



Green City Accord

Explanatory Note on Monitoring and Reporting & Set of Mandatory Indicators

The following provides a brief overview of the cornerstones of the monitoring and reporting (M&R) requirements of the Green City Accord (GCA), as well as the set of mandatory indicators for each of the five areas covered by the Green City Accord: air, water, nature & biodiversity, waste & circular economy, and noise.

Reporting as a core component of the Green City Accord

Signatory cities are required to report their progress in the five different domains of the Green City Accord. The M&R system - currently still under development - will reflect progress towards these goals.

The main purposes of reporting in the frame of the GCA therefore are:

- Providing evidence on how signatory cities are progressing towards the five goals of the GCA;
- Enabling signatory cities to benchmark their own progress against the progress of their fellow cities.

Mandatory indicators

The full set of mandatory indicators can be found on the subsequent pages.

In order to avoid too much extra burden for cities, the number of mandatory indicators has been limited and is therefore not meant to cover the full breadth of each GCA area.

In addition to the mandatory indicators, cities are welcome to use other locally defined indicators to monitor progress towards their specific local targets.

Use of mandatory indicators

The mandatory indicators are to be applied for:

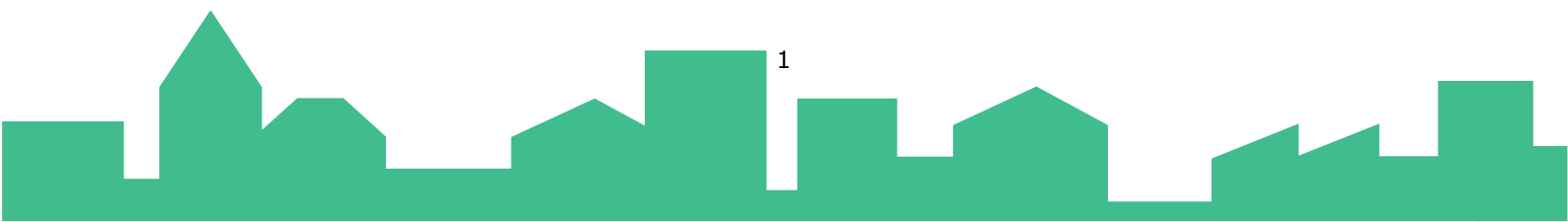
- Establishing the baseline (i.e. the starting point in each domain) within two years after signing the GCA.
- Reporting changes compared to the baseline in a regular rhythm of three years.

Reporting tool

The reporting tool will become available soon. In practical terms, you will need to complete two sections: mandatory indicators and actions.

Mandatory indicators: Reporting is envisaged to happen online via a dedicated tool where the indicators' values can be directly inserted.

Actions: For the *planned* actions (→ baseline reporting) and the *implemented* actions (→ progress reporting) a template will have to be completed (in English) which can then be uploaded onto the dedicated area for reporting on the website.



Air

Cities commit to significant improvement in air quality by moving closer to respecting the WHO's air quality guidelines and ending exceedances of EU air quality standards as soon as possible.



— **PM_{2.5} concentration levels [highest annual mean observed at (sub) urban background stations]**

This indicator denotes the particulate matter (PM) 2.5 annual average concentration levels at highest background levels.

REF: EU Ambient Air Quality Directives ([2008/50/EC](#) and [2004/107/EC](#)) and the [new WHO Air Quality Guidelines](#)

— **PM₁₀ daily concentration levels [highest number of days per year exceeding the WHO recommendation of 45 µg/m³ observed at any (sub) urban background or traffic station]**

This indicator denotes the particulate matter PM₁₀ in days exceeding 45 µg/m³ at any (sub) urban background or traffic station.

REF: EU Ambient Air Quality Directives ([2008/50/EC](#) and [2004/107/EC](#)) and the [new WHO Air Quality Guidelines](#)

— **NO₂ concentration levels (highest annual mean observed at traffic stations)**

This indicator identifies nitrogen dioxide (NO₂) annual average concentration levels at highest traffic location levels.

REF: EU Ambient Air Quality Directives ([2008/50/EC](#) and [2004/107/EC](#)) and the [new WHO Air Quality Guidelines](#)



Water

Cities commit to making significant progress in improving the quality of water bodies and the efficiency of water use.

— **Household water consumption (litres/capita/day)**

This indicator measures household water consumption and is calculated using litres per capita per day.

REF:

E.g. European Green Capital Award 2023, [Guidance Note](#) (May 2020).

— **Infrastructure Leakage Index (ILI)**

The Infrastructure Leakage Index (ILI) is the ratio of the Current Annual Real Losses (CARL) to the Unavoidable Annual Real Losses (UARL)

ILI = CARL/UARL

The ILI is as a performance indicator for leakage which adjusts the measured loss by taking into account the service pressure and the length of the network.

