



Expert Panel

Technical Assessment Synopsis
Report

European Green Leaf Award 2019

April 2018

ec.europa.eu/europeangreenleaf

Acknowledgements

The authors of this Technical Assessment Synopsis Report are the European Green Leaf Award Secretariat, RPS Group Limited (hereafter RPS) together with the contribution of the Expert Panel. We would like to thank the Expert Panel and the European Commission Directorate-General for Environment for their assistance in the preparation of this report.

RPS, an environmental and communications consultancy based in Ireland, is currently appointed as the European Green Leaf Award Secretariat. The competition application process and the work of the Expert Panel and the Jury are facilitated by the Secretariat.

The Secretariat also assists with PR activities related to the European Green Leaf Award through the European Green Capital Award website, Facebook, Twitter and LinkedIn pages, and through various communication channels such as brochures, press releases, newsflashes and film clips etc.

Copyright

© RPS 2018

The report has been prepared on behalf of our client, the European Commission Directorate-General for Environment. All or part of this publication may be reproduced without further permission, provided the source is acknowledged. If this document or portions of this document are reproduced it shall be cited as: Technical Assessment Synopsis Report - European Green Leaf Award 2019, RPS (2018).

No liability is accepted by RPS for any use of this report, other than the purpose for which it was prepared.

Disclaimer

RPS has taken due care in the preparation of this document to ensure that all facts and analysis presented are as accurate as possible within the scope of the project. RPS makes no warranty, express or implied, with respect to the use of any information disclosed in this document, or assumes any liabilities with respect to the use of, or damage resulting in any way from the use of any information disclosed in this document. While care has been taken in the production of the publication, no responsibility is accepted by RPS for any errors or omissions herein.

RPS accepts no responsibility for any documents or information supplied to RPS by others and no legal liability arising from the use by others of opinions or data contained in this report. It is expressly stated that no independent verification of any documents or information supplied by others has been made.

TABLE OF CONTENTS

| | | |
|----------|---|-----------|
| 1 | INTRODUCTION | 1 |
| 1.1 | EUROPEAN GREEN LEAF AWARD | 3 |
| 1.2 | AIM OF THIS REPORT | 5 |
| 2 | TECHNICAL ASSESSMENT PROCEDURE | 6 |
| 2.1 | RULES OF CONTEST | 6 |
| 2.2 | APPLICANT CITIES FOR EGLA 2019 | 6 |
| 2.3 | SIX ENVIRONMENTAL TOPIC AREAS..... | 9 |
| 2.4 | APPLICATION FORM | 9 |
| 2.5 | TECHNICAL ASSESSMENT EXPERT PANEL..... | 10 |
| 2.6 | TECHNICAL ASSESSMENT PROCEDURE | 11 |
| 2.6.1 | Pre-selection Screening | 11 |
| 2.6.2 | Primary Technical Review | 11 |
| 2.6.3 | Ranking Criteria..... | 11 |
| 2.6.4 | Co-evaluation..... | 11 |
| 2.6.5 | Conflicted Application..... | 12 |
| 2.6.6 | Background Check..... | 12 |
| 3 | TECHNICAL ASSESSMENT RESULTS | 13 |
| 4 | TECHNICAL ASSESSMENT | 14 |
| 4.1 | SHORTLISTED CITY SUMMARIES..... | 14 |
| 4.1.1 | Cornellà de Llobregat..... | 14 |
| 4.1.2 | Gabrovo | 14 |
| 4.1.3 | Horst aan de Maas | 15 |
| 4.1.4 | Joensuu | 15 |
| 4.1.5 | Mechelen | 16 |
| 4.2 | SHORTLISTED CITY TECHNICAL ASSESSMENTS | 16 |
| 4.2.1 | Cornellà de Llobregat Technical Assessment..... | 16 |
| 4.2.1.1 | Climate Change and Energy Performance | 16 |
| 4.2.1.2 | Sustainable Urban Mobility | 17 |
| 4.2.1.3 | Nature, Biodiversity and Sustainable Land Use | 17 |
| 4.2.1.4 | Air Quality and Noise | 18 |
| 4.2.1.5 | Waste and Circular Economy..... | 19 |
| 4.2.1.6 | Water | 20 |
| 4.2.2 | Gabrovo Technical Assessment | 20 |

| | | |
|---------|---|----|
| 4.2.2.1 | Climate Change and Energy Performance | 20 |
| 4.2.2.2 | Sustainable Urban Mobility | 21 |
| 4.2.2.3 | Nature, Biodiversity and Sustainable Land Use | 21 |
| 4.2.2.4 | Air Quality and Noise | 22 |
| 4.2.2.5 | Waste and Circular Economy | 22 |
| 4.2.2.6 | Water | 23 |
| 4.2.3 | Horst aan de Maas Technical Assessment | 23 |
| 4.2.3.1 | Climate Change and Energy Performance | 23 |
| 4.2.3.2 | Sustainable Urban Mobility | 24 |
| 4.2.3.3 | Nature, Biodiversity and Sustainable Land Use | 25 |
| 4.2.3.4 | Air Quality and Noise | 25 |
| 4.2.3.5 | Waste and Circular Economy | 26 |
| 4.2.3.6 | Water | 27 |
| 4.2.4 | Joensuu Technical Assessment | 27 |
| 4.2.4.1 | Climate Change and Energy Performance | 27 |
| 4.2.4.2 | Sustainable Urban Mobility | 28 |
| 4.2.4.3 | Nature, Biodiversity and Sustainable Land Use | 28 |
| 4.2.4.4 | Air Quality and Noise | 29 |
| 4.2.4.5 | Waste and Circular Economy | 30 |
| 4.2.4.6 | Water | 30 |
| 4.2.5 | Mechelen Technical Assessment | 31 |
| 4.2.5.1 | Climate Change and Energy Performance | 31 |
| 4.2.5.2 | Sustainable Urban Mobility | 31 |
| 4.2.5.3 | Nature, Biodiversity and Sustainable Land Use | 32 |
| 4.2.5.4 | Air Quality and Noise | 32 |
| 4.2.5.5 | Waste and Circular Economy | 33 |
| 4.2.5.6 | Water | 33 |

APPENDICES

Appendix A Application Form for the European Green Leaf Award 2019

Appendix B Expert Panel Profiles

LIST OF FIGURES

Figure 2.1 - Map of European Green Leaf 2019 Applicant Cities 8

LIST OF TABLES

Table 2.1 - Details of Applicant Cities (presented in alphabetical order) 6
Table 2.2 - EGLA 2019 Application Form Format 9
Table 2.3 - Expert Technical Assessment Panel 10
Table 3.1 - Technical Ranking of Shortlisted Cities for European Green Leaf Award 2019 13

1 INTRODUCTION

Europe's cities are recognised as the engines of the European economy, providing jobs and services, and serve as hubs that catalyse creativity and innovation. Cities are the living environment for 72% of all Europeans with this percentage expected to rise to 80% by 2050. They possess potential such as economic growth, innovation and employment opportunities¹. However, they are facing ever increasing challenges, with regards to the environment, transport and social cohesion.

The European Green Capital and European Green Leaf Awards are underpinned by European Policy on sustainable urban planning and design. The Awards support the goals set out most recently in the Urban Agenda for the EU-Pact of Amsterdam, signed in 2016, and prior to this the 7th Environment Action Programme (EAP), as adopted in 2013.

The Urban Agenda for the EU - Pact of Amsterdam

Following a public consultation process in 2014, the Urban Agenda for the EU was launched in May 2016 with the EU Member States agreement on the Pact of Amsterdam. The Urban Agenda for the EU aims to address the challenges faced by cities and also to fully exploit the potential of cities by integrating the urban dimension into EU policies. The EU Urban Agenda also aims to promote cooperation and partnerships between member states, the European Commission, European institutions, cities and other stakeholders in order to stimulate growth, liveability and innovation in the cities of Europe through:

1. Better Regulation: Improving the development, implementation and evaluation of EU legislation;
2. Better Funding: Ensuring better access to and utilisation of European funds; and
3. Better Knowledge: Improving the EU urban knowledge base and stimulating the sharing of best practices and cooperation between cities.

The Urban Agenda for the EU outlines twelve priority themes, which are essential to achieve the smart, green, and inclusive growth of urban areas. Many of the themes outlined align with the indicators and topic areas assessed in the EGC and EGL Awards, including; Urban Mobility, Circular Economy, Climate Adaptation, Air Quality, Energy Transition and Sustainable Use of Land and Nature-Based Solutions.

Thematic Partnerships representing various governmental levels and stakeholders are the key delivery mechanism within the Urban Agenda for the EU. All the twelve Partnerships, which include cities from across Europe, have been set up in three phases between May 2016 and June 2017. The existing Partnerships have been launched in three steps:

- 'Amsterdam Partnerships': these pilot Partnerships deal with the inclusion of migrants and refugees, affordable housing, air quality, and urban poverty;
- The 'Bratislava Partnerships', launched during 2016, work on circular economy, digital transition, jobs and skills in the local economy, and urban mobility; and

¹ <http://urbanagendaforthe.eu/wp-content/uploads/2015/12/EU-Urban-Agenda-factsheet.pdf>

- 'Malta Partnerships': established in 2017 comprises Partnerships on climate adaptation, energy transition, responsible and innovative public procurement, and sustainable land use and nature-based solutions.

The Partnerships analyse challenges and bottlenecks to recommend implementable actions in the form of an Action Plan to be finalised within two years after the start of their work.

A European Commission report to the Council published in November 2017 presents the progress of the Urban Agenda for the EU and its Partnerships². The work of the Partnerships is communicated through the 'Futurium' website³ which enables all those interested to be informed and to give feedback (e.g. on the first drafts of Action Plans proposed by the Partnerships). In February 2018, the Urban Agenda Partnership on Circular Economy published the Draft Action Plan⁴ which sets out a series of actions to support the efforts of European cities in the field of circular economy.

The Urban Agenda for the EU will contribute to the implementation of the UN 2030 Agenda for Sustainable Development, notably Goal 11 'Make cities inclusive, safe, resilient and sustainable' and the global 'New Urban Agenda' as part of the Habitat III process.

7th Environment Action Programme (EAP)

The Commission commenced the 7th Environment Action Programme (EAP) in 2013 which sets out a strategic agenda for environmental policy-making with nine priority objectives to be achieved by 2020. It establishes a common understanding of the main environmental challenges Europe faces and what needs to be done to tackle them effectively. This programme underpins the European Green Capital Award (EGCA) in relation to policies for sustainable urban planning and design.

Protecting and enhancing natural capital, encouraging more resource efficiency and accelerating the transition to the low-carbon economy are key features of the programme, which also seeks to tackle new and emerging environmental risks and to help safeguard health and welfare of EU citizens. The results should help stimulate sustainable growth and create new jobs to set the European Union on a path to becoming a better and healthier place to live.

Cities play a crucial role as places of connectivity, creativity and innovation, and as centres of services for their surrounding areas. Due to their density, cities offer a huge potential for energy savings and a move towards a carbon-neutral economy.

Most cities face a common core set of environmental problems and risks, including poor air quality, high levels of noise, greenhouse gas (GHG) emissions, water scarcity, contaminated sites, brownfields and waste. At the same time, EU cities are standard setters in urban sustainability and often pioneer innovative solutions to environmental challenges. An ever-growing number of European cities are putting environmental sustainability at the core of their urban development strategies.

² <https://ec.europa.eu/futurium/en/system/files/ged/celex3a52017dc06573aen3atxt.pdf>

³ <https://ec.europa.eu/futurium/en>

⁴ <https://ec.europa.eu/futurium/en/circular-economy/circular-economy-draft-action-plan>

The 7th EAP sets the target of meeting local, regional and global challenges by enhancing the sustainability of cities throughout the European Union and fixes the goals that by 2020 a majority of cities in the EU are implementing policies for sustainable urban planning and design.

European Green Capital and European Green Leaf Awards

The European Green Capital Award (EGCA) is the result of an initiative taken by 15 European cities (Tallinn, Helsinki, Riga, Vilnius, Berlin, Warsaw, Madrid, Ljubljana, Prague, Vienna, Kiel, Kotka, Dartford, Tartu & Glasgow) and the Association of Estonian cities on 15 May 2006 in Tallinn, Estonia. Their green vision was translated into a joint Memorandum of Understanding establishing an award to recognise cities that are leading the way with environmentally friendly urban living. The EGCA initiative was launched by the European Commission in 2008.

It is important to reward cities which are making efforts to improve the urban environment and move towards healthier and sustainable living areas. Progress is its own reward, but the satisfaction involved in winning a prestigious European award spurs cities to invest in further efforts and boosts awareness within the city as well as in other cities. The Award enables cities to inspire each other and share examples of good practices in situ. The winning EGC cities to date include: Stockholm in 2010, Hamburg in 2011, Vitoria-Gasteiz in 2012, Nantes in 2013, Copenhagen in 2014, Bristol in 2015, Ljubljana in 2016, Essen in 2017, Nijmegen in 2018 and Oslo in 2019. All are recognised for their consistent record of achieving high environmental standards and commitment to ambitious goals.

Initially the EGCA was open to cities with a population of over 200,000. However since the 2016 EGCA cycle the competition has been open to applications from cities with a population of over 100,000 inhabitants.

