elected Municipalities improved slightly worse as the total group of municipalities. The biggest improvement is found in 'Infrastructure & Mobility' and 'Competitiveness', while 'Spatial location conditions' shows a decline.

4 Elected Municipalities showing largest improvement or reduction in sustainability score in 2020–2022 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 2020: 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 2020 have in this assessment been corrected for additional indicators used in 2022 to make them comparable with the 2020 data. The results are therefore sometimes differing from those given in the 2020 Framework document.

4.1 Elected agricultural municipalities

Table 4.1 presents the 15 best-in-class municipalities of the agricultural type, their reconstructed 2020 scores and the 2022 scores for total sustainability. All municipalities improved their score.
Zwartewaterland improved the most in the period 2020-2022, with 1.8 percentage points. Overall, the score of the group of elected agricultural municipalities improved 1.2 percentage points since 2020.

Table 4.1 Improvements and reductions in total sustainability scores of elected agricultural municipalities over 2020-2022

Agricultural municipality	Sustainability score 2020	Sustainability score 2022	Difference
Zwartewaterland	51.4	53.2	1.8
Dinkelland	54.0	55.7	1.7
Wijk bij Duurstede	51.1	52.8	1.7
Tubbergen	52.0	53.5	1.5
Tynaarlo	52.7	54.1	1.4
Raalte	52.2	53.6	1.4
Wierden	53.0	54.3	1.3
Bunnik	51.8	53.0	1.2
Oost Gelre	53.4	54.5	1.1
Berkelland	51.9	53.0	1.1
Dalfsen	54.0	54.8	0.8
Hof van Twente	53.7	54.3	0.6
Staphorst	53.7	54.3	0.6

Midden-Delfland	55.0	55.1	0.1
Average	52.9	54.0	1.2

4.2 Elected center municipalities

As table 4.2 shows, all municipalities did improve their score the last years. Deventer improved the most, with 2.4 percentage points, followed by Zwolle, Katwijk and Groningen. Overall, the score of the group elected center municipalities improved with 1.3 percentage points.

Table 4.2 Improvements in total sustainability scores of elected center municipalities over 2020-2022

Center municipality	Sustainability score 2020	Sustainability score 2022	Difference
Deventer	51.5	53.9	2.4
Zwolle	52.9	55.0	2.1
Katwijk	51.2	53.1	1.9
Groningen	51.3	53.0	1.7
Hilversum	49.9	51.5	1.6
Apeldoorn	52.0	53.5	1.5
Ede	52.5	53.8	1.3
Gouda	51.5	52.7	1.2
Gooise Meren	50.2	51.4	1.2
Nijmegen	52.9	54.0	1.1
Huizen	50.7	51.7	1.0
Utrecht	53.5	54.5	1.0
Arnhem	50.2	51.0	0.8
Delft	53.4	54.1	0.7
Castricum	53.7	54.2	0.5
Average	51.8	53.2	1.3

4.3 Elected green municipalities

Elected green municipalities on average improved with 1.5 percentage points. One municipality show a decrease in their sustainability score between 2020-2022, as shown in Table 4.3. Heeze-Leende improved the most with 2.9 percentage points, followed by Nunspeet, Leusden and Elburg.

Table 4.3 Improvements and reductions in total sustainability scores of elected green municipalities over 2020-2022

Green municipality	Sustainability score 2020	Sustainability score 2022	Difference
Heeze-Leende	53.6	56.5	2.9
Nunspeet	51.7	54.3	2.6
Leusden	53.9	56.2	2.3
Elburg	51.6	53.9	2.3
Hilvarenbeek	52.3	54.5	2.2
Noordwijk	53.7	55.9	2.2
Waalre	53.9	55.9	2.0
Ommen	52.8	54.4	1.6
Bladel	51.3	52.9	1.6
Bloemendaal	53.7	55.3	1.6
Vlieland	55.0	56.2	1.2
Mook en Middelaar	54.7	55.2	0.5
Terschelling	53.1	53.6	0.5
Putten	51.7	51.7	0.0
Westerveld	51.4	51.1	-0.3
Average	53.0	54.5	1.5

4.4 Elected growth municipalities

The elected growth municipalities showed an improvement of 1.4 percentage point last year. One municipality (Urk) did not improve its score. Highest improvement was found for Heeze-Leende, Leusden, followed by Noordwijk and Houten.

