



Deliverable D7.10

## **EDIAQI Legacy – Reports on Networking and Collaboration Activities (Version 1)**

Work Package 7

Exploit

Version: Final



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## Deliverable Overview

This Deliverable D7.10 marks the first iteration of EDIAQI's legacy strategy, providing an analytical and forward-looking framework for ensuring the project's long-term sustainability beyond its funded duration. It serves as both a conceptual foundation and a strategic draft, mapping out how the project's results, networks, and methodologies can evolve into enduring value for European citizens, policymakers, and scientific communities.

This first version focuses on possibilities rather than certainties. It introduces preliminary findings, methodological groundwork, and structural options for continuity – specifically, the prospective establishment of a Non-Profit Organisation (NPO) to steward EDIAQI's outcomes after project completion. The document therefore provides a direction-setting analysis rather than definitive conclusions, with subsequent versions (notably D7.11 Version 2, due at PM48) intended to refine and finalise these concepts.

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## Statement of Originality

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.



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## List of Terms and Abbreviations

| Abbreviation    | Full Term                                       |
|-----------------|-------------------------------------------------|
| 2D              | Two Dimensional                                 |
| 3D              | Three Dimensional                               |
| AI              | Artificial Intelligence                         |
| API             | Application Programming Interface               |
| AQBIE           | AQBIE                                           |
| BC              | Black Carbon                                    |
| BCR             | Benefits Cost Ratio                             |
| BIM             | Building Information Management                 |
| CBA             | Cognitive Behavioural Analysis                  |
| CFD             | Computational Fluid Dynamics                    |
| CO <sub>2</sub> | Carbon Dioxide                                  |
| COPD            | Chronic Obstructive Pulmonary Disease           |
| CPM             | Cognitive Performance Metrics                   |
| CRO             | Contract Research Organisation                  |
| DALYs           | Disability Adjusted Life Years                  |
| DG ENER         | Directorate General for Energy                  |
| DG ENV          | Directorate General for Environment             |
| DG RTD          | Directorate General for Research and Innovation |
| DG SANTE        | Directorate General for Health and Food Safety  |
| EEA             | European Environment Agency                     |
| ECHA            | European Chemicals Agency                       |
| EMA             | European Medicines Agency                       |
| GBCI            | Green Business Certification Inc.               |
| GBI             | Green Building Initiative                       |
| GP              | Gaussian Process                                |
| HADEA           | European Health and Digital Executive Agency    |
| HEPA            | High Efficiency Particulate Air                 |
| HVAC            | Heating, Ventilation and Air Conditioning       |
| IAQ             | Indoor Air Quality                              |
| IAP             | Indoor Air Pollution                            |
| NCD             | Non Communicable Disease                        |
| ILFI            | International Living Future Institute           |
| IoT             | Internet of Things                              |
| IP              | Intellectual Property                           |
| IT              | Information Technology                          |
| NO              | Nitrogen Oxides                                 |
| NO <sub>2</sub> | Nitrogen Dioxide                                |
| NGO             | Non-Governmental Organisation                   |
| NPO             | Non-Profit Organisation                         |



|                |                                                                               |
|----------------|-------------------------------------------------------------------------------|
| OECD           | Organisation for Economic Cooperation and Development                         |
| O <sub>3</sub> | Ozone                                                                         |
| PM2.5          | Fine Particulate Matter (2.5 micrometres)                                     |
| PM10           | Particulate Matter (10 micrometres)                                           |
| QA             | Quality Assurance                                                             |
| REHVA          | Federation of European Heating, Ventilation and Air Conditioning Associations |
| ROI            | Return on Investment                                                          |
| SME            | Small and Medium Sized Enterprise                                             |
| SOP            | Standard Operating Procedure                                                  |
| SROI           | Return on Investment                                                          |
| SWOT           | Strengths, Weaknesses, Opportunities, Threats                                 |
| T#             | Task Number                                                                   |
| TRL            | Technology Readiness Level                                                    |
| VOC            | Volatile Organic Compound                                                     |
| ZPAP           | Zero Pollution Action Plan                                                    |



## 1. Executive Summary

This deliverable outlines the emerging strategy for EDIAQI's long term legacy. It presents the first integrated view of how the project's scientific, digital, and educational outputs can deliver lasting public value, strengthen European indoor air quality policy, and support a growing community of partners.

The work brings together the Public Value Canvas, the SWOT and innovation stock take, and an expanding network of scientific, institutional, industrial, and civil society actors.

Together, these elements form the foundation for future exploitation pathways, including consulting, certification, data services, and educational tools, as well as deeper policy engagement across national and European levels.

The deliverable also introduces the initial concept for the EDIAQI Non-Profit Organisation (NPO) to be established at M48, setting out early options for long term governance, sustainability, and stewardship of the project's outputs. It provides preliminary scenarios for sustaining impact, aligned with market trends, regulatory developments, and the wider IDEAL Cluster ecosystem.



## 1. Introduction

Deliverable D7.10 – EDIAQI Legacy, Reports on Networking and Collaboration Activities – Version 1 – represents the first iteration of the project’s long-term sustainability and legacy framework. It builds on the activities, insights, and outputs produced across the consortium during the initial 36 months of the project and marks the first step in shaping the future pathways through which EDIAQI’s work will continue to deliver impact beyond its funded duration.

This deliverable serves as both a conceptual and analytical draft, outlining the emerging strategy for the project’s legacy, the foundations of the Non-Profit Organisation (NPO) to be established at M48, as well as the networking and collaboration activities that will underpin EDIAQI’s enduring presence.

It includes a consolidated compendium of project outputs, the definition of their innovative elements, an initial exploitation strategy presented through a set of scenarios, and a preliminary articulation of the EDIAQI solution as a modular and customisable package for diverse IAQ management needs. It also provides an overview of relevant market trends, key players, and early business scenarios, alongside the first round of SWOT analyses capturing partner and pilot innovations.

At the same time, this version does not yet include several components that will be developed and refined in the next report. These include the detailed business plan for the NPO, the full project observatory, quantified Return on Investment (ROI) models, and the associated forecasts and risk assessments. These elements require further consolidation across the consortium and depend on decisions still to be taken regarding the final governance and operating model of the NPO. They will therefore be fully elaborated in the final legacy deliverable (D7.11) once all necessary inputs, legal scoping, and market applicability findings are complete.

It reflects the project’s dynamic and exploratory nature, recognising that legacy planning is an evolving process — one that relies on continuous iteration, partner input, and market and policy developments still in motion.



The document is not intended to present certainties, but rather possibilities: a framework of potential models, scenarios, and directions that will be refined in the months ahead. The work described here lays the groundwork for subsequent deliverables – notably the final version (D7.11) – which will incorporate updated findings from market applicability studies, legal scoping of the NPO, and the consolidation of outputs into a definitive legacy structure. The deliverable is organised into nine sections, each addressing a core component of EDIAQI’s long-term vision:

- **Methodology:** Outlines the iterative, evidence-driven approach combining desk research, strategic canvases, SWOT analysis, and innovation mapping.
- **Public Value Canvas:** Presents the first collective mapping of how EDIAQI’s scientific, digital, and educational outputs generate long-term public value.
- **SWOT Analysis and Innovation Stock-Taking:** Provides a comparative assessment of project innovations, tracing their pathway from scientific discovery to societal impact.
- **The EDIAQI Network:** Describes the project’s expanding ecosystem of scientific, institutional, industrial, and civil-society partners supporting long-term impact.
- **Ecosystem and Market Trends Analysis:** Assesses the wider regulatory, technological, and market landscape shaping demand for healthy indoor environments and informing EDIAQI’s positioning.
- **Exploitation and Sustainability Scenarios:** Sets out seven preliminary models for sustaining EDIAQI beyond the project, culminating in a likely hybrid approach.
- **Next Steps:** Defines the forthcoming analytical and organisational work leading to Deliverable – D7.4 the Market, Innovation, and Applicability Analysis as well as the final EDIAQI Legacy deliverable (D7.11) at M48.

This document is therefore a living, evolving framework – designed to be enriched as new data, partnerships, and insights emerge. It aims to set the stage for informed, evidence-based decisions on how EDIAQI’s collective achievements can translate into enduring public value and systemic change.



## 2. Methodology

The methodology applied in the preparation of this deliverable combines desk-based research, participatory workshops, and structured analytical tools designed to capture both the market and public value dimensions of the project's legacy. This approach ensured that the strategy evolved iteratively, drawing from partner input, expert consultation, and cross-disciplinary reflection. The process was exploratory rather than conclusive, forming the analytical foundation upon which deliverables – particularly the final legacy report at PM48 – will build.

The methods consisted of four interlinked components: Desk Research, Osterwalder and Public Value Canvas Analysis, SWOT Analysis, and the EDIAQI Innovation and Results Compendium. Together, these tools provided a structured yet adaptive framework for assessing EDIAQI's sustainability potential, identifying exploitable outcomes, and envisioning the establishment of the EDIAQI NPO.

### 2.1 Desk Research

The first stage involved extensive desk research to situate the legacy discussion within the wider European and international policy context and to identify where EDIAQI outputs could best support existing or emerging policy agendas. This work produced the EDIAQI Policy Landscape Document, which synthesised relevant legislative and policy developments and positioned EDIAQI within priorities such as the European Green Deal, the Zero Pollution Action Plan (ZPAP), and the Energy Performance of Buildings Directive (EPBD).

The analysis followed a systematic coding process that organised issues, policies, and opportunities into thematic areas, including Indoor Air Quality (IAQ) challenges, health impacts, regulatory gaps, and specific concerns such as schools, vulnerable populations, and cross sectoral governance barriers. This provided a solid analytical base for the legacy design. This desk research was also supported by expert input from Sotirios Papathanasiou, which strengthened scientific grounding and interpretative consistency.

The desk research phase was a central analytical exercise. Understanding the policy drivers, barriers, and gaps that shape demand for IAQ innovation in Europe was essential to



assessing the potential of EDIAQI outputs, and it ensured that subsequent work, from business modelling to legacy planning, was grounded in evidence and context.

## 2.2 Market, Innovation and Applicability Analysis – Survey

Running Alongside the desk research, Task 7.3 (T.73) on Market, Innovation and Applicability Analysis, led by Deda, further informed the evidence base for sustainability and exploitation planning. The task examined how EDIAQI results can be positioned within evolving market and policy ecosystems through three activity streams:

- Scouting of comparable initiatives, technologies, and project experiences
- Collection of inputs from pilot sites
- Initial definition of the EDIAQI value proposition for market and public sector actors

Deda, coordinated a survey completed by all partners, covering market context, demand and supply trends, user needs, and competitor mapping. This participatory process was supported by focus groups and regular WP7 discussions. The task is also implementing a market watch mechanism to track trends and competitor activity and to maintain alignment with regulatory and market developments.

Findings from T7.3 feed directly into this deliverable, the Market and Applicability Analysis Report, the final legacy report, and the Clean Air Act 2050 Roadmap, creating a coherent analytical link across WP7 and WP6.

## 2.3 Osterwalder Business Canvas and Public Value Canvas

Building upon the desk research, a combined Osterwalder Business Model Canvas and Public Value Canvas exercise was conducted during the EDIAQI consortium meeting in Ljubljana on 9 June 2025, hosted by the NIB. The session aimed to explore sustainable pathways for EDIAQI results, examining both profit-oriented and public-value-driven routes to continuity. Participants were divided into two groups:

- **Private sector:** completed a *Business Model Canvas* focused on innovation uptake, market potential, and service development.
- **Public sector, academic, and non-profit partners:** completed a *Public Value Canvas* emphasising societal benefit, policy alignment, and the maintenance of open-access outcomes.



The Osterwalder Business Model Canvas provided the structural base for this exercise. Traditionally used to describe the rationale by which an organisation creates, delivers, and captures value, the model includes nine key components: *key partners, key activities, key resources, value proposition, customer relationships, channels, customer segments, cost structure, and revenue streams*.