Due to interest from smaller cities and building on the success of the EGCA the need to create a competition for cities of a smaller size was identified by the European Commission in 2014. This competition now exists as the 'European Green Leaf' (EGL) Award. The EGLA is open to towns and cities with 20,000-100,000 inhabitants, in order to recognise their environmental achievements, create citizen awareness and to encourage other cities of a similar size to grow greener. In December 2014 the inaugural 2015 European Green Leaf call opened to over 500 cities from EU Member States, Candidate Countries and Iceland, Liechtenstein, Norway and Switzerland.

The winning cities to date include: Mollet del Vallès, Spain and Torres Vedras, Portugal in 2015/2016, Galway, Ireland in 2017, and Leuven, Belgium and Växjö, Sweden in 2018.

1.1 EUROPEAN GREEN LEAF AWARD

As mentioned in Section 1, the EGLA was borne out of the success of the EGCA and the need to recognise towns and cities of a smaller size. The 2019 EGLA is a competition aimed at towns and cities with a population of 20,000 and up to 100,000.

The objectives of the European Green Leaf Award are to:

- a) To recognise towns and cities that demonstrate a good environmental record and commitment to generating green growth;

- b) To encourage towns and cities to actively develop citizens' environmental awareness and involvement;
- c) To identify towns and cities able to act as a 'green ambassador' and to encourage other towns and cities to progress towards better sustainability outcomes.

In order to be eligible for the EGLA competition a town/city must meet the following criteria:

- Be located in an EU Member State, EU Candidate Country, Iceland, Liechtenstein, Norway or Switzerland.
- All towns/cities from the countries listed above must have 20,000 and up to 100,000 inhabitants at the date of application.
- In countries where there is no city with more than 20,000 inhabitants, the largest city is eligible to apply.
- In this context a 'city' is understood to be an urban area and an administrative unit governed by a city council or another form of democratically elected body.
- Previous winners may not apply for a period of ten years after they have been awarded a 'European Green Leaf'.

The overarching message of the EGLA is to communicate locally that European citizens have a right to live in healthy urban areas. Cities are encouraged to improve the quality of life for their citizens and reduce their impact on the global environment.

The EGLA is presented on an annual basis by the European Commission as an award recognising 'Towns and Cities, Growing Greener!' The 2019 EGLA initiative was launched by the European Commission on the 24th of May 2017 and the call for applications from eligible cities was open until 18th October 2017.

An expert panel of environmental specialists was engaged to independently assess the applications and propose a shortlist of applicant cities to present to the Jury. The Expert Panel carried out a technical assessment of each of the six environmental topic areas (detailed in Section 2.3) and provided a ranking of the fifteen applicant cities together with qualitative comments on each application. This ranking is the result of a joint assessment from the two experts assigned to each topic area (further details on this procedure are provided in Section 2).

An independent Jury has been selected for EGLA, comprising the same member organisations as the EGCA Jury. The shortlisted cities are invited to present a communication strategy substantiated by action plans on how they intend to fulfil their year as EGL 2019, should they win. The EGLA shortlisted city presentations to the Jury will take place on 21st June 2018 in Nijmegen, Netherlands. Shortlisted EGLA cities are invited to present to the Jury on the following topics:

1. The city's overall commitment, vision and enthusiasm as conveyed through the presentation.
2. The city's capacity to act as a role model, inspiring other cities, promoting best practices and raising the awareness of the EGL model further, bearing in mind city size and location.
3. The city's communication strategy and actions, which should address:

- Citizen communication and involvement to date in relation to the six topic areas, effectiveness via changes in citizen behaviour, lessons learned and proposed modifications for the future.
- The extent of the city's (local, regional and national) partnering to gain maximum social and economic leverage.
- How they intend to fulfil their role of EU Ambassador, inspiring other cities.

Based on the proposals from the Expert Panel and information presented to the Jury, the Jury will make the final decision and select the city or cities to be awarded the title of European Green Leaf 2019. The winner(s) will be announced at the EGCA and EGLA Awards Ceremony in Nijmegen (Netherlands), on the 21st June 2018.

1.2 AIM OF THIS REPORT

This Technical Assessment Report provides an overview of the approach to this competition. It presents the technical assessment of the Expert Panel for each of the 15 applicant cities, which forms the basis for shortlisting the cities. This is presented per topic area per city for transparency of the overall process.

An additional information package detailing the good practice across the six topic areas taken from the cities' applications will also be prepared and uploaded to the European Green Leaf Award website. Both of these resources are compiled and edited by RPS, Ireland, acting as Secretariat for the European Green Leaf Award.

2 TECHNICAL ASSESSMENT PROCEDURE

2.1 RULES OF CONTEST

A financial incentive was introduced to the 2019 EGLA cycle. With the introduction of the financial incentive, *Rules of Contest* were developed which included rules to ensure a minimum quality standard and to facilitate the screening out of incomplete submissions. The formal requirements for the applicants to follow were set out in the Guidance Note and Section 3.1.2 of the Rules of Contest:

- The full application shall be written in one of the official languages of the European Union;
- Candidate cities shall answer all the questions and complete all sections of the Application Form. In the event that a question cannot be answered, reasons should be given;
- For the pre-selection stage, applications shall adhere to the word limits indicated per section of the Application Form. Any words above the specified limit will not be taken into account and may leave application responses incomplete. Text included in the body and heading of graphics/images/tables will be included in the word count;
- There is a limit of graphics/images/tables to be provided per Topic Area and Good Practice section of the Application Form that should be adhered to;
- For the pre-selection stage, applicants shall submit their application in word document format and upload through the application portal on the European Green Capital Award website. An additional pdf file may be provided if desired.

2.2 APPLICANT CITIES FOR EGLA 2019

A total of 16 cities applied for the EGLA 2019 competition. Of these, 15 submitted valid applications. Details of the 2019 applicants are included in **Table 2.1** and **Figure 2.1**.

Of the 15 cities evaluated, 7 are signatories of the Covenant of Mayors (CoM) and 15 of the eligible countries from across Europe are represented. The smallest city by population is Nagykőrös in Hungary with a population of 24,134, while Avignon in France has the largest population of 90,194.

Table 2.1 - Details of Applicant Cities (presented in alphabetical order)

| | City | Country | Inhabitants | Signatory of the CoM |
|---|-----------------------|-------------|-------------|----------------------|
| 1 | Avignon | France | 90,194 | No |
| 2 | Cornellá de Llobregat | Spain | 86,072 | Yes |
| 3 | Delitzsch | Germany | 24,850 | No |
| 4 | Gabrovo | Bulgaria | 65,268 | Yes |
| 5 | Horst aan de Maas | Netherlands | 42,000 | No |
| 6 | Joensuu | Finland | 75,557 | Yes |
| 7 | Mechelen | Belgium | 84,523 | Yes |
| 8 | Nagykőrös | Hungary | 24,134 | No |

| | City | Country | Inhabitants | Signatory of the CoM |
|----|-----------|-----------|-------------|----------------------|
| 9 | Pärnu | Estonia | 40,664 | No |
| 10 | Roman | Romania | 50,713 | Yes |
| 11 | Santarém | Portugal | 62,200 | Yes |
| 12 | Serres | Greece | 76,817 | No |
| 13 | Strovolos | Cyprus | 67,904 | Yes |
| 14 | Tauragė | Lithuania | 41,341 | No |
| 15 | Valmiera | Latvia | 25,130 | No |

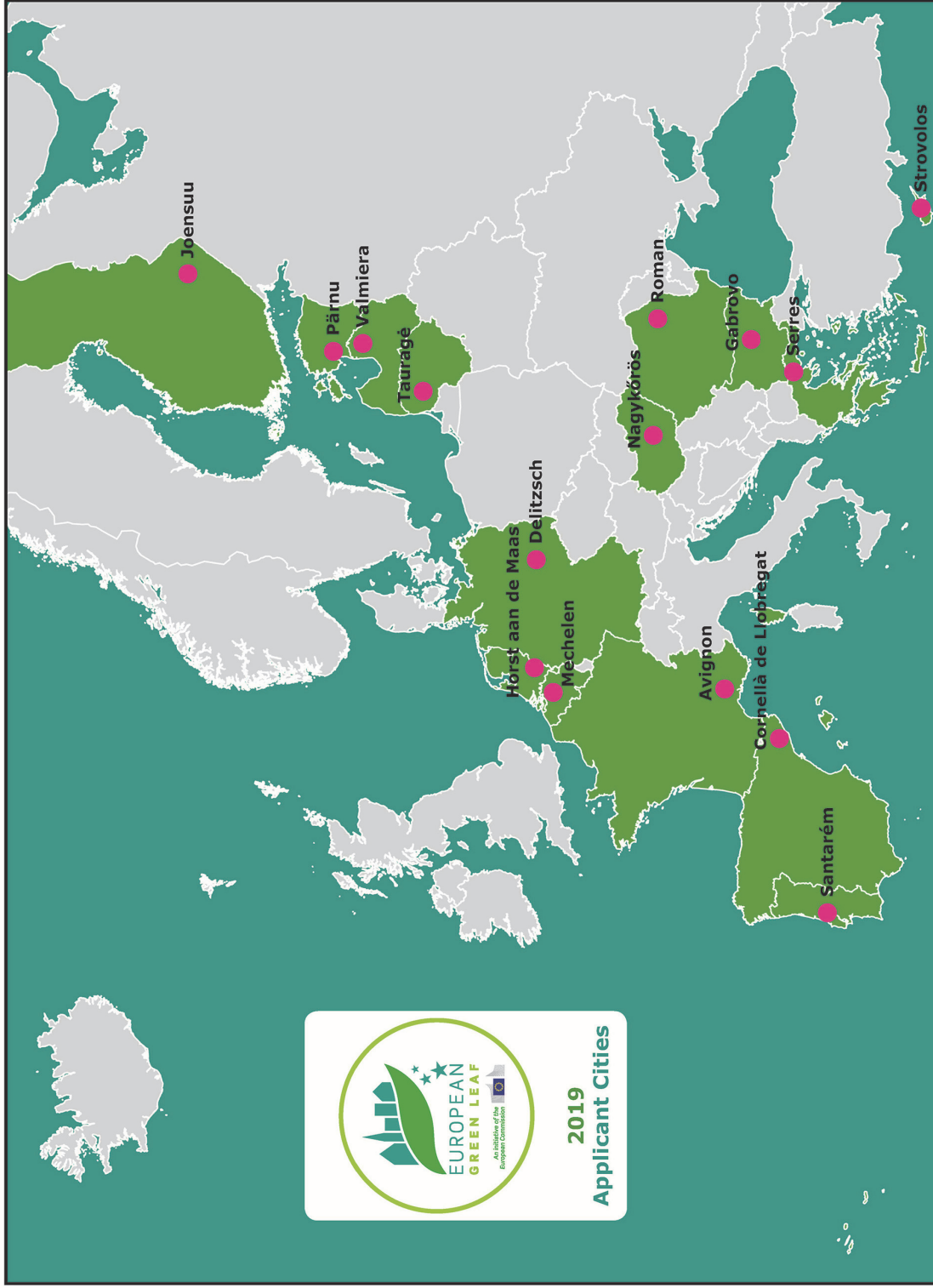


Figure 2.1 - Map of European Green Leaf 2019 Applicant Cities

2.3 SIX ENVIRONMENTAL TOPIC AREAS

The selection of the European Green Leaf 2019 is based on the following six topic areas:

1. Climate Change & Energy Performance
2. Sustainable Urban Mobility
3. Nature, Biodiversity and Sustainable Land Use
4. Air Quality and Noise
5. Waste and Circular Economy
6. Water

The topic areas were broadly developed on the basis of the 12 indicators used to assess the EGCA with many of the EGCA indicators combined to produce a smaller number of ECLA topic areas. In addition to this the application form for ECLA is more qualitative in comparison to the EGCA application form.

2.4 APPLICATION FORM

The 2019 ECLA Application Form is made up of 3 sections as presented in **Table 2.2**.

Table 2.2 - ECLA 2019 Application Form Format

| Section | Description |
|-----------|---|
| Section A | City Introduction and Context |
| Section B | Topic areas 1-6 (as per Section 2.3 above) Within each Topic Area there are 2 sub-sections: <ul style="list-style-type: none"> ▪ Current Situation and Strategic Approach ▪ Citizen Participation and Public Awareness |
| Section C | Good Practices |

Section A: The 'City Introduction & Context' section provides valuable insight and context to the Expert Panel into the history and background of the city and the challenges faced.

Applicants are required to answer Section B for each of the six Topic Areas. This provides applicants with the opportunity to describe the current situation in the city in a particular topic area. Applicants are also required to explain how this situation has been achieved. This should be done by presenting background information, key objectives, targets, data, numerical information, figures, graphics, budgets etc. and achievements/benefits from implementation of measures.

For *Citizen Participation & Public Awareness* the focus is on campaigns undertaken by applicants, public consultation, awareness raising campaigns and events, stakeholder participation, school

education and forums. This section should also discuss and outline the benefits of awareness projects.

It should be noted that Section B is the only section which counts towards the ranking.

Section C of the EGLA Application Form provides the Expert Panel with a valuable insight in to what the applicant considers as good practice within their town or city. This section also forms the basis of the good practice resource package prepared each year.

A copy of the EGLA 2019 Application Form is attached in Appendix A.

A guidance note was provided for the 2019 competition to assist cities in developing their application. A background check of applicant cities was not carried out as part of the EGLA technical assessment. However, this will be carried out in advance of the Jury Meeting.

2.5 TECHNICAL ASSESSMENT EXPERT PANEL

The Technical Assessment Expert Panel consists of 12 experts who bring internationally recognised expertise to the process within each of the topic areas. The experts also evaluate the EGCA. Profiles for each of the experts are in Appendix B.

