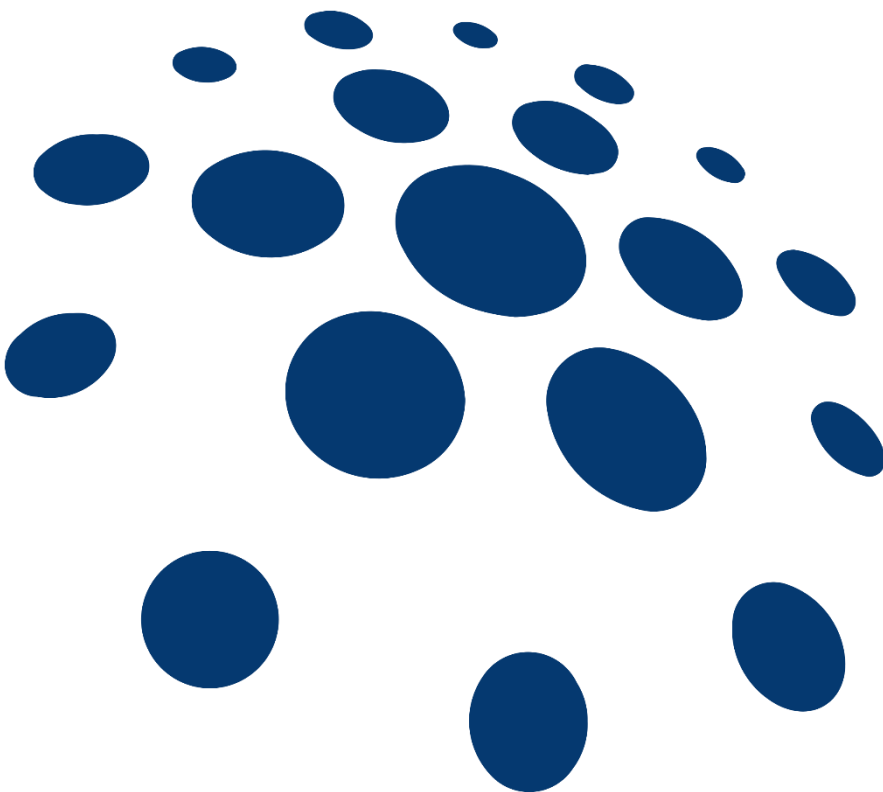


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Dissemination, Exploitation, and Communication Plan



Net4Cities Consortium



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Executive Summary

Net4Cities will adopt an integrated approach towards dissemination, exploitation, and communication (DEC). The strategies tailored to the proposed approach and corresponding plans will vary to fit the three different phases of the project. A crucial aspect of this strategy will be to enable effective exploitation, but more importantly, to maximize long term impacts, by ensuring sustainability of the developed products and applied approaches. The DEC plan will serve as management tool for defining and updating stakeholders and target audiences, and for continuous evaluation of the DEC progress. The Net4Cities transdisciplinary approach will ensure the development of outputs and results for and with stakeholders and the ability to explore options for uptake, adoption and implementation to maximize impact.

The communication and dissemination strategy taken in this project will focus on several key aims. These include engaging stakeholders at various levels of government and authority, promoting results and innovations of the project, empowering decision makers and citizens to act on air and noise pollution in their cities, and to position Net4Cities as a leading initiative in these regards. There are several key target groups for this work, including: 1) local authorities in cities and their airports and harbours; 2) the private sector; 3) the scientific community; and 4) policy-makers, citizens, and NGOs. There will be also several key tools by which much of this dissemination and communication will occur. These include the Net4Cities website, social media accounts, stakeholder workshops in partner cities, corporate visual identity, and the organization and participation in various events. In particular, the Net4Cities social media strategy involves the creation of LinkedIn, X, and Mastodon accounts by various aspects of the project can be shared. Educational content, updates on project milestones and deliverables, and engagement in public discussions will be among the activities Net4Cities will engage in using its social media accounts.

Communication will also occur on a regular basis with the External Expert Advisory Boards (Scientific Advisory Board and Stakeholder Advisory Board), as well as with external projects connected to the goals and actions of Net4Cities. These partners will aid in the dissemination of project results, primarily by further sharing them with their networks of stakeholders, and will provide suggestions for improving Net4Cities DEC strategies. Various tools will be used for tracking the impact of DEC in Net4Cities, including the use of Key Performance Indicators (KPIs), tracking mechanisms (e.g., on the website), soliciting feedback from stakeholders and EEABs, etc.

Exploitation of Net4Cities results will focus on maximizing long-term impact of products and results, including the potential for their commercialization. This includes: 1) improvement of monitoring networks in accordance with expected revisions to the Ambient Air Quality Directive (AAQD); 2) providing policy solutions for achieving targets under the European Zero Pollution Action Plan; and 3) achieving wider update of project results for external stakeholders beyond the scope of Net4Cities partner cities. Key Exploitable Results (KERs) include: 1) the Net4Cities Studio; 2) generating data on new and emerging pollutants; 3) reducing uncertainties in emissions inventories; and 4) developing and improving source apportionment tools. Additionally, key project instruments and sensors will be made available for purchase at depreciated cost, or provided at no extra cost to local partners in cities.

1. About this Document

This document provides information on the dissemination, exploitation, and communication (DEC) activities planned and already happening in Net4Cities. This includes activities during the course of the project, but also activities that will support the longer-term goals of the project that go beyond the end of the funding period. This first version builds upon the information provided in the Grant Agreement (GrA) by providing greater detail and more thoroughly fleshed out ideas. This DEC Plan will be revisited and revised multiple times over the course of the project.

As per the Horizon Europe guidelines¹, DEC activities are a legal obligation of the projects funded under Horizon Europe and the following brief definitions for dissemination, communication, and exploitation are provided here for context:

Dissemination: Make knowledge and publicly available free-of-charge.

Communication: Inform, promote and communicate activities and results.

Exploitation: Make concrete use of results for commercial, societal and political purposes.