In the EDIAQI adaptation, these elements were transformed into a **Public Value Canvas**, ensuring relevance for public and non-profit actors:

- **Customers** were reframed as **beneficiaries and users**, including citizens, schools, municipalities, and policymakers.
- **Revenue streams** were interpreted as **sustainable funding mechanisms**, exploring models for maintaining a future NPO.
- **Value proposition** was reoriented toward **societal and policy benefits**, highlighting EDIAQI's contribution to European citizens' well-being and to European Union policy goals such as the Green Deal and ZPAP.

This participatory approach ensured that EDIAQI's legacy design reflects both economic viability and public good, identifying key partners, resources, and activities required for long-term sustainability after project completion.

## 2.4 SWOT Analysis

To deepen the strategic understanding of project outcomes, a SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) was launched in September 2025, coordinated under WP7. Each EDIAQI partner was tasked with completing at least one SWOT analysis, focusing on a specific innovation or result listed in the EDIAQI Innovation Compendium.

A detailed email instruction and example template were circulated to guide completion, emphasising flexibility: analyses could address a tangible innovation (e.g., the *Digital Twin* or *EDIAQI Wiki*) or a conceptual outcome (e.g., the *Policy Intelligence Framework*).

The process ensured both individual reflection and collective synthesis:

- Partners identified internal strengths and weaknesses of their outputs, along with external opportunities (e.g., policy momentum, new markets) and threats (e.g., funding gaps, competing agendas).



- The WP7 team collected and consolidated all submissions into a unified strategic overview.
- Results were shared with T7.3 (Market, Innovation, and Applicability Analysis) and T6.3 (Clean Air Act 2050 Roadmap) to inform subsequent deliverables (D7.4, D7.10, and D6.3).

The SWOT exercise proved instrumental in identifying the enablers and barriers for EDIAQI's transition from project outputs to enduring legacy.

## 2.5 EDIAQI Innovation and Results Compendium

Running in parallel with the SWOT analysis, the EDIAQI Innovation and Results Compendium was developed as a dynamic inventory of all exploitable outcomes across the consortium.

The compendium employed an Excel-based template shared in July 2025, inviting partners to provide concise entries on:

- Innovation name and description
- Contributors and related tasks
- Background IP (if applicable)
- Technology Readiness Level (TRL)
- Impact and exploitation potential

Biweekly reminders ensured continuous engagement, while response tracking supported accountability and completeness. The compendium serves as a living database for the project, feeding directly into:

- The **Project Legacy Reports (D7.10 and D7.11)**
- The **Market Applicability Analysis (D7.4)**
- The **EDIAQI Clean Air Roadmap (D6.3)**

Together with the SWOT analyses, the compendium provides the evidence base for assessing both market applicability and public value creation. It also acts as a knowledge continuity tool, enabling the forthcoming NPO to identify, maintain, and steward EDIAQI's most valuable innovations beyond the project's lifetime.



## 2.5 Summary

In sum, the methodology was iterative, participatory, and evidence-driven. The combination of desk research, strategic canvases, SWOT analysis, and innovation mapping allowed the consortium to:

- Ground EDIAQI's legacy in current policy and market realities.
- Identify distinct pathways for profit-oriented and non-profit exploitation.
- Ensure inclusivity by involving all partners in reflection and strategy building.
- Create a robust foundation for the continuation of EDIAQI's mission through the future NPO and its alignment with European health and environmental policy goals.



### 3. Public Value Canvas: Brainstorming Base

The Public Value Canvas exercise, conducted during the EDIAQI consortium meeting in Ljubljana on 9 June 2025, served as a structured reflection on how the project's results can generate long-term public benefit across Europe. Adapted from Osterwalder's Business Model Canvas, the tool was reinterpreted to emphasise societal value, inclusivity, and policy relevance rather than commercial return.

Partners from the public sector, academia, and civil society worked collaboratively to map how EDIAQI's scientific, digital, and educational outputs can continue to deliver impact after the project's conclusion. The findings summarised here were identified through that participatory exercise and represent a first collective vision of EDIAQI's public-value pathways. They are exploratory rather than definitive, forming the conceptual base upon which future iterations – particularly those linked to T7.3 (Market, Innovation and Applicability Analysis) and T7.4 (Project Legacy) – will build.

The chapter follows a logical progression mirroring EDIAQI's pathway from knowledge to sustainability:

- **Partnerships and Stakeholders:** Identifies the key partners and stakeholder types essential for sustaining EDIAQI's value creation, linking them with the project's communication personas and stakeholder-engagement strategy.
- **Resources and Value Dimensions:** Summarises the technical, human, and institutional assets that underpin EDIAQI's impact, alongside the seven public-value dimensions defined collectively by partners.
- **Beneficiaries and User Relationships:** Explores how EDIAQI engages its audiences through co-creation, capacity building, and transparent communication, forming the human infrastructure for long-term legacy.
- **Channels and Cost Structure:** Describes the dissemination and operational mechanisms supporting outreach and delivery of value, ensuring efficiency and visibility.



- **Sustainability Model:** Outlines the mechanisms – financial, institutional, and network-based – that will ensure continuity through the planned NPO and broader IDEAL Cluster ecosystem.

Together, these sections illustrate how EDIAQI transforms scientific excellence into public value, translating research outputs into practical benefits for citizens, institutions, and policymakers. The Public Value Canvas thus acts as the bridge between the project's results and its long-term sustainability, guiding future decisions on governance, funding, and stakeholder engagement.

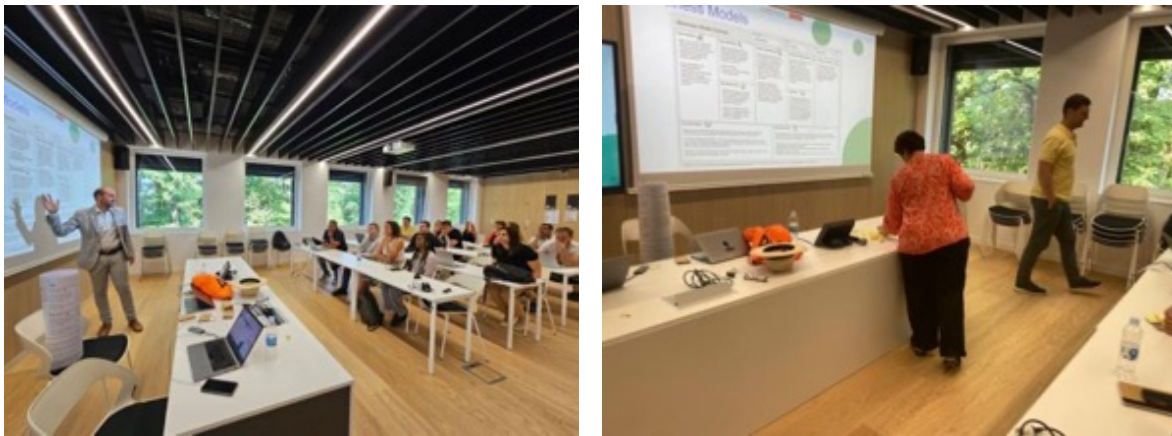


Figure 1 - Public Value Canvas Workshop with Public Sector Partners during Ljubljana Project Meeting 1

### 3.1 Key Partners

The exercise identified a wide network of actors essential for transforming EDIAQI's outcomes into public value:

- **Research and academic institutions** providing scientific expertise, methodologies, and analytical capacity.
- **National and regional research organisations** ensuring evidence comparability and cross-country collaboration.
- **Public authorities** – ministries, municipalities, and environmental agencies – aligning the project with European and national policy frameworks.
- **Schools and educational institutions** acting as testbeds and awareness hubs for children and teachers.



- **Health professionals and public-health agencies** linking IAQ data with prevention and wellbeing initiatives.
- **Technology providers and SMEs** co-developing and maintaining sensors, data systems, and digital platforms.
- **NGOs and citizen groups** facilitating outreach and community participation.
- **European and international bodies** such as Directorate-General for Environment (DG ENV), Directorate-General for Health and Food Safety (DG SANTE), European Environment Agency (EEA), European Health and Digital Executive Agency (HADEA), Directorate-General for Energy (DG ENER), Directorate-General for Research and Innovation (DG RTD), and the World Health Organisation (WHO) ensuring policy coherence and visibility.

### 3.1.1 Alignment with Personas and Stakeholder Value

The Public Value Canvas exercise revealed that the success of EDIAQI's legacy depends not only on the robustness of its technical outputs, but on how effectively these results address the distinct motivations, priorities, and communication behaviours of different stakeholder types. To ensure coherence with the project's overarching communication and engagement strategy, the findings were cross-referenced with the five key personas defined in D7.2 – Communication, Networking Plan and Dissemination Strategy. This alignment ensures that EDIAQI's public value proposition translates into targeted benefits and engagement approaches for each audience group.

Table 1 - Value Dimensions, Beneficiaries, and EDIAQI Personas

| Value Dimension                      | Primary Beneficiaries                       | Personas                             |
|--------------------------------------|---------------------------------------------|--------------------------------------|
| <b>Evidence-based policymaking</b>   | Regulators, researchers                     | Eléonore Dupont, Tomas Vargas, Laura |
| <b>Innovation for public good</b>    | Industry, academia, technology developers   | Maria Hernandez, Laura Mueller       |
| <b>Empowerment through knowledge</b> | Civil society, educators, schools           | Ana Petrović, Tomas Vargas           |
| <b>Equity and inclusion</b>          | Vulnerable groups, children, municipalities | Ana Petrović, Eléonore Dupont        |



|                                               |                                                           |                                              |
|-----------------------------------------------|-----------------------------------------------------------|----------------------------------------------|
| <b>Trust and transparency</b>                 | Public authorities, citizens                              | Ana Petrović, Tomas Vargas, Eléonore Dupont  |
| <b>Capacity building and long-term change</b> | Schools, municipalities, policy and research institutions | Laura Mueller, Eléonore Dupont, Tomas Vargas |

By linking the Public Value Canvas with the personas defined in D7.2, EDIAQI ensures that its communication, dissemination, and legacy strategies remain audience-centred and impact-oriented. This alignment confirms that each stakeholder – whether policymaker, scientist, innovator, or citizen – finds clear relevance in EDIAQI’s results and a meaningful way to engage with the project’s long-term vision.

### 3.2 Key Resources

The workshop emphasised that EDIAQI’s long-term success relies on combining technical, human, and institutional assets:

- **Technical infrastructure** including sensor networks, cloud platforms, and European Union-compliant interoperability frameworks.
- **Scientific and methodological** resources such as calibration protocols, exposure models, and policy frameworks.
- **Human expertise** spanning environmental science, toxicology, epidemiology, and communication.
- **Institutional networks** connecting municipalities, schools, and research bodies across Europe.
- **Digital and communication tools** ensuring transparency and stakeholder access.
- **Financial and administrative support** via Horizon Europe funding and partner co-financing.

These resources were recognised as both prerequisites for project success and cornerstones for sustaining the legacy.

### 3.3 Value Proposition

Participants identified seven core dimensions through which EDIAQI creates public value.



Table 2 – Public Value Dimensions and Impact Pathways

| Public Value Dimension                        | Impact Pathways                                                                                              |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <b>Healthier indoor environments</b>          | Reducing exposure to pollutants in schools, homes, and public buildings to protect vulnerable populations.   |
| <b>Evidence-based policymaking</b>            | Translating IAQ data into regulatory recommendations aligned with the Green Deal and ZPAP.                   |
| <b>Empowerment through knowledge</b>          | Providing citizens, teachers, and municipalities with accessible IAQ insights and guidance.                  |
| <b>Innovation for public Good</b>             | Demonstrating that digital and data-driven innovation can serve environmental health and social wellbeing.   |
| <b>Equity and inclusion</b>                   | Engaging diverse communities and under-resourced regions to ensure fair access to knowledge and tools.       |
| <b>Trust and transparency</b>                 | Promoting open data, participatory monitoring, and clear communication of results.                           |
| <b>Capacity building and long-term change</b> | Strengthening institutional and local capacity to monitor, assess, and act on IAQ issues beyond the project. |

As noted, these dimensions align closely with the stakeholder personas defined in D7.2 – ensuring relevance for policymakers, researchers, innovators, health professionals, and civil society representatives.