Table 2.3 - Expert Technical Assessment Panel

| | Topic Area | Expert | Title |
|---|---|-------------------------------|---|
| 1 | Climate Change & Energy Performance | Dr. Matthew Kennedy | Head of Strategy and Business (International Energy Research Centre), Ireland |
| | | Prof. Dr. Manfred Fischedick | Vice President of the Wuppertal Institute and Professor at the Schumpeter School of Business and Economics, Wuppertal, Germany |
| 2 | Sustainable Urban Mobility | Dr. Ian Skinner | Director, Transport and Environmental Policy Research, Crowborough, United Kingdom |
| | | Mr. Alex Minshull | Innovation and Sustainability Service Manager, Bristol City Council, United Kingdom |
| 3 | Nature, Biodiversity and Sustainable Land Use | Dr. Annemieke Smit | Secretary to the Board of Wageningen Environmental Research (part of Wageningen University and Research), The Netherlands |
| | | Mr. David Jamieson | Parks & Green Space Manager, City of Edinburgh Council, and Director, Greenspace Scotland, United Kingdom |
| 4 | Air Quality and Noise | Prof. Dr. Diogo Alarcão | Specialist in Acoustic Engineering. Principal Researcher and Professor at Instituto Superior Técnico University of Lisbon, Portugal & the Polytechnic Institute of Lisbon, Portugal |
| | | Mr. Joan Marc Craviotto Arnau | Air Quality Project Manager at Barcelona City Council, Spain |

| | Topic Area | Expert | Title |
|---|----------------------------|--------------------|--|
| 5 | Waste and Circular Economy | Mr. Warren Phelan | Technical Director, Waste, Energy & Environment, RPS, Ireland |
| | | Mr. Marc Okhuijsen | Co-founder and owner Zonnova BV, Director at Réciprocité, The Netherlands |
| 6 | Water | Mr. Christof Mainz | Senior/First Officer at the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), Bonn, Germany |
| | | Ms. Birgit Georgi | Urban and Adaptation Expert, Founder of 'Strong Cities in a Changing Climate', Germany |

2.6 TECHNICAL ASSESSMENT PROCEDURE

2.6.1 Pre-selection Screening

In accordance with Section 4.3: Pre-selection of the Rules of Contest, the Secretariat validated the applications for compliance with the criteria set out in Section 3 of the Rules of Contest. Applications which did not comply with the Rules of Contest were issued to the Commission for confirmation on the findings of the Secretariat regarding their validity. Compliant applications were issued to the Expert panel for technical evaluation.

2.6.2 Primary Technical Review

Each Expert was required to assess each application based on its own merit and rank all applications against each other within each topic area. In the course of the primary technical review, each expert only read Section A and the part of Section B of the application that focused on their specific topic area. Each topic area has two sub-sections. Each sub-section carries equal consideration by the expert.

2.6.3 Ranking Criteria

Experts use a defined ranking system. Under this ranking system a position of 1st, 2nd, 3rd etc. is applied to each city per topic area. Since there were 15 applications to be evaluated, each city was ranked from 1st as the best to 15th the weakest. It is important to note these are not quantitative scores but rankings.

2.6.4 Co-evaluation

The EGLA technical assessment was carried out as a co-evaluation process. All Expert Panel members assessed their respective topic area and then discussed and agreed a combined final ranking and commentary for all applicants with their partner co-evaluator. This exercise provides a robust quality check of the assessment process. Where the two experts differ on a ranking, they must work together to reach a consensus. The final ranking and comments are a combination of both reviewers' assessments.

2.6.5 Conflicted Application

In the event of a conflicted application, where an expert cannot complete an unbiased assessment of an application for personal or professional reasons, a suitable external expert is identified by the EGLA Secretariat to complete both the primary technical review and the peer review of the conflicted application. There was no conflict of interest raised in the 2019 EGLA competition.

2.6.6 Background Check

As part of the EGLA process a high level background check is carried out by the European Commission on all shortlisted cities to identify if any are in breach of environmental legislation or do not meet European reporting requirements. This background check is not presented to the Expert Panel during the technical assessment process. It is provided to the Jury in advance of the Jury Meeting and their deliberations.

3 TECHNICAL ASSESSMENT RESULTS

Based on the technical assessment results, the Expert Panel has proposed to shortlist the following five cities (presented in alphabetical order) for European Green Leaf 2019:

Cornellà de Llobregat – Gabrovo – Horst aan de Maas – Joensuu – Mechelen

The Commission will invite these five cities to the next stage of the evaluation process.

The Expert Panel's detailed ranking for the shortlisted cities in all six topic areas is detailed in **Table 3.1**.

Table 3.1 - Technical Ranking of Shortlisted Cities for European Green Leaf Award 2019

| Topic area/Applicant City | Cornellà de Llobregat | Gabrovo | Horst aan de Maas | Joensuu | Mechelen |
|---|-----------------------|-----------|-------------------|-----------|-----------|
| Climate Change & Energy Performance | 2 | 7 | 3 | 1 | 6 |
| Sustainable Urban Mobility | 2 | 13 | 3 | 5 | 1 |
| Nature, Biodiversity & Sustainable Land Use | 2 | 3 | 6 | 5 | 1 |
| Air Quality & Noise | 1 | 5 | 3 | 4 | 2 |
| Waste & Circular Economy | 2 | 3 | 4 | 5 | 1 |
| Water | 1 | 4 | 3 | 15 | 2 |
| Total Combined Ranking | 10 | 35 | 22 | 35 | 13 |

4 TECHNICAL ASSESSMENT

4.1 SHORTLISTED CITY SUMMARIES

4.1.1 Cornellà de Llobregat

Cornellà de Llobregat is a municipality located in the Baix Llobregat region in Catalonia, Spain. Geographically, it is located North-East of the large meander of the Llobregat River, between its left bank and the foothills of the Collserola Mountain. Cornellà covers an area of 7 km², 88% of which is urban area and has a population of 86,072 inhabitants, with a population density of 12,413 inhabitants per km².

Cornellà has a compact structure and is divided into 7 districts; these are made up of residential, green, commercial and industrial areas. The city operates as both an agricultural and industrial municipality, with a per capita income of €30,000. As of July 2017, the unemployment rate was at 11.11% which is lower than the average of Catalonia as a whole.

The city identifies its two most important environmental challenges as the improvement of air quality and increasing their segregated waste collection service. Cornellà's key objectives are to become a green, biodiverse, resilient and sustainable city. It has developed the strategic Cornellà Nature Project (2016-2026) which aims to naturalise the city and accentuate its environmental, social and landscape values for its citizens. The city is investing €35 million in this project, which is being carried out through citizen participation and involvement. Cornellà currently has 9.74 m² of green area per inhabitant, with a goal of reaching 15.52 m² per inhabitant by 2026.

4.1.2 Gabrovo

Gabrovo municipality is situated in the central area of the Republic of Bulgaria, with a population of 65,268 inhabitants. Gabrovo is situated in the foothills of the Balkan Mountains, in the Yantra River Valley, to the north of the Shipka Pass. Over 50% of Gabrovo's territory is covered by forests, with beech trees being the most dominant species. One third of the territory is a Natura 2000 area. It has a strategic location and proximity to the geographic centre of the country and acts as a key transport junction, with one of the most important road links passing through Gabrovo connecting Bulgaria from North to South.

The town hosts one of the largest technical and science universities in Bulgaria, the Technical University of Gabrovo. Through its cooperation with the business sector, the University of Gabrovo is a key player in the local economic development of the city. Key industries located in Gabrovo which contribute to the local economy are involved in the manufacture and production of machinery, tools, mechatronics, electronics, plastics, cosmetics, textiles and clothing.

The first passive public building in Bulgaria, the 'Slance' Kindergarten, was opened in Gabrovo in 2014. It was certified by the German Passive House Institute in Darmstadt. The city has rolled out other energy efficiency measures in the municipality, including the modernisation of street lighting. Gabrovo has identified its key strategic goal as the integration of policies that will improve the quality of its education, social, cultural, tourism and urban environment sectors, allowing it to develop in to a modern European City.

4.1.3 Horst aan de Maas

Horst aan de Maas is situated in the south of the Netherlands, in the northern part of the Province of Limburg. It is the biggest municipality in terms of surface area in the Province, covering a total surface area of 19,192 ha, of which 18,871 ha is land and 320 ha is water. Horst aan de Maas has 42,000 inhabitants with a population density of 221 per km². In 2001, three municipalities Broekhuizen, Horst and Grubbenvorst joined together to form the Municipality of Horst aan de Maas. In 2010 the municipality enlarged again, when the Municipality of Sevenum and the villages Meerlo, Tienray and Swolgen joined. As of today, the municipality consists of sixteen different urban cores.

The municipality has a history of strong collaboration between its urban cores spanning centuries due to its inhabitants working together to survive. This has resulted in a mind-set where citizens consider reuse the norm, and so a well-functioning circular economy has developed over time. In terms of sustainability projects, the municipality encourages the involvement of schools and higher education, in order to raise awareness and encourage protection of the environment amongst its future entrepreneurs. The municipality opts for Green Public Procurement when planning its projects, choosing what is best for its citizens and environment.

Horst aan de Maas is an enterprising, active and united municipality, where many of its initiatives are derived from citizens and supported by the municipality. The city's slogan is 'enterprising by nature' and the municipality aspires to become the Healthiest Region of 2025, which also arose from a citizen initiative. The municipality was awarded the Waste Separation Award three times in the past five years by Nedvang, the Dutch Packaging Producer Responsibility Initiative.

4.1.4 Joensuu

The City of Joensuu is located in the Region of North Karelia, Eastern Finland and covers an area of 2,751 km². The land surface area of Joensuu is 2,382 km², with majority of this comprising forest and rural areas. The city has a population of 75,557 inhabitants, and a population density of 31.8 inhabitants per km², with most of the population living in close proximity to the city centre. One third of the jobs in Joensuu are in public administration, education, health and social service sectors. Trade, transportation, accommodation, restaurants and industry are also significant employers in the Joensuu area. The city hosts the University of Eastern Finland, which offers diversified international cooperation in science, industry and commerce which benefits the region.

Joensuu is situated on the River Pielisjoki, which formed an essential role in the history of Joensuu as an important river route for trade and other traffic. Joensuu has utilised River Pielisjoki and other local rivers for hydroelectric power plants. Together with water power, biomass is the major source of renewable energy in Joensuu. Forests play an important role in the city and there is high quality forest research, education and industry located in the area. The European Forest Institute and Natural Resources Institute Finland both have their centres located in the city. The city's forests also provide a recreational value for citizens, with diverse hiking and nature trails.

Joensuu is working towards tackling climate change by taking part in climate action projects and implementation of the Climate Programme of Joensuu with the goal of becoming a carbon neutral city by 2025.

4.1.5 Mechelen

Mechelen, Belgium, is located in the heart of Flanders, between Brussels and Antwerp, with both cities reachable within 20 minutes. The city developed on the River Dijle and was built on wetlands, and so water management has always been a focus of the city. The city has a diverse population of 84,523 inhabitants, with 27.5% of the population from non-Belgian roots. The Mayor of Mechelen, Bart Somers, was awarded the 2016 World Mayor Prize which is in part as a result of the diversity in place within the city

The city has seen a revival in the last decade, leading to a growth in population and economy. This is in part due to strong investments by the city. Due to its location, the city is an ideal operation base for business, attracting many companies to the area. Mechelen has a strong manufacturing, creative and innovative sector. Since 2010, the number of companies grew from 5,000 to almost 6,000.

The city is one of five art cities in Flanders, featuring more than 300 historical buildings and three UNESCO heritage sites. In 2016, Mechelen was awarded the Best Belgian Local Government Award based on the city's public services. The city has different goals, such as climate neutrality, diversity, and child-friendliness but emphasises co-creativity and participation through annual citizen meetings and participatory projects to achieve these goals. City partners are also involved in smart city development through 'citylabs'.

4.2 SHORTLISTED CITY TECHNICAL ASSESSMENTS

4.2.1 Cornellà de Llobregat Technical Assessment

4.2.1.1 Climate Change and Energy Performance

| Ranking | Experts |
|---------|---|
| 2 | Dr. Matthew Kennedy Prof. Dr. Manfred Fischedick |

Cornellà de Llobregat presented a high quality response to the climate change and energy performance question. The City provided information on the development of Green House Gas (GHG) emissions from 2005-2015 in terms of sources and sectors, demonstrating the consistent decline in GHG emissions (31%) over this time. Strong attention is placed on monitoring, regulations and performance analysis. However, no explanation was provided how the reduction of demand could be achieved and no assessment was provided regarding the extent the development has been influenced by local measures.

The city's strategic framework is set out by its Sustainable Energy Action Plan (SEAP) which was launched in 2010. A second SEAP monitoring report was developed in 2017 setting out actions to be achieved by 2030. There are 57 actions set out in the second SEAP which should result in an initial 22.4% reduction in GHG's by 2020 and a 40.5% reduction by 2030. Cornellà has developed an Energy Saving and Efficiency Plan for city facilities and street lighting (2017-2019) and a Metropolitan Plan for Adaptation to Climate Change (2015-2020) which includes a preliminary vulnerability analysis and several measures are presented to improve energy efficiency and renewable energies. Furthermore, the city is a member of the Covenant of Mayors.