Table 4.4 Improvements and reductions in total sustainability scores of elected growth municipalities over 2020-2022

Growth municipality	Sustainability score 2020	Sustainability score 2022	Difference
Heeze-Leende	53.6	56.5	2.9
Leusden	53.9	56.2	2.3
Noordwijk	53.7	55.9	2.2
Houten	53.9	55.9	2.0
Blaricum	51.3	53.3	2.0
Bloemendaal	53.7	55.3	1.6
Oegstgeest	53.8	55.3	1.5
Wageningen	55.1	56.5	1.4
Zeewolde	50.8	52.1	1.3
Bunnik	51.8	53.0	1.2
Nijmegen	52.9	54.0	1.1

Woudenberg	53.3	54.3	1.0
Delft	53.4	54.1	0.7
Midden-Delfland	55.0	55.1	0.1
Urk	51.6	50.9	-0.7
Average	53.2	54.6	1.4

4.5 Elected historic municipalities

One municipality showed a decline in municipality score over the past year, which is Kampen. Rheden, Leiden and Ameland improved the most over the reported period. The average score improved last year with 1.1 percentage points, as presented in Table 4.5.

Table 4.5 Improvements and reductions in total sustainability scores of elected historic municipalities over 2020-2022

Historic municipality	Sustainability score 2020	Sustainability score 2022	Difference
Rheden	50.8	53.0	2.2
Leiden	51.2	53.2	2.0
Ameland	52.0	53.7	1.7
Hilversum	49.9	51.5	1.6
Eijsden-Margraten	48.8	50.2	1.4
Molenlanden	51.7	53.0	1.3
Vlieland	55.0	56.2	1.2
Utrecht	53.5	54.5	1.0
Bronckhorst	54.2	55.2	1.0
Zutphen	53.0	53.8	0.8
Arnhem	50.2	51.0	0.8
Delft	53.4	54.1	0.7
Staphorst	53.7	54.3	0.6
Schiermonnikoog	51.7	51.9	0.2
Kampen	52.1	51.9	-0.2
Average	52.1	53.2	1.1

4.6 Elected mid-sized municipalities

Table 4.6 shows that mid-sized municipalities improved sustainability score on average with 1.3 percentage points last year. All municipalities improved their score. Woerden, Barneveld, Hengelo and Houten improved with 2.0 percentage points or more, the most in the past two years.

Table 4.6 Improvements and reductions in total sustainability scores of elected mid-sized municipalities over 2020-2022

Mid-sized municipality	Sustainability score 2020	Sustainability score 2022	Difference
Woerden	52.2	54.4	2.2
Barneveld	51.5	53.6	2.1
Hengelo	50.3	52.4	2.1
Houten	53.9	55.9	2.0
Heerenveen	50.8	52.7	1.9
Katwijk	51.2	53.1	1.9
Hilversum	49.9	51.5	1.6
Amstelveen	51.3	52.5	1.2
Gouda	51.5	52.7	1.2
Gooise Meren	50.2	51.4	1.2
Pijnacker-Nootdorp	52.0	53.0	1.0
Westerkwartier	51.9	52.9	1.0
Altena	50.0	51.0	1.0
Krimpenerwaard	52.6	52.6	0.0
Kampen	52.1	51.9	-0.2
Average	51.4	52.8	1.3

4.7   Elected New Town municipalities

Elected New Town municipalities improved on average their score with 1.5 percentage points (see table 4.7). Best improved its score with 2.7 percentage points, followed by Heumen, Zwolle and Barneveld (all an improvement of 2.1 percentage points).

Table 4.7 Improvements and reductions in total sustainability scores of elected New Town municipalities over 2020-2022

New Town municipality	Sustainability score 2020	Sustainability score 2022	Difference
Best	50.7	53.4	2.7
Heumen	51.6	53.7	2.1
Zwolle	52.9	55.0	2.1
Barneveld	51.5	53.6	2.1
Houten	53.9	55.9	2.0
Culemborg	52.6	54.6	2.0
Nijkerk	51.4	53.4	2.0
Tubbergen	52.0	53.5	1.5
Zeewolde	50.8	52.1	1.3
Harderwijk	51.8	53.1	1.3
Woudenberg	53.3	54.3	1.0
Pijnacker-Nootdorp	52.0	53.0	1.0

Midden-Delfland	55.0	55.1	0.1
Urk	51.6	50.9	-0.7
Average	52.2	53.7	1.5

4.8 Elected old industrial municipalities

Elected old industrial municipalities scored on average 1.6 percentage points higher over the reporting period, as shown in Table 4.8. Oisterwijk improved the most with 2.9 percentage points, followed by Best. One municipality decreased in score over time with 0.2 percentage points, which is Haaksbergen.