2. Overview and links among WPs

Dissemination, exploitation and communication (T7.3) is part of WP7: Project Management and Communication, Dissemination and Exploitation. The GFZ-RIFS is the lead beneficiary of both WP7 and T7.3. All partners are involved in T7.3. Many of the DEC activities are linked to the activities of WP1: Co-creation: City monitoring network specification, implementation roadmap & stakeholder engagement, which are focused on the co-creation approach with target group 1a (Authorities in partner cities (those involved in the project), incl. ports, and airports; see Table 1). WP1 is led by GFZ-RIFS, but key tasks that have dissemination and communication components are led by VITO (T1.2: Local stakeholder workshops: scoping – partner cities) and NILU (T1.5: External stakeholder workshops: increasing EU-wide uptake). As part of WP1 and the tasks just mentioned, there will be regular meetings and workshops with these stakeholders from the beginning of the project through all three of the co-creation phases (see Figure 1), including long-term planning for continued use of results and infrastructure beyond the end of the project. The co-creation approach for T1.2 is harmonized centrally, but conducted locally, with each partner city having a city liaison in the consortium. In addition, as part of the WP1 activities, there are also webinars and events planned that will target a broader stakeholder audience across Europe. The activities of WP1 and WP7 related to dissemination and communication are coordinated in the steering committee (SC) where all WP and key task leads are members. In the DEC activities described in this plan will be focused on those in WP7, but implicitly includes some of what is happening in WP1 as well. The dissemination and communication activities central to WP7, such as the project website, social media, etc., will be led by the Coordinator (GFZ-RIFS) and coordinated with all project partners. Further details are provided in the following document.

¹ European Union, 2023. Communication, Dissemination & Exploitation: What is the difference and why they all matter. DOI: 10.2848/289075

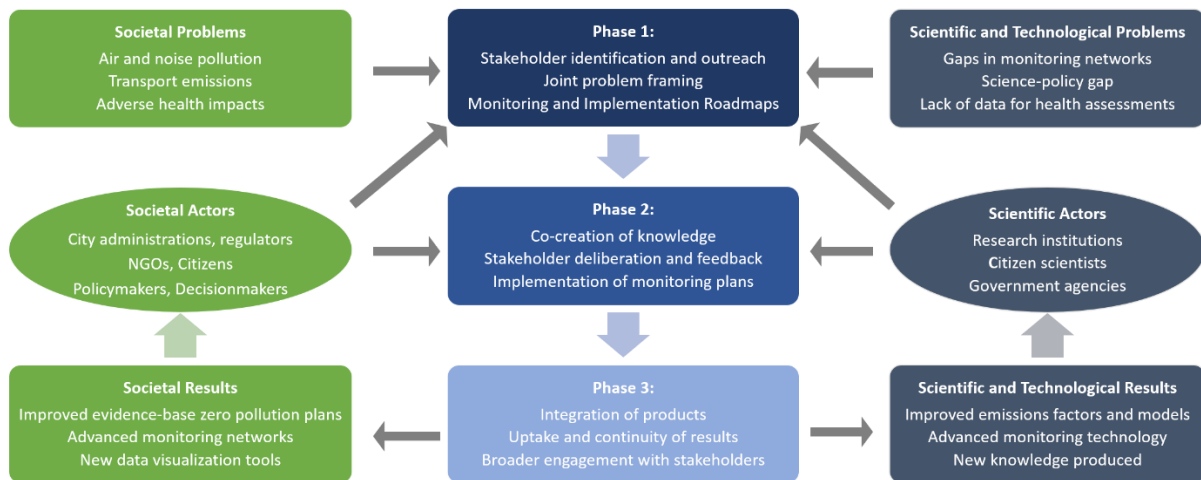


Figure 1. Three phases of the transdisciplinary co-creation process, including how actors, issues, and results fit in the concept, specified for Net4Cities.

3. Communication and Dissemination in Net4Cities

The main aims of the Net4Cities communication and dissemination strategy are:

- to engage stakeholders at local, regional, national, and/or EU level to foster collaboration and knowledge exchange,
- promote the project’s achievements, research findings, and innovations to a diversity of audiences,
- to empower decision-makers and citizens to take informed actions to improve air quality and reduce noise pollution in their cities,
- to position Net4Cities as a leading initiative driving positive change in urban environmental monitoring and management.

Core target groups have been defined for Net4Cities and are listed in Table 1, along with some of the key messages as examples and tools to be used.

Further to what is already in the table, an overall ‘Net4Cities message’ will be developed. This key message will be related to the objectives and planned project outputs and outcomes. This message will be created as part of the 2nd consortium meeting in early 2025.

3.1 Net4Cities Communication and Dissemination for Partner Cities

The core of the Net4Cities communication strategy for the partner cities is linked to the co-creative research approach. The details of this will not be discussed in this document, as they have been described previously in D1.1 Co-creation Guidelines. D1.1 includes a description of roles, meetings and workshops, who is involved, and timelines for this process. These activities are specifically related to TG1a, the partner cities.

Table 1. Target audience categories, including examples for the target groups (who?), objective(s) (why?), key messages, and tools for engagement (how?).

Target Audience Group Category	Specific Target Audience(s)	Objective(s)	Key Message Example	Tools
TG1a: Authorities in partner cities (those involved in the project), incl. ports, and airports	Air Quality and Noise Monitoring Network Authorities, Air quality planners, local municipality, Port, Airport & Rail authorities.	Uptake of Net4Cities outputs to achieve longer-term goals; mutual learning from implementation and collaboration that is transferrable to other cities.	Net4Cities provides guidance and support for achieving an advanced monitoring network and tailored and transferrable policy support.	Transdisciplinary engagement (co-creation), website + Net4Cities Studio, events, webinars, bilateral meetings, newsletters.
TG1b: Cities, incl. harbours and airports (beyond partner cities)	Other cities authorities, city networks, such as POLIS, Eurocities, ICLEI, Covenant of Mayors (EU), C40, Zero Pollution Stakeholder Platform.	Uptake of e.g., guidance for monitoring network advancement; policy-support outputs for achieving Zero Pollution Action Plans (ZPAPs).		Website + Net4Cities Studio, events, webinars, press releases, science-policy event, policy briefs, publications, bilateral meetings, newsletters.
TG2: Industry	SMEs, instrument manufacturers, developers of AQ/Noise/ Health apps, consultants working on AQ/noise.	Connect cities with industry to deliver the next generation of advanced monitoring networks.	Net4Cities has tools that reflect the state-of-the-art for monitoring and policy support, and a network of interested and engaged users.	Website, events, conferences, webinars, press releases, publications, direct contacts, newsletters.
TG3: Scientific community	FAIRMODE, JRC, WMO-GAW, WHO, ACTRIS, COPERT, GEIA, individual scientists, academia.	Exchange new knowledge on (emerging) pollutants and noise, source apportionment method advancements, emission inventory improvements.	Net4Cities provides the latest data and information on UFP, emerging pollutants, GHGs, and state-of-the-art source apportionment methods in cities related to transport sources.	Publications, website, social media, direct exchange via networks of participants, conferences and meetings, participation in expert bodies.
TG4: Policy- and decision-makers/ regulatory bodies	Local, national, and regional environment/ transport/ climate depts, environment ministries, EC (DGs), EEA.	Generate uptake for co-created evidence-based, policy solutions for effective air and noise reduction plans.	Net4Cities provides the latest data and information for policy support for air quality, noise, NBS, and emission inventories that is both tailored and transferrable.	Website + Net4Cities Studio, science-policy events, webinars, policy briefs, workshops, newsletters.
TG5: NGOs, Citizens	Citizen Associations, local, national and European NGOs (e.g., ICCT, T&E, EDF, European Environmental Bureau, AirClim, local and national NGOs), Science-policy boundary organizations (Geneva Science-Policy Interface, ProClim).	Generate support for co-created evidence-based, policy solutions for effective air and noise reduction plans.	Net4Cities provides the information on UFP, emerging pollutants, and GHGs to motivate citizens to contribute to reach Zero Pollution Goals and healthy living in cities.	Website + Net4Cities Studio, citizen science, public events (e.g., local Environment and Mobility Days initiatives), newsletters.