Cornellà demonstrates some convincing measures for citizen participation and public awareness, with a specific focus on giving support to preventing energy poverty. One such example is the city's energy efficiency advice service, launched in 2016, that has carried out over 178 household audits so far. Another example of Cornellà's participatory approach is its 'Run Against Energy Poverty', where energy consumed by the participants is converted into money which the City Council then invests in prevention of energy poverty.

Other actions include education programmes for businesses and schools and smart meters for families, however no clear behavioural engagement was discussed regarding this area. It would have been useful to learn more about the education measures carried out in schools over the past five years. Besides the measures outlined, there was no direct participation of the citizens demonstrated in terms of the formulation of a long-term strategy.

4.2.1.2 Sustainable Urban Mobility

| Ranking | Experts |
|---------|--------------------------------------|
| 2 | Dr. Ian Skinner Mr. Alex Minshull |

Cornellà de Llobregat is a dense urban area within Barcelona Metropolitan Area with good public transport connections and a very high walking and cycling rate (58%). The application included good information on the current modal share and the improvements in recent years. The municipality has a Sustainable Urban Mobility Plan (SUMP) that contains a wide range of measures to promote cycling, walking and public transport use through the development of infrastructure and a range of soft measures.

There is an electromobility plan, which includes plans to make the municipal fleet go electric, to incorporate electric fleet requirements into new municipal contracts, to install public charging points and to promote electric vehicles, including and tax credits for owners of low emission vehicles.

The city provided a brief description regarding its actions relating to goods distribution. However, it would have been useful to have included more detailed information on these.

Overall, the city has undertaken an excellent range of measures to engage its citizens, and to increase their awareness of alternative mobility options.

4.2.1.3 Nature, Biodiversity and Sustainable Land Use

| Ranking | Experts |
|---------|--|
| 2 | Dr. Annemieke Smit Mr. David Jamieson |

The development and implementation of the Cornellà Biodiversity & Urban Greenery Plan should help focus attention on and awareness of the town's natural green spaces. This will help protect, enhance, and extend the town's biodiversity assets, and strengthen the good works already initiated by the Cornellà Natura Project.

It would have been useful for the city to include information on how the City manages derelict zones. The city demonstrated its ambition to increase the green area per capita, and although the ambition is well appreciated, the implementation of the plan remains rather vague. Information on how this will be achieved would have been a useful addition to the application.

Overall, the biodiversity and green space vision, ambitions and projects underway in Cornellà are clearly described, showing an ambitious approach to naturalise a rather densely populated city.

4.2.1.4 Air Quality and Noise

| Ranking | Experts |
|---------|--|
| 1 | Prof. Dr. Diogo Alarcão Mr. Joan Marc Craviotto Arnau |

Cornellà de Llobregat belongs to an air quality zone (a representative zone with similar orography, climatology, type of emissions, etc.) with 31 monitoring points managed by the Catalan Government. It is noted that there are no air quality monitoring sites within the city. The air quality situation is presented using a heat map (low resolution model) and demonstrates that the zone is exceeding the annual limit value for NO₂ and is in compliance with the annual limit value for PM₁₀. Information about exceedances cannot be shown as the city does not have a monitoring station in place.

To tackle air pollution, the city mentions the Plan of action for the improvement of the air quality, approved by the Government of Catalonia. Within this plan there are some actions identified at city level, like the promotion of sustainable mobility, the protocol for municipal works (assumed to refer to construction works) and regulation of domestic boilers in municipal facilities, etc. Also, the City mentions the Metropolitan Programme of measures against air pollution and the Action Protocol in case of high pollution episodes of NO₂ and PM₁₀, whereby the most polluting cars will not be allowed to circulate in the metropolitan region in case of activation.

In general, the city is performing quite well in relation to air quality. As air quality evaluation is currently based on regional information, it would be interesting to complete further assessments based on the results of implementing monitoring campaigns with a mobile monitoring station or using passive samplers to better understand the local situation. This precise information will allow the city to consider future additional local measures.

In relation to noise, strategic maps for the Greater Barcelona region were produced by the Catalan Government. These maps, approved in 2015, show that 18% and 24% of the population of Cornellà is exposed, respectively, to total noise levels of L_{den} ≥ 65 dB(A) and L_n levels ≥ 55 dB(A). These share values are generally in line with typical European urban areas, but showing that to some extent a noise exposure problem exists within the municipal territory.

It is stated that 11% of the population are subject to noise levels of L_d < 55 dB(A) and these are classified as quiet zones. It must be emphasised that these are not formally delimited and classified quiet areas, and these quiet zones could serve as the starting point for doing this relevant inventory work.

The city has an acoustic zoning map, which was last updated and approved in 2014. The main sources of noise are derived from the traffic on the major roads and on the major railways, and there is also some industrial/commercial and entertainment noise.

A regionally elaborated Noise Action Plan, approved in 2013 and updated in 2017, considers the acoustic situation portrayed by the strategic noise maps and includes as principle actions/measures: traffic calming, the promotion of soft modes of transportation and e-mobility and the adoption of noise barriers.

In addition, the municipality considers the acoustic insulation reinforcement of municipal building façades and the monitoring of entertainment noise connected with bars, festivals, concerts and other events (147 sound levels tests were conducted by the Municipal Police during 2016).

The city carried out a noise awareness campaign in April 2015, called 'Stop Noise', directed at the general population, as well as schools, and comprised an exhibition in a public building for teachers and students, the production of educational posters for schools and an educational environmental activity called the 'Giant Ear'.

Another noise awareness campaign, the 'Week without noise', was held in April 2017, whereby a tent was set up in a central square so that citizens could use sound level meters to measure and to compare noise levels in the surrounding area. An efficient driving course for public and town hall employees was also organised in 2010 and 2016, which may be relevant for reducing engine noise and pollutant emissions. Finally, three educational activities for schools, on noise and air pollution, are also mentioned, but details are lacking.

4.2.1.5 Waste and Circular Economy

| Ranking | Experts |
|---------|---|
| 2 | Mr. Warren Phelan Mr. Marc Okhuijsen |

Cornellà's waste management activities consist of strong selective collection with low levels of disposal to landfill and high levels of recovery. The rate of recycling is reasonable but appears to have reached a plateau. A new ambitious waste plan is under development with links to the wider regional plan. Waste generation has been decreasing over a sustained period, which is further evidence of the city's high performing system.

As evident through its food waste measures, social reuse and sustainable purchasing activities, the city has demonstrated its commitment and ambition to transition to a circular economy.

Overall, Cornellà has submitted a very strong application which is well structured with detailed responses to many issues. The content provides a good understanding of the city's waste system, circular economy strategy and public involvement activities.

4.2.1.6 Water

| Ranking | Experts |
|---------|---|
| 1 | Mr. Christof Mainz Ms. Birgit Georgi |

Cornellà provided a good overview of its water and waste water management systems. The city provided the main data required and demonstrates a low water consumption rate. However, additional information such as the connection rate would have been welcomed.

The city outlined its Master Plan on alternative water resources, which includes public activities, such as grass replacement by species with less water consumption, aerators in taps of public buildings, rain water harvesting and grey water recycling and reuse. The city also outlined some flood management measures.

A clearer response regarding the sustainable use of groundwater in the city would have been useful. Furthermore, information on surface water quality and data on legal requirements/Water Framework Directive targets achieved to date would have been a useful addition.

The city has carried out awareness raising campaigns and education programmes in relation to domestic water consumption since 2007. One such campaign, 'We love water', which educates citizens on what to flush in toilets in order to avoid pollution, is considered an excellent initiative.

Overall, the city provided a strong response to this topic area, presenting many water management activities, including a grey water reuse system at its football stadium.

4.2.2 Gabrovo Technical Assessment

4.2.2.1 Climate Change and Energy Performance

| Ranking | Experts |
|---------|--|
| 7 | Dr. Matthew Kennedy Prof. Dr. Manfred Fishedick |

Gabrovo joined the Covenant of Mayors in 2013 and has developed a five year Sustainable Energy Action Plan (SEAP) (2015-2020). The city's first greenhouse gas inventory demonstrates a CO₂ reduction of 17.2% over five years (2008-2013), further monitoring has been carried out for the period 2014-2016.

The city's measures focus on reducing energy consumption and increasing energy efficiency in public buildings. The first public passive building in Bulgaria, a kindergarten, was opened in Gabrovo in 2015. Regarding residential buildings, the National Programme for Energy Efficiency in Residential Buildings seems to play a central role in Gabrovo. This strategy focuses on energy efficiency and renovation whilst encompassing recent developments in information and communication technology (ICT) and data analytics.

In order to increase public awareness, the city has established an energy efficiency information centre. Furthermore, Gabrovo is part of a municipal network known as 'EcoEnergy'. There is still potential for the city to further strengthen its citizen participation. Gabrovo's current focus is centred on EU wide consumer engagement initiatives rather than targeted interventions within the city.

4.2.2.2 Sustainable Urban Mobility

| Ranking | Experts |
|---------|--------------------------------------|
| 13 | Dr. Ian Skinner Mr. Alex Minshull |

Mobility is one of the main priorities of Gabrovo's Integrated Plan; the city has also developed a SUMP with the support of an EU project; the aim is to promote multimodal, sustainable urban mobility to deliver more efficient and ecological urban transport.

Gabrovo is clearly taking a lot of actions to improve its transport system. However, from the application there appears to be a focus on improving traffic flow, for example with the construction of a large roundabout in the city centre. More information on the actions that are being undertaken to promote walking, cycling and public transport use, in addition to improving infrastructure, would have been welcomed.

It would have been interesting to know more about the city's plans to improve the environmental performance of vehicles, including freight vehicles, by using alternative fuels.

Overall, the city has engaged well with its citizens on transport and mobility, and undertakes a range of awareness raising activities.

4.2.2.3 Nature, Biodiversity and Sustainable Land Use

| Ranking | Experts |
|---------|--|
| 3 | Dr. Annemieke Smit Mr. David Jamieson |

Gabrovo has a significant amount of rural land protected and managed for nature. Recent initiatives such as Floral City and improvements to green infrastructure are bringing a similar ethos into the city itself.

The application presents Gabrovo's objectives; however, it does not adequately identify nature and sustainable land use targets, which would have been useful.

Gabrovo has outlined its vision on what it wants to achieve with its campaigns, but unfortunately no results or outcomes are presented. Information on how many people have been engaged with or what they have collectively achieved would have made a valuable addition.

4.2.2.4 Air Quality and Noise

| Ranking | Experts |
|---------|--|
| 5 | Prof. Dr. Diogo Alarcão Mr. Joan Marc Craviotto Arnau |

Gabrovo showed good air quality parameters for the year 2016. Data is presented as yearly mean of NO₂, SO₂, O₃, CO and PM₁₀, and the data indicates that they comply with the EU limit values. The domestic sector is the main contributor, followed by industry and transport. It would be interesting to evaluate the source contribution for every pollutant because the source can differ significantly. The city mentions, actually, a dispersion model assessment for PM₁₀ in 2016, and probably has detailed information about its sources. It would be interesting to do the same for NO₂.

Referring to noise, annual acoustic monitoring is carried out by the Regional Health Inspection. In 2016, 12 stationary points in the city were chosen for measurements, and it is reported that the noise levels showed a tendency for a gradual increase from 2009 to 2016 (with average high noise levels being registered in the intervals 63-66 dB(A), but no indicator being defined). It is also argued that an increase in noise rates was registered in seven of the measuring points, when compared to 2015. It is stated that road traffic noise in central areas stays within the safe norm values (60 dB(A) near roads and railways, 70 dB(A) near industrial sites and 55 dB(A) near noise protected areas), which is however a very passive, and very unambitious, attitude towards the noise pollution.

The city has a Municipal Programme for the Protection of the Environment, where measures for reducing the air and noise pollution are set on an ongoing basis, but no details are provided. Nevertheless, some measures allowing noise and air quality reduction are mentioned, such as heavy vehicles and motorcycles traffic restrictions, road surface maintenance and noise restrictions for places of entertainment.

In terms of public awareness and citizenship participation, the application explains its participation in European Mobility Week, with more than 1,000 participants taking part in initiatives. Also, information campaigns about fine particles contamination and the advantage of quality fuels are mentioned.

Moreover, it is mentioned that the city tries to raise awareness concerning alternate transportation modes (e-mobility) and urban green areas ('Floral city' project, done with the collaboration of Swiss experts), and these actions could also include noise awareness.

4.2.2.5 Waste and Circular Economy

| Ranking | Experts |
|---------|---|
| 3 | Mr. Warren Phelan Mr. Marc Okhuijsen |

Gabrovo's current waste system has progressed from being low performing and poorly managed to being well structured and planned with an appropriate collection and treatment infrastructure. It is evident that continued progress is required to move further away from landfilling but a solid

foundation has been laid in relation to circular economy. The city's circular economy measures are not evident yet, but are expected to be developed and integrated in to its waste plan.

The city is committed to stakeholder engagement and raising awareness and this is demonstrated through the range of activities presented. The 'Colours of the Garbage' is a good example of an innovative approach to communicating waste and recycling messages to children. An example of consultation activities such as forums of workshops would have further strengthened the city's response to the question.

Overall, the response from Gabrovo includes a good level of detail and examples, however, detail on the city's circular economy measures was its weakest element. The city's new plan, which contains progressive objectives and targets, will further improve the city's system.