### 3.4 Beneficiaries and User Relationships

EDIAQI's beneficiaries range from individual citizens to institutional actors across multiple governance levels. Engagement is built around collaboration, transparency, and capacity development. This includes:

- **Co-creation and participatory engagement:** Citizens, schools, and municipalities are involved as active contributors through workshops and monitoring activities.
- **Citizen science and empowerment:** Data is translated into actionable feedback via dashboards and educational interfaces.
- **Capacity building and mutual learning:** Training sessions and knowledge exchanges strengthen the ability of teachers, health professionals, and public officials to interpret and act on IAQ data.
- **Long-term partnerships:** Sustained collaboration with municipalities and schools ensures continuity beyond the project.



- **Transparency and inclusivity:** Clear communication of findings and open feedback channels foster trust and accountability.

These relationships form the human infrastructure of EDIAQI's legacy, bridging research excellence with societal impact.

### 3.5 Channels

Dissemination and engagement rely on an integrated mix of digital, educational, policy, and community channels:

- **Digital platforms:** The EDIAQI website, data dashboards, IAQ Wiki, and chatbot serve as central access points for open information.
- **Educational channels:** Lesson materials, teacher workshops, and student activities embed IAQ learning within classrooms.
- **Professional and policy channels:** IDEAL Cluster events as well as European and international conferences, connect EDIAQI to policymakers, experts, and citizens.
- **Media and social networks:** LinkedIn, X (Twitter), Instagram, Facebook, YouTube, and newsletters amplify visibility and foster dialogue with the public.
- **Local outreach:** Collaboration with municipalities, schools, and community groups ensures locally relevant dissemination and uptake.

These channels correspond directly to the communication pathways defined in D7.2 and remain key instruments for building trust and awareness.

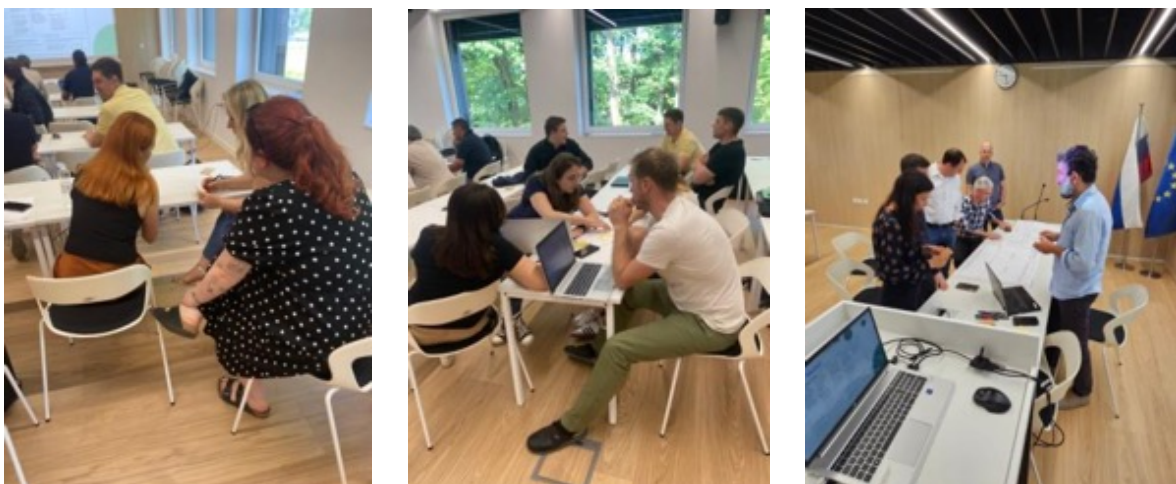


Figure 2 - Public Value Canvas Workshop with Public Sector Partners during Ljubljana Project Meeting 2



### 3.6 Cost Structure

EDIAQI's cost structure reflects the multi-dimensional nature of its value creation:

- **Personnel costs:** Scientific, technical, management, and communication staff essential to project execution.
- **Equipment and infrastructure:** Procurement, calibration, and maintenance of sensors and Information Technology (IT) systems and high-end equipment.
- **Data management:** Hosting, integration, and processing of large IAQ datasets.
- **Operations:** Logistics, training, and travel related to operational implementation.
- **External services:** Subcontracted design, calibration, and communication support.
- **Dissemination and events:** Workshops, conferences, and public engagement activities.
- **Contingency provisions:** Allowances for unforeseen technical or operational challenges.

These expenditures serve dual purposes: immediate project implementation and the creation of reusable infrastructures for legacy continuation.

### 3.7 Sustainability Model

Ensuring continuity of EDIAQI's outcomes requires a diversified sustainability model combining public, institutional, and network-based mechanisms.

The initial canvas identifies several possible directions:

- **Follow-up EU funding:** Pursuing Horizon Europe, LIFE, or Digital Europe calls aligned with air quality, climate adaptation, and health missions.
- **National and regional investment:** Mobilising ministries and municipalities to integrate IAQ monitoring into policy frameworks and budgets.
- **Institutional co-financing:** Encouraging partners and local authorities to maintain and expand sensor networks and data platforms.
- **Public procurement:** Positioning EDIAQI tools as ready-to-use IAQ monitoring services for public buildings and schools.
- **Consultancy:** A dedicated EDIAQI service offering expert advisory support to public and private entities aiming to improve IAQ performance.



- **Private-sector partnerships:** Engaging responsible industry actors and Corporate Social Responsibility (CSR) programmes for awareness and education support.
- **Cluster and network collaborations:** Leveraging IDEAL Cluster synergies to attract cross-project funding and visibility.
- **Philanthropic foundations:** Exploring collaboration with health and environmental foundations for targeted initiatives.
- **Community-based models:** Supporting micro-funding and crowdfunding for citizen-science and school-based projects.

This pluralistic model underlines that EDIAQI's sustainability will depend on both institutional ownership and networked stewardship, rather than a single financial source. The NPO envisaged for PM48 will act as the vehicle to operationalise this model, ensuring the project's continued contribution to healthier indoor environments and evidence-based policymaking across Europe.

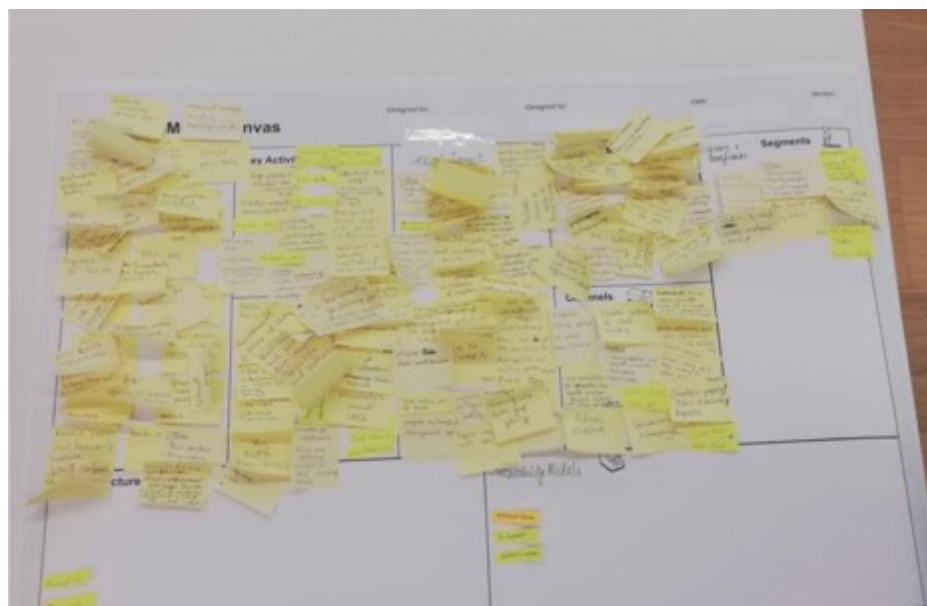


Figure 3 - Final EDIAQI Public Value Canvas



## 4. SWOT Analysis: Stock-Taking of EDIAQI Results and Innovations

Building on the Public Value Canvas exercise, which set the conceptual basis for understanding how EDIAQI creates societal and policy value, this section presents the projects first SWOT analysis and stock taking of innovations. While the Public Value Canvas identified what value EDIAQI generates and for whom, this section focuses on how those values appear in specific results, tools, and solutions, and on the conditions needed to sustain and scale them.

The analysis brings together information from the consortium, pilots, and technical work packages to form an integrated view of the EDIAQI solution portfolio. It reflects both research outputs and practical innovations from pilots, awareness campaigns, modelling tools, and educational materials. Together, these results show EDIAQI's holistic approach to IAQ, linking environmental data, health evidence, behavioural change, and policy impact. The SWOT analysis is essentially a stock taking exercise that maps current results, their value propositions, and their possible pathways to sustainability. It does not aim to capture every aspect of innovation, as some elements are still in development and will be refined later. However, it provides a sound basis for shaping the projects legacy roadmap, policy framework, and future exploitation strategy, including the NPO.

For consistency and comparability, each solution or innovation is described using a standard structure.

Table 3 - Overview of Innovation Reporting Sections

| Section                                                | Purpose                                                                                                                                          |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description</b>                                     | Introduces the innovation, maturity level (e.g., TRL), and relevance within the project.                                                         |
| <b>Innovation Profile and Value Creation</b>           | Summarises the innovation's unique features, core value, and potential for use or exploitation in public, scientific, or market contexts.        |
| <b>Implementation Barriers and Market Landscape</b>    | Describes the main technical, regulatory, or organisational challenges and situates the innovation within its competitive or policy environment. |
| <b>Opportunities, Stakeholders, and Impact Outlook</b> | Outlines future opportunities, key target audiences, and expected societal or economic returns, including next steps for uptake or replication.  |



The chapter is organised into three interconnected parts, reflecting EDIAQI's journey from scientific discovery to societal and policy impact:

- **Scientific Evidence Base:** Presents the scientific results that underpin EDIAQI's knowledge base – mapping pollutant profiles, exposure pathways, and biological responses.
- **Technological Tools and Innovations:** Showcases the instruments, models, and digital platforms tested and validated within EDIAQI – including low-cost sensors, the Know Centre Dashboard, and other interoperable tools – that enable communities and institutions to monitor and manage IAQ cost-effectively.
- **Citizen Empowerment and Policy Enablement:** Builds on evidence and tools to translate scientific insight into public awareness, behavioural change, and policy action.

Together, these three layers trace EDIAQI's value chain: from knowledge generation to practical application and ultimately policy transformation, ensuring that science and technology deliver real benefits for people and the environment.

#### 4.1 Scientific Results and Evidence Base

The following results represent the scientific foundation of the EDIAQI project — the core evidence base upon which its dissemination, policy impact, and exploitation strategy are built. Together, these findings combine validated methodologies, datasets, and analytical tools to map pollutant profiles, airflow dynamics, and health effects in diverse indoor environments – advancing Europe's scientific and policy understanding of how indoor air impacts human well-being.

Taken together they:

- Establish new scientific evidence and analytical frameworks for assessing indoor pollutants and biological responses.
- Demonstrate excellence across medicine, biomedicine, toxicology, molecular biology, data science, environmental sensing, and public health.
- Provide robust inputs for policy development under the Green Deal, ZPAP, and future IAQ initiatives.



- Enable replication, standardisation, and integration into European and national public-health frameworks.