3.2 Communication and Dissemination Channels, Tools, and Means

Effective communication is essential for disseminating information, engaging stakeholders, and promoting the adoption of results/products output by Net4Cities. Utilizing a variety of communication channels, and communication and dissemination tools and means ensures that key messages reach target audiences in a timely and accessible manner. A number of different tools are foreseen to aid in the communication and dissemination activities of Net4Cities. A selection of these tools and the associated KPIs are listed below in Table 2. While some of these dissemination tools will be primarily developed and put in place by GFZ-RIFS (Coordinator; responsible for WP7), contributions to e.g., the social media posts, stakeholder workshops, publications, etc. are expected from all partners. These contributions will be coordinated by GFZ-RIFS. To retain an overview of publications and events where consortium members are involved, a publication log and events log have been created. The use of these is also outlined in the project handbook. Text below the table provides further detail pertaining to the tools and means being used in Net4Cities to address dissemination and communication, including information on responsibilities.

Table 2. Tools to support the dissemination and communication strategy.

Net4Cities Tools (WP; main responsible partner)	Description and Aim	KPIs
Website (WP7; GFZ-RIFS)	The Net4Cities website will be the primary information hub of the project, regularly updated with results, events, public deliverables, blog articles and other pertinent news, e.g., public project activities (e.g., webinars (MS1, MS4)) and achievements in partner cities or of similar ongoing projects. It will also act as a repository for project documents and publications. The Net4Cities Studio will initially be made available on the website (format yet to be determined). Additionally, a mailing list will be used to communicate the project results and activities with all interested stakeholders via regular e-newsletters; in the website plan, this element has already been integrated.	Number unique web visitors: 2000 Publications on website: 20 Blog articles: 2 per year Newsletter: min. 2 per year Average time on webpage: 20% increase per year Links to other webpages: 50 connections
Visual Identity (WP7; GFZ-RIFS)	A coherent identity for Net4Cities is in the process of being created. The main logo can be seen in Figure 2, along with some of the main elements of the colour palette and font. Further complete information will be assembled and shared internally. Infographics and visual maps will be created to easily visualize and communicate the most relevant outcomes generated during the project and be used, for example, as support material for the participatory workshops, as needed.	Templates for Microsoft Office products, such as PowerPoint and Publisher. Partner cities used Net4Cities logo in external presentations: 10+ Net4Cities logo appears as example in external webpages: 5+

<p>Social Media (WP7; GFZ-RIFS + All)</p>	<p>Social media campaigns will foster engagement with scientists and stakeholders, but will also be crucial to reach citizens, raise awareness about air and noise pollution and their connection to transport, as well as foster the transition to sustainable mobility and support for ZPAPs. A strong presence on social media platforms (e.g., X, LinkedIn) will foster broader dissemination of the project results.</p>	<p>No. of posts (views) in social media: 200 (100K+) No. followers on Twitter and LinkedIn: 1500 No. of references on other websites: 10 No. of newsletters: 8 No. of multimedia material downloads: 30</p>
<p>Stakeholder Workshops (WP1; NILU; VITO)</p>	<p>One large in-person stakeholder engagement workshop will be held in connection with a consortium meeting (MS22) to disseminate initial project results, gather feedback on prototype Net4Cities Studio products, and generate interest in uptake. This centrally held workshop will be complemented by locally organized workshops focused on stakeholder engagement in partner cities throughout the project</p>	<p>Local workshops (total participants): 22, with min. 2 per city (50+) Stakeholders participating in mid-term workshop: 10+ Stakeholders confirming interest to follow project progress: 40+ Stakeholders lead new initiatives involving Net4Cities: 5+</p>
<p>Publications (WP7; GFZ-RIFS + All)</p>	<p>Foreseen publications include, but not limited to, scientific publications, policy briefs and factsheets. A detailed editorial plan will be created, and regularly updated, to coordinate the scientific publications among the partners and support publications in other outlets. All partners will be involved in the different publications as is appropriate. Press and communications departments from the partners will be leveraged to support news mentions and publications in local newspapers and online outlets.</p>	<p>Number of scientific publications in peer-review journals during and after project, all open access: 20+ Policy Briefs/Factsheets – number copies distributed/downloaded: 100+ Number of general press articles published: 20+</p>
<p>Participation in events (WP7; GFZ-RIFS + All)</p>	<p>A plan for attending national and international (scientific) conferences to disseminate Net4Cities results, local to regional science-policy events, and expert workshops will be defined and updated throughout the project duration.</p>	<p>Number of events attended representing the project: 30+ Number of presentations (oral or poster): 20+</p>
<p>Events, incl. online (organized (WP1) and attended when representing the project (WP7))</p>	<p>Webinars and online workshops to present project plans, identify and discuss common policy challenges, get feedback on Net4Cities Studio product development, disseminate finished products to foster uptake; conference sessions/joint sessions with other related projects at conferences; capacity building events.</p>	<p>Webinars (participants): min. 2 (50) Conference presentations: 25+ Capacity building activities: 4+ Capacity building rating in terms of the usefulness of Net4Cities for improving decision-making processes: >8 (rated 1-10, based on participants feedback)</p>