4.2.2.6 Water

| Ranking | Experts |
|---------|---|
| 4 | Mr. Christof Mainz Ms. Birgit Georgi |

The city provided a good general overview on waste water and drinking water system management. The city also described the Programme for Environmental Protection 2016-2020. Additional information including data on metering and compliance with the Water Framework Directive would have been welcomed. Water leakage rates appear to have significantly reduced over the past few years but remain high at 48%.

The city has won multiple awards for interesting public awareness raising campaigns. Awareness activities such as open tours of facilities are offered and information on quality standards are provided online via the internet.

Overall, the application presents quite an active water sector within the city, with large technological efforts. However, the application would be strengthened by providing information about drainage, rainwater management and flood management.

4.2.3 Horst aan de Maas Technical Assessment

4.2.3.1 Climate Change and Energy Performance

| Ranking | Experts |
|---------|--|
| 3 | Dr. Matthew Kennedy Prof. Dr. Manfred Fishedick |

A key focus of Host aan de Maas (HadM) lies on increasing the sustainability of glass-horticulture companies as 42% of energy consumption in the city is from the glass-horticulture sector. However the role of the municipality is somewhat unclear in the activities presented in the application. A focus on the actual measures alongside geothermics (RES-H) to reduce CO₂ generation in agriculture (which could include the reduction of fertilisers, land use change etc.) would have been welcomed.

The application of geothermics does present a good practice example for similar companies for significantly decreasing CO₂ emissions. The focus on the municipality working alongside industry to deliver action is positive. Challenges of reducing GHGs from agriculture are not detailed.

The strategic framework is set by the Klimaatverbond Nederland, which is a partner of the Climate Alliance. Furthermore, there are promising ongoing actions for creating a regional energy vision and a local Masterplan Energie; both are envisaged for 2018 and it will be interesting to learn about these outcomes.

The data provided demonstrates an increasing use of renewable energy. However, it would be good to provide further information, e.g. of the development of overall energy consumption/CO₂ emissions or energy consumption/CO₂ emissions per sector. The city has taken measures to adapt to climate change (building of extra dikes, widening of the river).

Some promising activities for citizen participation and public awareness are described, focusing on citizens and companies (Energiek Kronenberg aiming at creating the first energy-neutral urban core in the Netherlands before 2030; Zamen with free, personalised advice and subsidies for increasing the sustainability of existing buildings of local companies) and making use of national formats (national sustainable house track) and collaborations (Buurkracht). The role of the local citizen and community engagement within this energy transition is unclear. Additional detail on how the measures described are implemented and how goals such as achieving energy-neutrality by 2030 in Energiek Kronenberg would have made the application stronger.

4.2.3.2 Sustainable Urban Mobility

| Ranking | Experts |
|---------|--------------------------------------|
| 3 | Dr. Ian Skinner Mr. Alex Minshull |

Horst aan de Maas has an extensive bicycle and public transport network as part of local, regional and national systems. The municipality has taken a wide range of actions to encourage cycling, promote shared transport and encourage electromobility, which is positive.

Horst aan de Maas involves its citizens in an effort to move away from a car-based mobility culture. For example, the Trendsportal initiative allows interested inhabitants and professionals to discuss the future mobility of the municipality. However, it was not clear how this tool informs the overall strategy and what principles are applied more generally in the development of the local transport system. More information on this would have been useful.

Given the aspiration of the municipality, it would have been useful if the city had included more information on what actions they have planned to discourage car use.

4.2.3.3 Nature, Biodiversity and Sustainable Land Use

| Ranking | Experts |
|---------|--|
| 6 | Dr. Annemieke Smit Mr. David Jamieson |

Horst aan de Maas's projects associated with ecological improvement of the Maasgaard Nature Reserve demonstrate a significant commitment to biodiversity objectives through partnerships with a wide range of organisations, both public and private. The city's bee project connects nature to ecosystem services through pollination, which is a very valuable function for the region.

The city would benefit from the production of a Biodiversity Strategy which would establish key objectives, targets, and monitoring for the protection and enhancement of nature and citizen involvement.

The city's response outlines several inspiring projects, but would have been greatly improved through demonstration of how projects are clearly related to a vision. Inclusion of a strategy on why and how they will preserve nature and valuable soils through sustainable land use in the municipality would have been a valuable addition.

4.2.3.4 Air Quality and Noise

| Ranking | Experts |
|---------|--|
| 3 | Prof. Dr. Diogo Alarcão Mr. Joan Marc Craviotto Arnau |

In terms of air pollution, the application only takes into account the particulate matter (PM₁₀ and PM_{2.5}). Extensive information about that pollutant is presented including latest annual mean and evolution. The main sources of PM are identified as being traffic and intensive farming. It would be interesting to get data also for NO₂.

The city mentions a measure of farm and greenhouse dismantling and remediation, but the benefit of this action is not clear. However, the city has conducted research into air quality and intensive livestock farms and their exact health effects. The results of this study are due in 2018. This is considered a positive measure as it is good to create knowledge and to trigger new measures focusing on agriculture. A project related to sustainable mobility is also mentioned.

In 2013, the city conducted a study on the noise levels around the A73 highway showing that they comply with the 65 dB(A) limit value. Strategic noise maps for the Eindhoven-Venlo railway line were produced by the national railway company (ProRail) and approximately 105 residential houses were identified with excessive noise levels. Specific noise reduction measures were designed for these houses. However an additional municipal lead study showed that the envisaged measures may not be sufficient for 23 houses near the railway terminal. As a result the city is providing additional funding for acoustic insulation of the façades, which is noteworthy and shows good engagement by the city.

The municipality has organised information sessions for the residents of the 105 affected residential houses for exchanging information, ideas and recommendations, which will be included in the final adopted measures.

Sound level meters are installed in the city centre and the monitored noise levels can be viewed by pub owners and the police in order to determine the appropriate measures/actions needed. The city has a zoned industrial area and when new industries propose to locate in this area, an acoustic study demonstrating compliance with noise limits must be provided.

Horst aan de Maas has two formally delimited and classified quiet areas (responsibility of the Province of Limburg) but the municipality also takes measures to maintain and protect these areas.

With regards to stakeholder participation, the city presents a measure which involves engagement of citizens with air quality monitoring by installing PM sensors in citizen's gardens. This kind of win-win measure is very interesting and powerful as it increases the commitment of citizens and at the same time the municipality gets additional valuable air quality data.

4.2.3.5 Waste and Circular Economy

| Ranking | Experts |
|---------|---|
| 4 | Mr. Warren Phelan Mr. Marc Okhuijsen |

The current waste system in Horst aan de Maas is strong with a high level of source segregation including food waste, recyclables, textiles and garden waste. The system is delivering a high level of recycling and a low level of residual waste compared to neighbouring cities. The application would have benefited from more detail on the treatment solutions for the wastes managed by the city.

The city did not include details of its waste plan, which would have been a useful addition to their response. The city's description of circular economy is quite theoretical with limited measures being implemented. The city is practicing Green Public Procurement which is positive.

The city has active engagement with citizens on the issue of waste, demonstrating details of its awareness events, programmes and the benchmark research. Further direct information on stakeholder participation activities in the formulation and or implementation of policy would have enhanced the city's response.

It is clear the city has a strong ethos in terms of waste management but details on how it plans to transition to the next step is not clear. Overall, the city has submitted a good application which could have benefited further if the responses were more focused on the questions.

4.2.3.6 Water

| Ranking | Experts |
|---------|---|
| 3 | Mr. Christof Mainz Ms. Birgit Georgi |

Horst aan de Maas has implemented positive programmes for water management, including sustainable and recreational measures, the disconnection of rainwater from sewers and climate adaptation measures against flooding, including the widening of the River Maas to decrease its water level by 35 cm.

The city provided a general overview on waste water and domestic water systems and management, but more data on waste water treatment and domestic water consumption such as metering data, leakage rates and sludge treatment would have been useful. The application would have also benefited from the inclusion of city data relating to the Water Framework Directive (WFD).

The city demonstrates a high level of involvement of public awareness, indicating several measures it is using in order to raise awareness amongst its citizens. One such activity is by showing the beauty of the municipality's river areas. The city's measures demonstrate a good balance between participation, information and highlighting important aspects relating to water in the city.

Overall, the city is quite active in the water sector and demonstrates very positive measures, but some basic data is missing.

4.2.4 Joensuu Technical Assessment

4.2.4.1 Climate Change and Energy Performance

| Ranking | Experts |
|---------|--|
| 1 | Dr. Matthew Kennedy Prof. Dr. Manfred Fishedick |

The City of Joensuu provides detailed energy and climate data and statistics (energy source split, greenhouse gas emissions in total and per capita, greenhouse gas emissions by sectors 2007-2015 and future goals until 2030).

The city has set the ambitious goal to become carbon neutral by 2025 (sub targets: -25% energy consumption by 2025 compared to 2007; 90% renewable energy by 2025). From 2007 to 2016, greenhouse gas emissions decreased by 28% (per capita: -32%). Commitments for climate protection started as early as 1996 on the occasion of the Aalborg Charter. By joining the HINKU Carbon neutral municipalities' project, Joensuu has made the commitment for a Fossil Fuel Free North Karelia 2030. It is also a signatory to Covenant of Mayors.

Central elements towards climate neutrality in 2025 are district heating/combined heat and power (replacing fuel oil entirely by renewable fuels; 2016: 70% renewable, mainly wood) and increasing energy efficiency in municipal buildings (participation of almost all buildings in the Energy Efficiency

Agreements 2008-2016 and 2017-2025). Furthermore, measures for adaptation to climate change were implemented (increasing green roofs, treating run off rain water, risk evaluations).

Finnish traditions of district heating also prevail in Joensuu. This accompanies innovative actions like geothermal heat mapping, efficiency agreements and strategic actions such as peat replacement with biofuels. Additional information about the nature of the efficiency agreements and quantifying economic savings would have been welcomed.

There are several approaches for citizen participation and public awareness. As part of the 'Climate Square' there are yearly activities (2015-2017) for climate responsibility projects and campaigns that promote collaboration between citizens and industries in tackling climate challenges. Furthermore information is provided online and via social media. Other activities include the participation of citizens for updating the climate programme (questionnaire in 2017), education in primary schools and the participation in events (Energy Saving Week, Earth Hour by WWF).

4.2.4.2 Sustainable Urban Mobility

| Ranking | Experts |
|---------|--------------------------------------|
| 5 | Dr. Ian Skinner Mr. Alex Minshull |

Joensuu has separate plans to develop cycling, walking and public transport, which is positive. The city has undertaken many measures to encourage the use of these modes. Joensuu was named cycling city of the year 2014, (in Finland it is presumed). It has good cycling infrastructure, including a new cycling bridge and cycling street, and maintains all year round cycling thanks to good winter maintenance.

The city's commitment to acquire zero emission cars in order to renew its fleet is positive.

While the city has a number of interesting campaigns to promote cycling and public transport, it would have been interesting to know more about how Joensuu engages with its citizens in the course of the development of policy.

4.2.4.3 Nature, Biodiversity and Sustainable Land Use

| Ranking | Experts |
|---------|--|
| 5 | Dr. Annemieke Smit Mr. David Jamieson |

Joensuu is blessed with significant natural heritage, and has recognised its value by seeking to conserve much of it with protective designations, and link it as part of a regional ecological network.

The application would have benefited from providing more information on the city's key biodiversity and sustainable land use objectives and targets. Inclusion of information on targets for accessible green space and how they aim to decrease GHG's from land use would have considerably improved the application.

In addition, the application could be improved by demonstrating coherence between vision, approach and results by providing a clear vision on why nature and sustainable land use are important for this city and how an improvement of the current situation will be improved by the planned or existing projects. Furthermore, including information on how projects result in higher benefits from the urban and surrounding green areas or an increased level of biodiversity would have been useful.

4.2.4.4 Air Quality and Noise

| Ranking | Experts |
|---------|--|
| 4 | Prof. Dr. Diogo Alarcão Mr. Joan Marc Craviotto Arnau |

The city explains that traffic, energy production and industry are the main polluters in the city, mainly in terms of NO₂ and PM. It would be interesting in future assessments to differentiate the two pollutants because the origins may differ.

When it comes to monitoring, the application mentions one site at the city centre and a mobile monitoring station. Some charts are presented of an air quality index: PM₁₀, PM_{2.5} and NO₂ but without a proper evaluation period. They seem to be present as monitoring campaigns rather than for the purpose of capturing continuous measurements. The city publishes air quality information on the city's website which is seen as a good measure.

The use of an air quality index is very welcome as it helps citizens to understand the current levels of air pollution. There is also some information about air quality determinants, like sand resuspension in spring (typical problem of a region with snowy winters).

In terms of noise, it is reported that the major source of noise is derived from road traffic, but temporary noisy activities such as concerts, sport events and other events at the market square are also mentioned. The city has a permanent noise monitoring station located in the city centre, but no data is provided. The municipality's environmental protection unit measures noise levels at some concert places and the recorded data is shared with the event organisers, which is very positive. In addition, noise permissions concerning open-air musical events are available on the city's website. Bulletins are also sent to citizens regarding noise issues.

Some noise reduction measures are reported such as land use planning, noise barriers for new sites, road traffic speed reductions, aircraft optimised flight procedures and façade acoustic insulation.

The city claims that there are many quiet zones in rural, forest and urban recreational areas, but quiet areas, as such, are not formally delimited and classified. This could be a future work topic for Joensuu.