Table 4 - Overview of EDIAQI Scientific Results

| Title and Partner                                                                                                            | Description and Scientific Contribution                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Comparative Analysis of Indoor and Outdoor Airborne Microplastics in School Environments (Vilnius Campaign)</b><br>(FTMC) | Establishes the first Northern European dataset on airborne microplastics in schools, introducing a semi-quantitative inhalation risk index and a harmonised monitoring framework to inform future European Union-wide standards.                                                                                                                                                                           |
| <b>Novel In Vitro Human Hepatic 3D Cell Models</b><br>(NIB)                                                                  | Provides an advanced, human-relevant system for toxicology and chemical safety assessment, improving predictive accuracy and supporting the European Union's transition towards animal-free testing in line with the 3R concept.                                                                                                                                                                            |
| <b>Biomarkers of Health Effects of Indoor Air Pollution</b> (SCH)                                                            | Identifies early biological responses to indoor pollutants through novel metabolite and RNA-based biomarkers, advancing understanding of the health effects of indoor air pollution. The findings lay the groundwork for improved prevention, diagnosis, and personalised healthcare, particularly for children and vulnerable populations.                                                                 |
| <b>IAQ Monitoring: Indoor Air Impacts on Human Health (Zagreb Pilot)</b><br>(IMROH)                                          | Combines scientific monitoring, citizen engagement, and educational outreach to link IAQ indicators with molecular health-related biomarkers, fostering community awareness and preventive behaviours. Identifying early molecular signs of diseases' initiation and progression.                                                                                                                           |
| <b>Integrated Evaluation Framework for Low-Cost Indoor Air Quality Sensors</b> (Consortium)                                  | Provides a comprehensive European methodology for assessing the performance, calibration requirements, and real-world usability of low-cost IAQ sensors. By combining laboratory validation, semi-real testing, field deployment, and URSA analysis, the framework enhances data quality, supports informed procurement, and strengthens the scientific foundations of large-scale IAQ monitoring networks. |
| <b>IDEAL Cluster Collocation Study: Comparative Validation of Low-Cost IAQ Sensors</b> (IDEAL Cluster)                       | A joint validation campaign comparing affordable sensors with reference instruments in real-world indoor environments, enhancing data reliability, citizen-science engagement, and methodological harmonisation across Europe.                                                                                                                                                                              |
| <b>EDIAQI Scientific Publications and Publication Strategy</b><br>(Consortium)                                               | Provides a robust, peer-reviewed scientific evidence base by publishing multidisciplinary results in accessible, open-access formats. These publications ensure the project's findings remain citable, reusable, and foundational for future research, policy development, and innovation long after the project's completion.                                                                              |



#### 4.1.1 Comparative Analysis of Indoor and Outdoor Airborne Microplastics in School Environments (Vilnius Campaign)

Led by FTMC, this pioneering study delivers the first Northern European dataset on airborne microplastics in school environments, addressing a key evidence gap in IAQ standards. It identifies primary sources of microplastics – such as textiles, packaging, and outdoor infiltration – and introduces a semi-quantitative inhalation risk index for children. The methodology provides a harmonised foundation for future EU-wide monitoring and standard-setting. The study directly supports the EDIAQI Policy Intelligence Framework, contributing to the European Union Clean Air Act 2050 Roadmap by positioning microplastics as a distinct pollutant category relevant to public health protection.



Figure 4 - the EDIAQI Vilnius Campaign

##### 4.1.1.1 Innovation Profile and Value Creation

This study stands integrates airborne microplastics into the IAQ policy landscape. It combines robust scientific evidence with tangible policy relevance and scalability.

Key elements of its value proposition include:

- **Policy relevance:** Provides solid evidence to include microplastics in future IAQ legislation.
- **Scientific robustness:** Employs  $\mu$ -FTIR, source apportionment, and inhalation risk models for accurate exposure assessment.
- **Replicability:** Uses a harmonised, size-resolved framework enabling comparability across European contexts.
- **Societal impact:** Directly safeguards children's health by informing building design, material choices, and ventilation improvements.



- **Innovation driver:** Opens new markets for microplastic monitoring, consulting services, and IAQ technology solutions.

#### 4.1.1.2 *Barriers and Competitive Landscape*

While the innovation holds clear potential, several barriers and contextual challenges must be addressed to ensure full adoption and replication.

- **Methodological gaps:** Absence of European Union-wide protocols for airborne MP monitoring may limit standardisation.
- **Technical constraints:** Dependence on advanced lab equipment ( $\mu$ -FTIR, Raman) restricts scalability.
- **Policy lag:** Microplastics are not yet formally recognised in current IAQ directives.
- **Competitive context:** Existing IAQ frameworks focus on Particulate Matter 2.5  $\mu$ m (PM<sub>2.5</sub>), Nitrogen Dioxide (NO<sub>2</sub>), and Volatile Organic Compounds (VOCs) – none of which capture microplastics.

Despite these barriers, the study retains a clear first-mover advantage in shaping the microplastics policy and research landscape in Europe.

#### 4.1.1.3 *Opportunities, Stakeholders, and Impact Outlook*

This innovation offers a strong platform for policy uptake and cross-sectoral collaboration across education, health, and environment domains.

- **Primary audiences:** DG ENV, DG SANTE, national environmental and education authorities, municipalities, public health institutes, Non-Governmental Organisations (NGOs), and parent associations.
- **Short-term (1–3 years):** Use in EDIAQI policy briefs and Clean Air Act 2050 consultations to raise awareness of microplastics in IAQ.
- **Medium-term (3–5 years):** Development of harmonised CEN/ISO methodologies; adoption in national school air-quality frameworks.
- **Long-term (5–10 years):** Integration of microplastics into European Union-level IAQ policy and potential development of commercial monitoring tools and consulting services.

The study also delivers societal and environmental return by protecting children's health, reducing long-term healthcare burdens, and encouraging cleaner indoor material choices.





Figure 5 Location of devices and instrumentation in the school site of Vilnius campaign

#### 4.1.2 Novel In Vitro Human Hepatic 3D Cell Models

**TRL: 5–6** (validated research system, ready for preclinical and regulatory application)

The 3D human hepatic spheroid models replicate the structural and functional complexity of the human liver far more accurately than conventional two-dimensional (2D) cultures. These models, implemented by NIB, demonstrate enhanced metabolic performance and enable long-term or chronic exposure studies – essential for assessing hepatotoxicity, drug metabolism, and environmental chemical risks. By reproducing key physiological and biochemical features of the liver, the innovation supports both regulatory toxicology and predictive health research, bridging in vitro science and real-world human relevance.

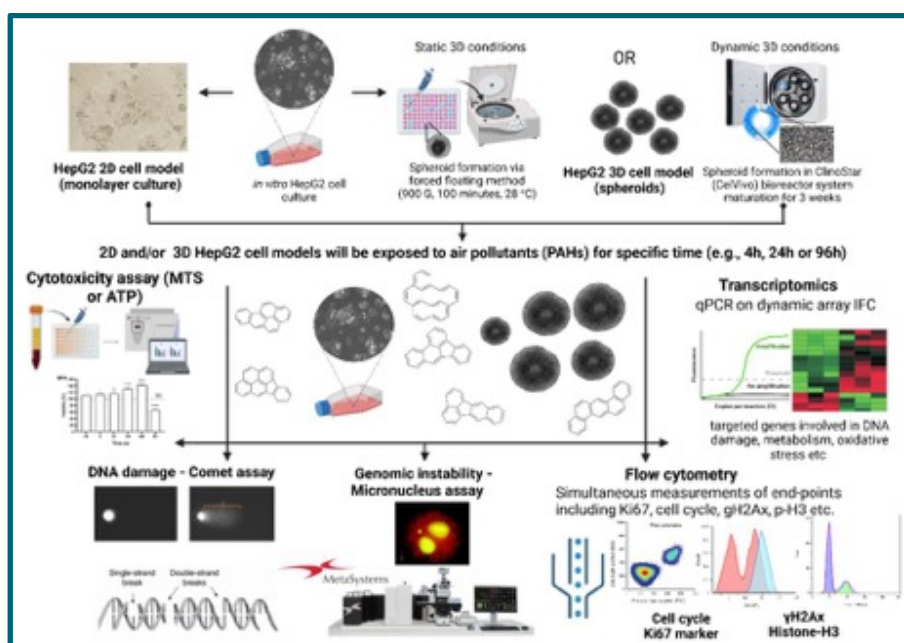


Figure 6 In Vitro Testing Approach on HepG2 Cells (2D and 3D cell cultures)



This project has received funding from the European Union's Horizon Europe Framework Programme under grant agreement N° 101057497.

#### 4.1.2.1 Innovation Profile and Value Creation

The 3D hepatic model offers a transformative platform for toxicology, drug development, and public health by improving predictive accuracy and reducing reliance on animal testing.

Key advantages include:

- **Human relevance:** Mimics native liver physiology, enabling more accurate toxicity and metabolism predictions.
- **Regulatory potential:** Aligns with European Union “Safer and Sustainable by Design” principles and animal testing reduction frameworks.
- **High-throughput compatibility:** Scalable for automated systems and large pollutant libraries.
- **Cross-sector applications:** Valuable for pharmaceuticals, cosmetics, food safety, and nanomaterials.
- **Ethical and societal value:** Supports 3Rs compliance (Replacement, Reduction, Refinement) and improves transparency in safety assessment.

This methodology can be easily transferred and standardised across laboratories, accelerating adoption throughout Europe and internationally.

#### 4.1.2.2 Barriers and Competitive Landscape

Despite its strong advantages, several adoption and systemic challenges persist:

- **Regulatory lag:** 3D hepatic models are not yet fully recognised in OECD or EMA testing guidelines, slowing official acceptance.
- **Technical dependency:** Reliance on proprietary dynamic culture systems (e.g., CelVivo Clinostar) may limit flexibility and increase costs.
- **Standardisation needs:** Inter-laboratory reproducibility requires validation through harmonised Standard Operating Procedures (SOPs) and Quality Assurance (QA) systems.
- **Training requirements:** Transitioning from 2D to 3D systems demands specialised training and awareness-building among researchers.
- **Competition:** Other advanced liver models – such as iPSC-derived organoids and organ-on-chip platforms – compete for market and regulatory visibility, but also present opportunities for collaboration and benchmarking.



#### 4.1.2.3 Opportunities, Stakeholders, and Impact Outlook

This innovation aligns with global trends toward animal-free testing, regulatory modernisation, and sustainable toxicology.

- **Primary audiences:** Pharmaceutical, chemical, and cosmetic industries; Contract Research Organisations (CROs); academic research labs; regulatory authorities such as the European Medicine Agency (EMA) the European Chemicals Agency (ECHA) Organisation for Economic Cooperation and Development (OECD); and public health agencies.
- **Short-term (1–2 years):** Integration into research and academic labs for mechanistic and omics-based studies; workshops and hands-on training for early adopters.
- **Medium-term (2–4 years):** Uptake by CROs and biotech companies for regulatory and safety services; validation under harmonised QA frameworks.
- **Long-term (5+ years):** Recognition in OECD and EMA guidelines, enabling mainstream regulatory acceptance and industrial use.

The societal return includes safer consumer products, reduced animal testing, and earlier identification of toxic compounds – reducing healthcare costs and strengthening environmental and human health protection.

#### 4.1.3 Biomarkers of Health Effects of Indoor Air Pollution

**TRL:** 2–3 (validated exploratory findings, early-stage research)

This research, led by the SCH, explores novel biomarkers of health effects linked to Indoor Air Pollution (IAP) – including metabolites and differential RNA expression patterns. These biomarkers can reveal early biological responses to indoor pollutants, helping to identify risks of respiratory or allergic diseases. While still at an early stage, the results lay the groundwork for improved diagnostic, preventive, and treatment strategies for vulnerable populations, particularly children and individuals with chronic respiratory conditions.

##### 4.1.3.1 Innovation Profile and Value Creation

The SCH innovation represents a pioneering step toward precision health and personalised prevention in environmental medicine. By identifying and validating specific biological indicators of IAP exposure, SCH can bridge clinical medicine, molecular biology, and environmental research. Key value pathways include:



This project has received funding from the European Union's Horizon Europe Framework Programme under grant agreement N° 101057497.

- **Improved healthcare services:** enabling earlier diagnosis and more accurate monitoring of respiratory and allergic diseases, in a less intrusive way.
- **Preventive strategies:** supporting new clinical guidelines and public-health recommendations for managing IAP-related health risks.
- **Societal impact:** contributing to better quality of life and reduced disease burden among children and sensitive groups.
- **Scientific relevance:** expanding translational research and strengthening Europe's knowledge base on environmental health.

The results are replicable across clinical and research contexts, positioning SCH as a regional leader in paediatric allergy and environmental health diagnostics.