Table 4.8 Improvements and reductions in total sustainability scores of elected old industrial municipalities over 2020-2022

Old industrial municipality	Sustainability score 2020	Sustainability score 2022	Difference
Oisterwijk	49.6	52.5	2.9
Best	50.7	53.4	2.7
Hellendoorn	50.3	52.7	2.4
Valkenswaard	50.6	52.9	2.3
Waalre	53.9	55.9	2.0
Losser	51.8	53.8	2.0
Culemborg	52.6	54.6	2.0
Oldenzaal	53.6	55.3	1.7
Bladel	51.3	52.9	1.6
Bergeijk	52.6	53.9	1.3
Wierden	53.0	54.3	1.3
Rijssen-Holten	53.2	54.2	1.0
Landsmeer	49.5	50.3	0.8
Putten	51.7	51.7	0.0
Haaksbergen	54.6	54.4	-0.2
Average	51.9	53.5	1.6

4.9 Elected residential municipalities

Residential municipalities improved in sustainability score with 0.9 percentage points on average, as can be seen in Table 4.9. Waalre and Borne increased the most with 2.0 percentage points since last year, followed by Wijk bij Duurstede.

Table 4.9 Improvements and reductions in total sustainability scores of elected old industrial municipalities over 2020–2022

Residential municipality	Sustainability score 2020	Sustainability score 2022	Difference
Waalre	53.9	55.9	2.0
Borne	51.6	53.6	2.0
Wijk bij Duurstede	51.1	52.8	1.7
Bloemendaal	53.7	55.3	1.6
Voorschoten	53.0	54.5	1.5
Eijsden-Margraten	48.8	50.2	1.4
Pijnacker-Nootdorp	52.0	53.0	1.0
Reusel-De Mierden	51.5	52.4	0.9
Waterland	49.7	50.6	0.9
Voerendaal	49.3	49.9	0.6
Mook en Middelaar	54.7	55.2	0.5
Castricum	53.7	54.2	0.5
Meerssen	50.1	50.1	0.0
Heemskerk	50.1	49.8	-0.3
Hendrik-Ido-Ambacht	52.7	52.2	-0.5
Average	51.7	52.6	0.9

4.10 Elected shrink municipalities

As far as elected shrink municipalities are concerned, it is found that they improved 1.1 percentage points on average last year (see Table 4.10). Leudal improved most with 2.4 percentage points, followed by Gulpen-Wittem and Ooststellingwerf. No municipalities decreased in score, but the score for Meerssen stayed the same.

Table 4.10 Improvements and reductions in total sustainability scores of elected shrink municipalities over 2020–2022

Shrink municipality	Sustainability score 2020	Sustainability score 2022	Difference
Leudal	47.6	50.0	2.4
Gulpen-Wittem	47.2	49.1	1.9
Ooststellingwerf	47.5	49.1	1.6
Echt-Susteren	46.7	47.9	1.2
Roerdalen	47.2	48.4	1.2
Berkelland	51.9	53.0	1.1
Bergen (L.)	48.6	49.7	1.1
Bronckhorst	54.2	55.2	1.0
Valkenburg aan de Geul	48.6	49.6	1.0
Doesburg	49.0	50.0	1.0
Noardeast-Frysland	49.0	49.6	0.6
Mook en Middelaar	54.7	55.2	0.5

Bergen (NH.)	51.9	52.3	0.4
Meerssen	50.1	50.1	0.0
Average	49.6	50.7	1.1

4.11 Elected small municipalities

The group of small municipalities has improved its score in 2022 by 0.7 percentage points, as shown in Table 4.11. Heeze-Leende leads this group by improving with 2.9 percentage points, followed by Leusden, Dinkelland, Lisse and Bloemendaal. The score for Putten stayed the same.

Table 4.11 Improvements and reductions in total sustainability scores of elected old industrial municipalities over 2020-2022

Small municipality	Sustainability score 2020	Sustainability score 2022	Difference
Heeze-Leende	53.6	56.5	2.9
Leusden	53.9	56.2	2.3
Dinkelland	54.0	55.7	1.7
Lisse	52.3	53.9	1.6
Bloemendaal	53.7	55.3	1.6
Oegstgeest	53.8	55.3	1.5
Wageningen	55.1	56.5	1.4
Tynaarlo	52.7	54.1	1.4
Bunnik	51.8	53.0	1.2
Noordenveld	52.9	53.7	0.8
Hof van Twente	53.7	54.3	0.6
Mook en Middelaar	54.7	55.2	0.5
Castricum	53.7	54.2	0.5
Midden-Delfland	55.0	55.1	0.1
Putten	51.7	51.7	0.0
Average	53.5	54.7	1.2

4.12 Elected tourist municipalities

The sustainability score of the elected tourist type of municipalities has improved on average 1.0 percentage points (see Table 4.12). Two municipalities show a decrease in their sustainability score since 2020, Veere and Westerveld. Hilvarenbeek and Noordwijk improved the most with 2.2 percentage points, followed by Ameland, Groningen and Bloemendaal.