4.2.4.5 Waste and Circular Economy

| Ranking | Experts |
|---------|---|
| 5 | Mr. Warren Phelan Mr. Marc Okhuijsen |

The current waste management system in Joensuu is well described. Regarding waste treatment, the city appears to be dependent on landfill and energy recovery of waste materials. Recycling is in place in the city; however, it is not as high a priority as other forms of treatment.

The city provided evidence of the circular economy measures it has in place including a regional board which aims to enhance waste management and improve the management of materials. The city has established a new plan for collecting wastes from housing owned by the city and a review is underway to make improvements. Furthermore, the city is implementing the national circular economy plan.

Overall, the city provided a quality response; however, some additional data could have been included in order to fully address the question, for example, more information on stakeholder activities.

4.2.4.6 Water

| Ranking | Experts |
|---------|---|
| 15 | Mr. Christof Mainz Ms. Birgit Georgi |

The application provided some details on issues with the lake water quality, groundwater and water services.

Overall Joensuu provided a very poor response in relation to this topic area and did not provide sufficient detail to address the questions in the application form. No information is provided in relation to compliance with UWWTD, Drinking Water Directive, and the Water Framework Directive. Information is also lacking with regards to metering, drinking water quality, waste water treatment, compliance with any legislation and connection rates.

The strategic approach of this city is not presented and it is unclear what the city's goals and objectives are in relation to water and waste water management. There are also no specific actions in relation to citizen engagement and awareness presented.

4.2.5 Mechelen Technical Assessment

4.2.5.1 Climate Change and Energy Performance

| Ranking | Experts |
|---------|---|
| 6 | Dr. Matthew Kennedy Prof. Dr. Manfred Fischedick |

By joining the Covenant of Mayors in 2012 (SEAP from 2013), Mechelen committed itself to reducing greenhouse gas emissions by 20% until 2020. A Baseline Emissions Inventory was carried out in 2011. Emissions could be reduced only for mobility (2011-2015) while in other sectors such as households, tertiary sector and industry it was found that emissions increased.

Mechelen presents a significant suite of measures within the SEAP which includes 54 measures and responsibilities across each sector. The impact, actions and achievements represent significant progress. However, it would have been interesting to consider measures relating to the companies charter and impact of the local energy bureau for companies.

Mechelen presented a well structured awareness and participation campaign, 'Mechelen Klimaatneutraal', that uses the 'MOBI model' which stands for motivate, support, exemplify and reward. For future applications, the city should adhere to the word count allowed to ensure a full assessment is possible.

4.2.5.2 Sustainable Urban Mobility

| Ranking | Experts |
|---------|--------------------------------------|
| 1 | Dr. Ian Skinner Mr. Alex Minshull |

Mechelen outlined a clear set of principles that guide the development of its transport policy. It has developed a circulation plan, traffic restrictions and parking policies to protect the historic city centre, including the provision of car free and freight restricted areas. It is also supporting alternatives with a free shuttle service on Saturdays and initiatives to promote cycle logistics.

The city demonstrates a wide range of measures on all aspects of sustainable mobility, which is excellent. Its future plans are being developed with adjoining municipalities and include promoting cycling, walking and public transport, restricting car use, investing in an electric vehicle fleet, developing a low emission zone, promoting shared transport and consolidating urban freight and promoting cargo-bicycles to distribute goods. However, it would have been helpful for the status of these plans to be more clearly explained in the application.

Mechelen undertakes a wide range of measures to involve its citizens, including information on changes to the transport system, neighbourhood surveys and extensions to the car free zones.

4.2.5.3 Nature, Biodiversity and Sustainable Land Use

| Ranking | Experts |
|---------|--|
| 1 | Dr. Annemieke Smit Mr. David Jamieson |

Mechelen outlined how it is linking citizens to biodiversity through its 'Nature In and Around Mechelen' strategy. The strategy appears to be an excellent way of bringing the city's various nature, green space and outdoor recreation policies together.

The city's response would have benefited further by outlining more clearly its key objectives and targets within its nature, biodiversity and sustainable land use strategies.

The relationship with the NGO, Natuurpunt, and Mechelen's Riverland is paying dividends and demonstrates how close collaboration with specialist partners can benefit the municipality.

4.2.5.4 Air Quality and Noise

| Ranking | Experts |
|---------|--|
| 2 | Prof. Dr. Diogo Alarcão Mr. Joan Marc Craviotto Arnau |

Air monitoring in Mechelen is undertaken by the Flemish Environment Department. It is noted that air quality levels are better than the average. Emissions have decreased between 2012 and 2014 and this is attributable to energy efficiency improvements in the household sector. Some air quality data would have been useful to support the air quality assessment presented by the city. The car free zone and the promotion of active and electric mobility are ambitious measures to tackle air pollution with several good outcomes.

In relation to noise, strategic noise maps depicting the noise situation for 2011 were produced by the Flemish Government, these maps showing that main source of noise are major roads and railways that pass through the municipal territory. However, the city recognises that strong local data is lacking.

Noise and air pollution reduction measures that have been implemented by the city comprises the implementation of a car free zone in city centre, with plans to extend this zone to a low-emission zone (LEZ) for the entire territory in 2018/2019. Other notable measures implemented include speed reductions, the promotion of soft modes of transportation, the implementation of a demand-driven policy for public e-charging stations, a municipal e-vehicles fleet and the participation in European projects to accelerate the renewal of residential installations.

The city has also put in place some policies concerning entertainment noise: a party noise charter (2017) that was produced in conjunction with event organisers, citizens and the hospitality sector and a hearing protection programme for large musical events (and other events) whereby hearing protectors are freely distributed to attendees together with relevant information on hearing loss due to exposure to high sound/noise levels. There is also a legislative framework in order to address and sanction all noisy activities from 10 pm till 6 am.

In September 2017, Mechelen City Council approved a motion for noise mapping and to protect quiet areas in the municipality's territory (luwteplekken), and in collaboration with citizens a 'silence atlas' is being created and made available to the whole population, which is noteworthy.

An interesting good practice presented by the city is the project Groundtruth 2.0. This project establishes a citizen observatory that includes the citizens of Mechelen and the Environmental Council (that has an advisory role to the city) in analysing and delineating strategies related to air and noise pollution. In the second phase measurements are executed by inhabitants and schools. This project eventually will lead to the formulation of a strategy, a web portal and local measures to address air quality and noise. Additional information about this project would have been welcomed.

Referring to citizen participation, the application explains that the noise and air quality strategy has been developed jointly with citizens, which is a very collaborative method and involves city management personnel.

4.2.5.5 Waste and Circular Economy

| Ranking | Experts |
|---------|---|
| 1 | Mr. Warren Phelan Mr. Marc Okhuijsen |

Mechelen's waste management system is well described with a good level of detail. The city has a comprehensive and integrated system and approach with activities representing all tiers of the hierarchy. The city provides good evidence of reuse and prevention measures active in the city.

The city demonstrates how circular economy activities are integrated into the overall approach in the management of wastes and resources. The 'Ecoso' and 'CEnario' projects are good examples of this approach. The city's pilot projects on public procurement and the citizen materials sharing application show a proactive city focused on progress and transitioning to a more circular approach.

The city demonstrates a high level of participatory approach with good examples provided. Some more examples of public awareness events would have enhanced application further but overall the city submitted a high quality application and has a high performing system.

4.2.5.6 Water

| Ranking | Experts |
|---------|---|
| 2 | Mr. Christof Mainz Ms. Birgit Georgi |

The city presented a good overall picture of the water and waste water management systems with a very high level of waste water treatment undertaken. Significant effort has been made in relation to water consumption and losses. The city is also committed to the prevention of droughts and flooding with natural infiltration, green roofs etc. It is notable the plans the city has regarding the re-opening of seven of the old city canals.

However, the application would have benefited from more detailed data and some explanations of the data presented, such as why water consumption has increased in 2015. There is also no information presented on the Water Framework Directive, metering and drinking water.

The city presents a range of awareness activities related to communicating the role of water, connecting water to leisure activities. It is also notable how the communication of drought prevention to citizens is communicated through the city's website and social media.

APPENDIX A

APPLICATION FORM FOR THE EUROPEAN GREEN LEAF AWARD 2019



Application Form for the European Green Leaf Award 2019

Section A

CITY INTRODUCTION & CONTEXT

Use this section to provide an overview of the city and provide context to the items that are addressed in Sections B and C.

Give an overview of your city including its population, surface area, population density, geographical location, some historical and economic background (e.g. GDP, €/capita), notable features and any other factors which have influenced or will influence the environment of the city and its surrounding area.

What are the key environmental challenges the city faces (or has addressed in the recent past)? Make reference to the city's infrastructure (transport, water and drainage, buildings, parks etc.). If appropriate, mention any significant legal proceedings on environmental issues.

Please describe the services provided by the municipality relevant to the Topic Areas in Section B. The aim of this section is to assist in understanding the responsibilities of the city, its controls and the ability of the city to act and effect change.

Please include an up to date map of the city and a maximum of one additional image i.e. a maximum of two images in total including the map. The map should show the layout of urban areas, geographical and other features, across the city.

(max. 600 words and two graphics or images)



Application Form for the European Green Leaf Award 2019

Section B: Topic areas

- Please note you must complete ALL topic areas in this Section.
- Section B is used in the evaluation/ranking process.

Topic Area 1: Climate Change and Energy Performance

Note: Your answers to sub-sections 1a and b together must not exceed a total of 600 and 300 words respectively (i.e. 600 word limit for section a and 300 word limit for section b). A total of six graphics, images or tables may be included in Topic Area 1.

Note: It is important to address Climate Change and Energy Performance equally in the response.

1a – Current Situation and Strategic Approach

Please outline the present situation, e.g. the relevant infrastructure and systems that are in place. The aim of this section is to show how the present situation has been achieved and what kind of measures or programmes have been implemented so far. You may include information on any relevant disadvantages or constraints resulting from historical, geographical and/or socio-economic factors. Please describe evolutions that have taken place over the last five to ten years. Comment on which measures have been most effective.

Please add relevant background information, performance statistics, dedicated budgets or innovative forms of financing and key outcomes (e.g. greenhouse gas emissions, adaptation to climate change, renewable energy, energy efficiency etc.). Highlight the need for the project/measure/initiative and any achieved or expected benefits from its implementation.

Please also state clearly what year the data provided relates to.

If data or figures are not available at a local level please state this in the application.

Please outline your city's overall approach to improve Climate Change and Energy Performance.

Please include:

- Principles that have governed the development of the plan/programme;
- Key Objectives and Targets (e.g. estimated reduction in greenhouse gas emissions; measures to increase resilience to the impacts of climate change);
- If available, please compare the specified targets of greenhouse gas emissions or renewable and energy efficiency for e.g. 2020 with past trends.

Where plans/programmes have been developed at a level above the city level i.e. regional, national etc. it is important to provide information on the plans/programmes and how they impact on the city and/or are implemented at the city level.



Application Form for the European Green Leaf Award 2019

Word Limit - 600 Words

1b – Citizen Participation and Public Awareness

Please mention any public awareness, citizen engagement or stakeholder participation undertaken in your city in the areas of Climate Change and Energy Performance.

Focus on campaigns, events or activities such as:

- (a) Public awareness: awareness raising activities including advertising and media, campaigns and events;
- (b) Stakeholder/citizen participation: public consultation, school education, open dialogue, stakeholder groups/forums, working groups, implementation partnerships, joint ventures with local businesses, etc.

Where possible show the connection between this section and the previous section i.e. 1b and 1a.

Please identify the target audience and any achieved or expected benefits.

Word Limit 300 Words



Application Form for the European Green Leaf Award 2019

Topic Area 2: Sustainable Urban Mobility

Note: Your answers to sub-sections 2a and 2b together must not exceed a total of 600 and 300 words respectively (i.e. 600 word limit for section a and 300 word limit for section b). A total of six graphics, images or tables may be included in Topic Area 2.

2a – Current Situation and Strategic Approach

Please outline the current situation, e.g. existing infrastructure and the measures that have been put in place to implement your city's Mobility Plans and Programmes. The aim of this section is to make clear how the present situation has been achieved. You may include information on any relevant disadvantages or constraints resulting from historical, geographical and/or socio-economic factors. Please describe evolutions that have taken place over the last five to ten years. Comment on which measures have been most effective.

Please mention relevant background information, performance statistics, dedicated budgets or innovative forms of financing and key outcomes. Highlight why the measures were needed and any achievements and expected benefits from their implementation.

Please also state clearly what year the data provided relates to.

If data or figures are not available at a local level please state this in the application.

Please outline your city's overall approach to Mobility.

Please include:

- Background (include principles that have governed the development of the plan/programme);
- Key objectives and targets (e.g. % increase cycling, % reduction city automobile congestion etc.).

Where plans/programmes have been developed at a level above the city level i.e. regional, national etc. it is important to provide information on the plans/programmes and how they impact on the city and/or are implemented at the city level.

Word Limit - 600 Words

2b – Citizen Participation and Public Awareness

Please mention any public awareness, citizen engagement or stakeholder participation undertaken in your city in the area of Mobility.

Focus on campaigns, events or activities such as:

- (a) Public Awareness: awareness raising activities including advertising and media, campaigns and events;
- (b) Stakeholder/Citizens Participation and engagement: public consultation, school education, open dialogue, stakeholder groups/forums, working groups, implementation partnerships,



Application Form for the European Green Leaf Award 2019

joint ventures with local businesses etc.

Please identify the target audience and any achieved or expected benefits.

Where possible show the connection between this section and the previous section i.e. 2b and 2a.