REF:

Canfora P., Antonopoulos I. S., Dri M., Gaudillat P., Schönberger H. (2019) Best Environmental Management Practice for the Public Administration Sector. JRC Science for Policy Report [EUR 29705 EN](#); Directive (EU) [2020/2184](#) of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption

— **Percentage of urban wastewater meeting the requirements of the UWWTD (regarding collection and secondary treatment)**

Percentage of wastewater load compliant with the requirements of the Urban Waste Water Treatment Directive (UWWTD) regarding collection and secondary treatment.

REF:

Urban Waste Water Treatment Directive ([UWWTD](#)) on collection (Article 3) and secondary treatment (Article 4).

Nature & Biodiversity

Cities commit to considerable progress in conserving and enhancing urban biodiversity, including through an increase in the extent and quality of green areas in cities, and by halting the loss of and restoring urban ecosystems.



— **Percentage of protected natural areas, restored and naturalised areas on public land in municipality**

Status and trend indicator that assesses the coverage of protected natural areas, restored and naturalised areas in the municipality in relation to the total surface areas of the municipality.

REF:

CBD (2014) [User's Manual on the Singapore Index on Cities' Biodiversity](#); Maes J et al., Enhancing Resilience of Urban Ecosystems through Green Infrastructure. Final Report, [EUR 29630 EN](#), Publications Office of the European Union, Luxembourg, 2019; Dumitru, A.; Wendling, L. (2021) [Evaluating the Impact of Nature-based Solutions: Appendix of Methods](#). Publications Office of the European Union, Brussels, 2021, ISBN 978-92-76-22960-5, doi:10.2777/11361.

— **Percentage of tree canopy cover within the city**

Status indicator that assesses the proportion of grown trees (with the potential to grow to full maturity) in relation to the city area and gives an indication of connectivity.

REF:

Doick et al. (2019) [The Canopy Cover of England's Towns and Cities](#): baselining and setting targets to improve human health and well-being; [European Urban Atlas](#).

— **Change in number of species of birds in urban area/built-up areas in the city**

Trend indicator that provides an overview of changes in species diversity: using birds as a proxy for habitat quality; important is the focus on densely built-up areas where the number of species is inevitably lower than that found in natural ecosystems species; a change can occur through re-introduction or extinction of species.

REF:

CBD (2014) [User's Manual on the Singapore Index on Cities' Biodiversity](#).

Waste & Circular Economy

Cities commit to advance towards the circular economy by securing a significant improvement in the management of household municipal waste, an important reduction in waste generation and landfilling, and a substantial increase in re-use, repair and recycling.



— **Municipal waste generated per capita (tons)**

The indicator measures the weight of municipal waste generated within the city, including waste prepared for export before treatment in per capita terms.

The indicator should be disaggregated into the different waste fractions (see Eurostat) as much as possible.

The indicator can be expressed as "tons of municipal waste generated per capita per year".

REF:

Eurostat Database Definition; [Eurostat Compilation Guide](#).

— **Recycling rate of municipal waste (%)**

The indicator measures the share of recycled municipal waste as part of the total municipal waste generated. Recycling includes material recycling, composting and anaerobic digestion. The ratio is expressed in percent (%) as both terms are measured in the same unit, namely tons.

REF:

[Eurostat Database Definition](#); [Eurostat Compilation Guide](#); [EU Urban Agenda Partnership on Circular Economy](#).

— **Municipal waste landfilled (%)**

The indicator measures the share of municipal waste collected within the city boundary that is landfilled (within and beyond the city boundary) in percentage. The indicator is expressed as "tons of municipal waste landfilled/tons of municipal waste collected". In addition, it can also be expressed in absolute terms per capita to allow for inter-city comparison.

REF:

[Eurostat Compilation Guide](#).

Noise

Cities commit to significantly reducing noise pollution in cities and moving closer to WHO recommended levels.



— **Percentage of the population exposed to average day-evening-night noise levels (Lden) \geq 55 dB**

Percentage of the population exposed to average day-evening-night noise levels (Lden) \geq 55 dB.

REF:

Environmental Noise Directive (END) ([2002/49/EC](#)) Art. 5, Art. 6; Annex II; EEA, [Exposure of Europe's population to environmental noise](#).

— **Percentage of the population exposed to night-time noise (Lnight) \geq 50 dB**

Percentage of the population exposed to night-time noise (Lnight) \geq 50 dB.

REF:

Environmental Noise Directive (END) ([2002/49/EC](#)) Art. 5, Art. 6; Annex II; EEA, [Exposure of Europe's population to environmental noise](#).

— **Percentage of (adult) population with High Sleep Disturbance**

Population noise exposure data (i.e. from indicators 1 & 2 above) can be combined with dose-effect relations (i.e. formulas specifying how the effect changes as a function of exposure), to calculate the risk of harmful effects of noise on health. "High Sleep Disturbance" is one of the effects (or 'health endpoints') that can be calculated; it relates to the Lnight indicator above.

REF:

Commission Directive (EU) [2020/367](#) of 4 March 2020 amending Annex III to Directive 2002/49/EC of the European Parliament and of the Council as regards the establishment of assessment methods for harmful effects of environmental noise; EEA (2019) [Environmental noise in Europe — 2020](#).