Table 4.12 Improvements and reductions in total sustainability scores of elected tourist municipalities over 2020-2022

Tourist municipality	Sustainability score 2020	Sustainability score 2022	Difference
Hilvarenbeek	52.3	54.5	2.2
Noordwijk	53.7	55.9	2.2
Ameland	52.0	53.7	1.7
Groningen	51.3	53.0	1.7
Bloemendaal	53.7	55.3	1.6
Bergeijk	52.6	53.9	1.3
Vlieland	55.0	56.2	1.2
Utrecht	53.5	54.5	1.0
Steenwijkerland	52.8	53.6	0.8
Mook en Middelaar	54.7	55.2	0.5
Terschelling	53.1	53.6	0.5
Bergen (NH.)	51.9	52.3	0.4
Schiermonnikoog	51.7	51.9	0.2
Westerveld	51.4	51.1	-0.3
Veere	53.2	52.5	-0.7
Average	52.9	53.8	1.0

4.13   Elected work municipalities

Elected work municipalities on average performed well the past year (plus 1.6 percentage point), as illustrated in table 4.13. Ermelo improved the most with 3.2 percentage points, followed by Nunspeet, Deventer and Noordwijk.

Table 4.13 Improvements and reductions in total sustainability scores of elected work municipalities over 2020-2022

Work municipality	Sustainability score 2020	Sustainability score 2022	Difference
Ermelo	50.4	53.6	3.2
Nunspeet	51.7	54.3	2.6
Deventer	51.5	53.9	2.4
Noordwijk	53.7	55.9	2.2
Oldenzaal	53.6	55.3	1.7
Bladel	51.3	52.9	1.6
Apeldoorn	52.0	53.5	1.5
Wageningen	55.1	56.5	1.4
Ede	52.5	53.8	1.3
Nijmegen	52.9	54.0	1.1
Oost Gelre	53.4	54.5	1.1
Rijssen-Holten	53.2	54.2	1.0

Utrecht	53.5	54.5	1.0
Delft	53.4	54.1	0.7
Average	52.7	54.4	1.6

4.14 Elected 100,000plus municipalities

The, for Dutch dimensions, relative large elected 100,000plus cities, on average improved their score with 1.5 percentage points. Eindhoven, Deventer, Amersfoort and Enschede improved the most, all with 2.4 percentage points. Almere is the only municipality in this group with a decreased score (-0.5 percentage points).

Table 4.14 Improvements and reductions in total sustainability scores of elected 100,000plus over 2020-2022

100,000plus municipality	Sustainability score 2020	Sustainability score 2022	Difference
Eindhoven	51.3	53.7	2.4
Deventer	51.5	53.9	2.4
Amersfoort	52.0	54.4	2.4
Enschede	49.0	51.4	2.4
Zwolle	52.9	55.0	2.1
Leiden	51.2	53.2	2.0
Groningen	51.3	53.0	1.7
Apeldoorn	52.0	53.5	1.5
Ede	52.5	53.8	1.3
Nijmegen	52.9	54.0	1.1
Utrecht	53.5	54.5	1.0
Arnhem	50.2	51.0	0.8
Delft	53.4	54.1	0.7
Haarlem	51.1	51.8	0.7
Almere	50.8	50.3	-0.5
Average	51.7	53.2	1.5

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 improvements in percentage points were found in former industrial municipalities, shrink municipalities, center municipalities and small municipalities. Highest sustainability scores were measured in small municipalities (54.7 percentage points) and lowest in shrink municipalities (50.7 percentage points).

Type of municipality	Sustainability score 2020	Sustainability score 2022	Difference
Small municipalities	53.5	54.7	1.2
Mid-sized municipalities	51.4	52.8	1.3
100.000plus municipality	51.7	53.2	1.5
Agricultural municipality	52.9	54.0	1.2
Center municipality	51.8	53.2	1.3
Former industrial municipality	51.9	53.5	1.6
Green municipality	53.0	54.5	1.5
Growth municipalities	53.2	54.6	1.4
Historic municipalities	52.1	53.2	1.1
New Town municipality	52.2	53.7	1.5
Residential municipalities	51.7	52.6	0.9
Shrink municipality	49.6	50.7	1.1
Touristic municipalities	52.9	53.8	1.0
Work municipality	52.7	54.4	1.6

5 Overall outcome for Elected Municipalities including their CO2-emission scores in 2020–2022

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 CO_2-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 98% had similar or higher sustainability scores in 2022 compared to 2020 (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 Ermelo, followed by Oisterwijk, Heeze-Leende and Best.

Table 5.1 Ten Elected Municipalities improving sustainability score most in the period 2020-2022

Elected municipality	Typology	Total score 2020	Total score 2022	Difference
Ermelo	Large, Growth, Historic, Work, Centre, Tourist	50.4	53.6	3.2
Oisterwijk	Large, Growth, Historic, Centre, Tourist	49.6	52.5	2.9
Heeze-Leende	Small	53.6	56.5	2.9
Best	Small, Growth, Work	50.7	53.4	2.7
Nunspeet	Small, Shrink, Green, Tourist	51.7	54.3	2.6
Eindhoven	Small, Growth, Tourist, Former industrial	51.3	53.7	2.4
Hellendoorn	Medium, Growth, Work	50.3	52.7	2.4
Amersfoort	Small, Residential, Green, Centre	52	54.4	2.4
Deventer	Small, Work, Former industrial	51.5	53.9	2.4
Leudal	Medium, Growth, Historic, Work, Green, Centre	47.6	50	2.4

The largest reduction in sustainability score among Elected Municipalities was detected in Veere, followed by Urk, Almere and Hendrik-Ido-Ambacht.