Word Limit 300 Words



Application Form for the European Green Leaf Award 2019

Topic Area 3: Nature, Biodiversity and Sustainable Land Use

Note: Your answers to sub-sections 3a and 3b together must not exceed a total of 600 and 300 words respectively (i.e. 600 word limit for section a and 300 word limit for section b). A total of six graphics, images or tables may be included in Topic Area 3.

Note: It is important to address Nature, Biodiversity and Sustainable Land Use equally in the response.

3a – Current Situation and Strategic Approach

Please outline the present situation, e.g. the relevant projects, infrastructure and systems that are put in place to implement your city's Nature, Biodiversity and Sustainable Land Use Plans and Programmes. The aim of this section is also to make clear how the present situation has been achieved. You may include information on any relevant disadvantages or constraints resulting from historical, geographical and/or socio-economic factors. Please describe evolutions that have taken place over the last five to ten years. Comment on which measures have been most effective.

Please mention any relevant background information, performance statistics, dedicated budgets or innovative forms of financing and known outcomes. Highlight why the project/measure/initiative is needed and any achieved or expected benefits from its implementation.

If data or figures are not available at a local level please state this in the application.

Please outline your city's overall approach to Nature, Biodiversity and Sustainable Land Use.

Please include:

- Background (include principles that have governed the development of the plan/programme);
- Key Objectives and Targets (these may include: green infrastructure, increase of parkland, green areas, designation of sites of special interest for biodiversity, new water areas, connectivity of green and blue areas, integrated planning, managing city expansion and growth, dealing with contaminated land etc.);
- Where possible, please mention the percentage of the population living within 300 metres of a green area open to the public and percentage of green areas open to the public in the city.

Where plans/programmes have been developed at a level above the city level i.e. regional, national etc. it is important to provide information on the plans/programmes and how they impact on the city and/or are implemented at the city level.

Word Limit - 600 Words

3b – Citizen Participation and Public Awareness

Please mention any public awareness, citizen engagement or stakeholder participation campaigns undertaken in your city in the areas of Nature, Biodiversity and Sustainable Land Use.



Application Form for the European Green Leaf Award 2019

Focus on campaigns, events or activities such as:

- (a) Public awareness: awareness-raising activities including advertising and media, campaigns and events.
- (b) Stakeholder/citizens participation: public consultation, school education, open dialogue, stakeholder groups/forums, working groups, implementation partnerships, joint ventures with local businesses etc.

Where possible show the connection between this section and the previous section i.e. 3b and 3a.

Please identify the target audience and any achieved or expected benefits.

Word Limit 300 Words



Application Form for the European Green Leaf Award 2019

Topic Area 4: Air Quality and Noise

Note: Your answers to sub-sections 4a and 4b together must not exceed a total of 600 and 300 words respectively (i.e. 600 word limit for section a and 300 word limit for section b). A total of six graphics, images or tables may be included in Topic Area 4.

Note: It is important to address Air Quality and Noise equally in the response.

4a – Current Situation and Strategic Approach

Please outline the current situation regarding Air Quality and Noise and mention related measures, projects and initiatives put in place. Information on any relevant disadvantages or constraints resulting from historical, geographical and/or socio-economic factors may be included. Please describe evolutions that have taken place over the last five to ten years. Comment on which measures have been most effective.

Please support information by providing relevant background information, including any performance statistics, dedicated budgets or innovative forms of financing and key outcomes. Highlight why the project/measure/initiative is needed and any achieved or expected benefits from its implementation.

Specific measures such as air pollution reducing actions and noise management tools such as noise maps, acoustic zoning, noise exposure data, management of quiet areas etc. are of interest.

If data or figures are not available at a local level please state this in the application.

Describe the short and long term objectives for Air Quality and Noise and the proposed approach for their achievement. Emphasise to what extent plans are supported by commitments, budget allocations, and monitoring and performance evaluation schemes.

Please include:

- Background (include principles that have governed the development of the plan/programme);
- Key objectives and targets (e.g. city's contribution towards reducing NO₂, PM₁₀ and PM_{2.5} concentrations, noise action plans, foreseen reduction in the share of population exposed to noise, actions to maintain, extend, or improve urban quiet areas etc.);
- Information on the air quality in relation to the EU air quality standards (e.g. days /per year) and EU noise exposure standards.

Where plans/programmes have been developed at a level above the city level i.e. regional, national etc. it is important to provide information on the plans/programmes and how they impact on the city and/or are implemented at the city level.

Word Limit - 600 Words



Application Form for the European Green Leaf Award 2019

4b – Citizen Participation and Public Awareness

Please mention any public awareness campaigns, citizen engagement or stakeholder participation undertaken in your city related to Air Quality and Noise.

Focus on campaigns events or activities such as:

- (a) Public awareness: awareness raising activities including advertising and media, campaigns and events;
- (b) Stakeholder/citizens participation: public consultation, school education, open dialogue, stakeholder groups/forums, working groups, implementation partnerships, joint ventures with local businesses etc.

Where possible show the connection between this section and the previous section i.e. 4b and 4a.

Please mention the target audience and any achieved or expected benefits.

Word Limit 300 Words



Application Form for the European Green Leaf Award 2019

Topic Area 5: Waste and Circular Economy

Note: Your answers to sub-sections 5a and 5b together must not exceed a total of 600 and 300 words respectively (i.e. 600 word limit for section a and 300 word limit for section b). A total of six graphics, images or tables may be included in Topic Area 5.

Note: It is important to address Waste Management and Circular Economy within the response.

5a – Current Situation and Strategic Approach

- a) Outline your city's current waste management system describing the collection and treatment infrastructure in place. In your response include a brief statement on the evolution of the system focusing on progress in the areas of collection, recycling and diverting waste away from landfill. Include details of any measures currently being implemented which are supporting the transition to a circular economy such as material reuse, repair, green public procurement or industrial symbiosis. Data which demonstrates and supports the progress made should be included in the response.
- b) Briefly describe your city's strategy or plan for the management of waste and the transition to a circular economy providing information on the key objectives and targets. Include details of how your waste plan/strategy interacts with other city plans/programme.

If data or figures are not available at a local level please state this in the application.

Where plans/programmes have been developed at a level above the city level i.e. regional, national etc. it is important to provide information on the plans/programmes and how they impact on the city and/or are implemented at the city level.

Word Limit - 600 Words

5b – Citizen Participation and Public Awareness

Describe any public awareness, citizen engagement or stakeholder participation undertaken in your city, in the waste and circular economy area. Focus on:

- (a) Public awareness activities including advertising and media, campaigns and events;
- (b) Stakeholder activities including citizens participation: public consultation, school education, forums, working groups, engagements with local businesses etc.

Where possible show the connection between this section and the previous section i.e. 5b and 5a. Please mention the target audience and any achieved or expected benefits.

Word Limit 300 Words



Application Form for the European Green Leaf Award 2019

Topic Area 6: Water

Note: Your answers to sub-sections 6a and 6b together must not exceed a total of 600 and 300 words respectively (i.e. 600 word limit for section a and 300 word limit for section b). A total of six graphics, images or tables may be included in Topic Area 6.

Note: It is important to address Water and Wastewater Management equally in the response.

6a – Current Situation and Strategic Approach

Please outline the present situation, e.g. the relevant infrastructure and systems that are put in place to implement your city's Water and Wastewater Management Plans and Programmes. The aim of this section is to make clear how the present situation has been achieved. You may include information on any relevant disadvantages or constraints resulting from historical, geographical and/or socio-economic factors. Please describe evolutions that have taken place over the last five to ten years. Comment on which measures have been most effective.

Please provide any relevant performance statistics useful to describe the present including:

- Urban and domestic water consumption per capita;
- Proportion (%) of water losses from the distribution network;
- Proportion (%) of urban drinking water supply subject to water metering;
- Proportion (%) of population connected to the wastewater collecting system and wastewater treatment plants;
- Ecological status of water bodies receiving the city effluent;
- Water reuse and sludge management.

Please state the status of the city in relation to compliance with the requirements of the UWWTD. Highlight why the project/measure/initiative is needed and any achieved or expected benefits from its implementation.

If data or figures are not available at a local level please state this in the application.

Please mention any plans and/or programmes for improved Water and Wastewater Management.

Please include:

- Define the priorities in water and wastewater management plans;
- Principles that have governed the development of the plan/programme;
- Key objectives and targets (describe/specify measures to be implemented);
- Where possible please outline the objectives and targets set/proposed and compare against the figures provided in section 6a describing the present situation (i.e. expected improvements in water consumption, water losses, etc.).

Where plans/programmes have been developed at a level above the city level i.e. regional, national etc., it is important to provide information on the plans/programmes and how they impact on the city and/or are implemented at the city level.



Application Form for the European Green Leaf Award 2019

Word Limit - 600 Words

6b – Citizen Participation and Public Awareness

Please mention any public awareness, citizen engagement or stakeholder participation undertaken in your city in the areas of Water and Wastewater Management.

Focus on campaigns, events or activities such as:

- (a) Public awareness: awareness raising activities including advertising and media, campaigns and events;
- (b) Stakeholder/citizens participation: public consultation, school education, open dialogue, stakeholder groups/forums, working groups, implementation partnerships, joint ventures with local businesses etc.

Where possible show the connection between this section and the previous section i.e. 6b and 6a.

Please mention the target audience and any achieved or expected benefits.

Word Limit 300 Words



Application Form for the European Green Leaf Award 2019

Section C

Good Practices

- Please note that the Good Practice section is not taken into consideration during the evaluation process.
- This section is for additional information only and will help in the compilation of any European Green Leaf 2019 Good Practice Factsheets or Case Studies, as appropriate.
- Please note that at least one good practice must be completed.

Note: The descriptions of your good practices must not exceed a total of 450 words and nine graphics, images or tables.

Please summarise up to three good practices that demonstrate how your city is improving its environmental record and is committed to generating new jobs linked with producing a better environment.

The Good Practices nominated should already be briefly mentioned in the corresponding topic areas in Section B of the application form. Please describe the proposed Good Practice in more detail here.

Please also explain why you have selected the good practice described.

Good Practice 1

Word Limit 150 words & 3 graphics, tables etc

Topic area:

Good Practice 2

Word Limit 150 words & 3 graphics, tables etc

Topic area:

Good Practice 3

Word Limit 150 words & 3 graphics, tables etc

Topic area:



Application Form for the European Green Leaf Award 2019

Checklist

Did you complete Section A?

Yes No

Did you complete Section B?

Yes No

Topic areas:

- | | | |
|-------------|-----|----|
| 1. a and b? | Yes | No |
| 2. a and b? | Yes | No |
| 3. a and b? | Yes | No |
| 4. a and b? | Yes | No |
| 5. a and b? | Yes | No |
| 6. a and b? | Yes | No |

Did you complete Section C? Yes No

At least one good practice must be completed.

A response must be included for all of the above. If all of the items are not completed the application will be invalid.

Did you adhere to the word limit for all sections?

Yes No

Did you adhere to the image limit for all sections?

Yes No

APPENDIX B

EXPERT PANEL PROFILES

Topic Area No. 1 – Climate Change & Energy Performance

Expert: Prof. Dr. Manfred Fishedick, Vice President of the Wuppertal Institute and Professor at the Schumpeter School of Business and Economics, Wuppertal, Germany



Manfred Fishedick is the Vice President of the Wuppertal Institute, an international well known think tank investigating transformation processes to a sustainable development. With particular reference to the areas of climate, energy, resources and mobility, the institute is looking for technical, infrastructure and social innovations supporting the transition to sustainable structures. Special focus is given on the transition process of the energy system and cities.

Manfred is also leading the research group 'Future Energy and Mobility Structures' of the Wuppertal Institute and is professor at the Schumpeter School of Business and Economics at the University of Wuppertal. He has been working for more than 20 years in the field of energy system analysis (including sustainable urban infrastructure analysis).

He is adviser to the German government as well as the Bundesland of North Rhine-Westphalia, author of various publications and peer reviewed articles. Manfred is coordinating lead author for the IPCC, member of several national and international scientific boards and advisory councils.

Manfred has been intensively working in the context of sustainable urban infrastructures and energy efficient cities. His project experience comprises among others the development of long term concepts for the German cities of Munich and Düsseldorf and the Chinese city of Wuxi.

For the Innovation City Ruhr Bottrop, which is kind of a real-term laboratory in the Ruhr Valley aiming for an emission reduction by 50% between 2010 and 2020 he is leading the scientific accompaniment process. In addition he was appointed as member of the Scientific International Advisory Council of the mayor of the city of Seoul. For the Innovation City Ruhr Bottrop, which is kind of a real-term laboratory in the Ruhr Valley aiming for an emission reduction by 50% between 2010 and 2020 he is leading the scientific accompaniment process. In addition he was appointed as member of the Scientific International Advisory Council of the Mayor of the City of Seoul.

Expert: Dr. Matthew Kennedy, Head of Strategy and Business, International Energy Research Centre, Ireland



Dr. Matt Kennedy is Head of Strategy and Business in the International Energy Research Centre, an Irish Government supported energy research centre. He was previously National Delegate (Energy) for Horizon 2020 for Ireland and led Energy R&D for the Irish Government's Sustainable Energy Authority of Ireland. Matt held the position of Special Advisor on energy and climate issues.

Matt was lead EU Negotiator for energy technology transfer at the UNFCCC's international climate change negotiations (COP21) and was a member of the UNFCCC's Technology Executive Committee (TEC) responsible for providing mitigation and adaptation technology policy advice to the UN Conference of the Parties.