#### *4.1.3.2 Implementation Barriers and Market Landscape*

While the innovation offers strong societal value, several structural and systemic challenges affect its full realisation:

- **Infrastructure limitations:** laboratory and data-analysis capacities require upgrading to support large-scale biomarker studies.
- **Skills gap:** bioinformatics and computational biology expertise are still developing, limiting complex data integration.
- **Staff turnover:** early-career researchers often leave before project completion, affecting continuity.
- **Recruitment of test subjects:** citizens are often reluctant to participate in health studies, which can limit sample size and representativeness.
- **Regulatory and Intellectual Property (IP) challenges:** biomarker results, being scientific knowledge, may not be easily protectable by IP rights.

Externally, competing research efforts (e.g. UK Clean Air Programme, IDEAL Cluster partners) are pursuing similar directions, underscoring the importance of coordination and standardisation.

#### *4.1.3.3 Opportunities, Stakeholders, and Impact Outlook*

Growing European Union focus on environmental health, clean air, and preventive care provides a favourable policy and funding environment for exploitation.



- **Primary audiences:** clinicians, biomedical researchers, public-health agencies, patient associations, and policymakers.
- **Short-term (1–2 years):** continued laboratory validation and methodological refinement.
- **Medium-term (3–5 years):** integration into collaborative European Union research initiatives and health-data platforms.
- **Long-term (5+ years):** uptake in clinical guidelines and personalised prevention strategies.

The results could ultimately enhance healthcare delivery and public-health policy through improved prevention and early diagnosis of IAP-related conditions. The primary return is societal and public-health – improved early detection, reduced disease burden, and strengthened preventive medicine capacity. Economic returns are indirect, through health-system efficiencies and innovation-driven collaboration.

#### 4.1.4 Indoor Air Quality Monitoring: Indoor Air Impacts on Human Health

**TRL:** 6–7 (validated pilot demonstrating scientific, behavioural, and societal applicability)

The EDIAQI Zagreb Pilot demonstrates how science, citizen engagement, and public communication can converge to enhance awareness of IAQ as a key determinant of health. Through a combination of citizen-science activities, public campaigns, educational sessions, and sensor validation studies, the pilot connects scientific research on pollutants and biomarkers with public health promotion and community empowerment. It engages citizens, teachers, healthcare professionals, and local authorities to promote preventive behaviours – such as proper ventilation and eco-friendly cleaning practices – contributing directly to European Union policy goals for healthier, more sustainable indoor settings.

##### 4.1.4.1 Innovation Profile and Value Creation

The pilot demonstrates how data-driven science and behavioural change can reinforce one another to deliver measurable public benefits. Its exploitation potential lies in its dual impact: improving citizens' health literacy while stimulating innovation in IAQ monitoring tools and services. Key contributions include:



- **Health insight:** Links IAQ parameters with biological indicators (DNA damage, inflammation, oxidative stress).
- **Preventive value:** Encourages healthy indoor habits and promotes early health check-ups.
- **Education and outreach:** Uses blogs, webinars, and school events to translate research into accessible messages.
- **Market stimulation:** Increases demand for reliable low-cost sensors, air purifiers, and eco-friendly cleaning products.
- **Policy leverage:** Provides evidence and tools to integrate IAQ more explicitly into European Union and national health frameworks.

#### *4.1.4.2 Implementation Barriers and Market Landscape*

Despite its broad engagement and clear public value, several challenges remain:

- **Data governance:** Health-related results are subject to General Data Protection Regulation (GDPR) and ethical approvals, limiting open publication.
- **Sustainability:** Continued awareness campaigns require long-term funding beyond the project lifetime.
- **Standardisation gaps:** Low-cost sensor validation and calibration remain barriers to trust and comparability.
- **Policy inertia:** Lack of binding European Union-wide IAQ standards weakens regulatory urgency and adoption.
- **Behavioural barriers:** Public understanding of IAQ risks is still low compared to outdoor pollution, and changing daily habits remains difficult.

However, these challenges also highlight strategic entry points for policy innovation, cross-sector partnerships, and future projects leveraging EDIAQI's methodologies.

#### *4.1.4.3 Opportunities, Stakeholders, and Impact Outlook*

The pilot aligns strongly with the European Union GD, ZPAP, and Sustainable Development Goal (SDG) 3 (Good Health and Well-being), placing IAQ firmly within Europe's health and sustainability agenda.

- **Target audiences:** Citizens, educators, municipalities, health authorities, NGOs, SMEs developing IAQ technologies, and European Union/national policymakers.



- **Short-term (1–3 years):** Publication of results, replication in schools, and dissemination via IDEAL Cluster activities.
- **Medium-term (3–5 years):** Integration of IAQ education into school curricula; adoption by public-health agencies for preventive campaigns.
- **Long-term (5–10 years):** Uptake into European Union and national frameworks linking IAQ to Non-Communicable Disease (NCD) prevention, with continued demand for IAQ-related products and monitoring services.

The expected ROI lies primarily in public-health and societal value – reduced respiratory disease burden, improved productivity, and lower healthcare costs – supported by secondary market growth for IAQ innovations and sensor technologies.

#### 4.1.5 Comprehensive Evaluation Framework for Low-Cost IAQ Sensors

##### TRL: 5 (M48)

The Comprehensive Evaluation Framework for Low-Cost IAQ Sensors is a methodological system for assessing the performance, calibration needs, and real-world usability of low-cost IAQ sensors. It covers precision testing against reference instruments, detailed calibration procedures, and Usability, Reliability, Sustainability, and Availability (URSA) analysis. The framework improves the quality and reliability of IAQ monitoring conducted by municipalities, schools, research organisations, and citizen-science groups, while providing manufacturers with validated processes to enhance and document product performance.

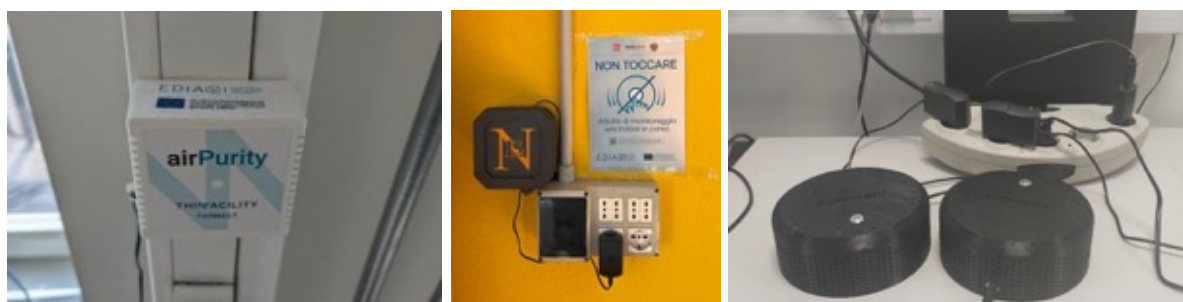


Figure 7 - EDIAQI Pilot Deployed Low-Cost Sensors

##### 4.1.5.1 Innovation Profile and Value Creation

The framework delivers clear value by raising the reliability of low-cost IAQ monitoring across public and private sectors. Its core advantages include:



- A **methodology** covering laboratory, semi-real, and real-world evaluation of low-cost sensors.
- **Validated calibration procedures** produced jointly by multiple providers.
- **URSA assessment** that captures user experience and operational sustainability beyond purely technical measures.
- Support for **informed procurement** and **improved exposure assessment** in schools, workplaces, and municipal networks.
- **Economic potential** through consulting services, calibration services, and integration into vendor documentation.

Its modularity and scientific robustness make it suitable for replication across new pollutants, environments, and sensor generations.

#### *4.1.5.2 Implementation Barriers and Market Landscape*

Several constraints may influence broad adoption:

- No significant IP restrictions, though reliance on **vendor-specific firmware** and **proprietary algorithms** limits transparency.
- **Access** to reference instruments and specialised facilities may challenge smaller organisations.
- **Limited survey sample** sizes in early stages reduce statistical generalisability.

Nevertheless, its holistic design and strong methodological basis provide a clear competitive advantage compared with narrower or vendor-specific approaches.

#### *4.1.5.3 Opportunities, Stakeholders, and Impact Outlook*

There is increasing demand for reliable low-cost IAQ monitoring across Europe. The framework aligns closely with emerging policy needs and can serve as a foundation for standardised sensor validation.

- **Target audience includes:** Municipalities, schools, and public authorities; research institutions; sensor manufacturers; and citizen-science groups/NGOs seeking reliable, validated, and cost-efficient IAQ data for deployment, benchmarking, calibration, and community engagement.

The adoption timeline is expected to progress in stages: immediate use within EDIAQI pilots and IDEAL Cluster activities, followed by broader uptake among European public authorities



and research networks within two to four years. Full integration into standardisation processes, certification schemes, or procurement guidelines is anticipated within four to six years. Expected ROI includes:

- **Societal gains** through higher-quality IAQ data, better exposure understanding, and increased trust in low-cost monitoring.
- **Economic gains** from reduced procurement waste, more effective sensor deployment, and new calibration or consulting services for industry.

The framework will be deployed through open guidance documents, integration into EDIAQI and IDEAL Cluster outputs, and partnerships with sensor vendors. Service-oriented pathways include calibration, validation, and sensor selection advisory support. Long-term sustainability will be achieved by contributing to European standardisation efforts.

#### 4.1.6 EDIAQI Scientific Publications

The scientific publications generated through EDIAQI project constitute a core and lasting output of the project. They convert experimental findings, exposure assessments, biomarker analyses, modelling results, and sensor-validation work into peer-reviewed contributions that strengthen the evidence base on IAQ. These publications ensure that EDIAQI's methods and datasets remain accessible, citable, and usable by researchers, practitioners, and policymakers long after the project's conclusion.

##### 4.1.6.1 Innovation Profile and Value Creation

EDIAQI's publications create value by transforming multidisciplinary research into scientific knowledge. Key benefits include:

- **Advancement of IAQ science:** Publications introduce validated methods for pollutant measurement, sensor calibration, digital modelling, and biomarker exploration.
- **Foundation for future research:** Open, reusable datasets and transparent methodologies strengthen reproducibility and enable comparative studies across Europe.
- **Policy relevance:** Findings provide evidence for health authorities, schools, and European Union institutions developing IAQ guidance and regulatory approaches.



- **Citizen awareness:** The results and findings are translated into clear and accessible information that enables citizens to better understand and take ownership of indoor air quality management in their own spaces.
- **Integration across disciplines:** Publications bring together biomedical, environmental, behavioural, and digital research, offering a comprehensive view of IAQ impacts.
- **Long-term societal contribution:** The published evidence supports healthier buildings, better ventilation practice, and informed public-health action.

Together, the EDIAQI scientific outputs form a durable scientific asset for the European IAQ community.

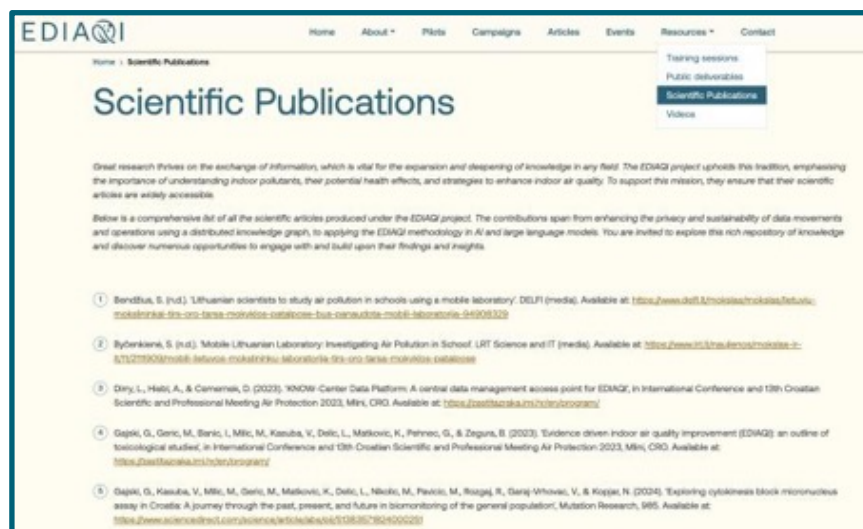


Figure 8 - EDIAQI Scientific Publications Page under Resources Tab on Website

#### 4.1.6.2 Implementation Barriers and Market Landscape

The publication process faces several structural challenges:

- **Multidisciplinary complexity** requiring harmonised methods across laboratories and data types.
- **Lengthy peer-review cycles** in high-impact journals, which may delay visibility.
- **Ethical and data-protection constraints**, particularly for school-based and health-related data.
- **Standardisation issues** around low-cost sensors and pollutant measurements.
- **Resource constraints**, including time, staff turnover, and open-access publication costs.