Table 5.2 Ten Elected Municipalities with largest declining sustainability score in the period 2020-2022

Municipality	Typology	Total score 2020	Total score 2022	Difference
Veere	Small, Growth, Historic, Green, Tourist	53.2	52.5	-0.7
Urk	Small, Historic, Green, Tourist	51.6	50.9	-0.7
Almere	Small, Green, Tourist	50.8	50.3	-0.5
Hendrik-Ido-Ambacht	Small, Shrink	52.7	52.2	-0.5
Heemskerk	Small, Residential, Green	50.1	49.8	-0.3
Westerveld	Small, Work, Agricultural	51.4	51.1	-0.3
Kampen	Small, Shrink, Residential, Green, Tourist	52.1	51.9	-0.2
Haaksbergen	Small, Agricultural	54.6	54.4	-0.2
Putten	Small, Former industrial	51.7	51.7	0
Meerssen	Small, Shrink, Historic, Agricultural	50.1	50.1	0

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 de last year; the CO2 emissions decreased with 6.5%. The other municipalities realized CO2 emissions reduction of 6.2%. 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	2010-2020	2019-2020
Elected (111)	-38,0%	-33,0%	-6,5%
Others	4,3%	-14,4%	-6,1%
Total (344)	-5,3%	-17,8%	-6,2%

The highest reduction was found in Leiden, followed by Haarlem and Lisse. Table 5.4 shows that Ameland, Schiermonnikoog and Hilvarenbeek 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 2019-2020	Elected municipality	Emission change over measuring years 2019-2020
Leiden	-18.0	Ameland	18.9
Haarlem	-17.2	Schiermonnikoog	18.8
Lisse	-16.8	Hilvarenbeek	10.0
Wageningen	-15.7	Ooststellingwerf	8.6
Bergen (NH.)	-15.4	Reusel-De Mierden	3.0
Landsmeer	-15.2	Oost Gelre	2.6
Amstelveen	-14.7	Mook en Middelaar	2.6
Heemskerk	-14.4	Tynaarlo	2.0
Rijssen-Holten	-14.3	Haaksbergen	1.9
Hilversum	-14.3	Noardeast-Fryslân	1.7

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 2020 and 2022 for the elected group, as shown in table 6.1, makes clear that the performance of several SDG's improved slightly or substantially (Goals 1, 4, 5, 7, 8, 9, 10, 12, 13, 14 and 16) but other showed a small fallback or stayed the same. (Goals 2, 3, 11 and 16).

In general, table 6.1 shows that the elected municipalities improved their performance between 2020 and 2022 for 11 of the 14 goals measured.

Table 6.1 SDG scores for elected (n=111) and all (n=344) municipalities 2020-2022

SDG	All municipalities (n=344)				Elected municipalities (n=111)			
	2020	2021	2022	Difference 2020-2022	2020	2021	2022	Difference 2020-2022
1. No Poverty	45.0	48.1	49.9	4.9	48.5	51.8	53.3	4.9
2. Zero Hunger	44.5	44.4	44.3	-0.1	44.8	44.8	44.6	-0.1
3. Good Health and Well-being	47.7	47.4	47.4	-0.3	50.4	50.1	49.8	-0.5
4. Quality Education	50.4	54.0	51.1	0.6	52.9	56.0	53.8	0.9
5. Gender Equality	68.1	67.2	69.1	0.9	69.0	67.9	69.7	0.7
6. Clean Water and Sanitation								
7. Affordable and Clean Energy	37.3	39.3	40.4	3.0	38.1	40.0	41.0	2.9

8. Decent Work and Economic Growth	51.5	51.1	52.3	0.7	53.0	52.3	53.4	0.4
9. Industry, Innovation and Infrastructure	41.0	44.8	45.9	4.9	42.6	46.3	47.4	4.8
10. Reduced Inequalities	45.1	45.1	45.3	0.2	43.7	43.7	45.1	1.4
11. Sustainable Cities and Communities	49.2	49.0	48.9	-0.3	50.9	50.7	50.6	-0.3
12. Responsible Consumption and Production	53.0	54.3	55.1	2.1	54.9	56.0	56.7	1.8
13. Climate Action	45.5	46.1	46.2	0.7	47.9	48.5	48.6	0.7
14. Life below Water	38.9	42.3	42.4	3.6	40.3	43.8	44.2	4.0
15. Life on Land	46.6	46.6	46.6	0.0	51.8	51.8	51.8	0.0
16. Peace, Justice and Strong Institutions	48.5	50.1	50.5	2.0	51.7	53.3	53.8	2.2
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 elected municipalities still outperforms the total group on all of the 15 measured goals, but the differences become smaller. On 14 of the 15 goals the total group showed a higher increase or smaller decline over the reported period than the elected group.