Matt was Chair of UNEP's Climate Technology Centre and Network, Copenhagen, Chair of the IEA's Renewable Energy Technology Deployment Technology Collaboration Programme, Paris, and the Chair of the Programme Board of the Renewable Energy and Energy Efficiency Partnership (REEEP), Vienna.

Matt holds a PhD from the School of Engineering of Trinity College Dublin, and Masters' degrees from NUI Galway and University College Dublin.

Topic Area No. 2 – Sustainable Urban Mobility

Expert: Dr. Ian Skinner, Director of Transport and Environmental Policy Research, Crowborough, London, United Kingdom

Ian Skinner is an independent researcher and consultant with over 20 years of experience in undertaking research and consultancy projects focusing on the environmental impacts of transport.

His PhD from University College London was on the implementation of sustainable transport policies in South East England and he has also undertaken research at the University of Kent on the marginal cost pricing of transport.



Since his PhD, Ian has worked at the Institute for European Environmental Policy (IEEP) and AEA (now Ricardo Energy & Environment) before co-founding TEPR in 2009. Ian's work focuses on the implementation and evaluation of sustainable transport policies for national and international organisations. Much of Ian's work has been undertaken at the European level for the European Commission, which has involved impact assessments and evaluations of various EU transport and environmental policies.

Ian has also drafted reports for UNEP, WHO and UNECE in the context of THE PEP (Transport, Health and Environment Pan European Programme) on jobs in sustainable transport, the most recent of which was presented at the 'Environment for Europe' Ministerial Conference in Batumi, Georgia in June 2016.

Expert: Mr. Alex Minshull, Innovation and Sustainability Service, Bristol City Council, Bristol, United Kingdom

Alex Minshull is based in Bristol, United Kingdom, where he leads Bristol City Council's Innovation and Sustainability Service. His responsibilities include the City Council's smart city, climate change and air quality programmes.

He studied for his environmental science degree at Southampton University and for his master's degree in the energy and environmental aspects of architecture at the Centre for Alternative Technology.



Alex has worked as sustainability professional for over 20 years, in the private and public sectors, as well as volunteering with environmental NGOs.

At the Environment Agency (England) he produced integrated river catchment management plans and advised on urban development to achieve environmental protection within the Midlands region

of England. In later years at the Environment Agency, and then at Bristol City Council, he implemented new environmental management systems, secured ISO14001 and Eco Management and Audit Scheme accreditation, and delivered significant improvements in environmental performance of these organisations.

Since 2006 his role has focused on the sustainable development of the city of Bristol and he has managed professionals working on a range of sustainability issues including, urban development, water, food, energy, electric mobility, climate change and air quality. He has worked to create effective partnerships between the city council and other organisations, including universities, businesses and environmental NGO's, bringing together their different capabilities to create a more sustainable city.

He has been involved with the European Green Capital Award since it began. He led Bristol's bids to become European Green Capital, being shortlisted twice and securing the Award for the year of 2015. Alex is passionate about the role of cities in leading the transition to a sustainable world and in cities working together to accelerate the transition. He has shared the learnings from Bristol with many cities across Europe, and across the globe.

Topic Area No. 3 – Nature, Biodiversity and Sustainable Land Use

Expert: Dr. Annemieke Smit, Secretary to the Board of Wageningen Environmental Research (part of Wageningen University and Research), The Netherlands



Annemieke Smit is a Physical Geographer with a PhD in Ecology. In 2001 she started working at Alterra (currently known as Wageningen Environmental Research) with a focus on Sustainable Soil and Land Use. She is an expert on sustainable land use management, both in urban, peri-urban and rural areas. She was one of the core team member of the Dutch Community of Practice CoP Sustainable land use management in spatial planning.

For four years she has been involved in the Alterra Green Cities programme, combining ecological, social and economic knowledge about multiple benefits of Green Infrastructure to the urban public and private stakeholders. As a Senior researcher on Nature Based Solution for Society she specialised in multi-stakeholder projects and is often involved in national input of EU assessments on sustainable development. She was part of the Dutch advisory board for the development of BREEAM-Community. For the last year, she has been Secretary to the Board of Wageningen Environmental Research.

With a focus on good and clear communication, Annemieke always keeps in mind that experts tend to go deep into the subject, while policy makers or non-scientific partners want to know about the impact of the research on their world, work and options.

Expert: Mr. David Jamieson, Parks & Green Space Manager, City of Edinburgh Council, and Director of Greenspace Scotland, United Kingdom



Based in Scotland, David is responsible for managing Edinburgh's public parks and greenspace network, including the city's nature reserves, woodlands, allotments, cemeteries and urban forest. As head of Edinburgh's Parks Service he has secured a number of green accolades for the city, including

winner of Britain in Bloom, Entente Florale Gold Medal, Eurocities, COSLA Gold Medal for Service Innovation & Improvement, the UK's Best Parks, Grounds and Horticultural Service Team award, and Fields in Trusts' Best UK Landowner.

Having led the development and implementation of Edinburgh's Nature Conservation Strategy, Urban Forestry Strategy, and Biodiversity Action Plan, he is presently directing the Edinburgh Living Landscape initiative in partnership with local universities, wildlife trust, botanic garden and green space trust. This is an innovative ecosystems approach to urban open space management, bringing nature closer to people's homes and work-places.

David is also Director and chair of the national charity, greenspace scotland, championing the value of green space to government and other decision-makers. As a chartered ecologist and environmental manager, with degrees from Stirling, Heriot-Watt and Huddersfield universities, his career has ranged across the public, academic and voluntary sectors. In recent years he has also been a director of Volunteer Development Scotland, BTCV Scotland, Oatridge Agricultural College and the Falkirk Environment Trust – promoting volunteering as a means for positive social and environmental change.

As well as being the Expert Panel member for Nature and Biodiversity, David is also a UK-level judge for Britain in Bloom and assessor for Green Flag Award, the two largest green award programmes in Great Britain. This gives him insight into current best practice in green space management, urban ecology, community-driven environmental initiatives, and sustainable development.

Topic Area No. 4 – Quality of Air & Noise

Expert: Prof. Dr. Diogo Alarcão, Principal Researcher and Professor in the scientific area of Acoustics at Instituto Superior Técnico - University of Lisbon and at the Polytechnic Institute of Lisbon, Portugal

Diogo studied Physics Engineering and holds a PhD in Acoustics from the University of Lisbon. He is a Chartered Acoustical Engineer, member of the Board of the Portuguese Acoustical Society and a Coordinator of the Executive Commission for the Acoustical Engineering Specialization of Ordem dos Engenheiros.



Diogo has been responsible for major projects in Environmental Acoustics and Noise Control, including Noise Mapping and Action Plans for large urban areas and for large transport infrastructures. He has also been responsible for several projects in the area of Room Acoustics and Virtual Acoustics including real time simulation and auralization of sound fields in enclosures.

Expert: Mr. Joan Marc Craviotto Arnau, Air Quality Project Manager at Barcelona City Council, Spain

Joan Marc Craviotto Arnau is an Air Quality Project Manager in Barcelona City Council, where he has worked since 2009. He has a degree in Industrial Engineering from the Polytechnic University of Catalonia and a postgraduate degree in Air Quality Management and Atmospheric Pollution Control from the University of Santiago de Chile.



In his role as Air Quality Project Manager for Barcelona City Council, Joan

Marc has gained extensive experience in managing air quality issues at city level. He undertakes air quality assessment and provides technical and policy advice in the field of air quality. He has also contributed to the development and assessment of the city's emission inventory and takes responsibility for the air quality modelling and monitoring for the City of Barcelona. Furthermore, Joan Marc steers the design and implementation of important measures to abate air pollution.

Joan Marc is a key contributor to the air quality public awareness campaign for the City of Barcelona. He is committed to sharing knowledge and raising awareness of environmental issues related to air quality. He engages with and promotes scientific research to increase the knowledge of the air quality dynamics in the city of Barcelona and is a regular speaker and attendant at air quality conferences, congresses and workshops.

Topic Area No. 5 – Waste and Circular Economy

Expert: Mr. Warren Phelan, Technical Director, Waste, Energy & Environment, RPS Group Ltd., Dublin, Ireland

Warren Phelan is a Technical Director with the Waste, Energy and Environment Section of RPS. Warren is a Chartered Waste Manager and a Chartered Civil Engineer with a Masters degree in Engineering Science from University College Dublin.



He is also a Chartered Waste Manager and a member of the Chartered Institute of Waste Managers. For the last 12 years Warren has specialised in the waste and resource management sector, developing expertise in waste policy and legislation, strategy and planning, data analysis, online resource applications and technical assessments.

Recently Warren served as co-ordinator for the national waste committee set up by the Irish Department of the Environment, Community and Local Government and tasked with completing the evaluation of the regional waste management plans. He has also served as the project manager for the EPA National Waste Statistics Project and the national online reuse website FreeTrade Ireland.

Expert: Mr. Marc Okhuijsen, Co-founder and owner Zonnova BV, Director at Réciprocité, The Netherlands

Marc is an independent consultant specialising in the application of ecological principles to spatial and energy-related initiatives for urban sustainability, with a specific focus on social relationships between partners from different sectors.



Marc runs his own company, Réciprocité and works with several different consortia, including BOnDS, a cooperative organisation he co-founded in 2013, through which specialist SMEs work together for the sustainable development and resilience of the City of Breda, Netherlands, and its surroundings. With BOnDS Marc developed the largest privately-owned crowd-funded PV solar farm in the Netherlands. Nowadays BOnDS uses its expertise far beyond the city borders.

Marc has extensive experience developing and managing EU funded cooperation projects. These have included projects in the area of water management, suburban and rural land use, Maglev transport systems and social energy cooperatives. The most recent projects support circular economy approaches, involving symbiotic industrial energy systems in business innovation zones

and the use of bi-directional shared e-cars in different European cities. With BOnDs, Marc is also an assessor for the Green Destination Award and Quality Coast Award in the south of the Netherlands and for ECOXXI with FEE International.

Marc originally studied Biology and Physical and Social Geography at Fontys University. He started his career at the Dutch Ministry of Agriculture, Nature and Fisheries where he worked in the late 1980s on the creation and implementation of the national and provincial structure plans for the Primary Ecological Networks (EHS and GHS) and then on the integration of urban areas into these major networks.

In 1993 Marc was appointed City Ecologist, City of Breda, later becoming Sustainability Coordinator, Head of the Department of Habitat-Environment and then Senior Strategist - Sustainable City Development until 2014. Whilst at Breda he participated in a 10-year project on the urban regeneration of the Metropolitan Municipality of Ekurhuleni, South Africa, worked for several years with the French *Ministère de l'Écologie, de l'Énergie du Développement Durable et de l'Aménagement du Territoire* on the specification of the sustainable city in their 'Projet urbain' and was the main speaker at several conferences in Europe on practical approaches for sustainability in cities. Marc has an excellent overview of eco-innovation and green growth in the European context, having supported Breda's commitment to the Aalborg Charter and later initiatives such as the Covenant of Mayors.

Topic Area No. 6 – Water

Expert: Mr. Christof Mainz, Senior/First Officer at the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), Bonn, Germany

Christof Mainz is a civil engineer specialised in the environment and water sector. In May 2017 he commenced working at the Directorate for Water management at the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) in Bonn, Germany.



Prior to his current position, he worked at the European Commission in Brussels (2011-2017) and at the regional Ministry for the Environment in Düsseldorf, North Rhine-Westphalia (1998-2011). While working at the European Commission's Directorate General for the Environment (DG ENV), within the unit responsible for the Marine Environment and Water Industry, his main responsibilities were linked to several EU Water Industry Directives and their relationship with other EU legislation and policy areas, as well as supporting EU actions on innovation in the water sector, such as strategies for water reuse and resource efficiency. Prior to this, he worked in different regional administrations on technical checks and monitoring of urban waste water treatment plants.

Expert: Ms. Birgit Georgi, Urban and Adaptation Expert, Founder of 'Strong Cities in a Changing Climate', Germany

Birgit Georgi is a freelance expert in the areas of climate change adaptation, environment and integrated urban development. She has a deep and broad integrated understanding of the urban environment and sustainability due to her long-standing professional experience in these fields for more than 25 years.



From 2007-2017 she worked with the European Environment Agency, initially as Project Manager for urban issues, and, since 2011, on climate change adaptation relating to cities and transport. Among Birgit's key contributions to the sector are the assessment reports; 'Urban Adaptation to Climate Change in Europe' (2012 and 2016), 'Adaptation of transport to climate change in Europe' (2014), and 'Quality of life in Europe's Cities and towns'.

Birgit was responsible for developing the interactive map book on urban vulnerability, the Urban Adaptation Support Tool, and the numerous case studies related to cities of the European Climate Adaptation Platform Climate-ADAPT. She supported the Commission in developing the Mayors Adapt initiative and its integration into the Covenant of Mayors for Climate and Energy. Birgit also organised the annual networking and learning event: Open European Day Resilient Cities. She has worked as an adviser for several EU projects such as PLUREL, SUME, RESIN and is a frequent speaker and moderator at many events on her topics.

Birgit's experience is complemented by her work at the German Federal Environment Agency from 1991-2007 where she developed action plans and supervised projects in the fields of sustainability planning, biodiversity, environmental management and sustainable transport. The scope ranged from local demonstration projects in Germany and other European countries to international activities, e.g. technical support in the framework of the UN Convention for Biological Diversity and as national contact point for the UNECE Programme, THE PEP.