This project has received funding from the European Union's Horizon Europe Framework Programme under grant agreement N° 101057497.

These factors are typical of large-scale environmental-health projects but underline the need for sustained scientific coordination beyond EDIAQI.

#### *4.1.6.3 Opportunities, Stakeholders, and Impact Outlook*

The growing focus on Healthy Buildings, Zero Pollution, and environmental health offers ideal timing for high-impact publication of EDIAQI results. Open-access visibility and coordinated policy brief pairings can ensure that findings reach regulators, practitioners, and the general public effectively.

- **Target audiences include:** Academic researchers; policymakers and agencies; practitioners and professionals in HVAC, ventilation, and public building management; as well as NGOs, and educators seeking authoritative IAQ evidence.
- **Societal/environmental return:** Improved IAQ awareness, informed policy decisions, and evidence-based health interventions.
- **Economic/indirect return:** Strengthened institutional reputation, increased research collaboration, and improved funding success for consortium partners.

The publication ecosystem will remain active through open repositories (Zenodo) preprint platforms, as well as the project website. Future activities include IDEAL Cluster joint publications to maintain European leadership in IAQ research and policy.

[Access the EDIAQI website's Scientific Publications page.](#)

#### *4.1.7 IDEAL Cluster Collocation Study – Comparative Validation of Low-Cost IAQ Sensors*

The IDEAL Cluster Collocation Study was a joint scientific effort comparing the performance of low-cost IAQ sensors against high-grade reference instruments in a real-world setting. Conducted in a lived-in house, the study examined how affordable sensors capture pollutants such as PM, Carbon Dioxide (CO<sub>2</sub>), and VOCs under varied environmental conditions. By systematically collocating low-cost sensors alongside reference devices and recording events such as cooking, cleaning, and ventilation, the study generated a high-resolution dataset.

##### *4.1.7.1 Innovation Profile and Value Creation*

The collocation study offers an approach to validating low-cost IAQ sensors in lived indoor



environments. Unlike previous laboratory-based comparisons, this study focuses on practical use-cases that mirror real behavioural and architectural contexts.

Its societal value lies in improving access to reliable air-quality information for citizens, schools, and municipalities. The evidence generated can inform future guidelines, procurement policies, and European Union-wide frameworks for IAQ monitoring.

Economically, it reduces the costs of data collection while supporting Small and Medium Sized Enterprises (SMEs) and sensor manufacturers by providing scientifically validated performance benchmarks.

The study's open protocols and standardised methods ensure high replicability. Its results can underpin the development of training materials, digital-twin calibration, and citizen-science initiatives, strengthening Europe's evidence base for healthy indoor environments.

#### *4.1.7.2 Implementation Barriers and Market Landscape*

Such studies face several constraints typical of data-intensive, cross-country research. These include:

- Household data and event time-stamps must comply with **GDPR and ethical-consent standards**.
- Some sensors rely on **proprietary algorithms** or calibration files, limiting transparency and comparability.
- **Differences** in sensor models, firmware, or placement conditions may complicate analysis.

Externally, barriers include:

- **Regulatory uncertainty** over the official use of indicative sensors indoors could delay policy uptake.
- **Rapid market evolution** may render results outdated without periodic follow-ups.

Other validation campaigns exist, but most focus on outdoor pollution or single-vendor trials. The IDEAL Cluster study's distinctive value lies in its multi-country, multi-vendor, and real-home methodology – combining scientific rigour with public engagement and cross-project collaboration.



#### 4.1.7.3 Opportunities, Stakeholders, and Impact Outlook

The collocation study aligns with the growing European focus on healthy buildings, citizen science, and sensor standardisation. It offers a unique opportunity to inform emerging IAQ policies, support standardisation initiatives, and strengthen the design of educational and awareness programmes.

- **Expected returns:**
  - **Societal and environmental ROI:** Broader and more equitable access to indoor-air information, fostering healthier living and learning environments.
  - **Economic ROI:** Reduced monitoring costs, improved procurement decisions, and increased innovation efficiency for SMEs and device manufacturers.

Results will be made available as an open dataset and methodological guide on the EDIAQI and IDEAL Cluster platforms.

## 4.2 Technological Innovations for Indoor Air Quality Management

The EDIAQI project has generated a robust portfolio of technological innovations that combine hardware precision, software intelligence, and interoperable data frameworks to transform IAQ monitoring and management. Together, these solutions form a complete ecosystem – from data acquisition and calibration to real-time analytics and decision support – bridging the gap between laboratory research and everyday application in schools, workplaces, and public buildings.

Collectively, they:

- Demonstrate Europe’s capacity to translate scientific excellence into deployable IAQ technologies aligned with European Union policy and standards.
- Deliver interoperable, user-friendly, and scalable tools that empower public institutions and private actors to manage healthy indoor environments.
- Contribute to the European Green Deal, the ZPAP, and the European Union Air Quality Directive (2024/2881) through traceable data, adaptive models, and decision-support systems.

Table 5 -Overview of EDIAQI Technological Innovations

| Innovation | Description and Technological Contribution |
|------------|--------------------------------------------|
|------------|--------------------------------------------|



This project has received funding from the European Union’s Horizon Europe Framework Programme under grant agreement N° 101057497.

|                                                                                                                 |                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>LAS Multi-Sensor System for Indoor Air Quality Monitoring</b> ( <i>LAS, TRL 9</i> )                          | A high-precision multi-sensor unit integrating particulate matter, gas, and environmental sensors with automated calibration and data logging. The system enables continuous, accurate measurement of IAQ parameters and supports harmonised monitoring across pilot sites and laboratories.                            |
| <b>AIRWINGS Environmental Monitoring System</b> ( <i>WINGS, TRL 9</i> )                                         | A comprehensive multi-sensor and cloud-analytics system that measures gases, particulate matter, and key environmental parameters. The platform integrates real-time analytics, Air Quality Index computation, and AI-based prediction and alerts, enabling continuous indoor–outdoor monitoring within a 1 km radius.  |
| <b>EDIAQI Dashboard for Data Visualisation and Integrity Control</b> ( <i>Know, TRL 7</i> )                     | A modular digital platform providing interactive dashboards, anomaly detection, and data-validation algorithms to ensure the reliability of IAQ measurements. The dashboard enables users to visualise, compare, and interpret data from multiple sources through an intuitive interface designed for decision support. |
| <b>Seasonal Adjustment of Indoor Air Pollutants Using a Periodic Gaussian Process</b> ( <i>RegionH, TRL 6</i> ) | An advanced statistical model capturing seasonal and periodic variations in IAQ parameters, improving data accuracy and predictive performance. The method supports automated adjustment of monitoring results and enhances cross-site comparability across Europe.                                                     |
| <b>EDIAQI Digital Twin for IAQ Simulation and Decision Support</b> ( <i>Ascalia, TRL 7</i> )                    | A virtual modelling and simulation tool integrating real-time sensor data with building parameters to predict IAQ scenarios and optimise ventilation strategies. The digital twin enhances preventive maintenance and policy testing by enabling “what-if” analyses in dynamic indoor environments.                     |
| <b>Integrated IAQ Monitor: Air Quality Beacon &amp; Immission Evaluator</b> ( <i>TROPOS, TRL 8</i> )            | A compact, portable IAQ monitoring platform designed for simultaneous assessment of pollutants and microclimatic conditions. Combining advanced optics and cloud connectivity, it supports rapid deployment in schools and workplaces, linking local measurements with large-scale environmental datasets.              |

#### 4.2.1 LAS Multi-Sensor System for Indoor Air Quality Monitoring

**TRL: 9** (market-ready system)

The LAS multi-sensor system (NetPID™ EDIAQI) represents a robust, calibratable, and traceable solution for continuous monitoring of indoor air pollutants. Developed within the Ferrara Pilot, it bridges the gap between low-cost consumer devices and high-end laboratory instrumentation. Unlike standard consumer-grade sensors, which lack metrological traceability and standardisation, LAS’s approach integrates professional-grade



multi-sensor units with a consultative and standard-compliant methodology for deployment. The system was tested in real-world environments such as schools and municipal buildings, combining air measurements with building characteristics and user behaviour to produce actionable insights on comfort, safety, and well-being.

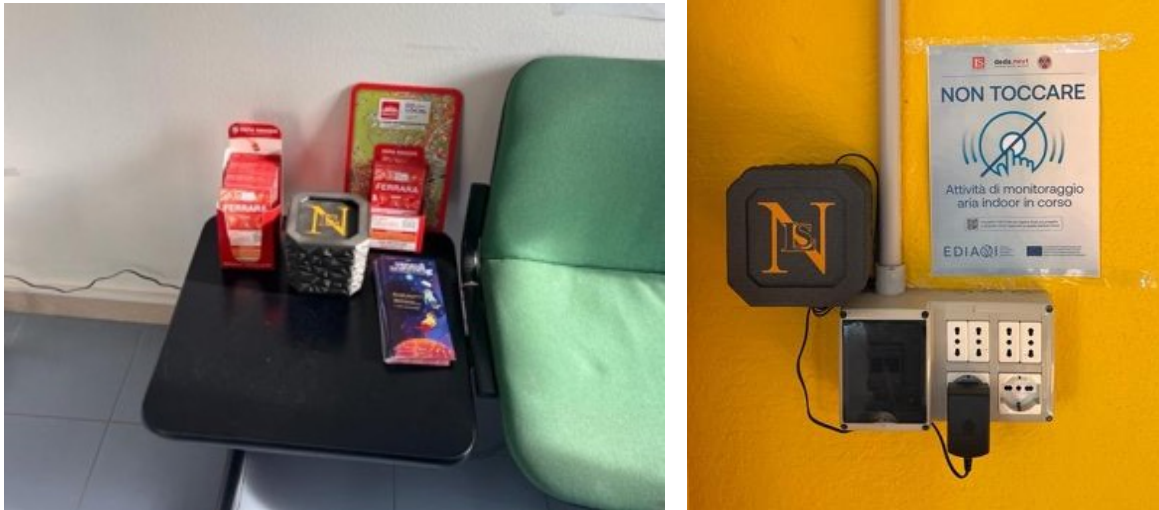


Figure 9 LAS Low-cost IAQ sensors in use in the Ferrara pilot

#### 4.2.1.1 Innovation Profile and Value Creation

LAS's innovation moves beyond measurement – it provides a service ecosystem for IAQ diagnostics, consultancy, and long-term improvement. Its key value lies in transforming IAQ monitoring from a single-point measurement into a standardised, replicable, and professional service model.

Core advantages include:

- **Metrological reliability:** Calibratable sensors traceable to reference standards.
- **Regulatory alignment:** Designed for compliance with ISO 16000 and emerging European Union IAQ requirements.
- **Non-invasive design:** Compact, flexible deployment suitable for schools, offices, and public buildings.
- **Consultative approach:** Integrates data interpretation and building diagnostics to support informed interventions.
- **Scalability:** Compatible with broader networks of laboratories and engineering firms offering environmental services.



This system not only provides accurate data but also empowers local administrations and private operators to manage IAQ strategically.