There are no many differences in the development of the scores between the two groups. They almost always had the same amount of percentage points decrease or increase.

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

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

7   Discussion and overview of outcome of assessment period 2020–2022

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 1.3 percentage points. Largest improvements occurred this year for the economic capital (2.0/2.2 percentage points for both groups). The ecological capital increased as well, with 1.6 and 1.5 percentage points, while the socio-cultural capital slightly increased with 0.3 percentage points for both the elected group and the total group.

A closer look at the CO_2 reductions shows that the group of Elected Municipalities realized a reduction in CO_2 emissions over de last year; the CO_2 emissions decreased with 6.5%. The other municipalities realized CO_2 emissions reduction of 6.2%. The outcome of this analysis is shown in table 5.3.

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 Ermelo, Oisterwijk, Heeze-Leende and Best were able to improve their total sustainability score most. The largest reduction in sustainability score among Elected Municipalities was detected in Veere, followed by Urk, Almere and Hendrik-Ido-Ambacht.

Comparison over the years 2020 and 2022 for the elected group, as shown in table 6.1, makes clear that the performance of several SDG's improved slightly or substantially (Goals 1, 4, 5, 7, 8, 9, 10, 12, 13, 14 and 16) but other showed a small fallback or stayed the same. (Goals 2, 3, 11 and 16). The elected municipalities still outperforms the total group on all of the 15 measured goals, but the differences become smaller. On 14 of the 15 goals the total group showed a higher increase or smaller decline over the reported period than the elected group. There are no many differences in the development of the scores between the two groups. They almost always had the same amount of percentage points decrease or increase.

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 2020 and 2022 for all 111 Elected Municipalities

Municipality	Total sustainability score 2020	Total sustainability score 2022	Difference 2020-2022
Ermelo	50.4	53.6	3.2
Oisterwijk	49.6	52.5	2.9
Heeze-Leende	53.6	56.5	2.9
Best	50.7	53.4	2.7
Nunspeet	51.7	54.3	2.6
Eindhoven	51.3	53.7	2.4
Hellendoorn	50.3	52.7	2.4
Amersfoort	52	54.4	2.4
Deventer	51.5	53.9	2.4
Leudal	47.6	50	2.4
Enschede	49	51.4	2.4
Leusden	53.9	56.2	2.3
Valkenswaard	50.6	52.9	2.3
Elburg	51.6	53.9	2.3
Rheden	50.8	53	2.2
Hilvarenbeek	52.3	54.5	2.2
Woerden	52.2	54.4	2.2
Noordwijk	53.7	55.9	2.2
Barneveld	51.5	53.6	2.1
Zwolle	52.9	55	2.1
Heumen	51.6	53.7	2.1
Hengelo	50.3	52.4	2.1
Houten	53.9	55.9	2
Losser	51.8	53.8	2
Borne	51.6	53.6	2
Culemborg	52.6	54.6	2
Leiden	51.2	53.2	2
Nijkerk	51.4	53.4	2
Waalre	53.9	55.9	2
Blaricum	51.3	53.3	2
Heerenveen	50.8	52.7	1.9
Gulpen-Wittem	47.2	49.1	1.9
Katwijk	51.2	53.1	1.9
Zwartewaterland	51.4	53.2	1.8
Groningen	51.3	53	1.7
Dinkelland	54	55.7	1.7
Ameland	52	53.7	1.7