Website:

- **Description:** Develop a dedicated website for Net4Cities (Figure 1) to serve as a centralized hub for project information, news updates, research publications, published materials and interactive tools.
- **Benefits:** Provides a comprehensive source of information for stakeholders to access at their convenience, increases project visibility, provides educational information and supports ongoing engagement.
- **Content:** Include project overview, objectives, activities, team profiles, news articles, event calendar, multimedia resources, blog posts, links to partners and collaborator websites, links to Net4Cities social media channels and contact information.
- **Responsibilities:** The creation and maintenance of the website is with the coordinator (GFZ-RIFS). The website launch is planned for July 2024. The centrally coordinated events and publications logs, as well as regular SC and GA meetings, will be used to make sure that information is updated regularly and includes content from all partners as appropriate. The press and communications team from GFZ-RIFS will coordinate news articles and press releases. Blog post contributions will be requested from all the partners by GFZ-RIFS.

Social Media Platforms:

- **Description:** Utilize popular social media platforms such as X and LinkedIn to share project updates, engage with stakeholders, and foster community dialogue.
- **Benefits:** Enables real-time communication, amplifies reach through sharing and engagement, and facilitates interaction with diverse audiences.
- **Content:** Share project milestones, research findings, infographics, videos, event announcements, and user-generated content. Use relevant hashtags and multimedia content to increase visibility and engagement.
- **Responsibilities:** See Section 4 for more detail on social media strategy and responsibilities.

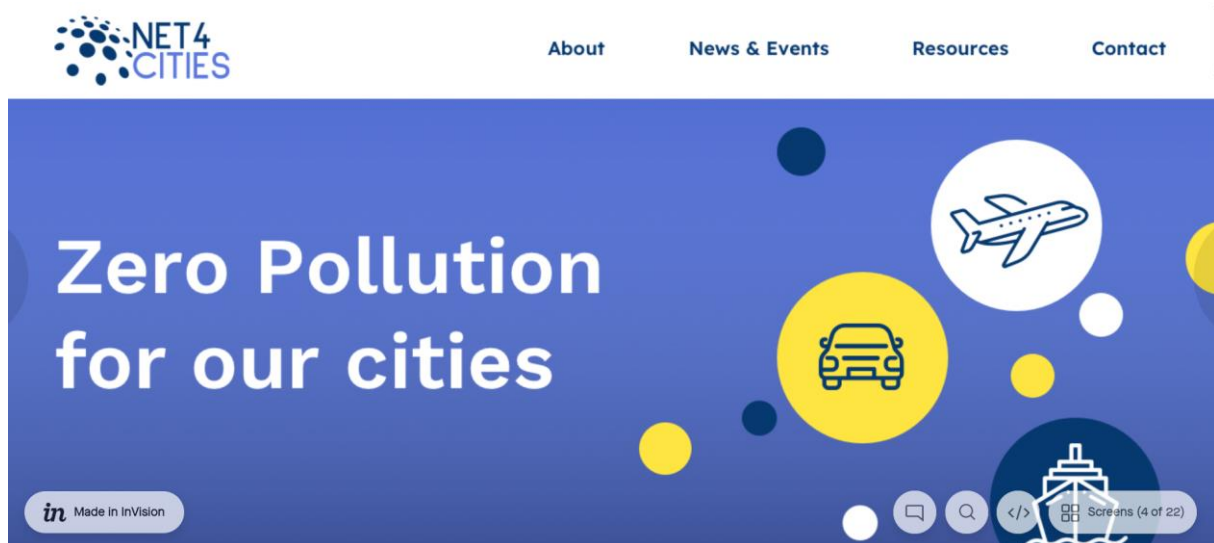


Figure 2. Screenshot of the design prototype of the main Net4Cities website landing page to be launched in July 2024.

Newsletters:

- **Description:** Implement a newsletter to deliver curated project updates, event invitations, and relevant resources directly to stakeholders' inboxes, as well as other outlets, e.g., the website or LinkedIn.
- **Benefits:** Provides a personalized communication channel, allows for targeted messaging, direct invitations and reminders to upcoming events, and facilitates ongoing engagement with subscribers.
- **Content:** Send regular newsletters featuring highlights of recent activities, upcoming events, and opportunities for involvement. Include links to relevant website pages and social media profiles for further exploration.
- **Responsibilities:** The newsletter will be sent via a mailing list that people can sign up for, advertised on the website and other platforms. The coordinator will oversee the maintenance of the mailing list and distribution of the newsletter. A minimum of 8 newsletters will be sent over the course of the 4-year project, with an aim to have quarterly newsletters as of year 2. A centralized request for content from all project partners will happen 2-4 weeks before distribution of the newsletter, but will also be coordinated through logs and SC/GA meetings.

Webinars and Online Workshops:

- **Description:** Organize webinars, online workshops, and virtual events to engage stakeholders, share knowledge, and facilitate discussions on air quality monitoring topics.
- **Benefits:** Offers interactive learning experiences, allows for global participation, and enables real-time interaction with experts and peers.
- **Content:** Plan informative presentations, panel discussions, Q&A sessions, and networking opportunities on relevant themes. Provide registration links, event recordings, and downloadable resources for accessibility and follow-up.
- **Responsibilities:** Two webinars are planned with assigned milestones (MS). MS1 is a webinar focused on capacity building for new monitoring instrumentation, led by Airmodus. MS4 is a webinar aimed at the presentation of preliminary monitoring results and training for Net4Cities Studio products, led by NILU. Additional webinars are under discussion as part of the co-creation process with the partner cities and will be led by GFZ-RIFS or VITO pending the outcomes of the co-creation workshop discussions. Further opportunities for joint webinars with the sister project (MI-TRAP) and/or other related projects or organizations will be pursued as appropriate.

Press Releases and Media Outreach:

- **Description:** Distribute press releases and media kits to relevant journalists and bloggers to secure media coverage in print, broadcast, and online outlets. This will be done in a coordinated way through the project partner's press and communication teams and their networks. Depending on the content, local, regional, or global press outlets will be targeted. Given the focus of the project, local and regional (to EU level) are the most likely audience.
- **Benefits:** Increases project visibility, enhances credibility, and reaches broader audiences through third-party 'endorsements'.
- **Content:** Craft compelling press releases highlighting project milestones, research findings, partnership announcements, and human-interest stories. Provide multimedia assets, quotes from project leaders, and contact details for media inquiries.