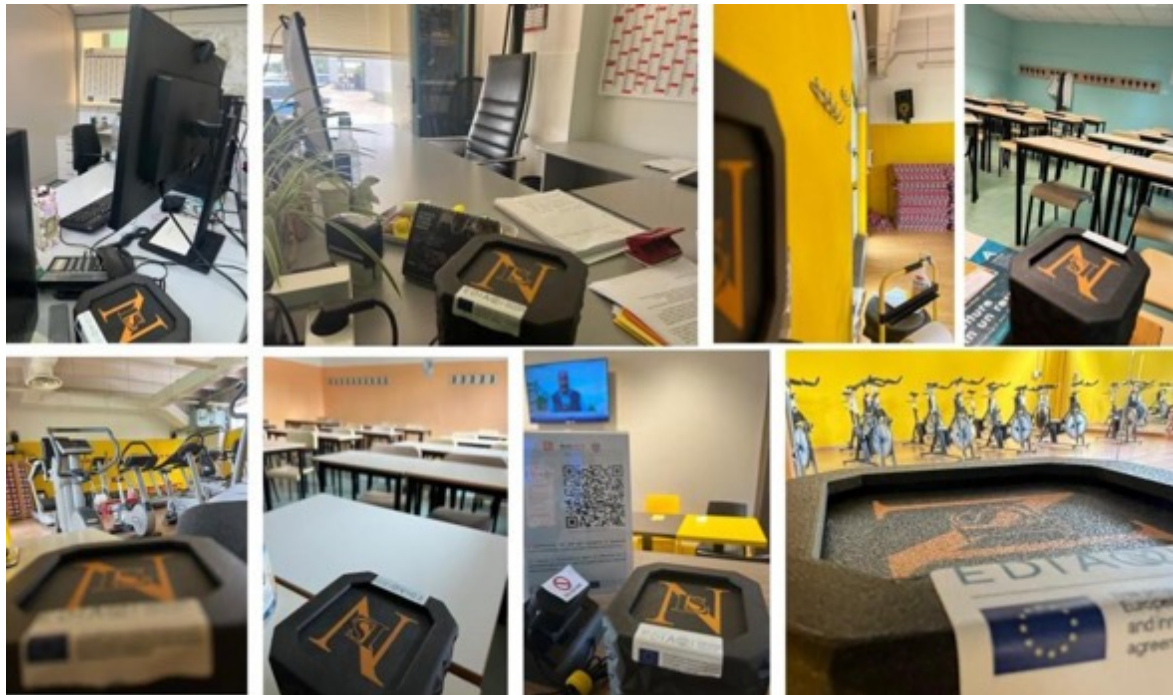


Figure 10 Installation of Netpid™ EDIAQI monitoring unit in the Ferrara Pilot

#### 4.2.1.2 Implementation Barriers and Market Landscape

While the technology is market-ready, a few barriers could influence its large-scale adoption:

- **Market inertia:** Limited awareness among industry professionals of the added value of continuous multi-sensor monitoring.
- **Regulatory uncertainty:** Delays in enforcing binding IAQ legislation may slow uptake.
- **Competition:** The market remains dominated by low-cost consumer devices that lack accuracy but are highly accessible.
- **Information sensitivity:** LAS retains technical design details confidential to safeguard competitive advantage.

Nevertheless, these challenges also highlight a first-mover opportunity to shape a market segment focused on professional IAQ consulting and traceable data-driven building management.



#### 4.2.1.3 Opportunities, Stakeholders, and Impact Outlook

The introduction of the new European Air Quality Directive (2024/2881) creates an ideal regulatory window for LAS's professional-grade solution.

- **Target audiences:** SMEs, large enterprises, hospitals, schools, municipal offices, laboratories, and consulting firms.
- **Short-term (1–2 years):** Deployment in research and demonstration sites; training laboratories on standardised IAQ campaigns.
- **Medium-term (2–4 years):** Expansion to national markets as IAQ monitoring becomes a legal obligation for certain building types.
- **Long-term (5+ years):** Commercial roll-out of sensor units and related consultancy services across the European Union, with potential integration into smart-building management systems.

ROI will derive from unit sales, rentals, and service contracts, complemented by knowledge-based revenue from training and consulting. The system's scientific robustness also strengthens the European Union's competitiveness in the IAQ technology sector while promoting healthier public buildings and better indoor environments for citizens.

#### 4.2.2 AIRWINGS Environmental Monitoring Ecosystem

**TRL: 9** (market ready solution)

AIRWINGS is an integrated hardware–software ecosystem for continuous indoor and outdoor air quality monitoring, prediction, and management. It combines multi-pollutant sensing with cloud analytics and AI-driven forecasting to deliver high-resolution environmental intelligence across urban, industrial, and health-sensitive settings. Within EDIAQI, AIRWINGS supported exposure campaigns linked to clinical asthma follow-up in children, demonstrating its suitability for public-health monitoring. Equipped with multi-sensor units measuring gases, particulates, meteorological conditions, and comfort parameters, and supported by a cloud platform offering AQI computation, exposure analysis, and risk alerts, AIRWINGS provides reliable, actionable information within a one-kilometre radius to municipalities, schools, clinics, and smart-city operators.





Figure 11 - AIRWINGS Environmental Monitoring System

#### 4.2.2.1 Innovation Profile and Value Creation

AIRWINGS offers a comprehensive and scalable solution that moves beyond static monitoring by integrating sensing, communications, predictive analytics, and environmental-risk intelligence within one unified platform. Core value propositions include:

- **Wide-spectrum measurement:** Multi-gas and particulate monitoring combined with meteorological and comfort indicators.
- **Predictive analytics:** AI-powered forecasting, anomaly detection, and wildfire-risk alerts as premium service layers.
- **Flexible deployment:** Multi-connectivity (WiFi, 4G/5G, NB-IoT, LoRa, GPRS) enabling installation in diverse environments.
- **Clinical relevance:** Suitable for health-exposure studies and asthma research, as demonstrated in EDIAQI campaigns.
- **Scalability:** Effective for both indoor and outdoor environments, from single buildings to district-level networks.
- **Alignment with European priorities:** Supports the Air Quality Directive 2024/2881, climate resilience, and child-health initiatives.



The platform empowers public authorities, schools, clinics, and companies to plan interventions, protect populations at risk, and anticipate environmental hazards through accurate, high-frequency intelligence.

#### *4.2.2.2 Implementation Barriers and Market Landscape*

While commercial and technically mature, certain conditions may influence large-scale adoption:

- **Healthcare integration:** Interfaces with clinical systems for asthma or respiratory monitoring are not yet standardised.
- **Sensor maintenance:** Periodic calibration and hardware upkeep introduce operational requirements.
- **Regulatory diversity:** National differences in IAQ legislation can slow procurement and deployment.
- **Public-sector constraints:** Adoption may fluctuate with national funding cycles.
- **Data governance:** AI-based environmental monitoring must comply with GDPR and maintain public trust.

Despite these challenges, AIRWINGS benefits from rising demand for environmental intelligence, wildfire-detection systems, and predictive IAQ analytics across Europe.

#### *4.2.2.3 Opportunities, Stakeholders, and Impact Outlook*

Growing demand for environmental intelligence, children's health protection, and climate-resilient urban planning creates a favourable policy window for AIRWINGS adoption. The system addresses a broad set of stakeholders across sectors, enabling systemic uptake and cross-domain integration.

- **Target audience:** Schools and clinics (as primary EDIAQI users), municipalities and environmental authorities, digital-health operators, smart-city departments, industrial facilities, airports and ports, civil-protection agencies, and research groups working on asthma, pollution, and climate risks.

The platform is already commercialised, with integration of EDIAQI results expected to accelerate institutional adoption within two to three years. The dual ROI is clear:



- **Societal ROI:** Reduced asthma exacerbations through early alerts, improved decision-making for schools and clinics, and enhanced public understanding of pollution exposures.
- **Economic ROI:** Increased demand for IAQ sensors, environmental analytics, and smart-city deployments, stimulating innovation for SMEs and service providers.

AIRWINGS is scalable across regions, building types, and operational contexts, ensuring continued relevance and long-term impact beyond the project's duration.

#### 4.2.3 EDIAQI Dashboard: Visualising and Ensuring Data Integrity

**TRL: 7** (validated prototype with high potential for operational deployment)

The EDIAQI Dashboard is a versatile, user-friendly application designed to manage, monitor, and visualise the large volumes of IAQ data generated during the project's pilots and campaigns. Built on the FROST Server infrastructure, the Dashboard acts as a central interface that enables users – from researchers to health agencies – to rapidly assess data quality, identify anomalies, and compare environmental conditions across multiple monitored sites. By providing transparent data diagnostics, the tool ensures data reliability, which is a fundamental prerequisite for scientific modelling, policy assessment, and AI-based analytics.

##### 4.2.3.1 Innovation Profile and Value Creation

The Dashboard offers a unique integration of real-time monitoring, troubleshooting, and data comparison within one intuitive platform. It was designed to ensure that IAQ datasets – often vast and complex – remain usable, accurate, and consistent throughout the project lifecycle.

Key features and strengths include:

- **Data Monitoring:** Continuous tracking of all sensor datastreams, instantly detecting data gaps, missing streams, or irregular transmissions.
- **Troubleshooting and Quality Control:** Identification of invalid or negative values, inconsistencies in measuring units, and streaming rate issues – enabling targeted fixes at hardware or software levels.



- **Comparative Analytics:** Aggregation of IAQ data across multiple sites, allowing users to benchmark performance against user-defined thresholds and reference standards.
- **User-centric design:** The Dashboard is intuitive enough for general users while providing advanced functionality for scientific and institutional users.
- **Cross-sector applicability:** Easily adaptable to future projects beyond EDIAQI, where large-scale environmental or health data monitoring is required.

In short, the Dashboard enhances data trustworthiness and operational efficiency, converting raw data into actionable insight.

#### *4.2.3.2 Implementation Barriers and Market Landscape*

While the tool provides a distinctive and flexible architecture, several operational and competitive challenges remain:

- **Data privacy and authentication:** Ensuring compliance with GDPR and secure user management for both metadata and live streaming data.
- **Licensing and open-source dependencies:** Components such as Streamlit, FROST, PostgreSQL, and Plotly require careful licence alignment for commercial adaptation.
- **Adaptation requirements:** Additional coding is still required to make the tool fully modular and usable without custom scripting per project.
- **Maintenance dependency:** Long-term usability depends on guaranteed technical support and service continuity.

While there are similar data visualisation platforms, none combine IAQ-specific troubleshooting and quality diagnostics in a single, easily deployable tool. These considerations position the Dashboard as a differentiated yet evolving solution, capable of scaling with proper service integration and support structures.

#### *4.2.3.3 Opportunities, Stakeholders, and Impact Outlook*

The Dashboard responds to the growing global recognition that data quality is as important as data volume in AI, environmental monitoring, and health analytics.

- **Target audiences:** Public-sector projects, environmental and health institutions, scientific partners, and private users seeking data-driven insight into IAQ or similar datasets.



- **Short-term (0–6 months):** Continued use in non-profit and research projects as an open or semi-open dashboard for data validation and visualisation.
- **Medium-term (1 year):** Adaptation into a market-ready software product for private customers or institutional users, packaged with training, service, and maintenance.
- **ROI and sustainability:** Expected break-even within one year after deployment in the private sector, driven by software licensing and service contracts.

By providing both immediate usability and scalability across sectors, the Dashboard supports Europe’s digital transformation goals through data transparency, interoperability, and user empowerment.

#### 4.2.4 EDIAQI Digital Twin for Indoor Air Quality Simulation and Decision Support

**TRL: 6** (validated prototype, ready for pilot integration)

The EDIAQI Digital Twin IAQ Simulation and Decision Support is a hybrid, web-based modelling tool that integrates Computational Fluid Dynamics (CFD), mass balance models, and physics-informed neural networks. It simulates the dispersion of pollutants, airflow dynamics, and filtration performance in real-time indoor environments, using live sensor inputs and 3D room geometry captured via LiDAR scans or building plans. Developed and validated in the EDIAQI Zagreb pilot, the system translates complex environmental data into visual, interactive maps that allow users to understand pollutant movement, identify problem areas, and test the impact of ventilation or behavioural changes. By reducing dependence on high-performance computing, it brings advanced IAQ analysis within reach for schools, municipalities, and building managers.