Oldenzaal	53.6	55.3	1.7
Wijk bij Duurstede	51.1	52.8	1.7
Hilversum	49.9	51.5	1.6
Bladel	51.3	52.9	1.6
Ooststellingwerf	47.5	49.1	1.6
Ommen	52.8	54.4	1.6
Lisse	52.3	53.9	1.6
Bloemendaal	53.7	55.3	1.6
Tubbergen	52	53.5	1.5
Apeldoorn	52	53.5	1.5
Voorschoten	53	54.5	1.5
Oegstgeest	53.8	55.3	1.5
Eijsden-Margraten	48.8	50.2	1.4
Raalte	52.2	53.6	1.4
Wageningen	55.1	56.5	1.4
Tynaarlo	52.7	54.1	1.4
Harderwijk	51.8	53.1	1.3
Zeewolde	50.8	52.1	1.3
Wierden	53	54.3	1.3
Ede	52.5	53.8	1.3
Molenlanden	51.7	53	1.3
Bergeijk	52.6	53.9	1.3
Vlieland	55	56.2	1.2
Gouda	51.5	52.7	1.2
Bunnik	51.8	53	1.2
Amstelveen	51.3	52.5	1.2
Roerdalen	47.2	48.4	1.2
Gooise Meren	50.2	51.4	1.2
Echt-Susteren	46.7	47.9	1.2
Berkelland	51.9	53	1.1
Oost Gelre	53.4	54.5	1.1
Nijmegen	52.9	54	1.1
Bergen (L.)	48.6	49.7	1.1
Utrecht	53.5	54.5	1
Westerkwartier	51.9	52.9	1
Rijssen-Holten	53.2	54.2	1
Woudenberg	53.3	54.3	1
Bronckhorst	54.2	55.2	1
Valkenburg aan de Geul	48.6	49.6	1
Huizen	50.7	51.7	1
Doesburg	49	50	1
Pijnacker-Nootdorp	52	53	1
Altena	50	51	1

Reusel-De Mierden	51.5	52.4	0.9
Waterland	49.7	50.6	0.9
Steenwijkerland	52.8	53.6	0.8
Noordenveld	52.9	53.7	0.8
Dalfsen	54	54.8	0.8
Arnhem	50.2	51	0.8
Landsmeer	49.5	50.3	0.8
Zutphen	53	53.8	0.8
Delft	53.4	54.1	0.7
Haarlem	51.1	51.8	0.7
Voerendaal	49.3	49.9	0.6
Noardeast-Fryslân	49	49.6	0.6
Hof van Twente	53.7	54.3	0.6
Staphorst	53.7	54.3	0.6
Mook en Middelaar	54.7	55.2	0.5
Terschelling	53.1	53.6	0.5
Castricum	53.7	54.2	0.5
Bergen (NH.)	51.9	52.3	0.4
Schiermonnikoog	51.7	51.9	0.2
Midden-Delfland	55	55.1	0.1
Krimpenerwaard	52.6	52.6	0
Meerssen	50.1	50.1	0
Putten	51.7	51.7	0
Haaksbergen	54.6	54.4	-0.2
Kampen	52.1	51.9	-0.2
Westerveld	51.4	51.1	-0.3
Heemskerk	50.1	49.8	-0.3
Hendrik-Ido-Ambacht	52.7	52.2	-0.5
Almere	50.8	50.3	-0.5
Urk	51.6	50.9	-0.7
Veere	53.2	52.5	-0.7

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

Elected municipality	Typology	% Difference 2019-2020
Leiden	Large, Growth, Historic, Work, Centre, Tourist	-18.0
Haarlem	Large, Growth, Historic, Centre, Tourist	-17.2
Lisse	Small	-16.8
Wageningen	Small, Growth, Work	-15.7
Bergen (NH.)	Small, Shrink, Green, Tourist	-15.4
Landsmeer	Small, Growth, Tourist, Former industrial	-15.2
Amstelveen	Medium, Growth, Work	-14.7
Heemskerk	Small, Residential, Green, Centre	-14.4
Rijssen-Holten	Small, Work, Former industrial	-14.3
Hilversum	Medium, Growth, Historic, Work, Green, Centre	-14.3
Nijmegen	Large, Growth, Work, Centre	-13.2
Woerden	Medium, Growth, Work, Agricultural	-12.2
Deventer	Large, Work, Centre	-12.1
Bergeijk	Small, Tourist, Former industrial	-11.5
Putten	Small, Green, Former industrial	-11.4
Voorschoten	Small, Growth, Residential	-11.2
Gouda	Medium, Centre	-11.1
Groningen	Large, Growth, Work, Centre, Tourist	-10.9
Valkenswaard	Small, Green, Former industrial	-10.8
Amersfoort	Large, Growth, New town, Work	-10.5
Katwijk	Medium, Growth, Centre	-10.1
Echt-Susteren	Small, Shrink, Former industrial	-10.1
Valkenburg aan de Geul	Small, Shrink, Tourist	-9.9
Woudenberg	Small, Growth, New town	-9.7
Harderwijk	Small, Growth, New town, Work, Green	-9.6
Huizen	Small, Centre	-9.5
Noordwijk	Small, Growth, Work, Green, Tourist	-9.4
Oldenzaal	Small, Work, Former industrial	-9.1
Wijk bij Duurstede	Small, Residential, Agricultural	-8.8
Zwolle	Large, Growth, New town, Work, Centre	-8.8
Ommen	Small, Green	-8.5
Eindhoven	Large, Growth, Work, Centre, Former industrial	-8.4
Arnhem	Large, Growth, Historic, Work, Green, Centre, Tourist	-8.3
Castricum	Small, Residential, Centre	-8.3
Leusden	Small, Growth, Green	-7.9
Ede	Large, Growth, Work, Green, Centre	-7.6