- **Responsibilities:** The GFZ-RIFS press and communications team has assembled a centralized contact list for the press and communication teams of the project partners. Via this network, press releases will be coordinated, such as the initial press release related to the project being funded (e.g., <https://www.rifs-potsdam.de/en/news/net4cities-network-healthier-cities>). News items will be published on the Net4Cities website (once active), as well as the institutional websites of the partners. Initiative for press releases can be taken by the partners, but as per the project handbook, the coordinator should be informed prior to all press releases, news items, or similar.

Stakeholder Meetings and Presentations:

- **Description:** Host stakeholder meetings, presentations, and networking events to engage with key stakeholders, gather feedback, and foster collaboration.
- **Benefits:** Builds relationships, solicits input, and generates buy-in from decision-makers, stakeholders, and/or community representatives.
- **Content:** Prepare engaging presentations, project demonstrations, and interactive discussions to showcase the utility of the project's planned outcomes, address stakeholders' questions, and align with the community's priorities.
- **Responsibilities:** As outlined in WP1 and the Co-creation Guidelines (D1.1); GFZ-RIFS/NILU/VITO/city liaisons.

Printed Materials:

- **Description:** Produce printed materials such as brochures, fact sheets, (conference) posters to distribute at events, conferences, and stakeholder activities.
- **Benefits:** Reinforces branding, provides tangible resources for stakeholders, encourages audience to complete a call to action such as navigating to further project information such as the website, and serves as a memorable reminder of the project's objectives and achievements.
- **Content:** Design visually appealing materials with key messages, project visuals, contact information, and calls to action. Customize materials to suit specific audiences and occasions.
- **Responsibilities:** Distributed. The coordinator will provide templates in line with the visual identity established for Net4Cities, but the generation of e.g., conference posters is the responsibility of the conference attendee. For e.g., brochures that are for Net4Cities generally, GFZ-RIFS will coordinate these efforts.

Collaboration Platforms and Online Communities:

- **Description:** Engage with online collaboration platforms, professional networks, and community forums to connect with like-minded individuals, share knowledge, and foster partnerships.
- **Benefits:** Expands the project's reach beyond traditional communication channels, facilitates peer-to-peer learning, and enables ongoing engagement between stakeholders.
- **Content:** Participate in relevant discussions, share project updates, contribute expertise, and offer support to community members. Establish a presence on platforms such as ResearchGate, GitHub, and LinkedIn Groups.
- **Responsibilities:** Distributed. All partners will be requested to engage via their academic affiliations with e.g., ResearchGate and/or GitHub, to share publications and research results

with their network and the communities on these platforms. This will be coordinated by GFZ-RIFS.

By leveraging these communication channels, tools, and means, Net4Cities can effectively reach, engage, and mobilize stakeholders to support the adoption and utilization of air quality monitoring technology and source apportionment information and approaches for healthier and more sustainable urban environments.

4. Social Media Strategy

The objective of Net4Cities social media strategy is to effectively utilize social media platforms to raise awareness, engage stakeholders, and disseminate information about Net4Cities' initiatives, research findings, materials and outcomes related to air quality and noise monitoring in urban environments. The information shared on social media outlets is expected to be of interest to all target audiences.

Key Platforms:

1. X (formerly Twitter) and Mastodon:

- Utilize X and Mastodon² to share short form content including real-time updates, project milestones, and news articles related to urban air quality and noise monitoring.
- Use relevant hashtags such as #UrbanAir, #AirQuality, #AirPollution, #NoisePollution to increase visibility and reach of the content.
- Engage with stakeholders by reacting to relevant content, responding to queries, and participating in discussions and conversations on the platform.

2. LinkedIn:

- Share project updates, research publications, and insights through LinkedIn posts and articles.
- Connect with industry professionals in relevant disciplines (atmospheric science, environmental science, urban planning, and public health) to expand the project's professional network and its contents' visibility and reach.
- Participate in discussions and conversations on the platform to showcase Net4Cities' expertise and thought leadership.
- <https://www.linkedin.com/company/net4cities/about/>

Content Strategy:

1. Educational Content:

- Create informative and visually appealing educational materials to educate the audience about air quality, noise pollution, and their impacts on urban health and sustainability.
- Explain and introduce scientific concepts, methodologies, and research findings in accessible language for a non-expert audience.

2. Project Updates and Milestones:

- Share regular updates on project progress, milestones, and achievements to keep stakeholders informed and engaged.

² Mastodon will be used on a pilot basis in parallel to X, to assess the utility as an alternative or in addition to X. Depending on the community and usage, engagement will be assessed and either continued or aborted.

- Highlight key findings, technological innovations, and collaborations with partners and stakeholders.
 - Celebrate successes and acknowledge the contributions of team members, collaborators, and supporters.
- 3. Engagement and Interaction:**
- Respond promptly to comments, messages, and inquiries to foster dialogue and build relationships with the project's audience.
 - Feature user-generated content, testimonials, and success stories to showcase the impact of Net4Cities on communities and individuals.
- 4. Responsibilities:**
- Central coordination of the social media engagement will be done by GFZ-RIFS.
 - All partners will be requested to provide content for posting under the Net4Cities account, at a minimum of 3 posts per year.

To increase visibility and links to other projects and institutions that have audiences with similar/overlapping interests, information posted by Net4Cities will also be promoted by existing accounts from project partners and/or supporting organizations and vice versa. These connections will be supported by using the appropriate 'mentions' or 'tags.'

5. Advisory Boards

At the beginning of the project a Stakeholder Advisory Board (AB) will be created consisting of external consultants who are members of enterprises active in the transport sector, environmental protection organisations, and regulatory bodies or ministries (T7.4). The Stakeholder AB will provide feedback on the development of the monitoring and implementation roadmaps, the Net4Cities Studio products, as well as participating and supporting DEC. The list of stakeholders and the organizations they represent are available in the shared drive (Net4Cities/WP7/T7.4 EEABs/). Participation will likely be expanded depending on the stage of the project and the expertise needed. Current organizations represented in the Stakeholder AB include the International Council on Clean Transportation (ICCT; monitoring and assessment of vehicle emissions), POLIS (EU local/regional network for sustainable transport), Dutch National Institute of Public Health and the Environment (RIVM; AQMN responsibility, strategies for ultra-fine particles (UFP) and ammonia (NH₃)), Transport & Environment (T&E; hosts of 'Clean Cities Campaign'). Additionally, a Scientific AB will be created comprising of experts in the field of air and noise pollution assessment, health, and science-policy. The Scientific AB will follow up and advise on the progress of Net4Cities pertaining to the state-of-the-art for instrumentation, measurements, and methodologies applied, as well as supporting the dissemination of results, publications and exploitation of data generated across the scientific community. The individual experts participating in the Scientific AB are listed on the shared drive (Net4Cities/WP7/T7.4 EEABs/).