Heerenveen	Medium, Work, Agricultural	-7.4
Zutphen	Small, Historic	-7.4
Apeldoorn	Large, Growth, Work, Green, Centre	-7.3
Barneveld	Medium, Growth, New town, Work, Green	-7.3
Almere	Large, Growth, New town, Centre	-7.2
Zwartewaterland	Small, Agricultural	-7.1
Delft	Large, Growth, Historic, Work, Centre	-7.0
Doesburg	Small, Shrink, Historic, Former industrial	-6.9
Culemborg	Small, Growth, New town, Former industrial	-6.9
Nunspeet	Small, Work, Green	-6.6
Enschede	Large, Work, Centre, Former industrial	-6.2
Voerendaal	Small, Residential, Agricultural, Tourist, Former industrial	-6.1
Waterland	Small, Historic, Residential, Tourist	-5.9
Meerssen	Small, Shrink, Residential, Tourist, Former industrial	-5.9
Hellendoorn	Small, Green, Former industrial	-5.9
Dinkelland	Small, Agricultural	-5.7
Ermelo	Small, Work, Green	-5.6
Eijsden-Margraten	Small, Historic, Residential, Agricultural, Tourist	-5.0
Rheden	Small, Historic, Green	-5.0
Roerdalen	Small, Shrink, Residential, Green, Tourist	-4.9
Molenlanden	Small, Historic, Agricultural	-4.9
Heeze-Leende	Small, Growth, Green	-4.7
Leudal	Small, Shrink, Centre	-4.5
Terschelling	Small, Green, Tourist	-4.4
Waalre	Small, Growth, Residential, Green, Former industrial	-4.4
Westerkwartier	Medium, Agricultural	-4.4
Gulpen-Wittem	Small, Shrink, Historic, Agricultural, Tourist	-4.3
Elburg	Small, Green	-4.3
Tubbergen	Small, New town, Agricultural	-4.1
Best	Small, New town, Former industrial	-4.1
Bladel	Small, Growth, Work, Green, Former industrial	-4.1
Kampen	Medium, Growth, Historic, Agricultural	-3.9
Oisterwijk	Small, Former industrial	-3.8
Urk	Small, Growth, New town	-3.8
Oegstgeest	Small, Growth	-3.7
Losser	Small, Former industrial	-3.7
Hengelo	Medium, Work, Former industrial	-3.7
Bunnik	Small, Growth, Agricultural	-3.6
Hendrik-Ido-Ambacht	Small, Growth, New town, Residential	-3.5
Altena	Medium	-3.5
Utrecht	Large, Growth, Historic, Work, Centre, Tourist	-3.2

Bloemendaal	Small, Growth, Residential, Green, Tourist	-2.9
Wierden	Small, Agricultural, Former industrial	-2.5
Vlieland	Small, Historic, Green, Tourist	-2.4
Nijkerk	Small, Growth, New town, Work	-1.6
Veere	Small, Tourist	-1.5
Heumen	Small, New town	-1.4
Staphorst	Small, Growth, Historic, Agricultural	-1.4
Hof van Twente	Small, Agricultural	-1.4
Borne	Small, Growth, Residential, Former industrial	-1.3
Dalfsen	Small, Agricultural	-1.3
Steenwijkerland	Small, Tourist	-1.2
Westerveld	Small, Green, Tourist	-1.2
Bergen (L.)	Small, Shrink, Green, Tourist	-1.2
Pijnacker-Nootdorp	Medium, Growth, New town, Residential	-1.2
Gooise Meren	Medium, Centre	-1.1
Midden-Delfland	Small, Growth, New town, Agricultural	-1.0
Houten	Medium, Growth, New town	-1.0
Bronckhorst	Small, Shrink, Historic, Agricultural	-0.6
Berkelland	Small, Shrink, Agricultural	-0.5
Raalte	Small, Agricultural	0.0
Krimpenerwaard	Medium, Agricultural	0.2
Zeewolde	Small, Growth, New town	0.2
Blaricum	Small, Growth	0.5
Noordenveld	Small	1.6
Noardeast-Fryslân	Small, Shrink, Historic, Agricultural	1.7
Haaksbergen	Small, Former industrial	1.9
Tynaarlo	Small, Agricultural	2.0
Mook en Middelaar	Small, Shrink, Residential, Green, Tourist	2.6
Oost Gelre	Small, Work, Agricultural	2.6
Reusel-De Mierden	Small, Residential, Green	3.0
Ooststellingwerf	Small, Shrink	8.6
Hilvarenbeek	Small, Green, Tourist	10.0
Schiermonnikoog	Small, Historic, Green, Tourist	18.8
Ameland	Small, Growth, Historic, Green, Tourist	18.9

(Source: www.emissieregistratie.nl)

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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