6. Interactions with other projects and initiatives

Net4Cities will also seek to keep regular communication and exchange of knowledge with other relevant initiatives and projects, including identifying and following up on synergies with the sister project (MI-TRAP) funded under HORIZON-CI5-2023-D5-01-18, as well as any projects awarded under upcoming calls for Destination 5. Clean and competitive solutions for all transport modes. Where Net4Cities partners are involved in projects, this linkage will be leveraged to be up to date on the

relevant activities in the projects, and also to pursue possible joint events and/or collaborations as feasible. For projects or initiatives where no connection exists, the coordinator or a representative of Net4Cities appointed by the coordinator, will reach out to the project contact for exploration of synergies and discussion. If more formalized involvement is needed, a representative will be added to the AB. A list of relevant projects and connections is provided in Table 3. The connections to all of the different projects are currently being established and will be added to the table in the 2nd half of 2024. This table will accordingly be updated over the course of the project, but at a minimum for the regular reporting periods.

Table 3. Projects, networks, and initiatives with links via Net4Cities partners and key outputs that will be integrated and built upon in Net4Cities.

Project / Network / Initiative (Partner)	Description and connection to Net4Cities
FAIRMODE (VITO, NILU)	The Forum for Air quality Modelling is a joint initiative of EEA and the JRC that brings together air quality modelers and users to support harmonized use of models by EU Member States. Members of Net4Cities consortium are chairs/co-chairs of working groups in FAIRMODE.
ACTRIS (NILU, FZJ, Cyl, UOC)	Pan-European research infrastructure producing high-quality, long-term, open access atmospheric data. Implements QA/QC, SOP for emerging pollutant instrumentation useful for Net4Cities monitoring activities.
AQUILA (VMM, NILU)	Air Quality Reference Laboratories is a network of National Reference Laboratories involved in the implementation of existing EU air policy and advising harmonization of measurements and QA/QC. There will be information exchange with Net4Cities on best practices and how to overcome potential bottlenecks for monitoring of emerging pollutants.
RI-URBANS (VITO, FZJ, NILU)	Development of enhanced AQ monitoring observations for UFP and PM to support AQ policy assessments. Net4Cities will build on the results of RI-URBANS, and implement and validate these to establish an EU-wide network
CEN-committees (Airmodus, VITO)	CEN/TS 16976 will be followed for instrumentation and evaluated for usability, robustness, and cost for UFP measurements. Net4Cities will contribute to standardization of monitoring techniques of emerging pollutants.
EEA - ETC HE and noise (NILU, UAB)	The European Topic Centre on Human Health and the Environment is a Consortium of 10 partners with expertise in air quality, air pollution, industrial emissions, chemicals, noise and environmental health. NILU is the lead of the ETC HE. This synergy will enable establishing a close cooperation and knowledge transfer between Net4Cities and ETC HE.
ICOS (UOC, Cyl, NILU)	European-wide GHG research infrastructure. Implementation of QA/QC protocols for Net4Cities GHG measurements.
VIDIS (NILU)	European project coordinated by the Institute for Nuclear Science, Serbia. It aims at generating knowledge and approaches for meaningful uptake of new technologies to measure air pollution by strategic partnerships.

	Net4Cities and VIDIS will establish synergies concerning monitoring strategies.
IGAC (GFZ-RIFS, ZHAW)	International project under Future Earth that facilitates atmospheric chemistry research towards a sustainable world. This will serve as a connection between Net4Cities and the atmospheric chemistry community for dissemination and uptake of scientific results.
GEIA (GFZ-RIFS, NILU)	The Global Emissions Initiative is a community effort that builds bridges between environmental science and policy to create and communicate information on emissions. GFZ-RIFS is on the steering committee of GEIA, thereby providing a valuable connection to the emissions community.
TOAR II (GFZ-RIFS)	TOAR II is an international science effort to provide an up-to-date scientific assessment of tropospheric ozone. GFZ-RIFS is on the steering committee of TOAR II.
CARES (EMPA, ICCT - both SAB members)	H2020 EU funded project investigating contactless measurement of vehicle exhaust emissions. Its experience is valuable to Net4Cities regarding vehicle emissions monitoring and anti-tampering.
ACACIA (FZJ, ZHAW, DLR)	H2020 project supporting the development of a more climate-friendly aviation system. Data and knowledge exchange with Net4Cities can support the reduction of aviation emissions.
EMME-CARE (CyI)	Regional Centre of Excellence for climate and atmospheric research in the Eastern Mediterranean and Middle East region. This centre is engaged with transport emissions in Limassol, a city in the Net4Cities project.
Edu4Climate (CyI)	The Edu4Climate project uses citizen science and custom-made miniature sensors within Cyprus. Links to Net4Cities' efforts to provide local champions for citizen science activities.
COMPAIR (Telraam, VMM)	This H2020 project is a citizen science initiative focusing on the use of new technologies to collect local AQ (e.g., Berlin, Flanders). Methodologies and data can be used in Net4Cities to inform the citizen science approach.
SMARAGD (FZJ)	The SMARAGD project combines air quality data with health data in a citizen science approach. Feedback and lessons learned on citizen science approaches can inform the Net4Cities approach.
STARGATE (VITO)	STARGATE aims to create green airports as multimodal hubs for sustainable and smart mobility. UFPs are measured and modelled at and near the airport. The findings (on PNC dynamics and spatial variability of UFP) will help steer Net4Cities complementary long-term monitoring of PNC near the airport.

7. Revisions and Monitoring Impacts of Net4Cities DEC

As the project develops further, the plan will be reviewed by the coordinator and reviewers from the consortium (as per the Project Handbook (D7.1), and adjusted as needed, based on experiences and lessons learned after monitoring activities have been brought online in the partner cities. The revisions will be carried out in accordance with the regular reporting intervals.

Monitoring the impact of a dissemination, communication, and exploitation strategy is crucial for evaluating its effectiveness, identifying areas for improvement, and maximizing the project's outreach and impact. Here are some key steps and metrics that are either already in progress or will be considered³ for monitoring the impact of such a strategy:

Key Performance Indicators (KPIs):

A number of KPIs have been defined and are listed in Table 2, as well as in Part B of the GrA associated to each of the 5 project objectives (not repeated here). These KPIs were developed to identify measurable indicators that align with the objectives of the dissemination, communication, and exploitation strategy. Some of the KPIs included relate to website traffic: Number of visitors, page views, and time spent on site; social media engagement: Number of followers, likes, shares, comments, and mentions; event attendance: Number of participants, demographics, and feedback. Please see the tables for more information.

Implement Tracking Mechanisms:

- Utilize web analytics tools, social media monitoring platforms, email marketing software, event registration systems, and/or media monitoring services to track KPIs, considering data protection requirements.

Regularly Collect and Analyse Data:

- Collect data on KPIs to track trends, measure progress, and assess the impact of communication efforts over time, at a minimum for the regular reporting requirements.
- Compare performance across different communication channels, campaigns, and target audiences.
- Look for insights that can inform future decision-making, such as which types of content resonate most with the audience, which channels drive the most engagement, and which strategies yield the highest return on investment.

Solicit Feedback from Stakeholders:

- Gather (qualitative) feedback from stakeholders through email, direct interactions during workshops and/or reflection spaces for the consortium members.
- Leverage the ABs to provide feedback on our DEC actions.

³ All planned tracking mechanisms and data collected for KPI analysis will need to be feasibility checked to make sure that it complies with the relevant European and country specific GDPR requirements.

Assess Impact on Project Objectives:

- Evaluate the impact of communication efforts on achieving project objectives, such as increasing awareness, fostering collaboration, and driving technology uptake.
- Compare actual outcomes against predetermined goals and benchmarks to assess performance and determine whether adjustments are needed to align with project objectives.
- Consider both short-term outcomes (e.g., immediate responses, website visits) and long-term outcomes (e.g., changes in behaviour, policy influence) to capture the full impact of communication activities.

Iterate and Improve:

- Use insights from monitoring and evaluation to iteratively improve the dissemination, communication, and exploitation strategy.
- Adjust tactics, messaging, and channels based on data-driven findings and stakeholder feedback to optimize effectiveness and maximize impact.
- Continuously refine the strategy over time to adapt to changing circumstances, emerging trends, and evolving stakeholder needs.

By implementing a systematic approach to monitoring the impact of dissemination, communication, and exploitation efforts, we will be able to assess the effectiveness of our strategies, identify areas for improvement, and enhance the overall success of Net4Cities.

8. Exploitation of the Results

Exploitation in Net4Cities will aim to identify opportunities to maximize the long-term impact of publicly available results, as well as the commercialization potential, of developments in the project. Exploitation of the foreseen innovative Net4Cities results will be:

1. designed to support European cities to be frontrunners for advanced monitoring networks and address any monitoring needs resulting from the upcoming revisions to the AAQD,
2. provide policy solutions with synergies for air and noise pollution for the transport sector to achieve the Zero Pollution Action Plan⁴ (ZPAP) targets, and
3. achieve wider uptake of the project results, outcomes, guidance, and recommendations in both partner cities and beyond. Point 3 includes exploitation of the data and/or publications to advance knowledge.

Activities to foster exploitation will start early in Net4Cities (within the first year), specifically to address the opportunities and means to finance the implemented monitoring infrastructure, and later to adopt the Net4Cities Studio products (e.g., real-time tools and graphical indicator, real-time source apportionment services) (T1.3).

⁴ https://environment.ec.europa.eu/strategy/zero-pollution-action-plan_en

There will be both commercial and non-profit pathways for exploitation. The direct commercial exploitation of Net4Cities innovations will be via the SME partners, mainly Airmodus, EarthSense, and Telraam. Advancements associated with the UFP instrumentation and the real-time source apportionment approaches have commercial potential via these partners. We will establish clear intellectual property rights and licensing agreements, as needed, to protect any developments within Net4Cities of commercial value. In most cases, exploitation will be non-profit through open access distribution of products. The instrumentation for UFP measurement will be provided for use during the scope of the project by Airmodus (depreciation value only covered during the project). This will provide cities with an opportunity to familiarize themselves with the instrumentation. It will be made clear at the beginning of the project, to allow a maximum amount of time for resource planning, that the instruments could be purchased and/or leased after the end of the project for the market value minus the cost of depreciation.

One main focus of the exploitation strategy will be on upscaling the monitoring network advances and broader uptake of Net4Cities Studio products, that will be informed by and coordinated within WP1 activities, including the monitoring implementation roadmap (D1.2). An initial summary of the main expected Key Exploitable Results (KERs) and the specific exploitation pathways is included in Table 3. We will also aim to forge strategic partnerships or collaborations with e.g., public agencies, environmental organizations, and/or community stakeholders for Net4Cities Studio products, such as the real-time maps. From a research perspective, we will aim to collaborate with (academic) researchers to promote data sharing for scientific research and public awareness. We will also coordinate with the sister project, MI-TRAP, to create joint publications and leverage our combined channels for greater exploitation and uptake. This also includes presentation of results at conferences and meetings, circulation of results among academic networks to support information sharing and exploitation.

Table 4. List of Key Exploitable Results (KERs).

Key Exploitable Results	Channels and methods EP = Exploitation Pathway, C = Customers, UVP = Unique Value Proposition. TG1 = City, airport, harbour authorities; TG2 = Industry; TG3 = Academia; TG4 = Policy-makers; TG5 = NGOs, Citizens
Extended monitoring network for air and noise pollution	EP: Targeted communication with key institutions, science-policy events, open access publication of guidance; UVP: Guidance for monitoring techniques and the design and standardization of monitoring networks (D6.3); training for capacity building; C: TG1, TG2, TG3, TG4
Newly generated data of non-regulated pollutants	EP: Presentation at conferences, webinars and workshops, open access (peer-reviewed) publications, open-access datasets, factsheets; UVP: 1-2+ year datasets of UFP, LDSA, emerging pollutants in urban areas across Europe for health impact assessments; C: TG1, TG3, TG4, TG5
Reducing uncertainties in emission inventories	EP: Presentation at conferences and workshops, open access (peer-reviewed) publications, website, updates to local and national databases and, as appropriate, international efforts that provide emissions data (e.g., GEIA, FAIRMODE); UVP: state-of-the-art updates to emission inventories, based on measurement-model evaluations, across a diverse set of locations in European cities; C: TG1, TG3, TG4

Operational source apportionment tools (open source)	<p>EP: Presentation at conferences and workshops, open access (peer-reviewed) publications, targeted communication with existing organizations (e.g., FAIRMODE);</p> <p>UVP: Operational, real-time source apportionment</p>
Operational source apportionment tools (closed – IPR)	<p>EP: Presentation at conferences and training workshops, targeted demonstrations for key stakeholders/potential customers;</p> <p>UVP: Operational, real-time source apportionment for policy support as a service (IPR method);</p> <p>C: TG1, TG2, TG4</p>
Net4Cities Studio	<p>EP: Stakeholder workshops, webinars, website, newsletter, demonstrations, and training for key stakeholders;</p> <p>UVP: Web platform including real-time air and noise pollution maps; integrated air and noise pollution, NBS graphical indicator; policy briefs, etc.;</p> <p>C: All TGs</p>
Transport-related activity data and emission factors	<p>EP: Presentation at conferences and workshops, open access (peer-reviewed) publications, website, open access datasets registered for open use on platforms such as Zenodo or Pangaea, contribution to national databases and international efforts that provide underlying data for emissions generation;</p> <p>UVP: real-world emission factors and transport activity data, across a diverse set of locations in European cities;</p> <p>C: TG1, TG2, TG3, TG4</p>

8.1 Continuity of Installed Monitoring Capacity

The information pertaining to post-project continuity of the instrumentation being installed during Net4Cities funding period, along with on-going maintenance costs, is being provided already now (in the first 6 months during the city stakeholder workshops) to the 11 partner cities so that they have adequate time to plan for acquisition and/or on-going maintenance needs, if this is of interest to them. Selected details of these continuity options are provided here.

8.1.1 Air Pollution Monitors

There are 24 Airmodus A30 CPCs that will be installed across the 11 partner cities to provide high time resolution ultrafine particle (UFP) monitoring data. During the project, the instrumentation and maintenance costs will be covered by Net4Cities. After the end of the Net4Cities funding period, the Airmodus A30 CPC will be available for cities to purchase or lease following the end of the Net4Cities project. Airmodus will offer the device for purchase at -50% of the normal price per unit (reflects depreciation).

The Naneos Lung-Depositible Surface Area (LDSA) UFP monitors provided by ZHAW will be deployed in all 11 Net4Cities partner cities. These instruments use diffusion charging to measure LDSA 24/7, are very small and versatile in deployment, and measure UFP between 20 – 350 nm. All cities will also receive a Naneos Partector 2 handheld device to perform comparison measurements, and monitor performance statistics. The devices can be kept after the end of the project at no extra cost, as their value will have depreciated to 0€ after 2 years. However, please note that regular maintenance is required and will be needed following 2 years of deployment. If these devices are not desired to be kept following the end of the project, they can be returned to ZHAW.

8.1.2 Noise Monitors

It is planned to install Noise Monitoring Terminals (NMTs) at 3 sites in 10 of the 11 partner cities. These will be located at key transport-related sites in each city (e.g., traffic sites, ports, airports), as desired. These NMTs are planned to be co-located with outdoor Telraam traffic counters (see below) when installed at traffic sites. The NMTs will be available for takeover at no added cost once the project has finished, if desired.

8.1.3 Traffic Monitors

In the Net4Cities project, it is planned to install Telraam traffic counters alongside NMTs at all traffic sites to co-locate vehicle counts with noise measurements. These traffic counters automatically count and distinguish between various different vehicles and are GDPR compliant. The post-project continuity of these devices is still being determined.

8.2 Uptake of Monitoring Approach Across European Cities

One example of the project outputs associated with the Net4Cities Studio, will be a guidance document including recommendations for future monitoring and network design for noise and air pollution. A second example is a policy brief on reducing urban transport pollution and the associated health impacts. These are just two examples of Net4Cities' Studio products that will be results that have concrete use potential for societal/political purposes. With the amendment to the EU AAQD where more monitoring of UFP will be required, the guidance document will hopefully be one example of exploitable results from Net4Cities that will take the results and lessons learned to support the implementation phase of the new monitoring requirements. The exploitation of these results will be supported and maximized through the Net4Cities dissemination and communication strategies.

9. Conclusions

The dissemination, exploitation, and communication activities outlined here will provide a solid foundation for the project to maximize uptake and visibility of the products and knowledge produced as part of Net4Cities. It will provide guidance to all consortium partners for their part in DEC activities. The established KPIs, communication tools, and target audiences provide a framework for achieving Net4Cities' objectives.

As a first iteration of this document, developments in the project will inform revisions to this DEC Plan going forward, to ensure that we revise approaches as needed to adequately address the objectives and goals of the project. Specifically, first, second, and final revisions will be made to this deliverable (D7.4, D7.9, and D7.10, respectively) as the project progresses. Key next steps at the publication of the first version of this DEC plan include the finalization of the Net4Cities Website, increased use of social media accounts, hosting stakeholder workshops, and engaging in initial discussions with partner projects and advisory boards. Once data and results are generated from the project (starting in 2025), more dissemination activities will commence.

Acronyms

Table 5. Table of acronyms used in this template.

Acronym	Meaning
DEC	Dissemination, exploitation, and communication
AAQD	Ambient Air Quality Directive
AB	Advisory Board
AQ	Air Quality
AQMN	Air Quality Monitoring Network
D#.#	Deliverable (WP.Number)
EEA	European Environment Agency
EP	Exploitation Pathway
ETC HE	European Topic Centre on Human Health and the Environment
EU	European Union
GA	General Assembly
GHG	Greenhouse Gas
GrA	Grant Agreement
KER	Key Exploitable Result
KPI	Key Performance Indicator
LDSA	Lung-Depositible Surface Area
MS#	Milestone (Number)
NGO	Non-Governmental Organization
NH3	Ammonia
NMT	Noise Monitoring Terminal
PM	Particulate Matter
PNC	Particle Number Count
QA/QC	Quality Assurance and Quality Control
SC	Steering Committee
SOP	Standard Operating Procedure
T#.#	Task (WP.Number)
TG	Target Group
UFP	Ultrafine Particles
UVP	Unique Value Proposition
WP	Work Package
ZPAP	Zero Pollution Action Plan