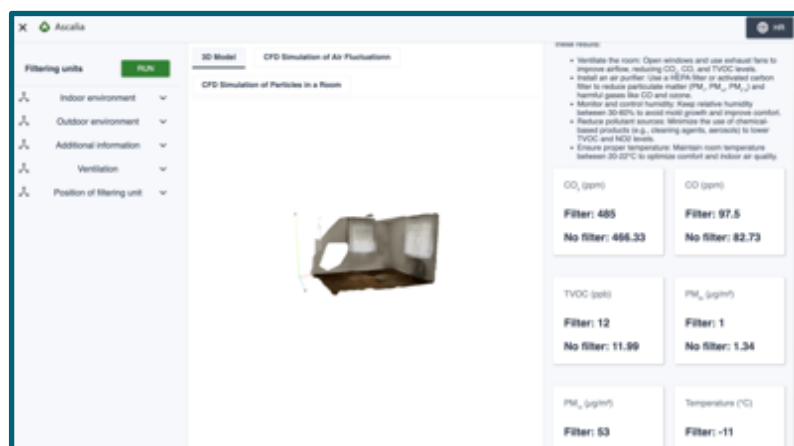


Figure 12 - EDIAQI Digital Twin for IAQ Simulation and Decision Support



This project has received funding from the European Union’s Horizon Europe Framework Programme under grant agreement N° 101057497.

#### 4.2.4.1 Innovation Profile and Value Creation

The Digital Twin represents a scalable and cost-efficient solution that bridges scientific modelling and practical application in IAQ management.

The strengths include:

- **Accessibility:** Runs in a browser environment, making CFD and Artificial Intelligence (AI) simulation usable without specialist hardware.
- **Integration:** Works seamlessly with low-cost sensors tested in EDIAQI, supporting real-time calibration and adaptive learning.
- **Customisation:** Applicable across multiple settings – schools, offices, hospitals, and residential buildings.
- **Interoperability:** Compatible with Building Management Systems (BMS) and smart-city data infrastructures.
- **Public and policy value:** Enables evidence-based IAQ assessment, supporting THE Green Deal, ZPAP, and EPDB.

In addition to supporting public-sector decision-making, the tool has commercial potential through consultancy services, licensing to facility managers, and integration within broader digital-twin ecosystems for sustainable buildings.

#### 4.2.4.2 Implementation Barriers and Market Landscape

The main challenges relate to integration, data management, and market entry:

- **Technical dependencies:** Integration of third-party CFD engines and sensor Application Programming Interface (APIs) may require licensing or additional adaptation.
- **Data protection:** Use of behavioural or occupancy data (e.g., window and door activity) must comply with GDPR.
- **Standardisation:** Ensuring interoperability with proprietary BMS and Internet of Things (IoT) systems requires alignment with European Union data-space standards.
- **Market awareness:** Limited familiarity among municipalities or schools with the concept of digital twins may slow adoption.
- **Competition:** Major engineering and software firms (e.g., Autodesk, Siemens, Dassault Systèmes) offer advanced but less accessible alternatives.



Despite these factors, EDIAQI's digital twin occupies a unique niche – scientifically robust, user-friendly, and policy-aligned – positioned between complex industrial systems and oversimplified consumer applications.

#### *4.2.4.3 Opportunities, Stakeholders, and Impact Outlook*

Growing EU investment in AI-driven sustainability, healthy buildings, and urban digital twins provides a strong policy and funding context. The solution is relevant for:

- **Public authorities and municipalities** managing IAQ in schools, offices, or public buildings.
- **Facility managers and engineers** seeking affordable IAQ diagnostics and simulation.
- **Research institutions and universities** for education and applied experimentation.
- **Environmental SMEs and consultants** offering IAQ services.
- **HVAC and smart-building manufacturers** integrating predictive IAQ monitoring.

After the end of the project it is estimated that it will take 12–24 months to get it on the market, with potential for commercial and institutional integration within three to five years. The expected ROI includes:

- **Societal:** Healthier indoor environments, improved public awareness, and better-informed building operation.
- **Environmental:** Support for energy-efficient ventilation and reduced exposure to pollutants.
- **Economic:** Cost savings through optimisation of ventilation strategies and potential consultancy or licensing revenues.

The path forward focuses on maintaining an open-access demonstration platform, developing professional service packages, and engaging partners.

[Access EDIAQID Digital Twin for IAQ simulation and decision support.](#)

#### *4.2.5 Seasonal Adjustment of Indoor Air Pollutants Using a Periodic Gaussian Process*

**TRL: 7** (validated model, ready for integration into IAQ platforms and epidemiological studies)

This innovation introduces a periodic Gaussian Process (GP) framework that dynamically models seasonal variance in indoor air pollutants. The method improves the accuracy of



long-term exposure metrics by accounting for cyclical fluctuations in pollutants such as Black Carbon (BC) and Nitrogen Oxides (NO<sub>x</sub>). By applying Bayesian inference to time-series data, the model enables more precise estimation of indoor exposure and health risks across different climatic and behavioural contexts. Developed by RegionH, this model serves as a bridge between data science and environmental epidemiology, making IAQ datasets more reliable for researchers, public-health authorities, and insurers.

#### 4.2.5.1 Innovation Profile and Value Creation

The periodic GP model delivers both scientific and operational value, transforming raw time-series data into seasonally adjusted, uncertainty-quantified exposure metrics.

Key advantages include:

- **Transferable methodology:** Once trained for one pollutant, the model can be re-trained for others with sufficient longitudinal data.
- **Scientific reliability:** Achieves strong predictive performance ( $R^2 \approx 0.75\text{--}0.80$  for BC & NO<sub>x</sub>).
- **Quantified uncertainty:** Bayesian framework provides posterior distributions, enabling transparent risk analysis.
- **Open science approach:** Implemented in open-source libraries (Pyro PPL, ArviZ, Scikit-learn) and published on GitHub for reproducibility.
- **Integration-ready:** Can be embedded into IAQ sensor software, HVAC controllers, or building-management systems for real-time corrections.

This data-driven correction framework enhances the precision of both epidemiological models and commercial IAQ analytics, supporting informed decisions in health policy and indoor-environment management.

#### 4.2.5.2 Implementation Barriers and Market Landscape

The approach is scientifically advanced but faces several technical and operational constraints:

- **Computational complexity:** Hamiltonian Monte Carlo sampling (NUTS) is resource-intensive and limits real-time applications.
- **Data dependency:** Requires dense, longitudinal datasets; performance declines with sparse or irregular inputs.



- **Regulatory and validation hurdles:** Emerging AI-based modelling standards may demand additional benchmarking and transparency.
- **Competition:** Deep-learning models may offer faster inference but lack interpretability; current IAQ vendors (e.g. Airthings, uHoo) rarely apply robust seasonal correction.
- **Data governance:** Linking IAQ data to health records must comply with strict privacy and ethical requirements, with attention to the sensitive nature of children's data.

Despite these barriers, the GP model occupies a distinctive niche: scientifically rigorous, open-source, and specifically tailored for seasonal IAQ adjustment – an underdeveloped area in current commercial and public-health tools.

#### 4.2.5.3 Opportunities, Stakeholders, and Impact Outlook

Growing recognition that indoor pollutant exposure varies seasonally has created strong demand for adaptive, machine-learning-based correction tools.

- **Primary markets:** Smart-building, Heating Ventilation, and Air Conditioning (HVAC), and health-tech industries; public-health agencies; environmental insurers.
- **Public-value partners:** National health and environmental agencies, municipal IAQ programmes, NGOs, and European Union research consortia.
- **Short-term (3–6 months):** Validate GP correction across two independent IAQ datasets; publish open code updates.
- **Medium-term (6–12 months):** Package as a Docker-based REST API and Software Development Kit, with dual open-source and commercial licences.
- **Long-term (1–2 years):** Integration into IAQ sensor software stacks and epidemiological models.

Expected ROI arises from reduced modelling uncertainty, improved health-risk prediction, and market uptake by building-automation and environmental-analytics firms. For public partners, the key value lies in more accurate exposure data feeding into policy design, climate adaptation measures, and insurance frameworks.

#### 4.2.6 Integrated Indoor Air Quality Monitor: Air Quality Beacon and Immission Evaluator

**TRL: 8** (fully operational and field-validated prototype)



The Air Quality Beacon and Immission Evaluator (AQBIE) is an integrated, portable IAQ monitor designed to measure complex aerosol and particulate pollution metrics, including particle number size distribution and black carbon mass concentrations. By merging high-precision instrumentation with affordability and modular design, AQBIE bridges the gap between costly reference-grade equipment and consumer-grade devices. The system supports scientific research, public monitoring, and policy enforcement, providing robust data for exposure studies, environmental assessments, and awareness campaigns.

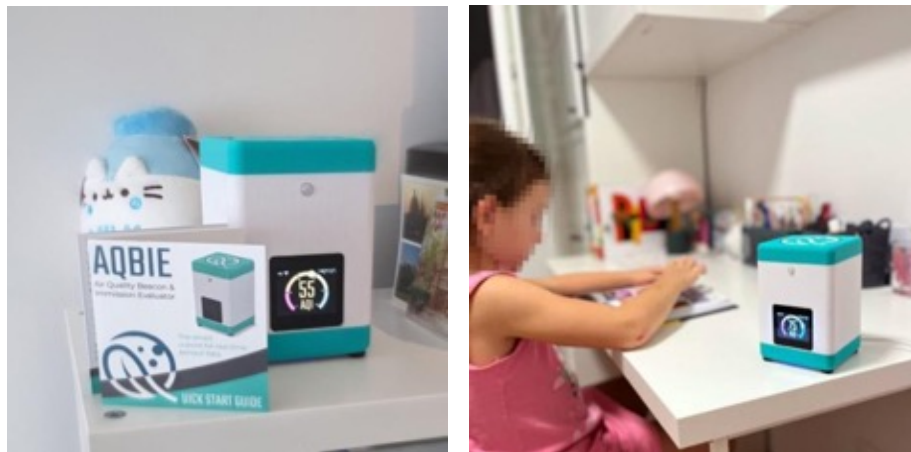


Figure 13 - EDIAQI Air Quality Beacon and Immission Evaluator

#### 4.2.6.1 Innovation Profile and Value Creation

AQBIE's value lies in its unique combination of scientific rigour, modular flexibility, and cost-effectiveness, opening new opportunities across research, policy, and commercial applications. Key features and advantages include:

- **Comprehensive measurement capability:** Accurately quantifies aerosol number and size distributions, surpassing the limitations of typical low-cost PM sensors.
- **Versatile deployment:** Suitable for schools, hospitals, offices, government buildings, and residential environments.
- **Complementary to high-precision instruments:** Offers a scalable, medium-cost solution for dense IAQ monitoring networks.
- **Integration potential:** Can be embedded into smart-building and IoT systems, linking air quality data with energy and comfort management.
- **Societal impact:** Generates actionable data to inform urban planning, occupational health, and public awareness.



The instrument's open architecture and user-friendly interface make it an ideal platform for research replication, citizen engagement, and policy co-design in air quality management.

#### *4.2.6.2 Implementation Barriers and Market Landscape*

Several constraints and risks could affect large-scale deployment or commercialisation:

- **Intellectual property:** Patent protection may be required for design, sensor integration, and software interface.
- **Cost and accessibility:** Use of high-grade components increases production cost compared to low-end commercial sensors.
- **Regulatory uncertainty:** Not yet recognised as an official reference device, limiting uptake by some authorities.
- **Data privacy:** Indoor deployments must comply with GDPR and ethical frameworks for exposure monitoring.
- **Market competition:** Established firms already offer low-cost PM solutions, though with weaker performance in particle sizing and accuracy.
- **Funding dependency:** Market entry may rely initially on public-sector or research funding, given the limited budgets for IAQ instrumentation.

Nonetheless, AQBIE's technical credibility and traceable measurement quality create a distinctive competitive advantage in the mid-range IAQ instrumentation market.

#### *4.2.6.3 Opportunities, Stakeholders, and Impact Outlook*

The AQBIE innovation responds to the growing demand for scientifically reliable yet cost-efficient IAQ monitoring solutions across Europe and beyond. It is designed to serve a wide range of target audiences, including:

- **Research institutes:** Conducting exposure and health-impact studies requiring validated, portable IAQ data.
- **Public authorities:** Monitoring IAQ in schools, hospitals, and public buildings to ensure compliance with health and safety standards.
- **Industrial and occupational-safety actors:** Deploying mobile, high-accuracy tools to assess workplace environments and protect employee well-being.

Its market pathway is well defined and phased to support sustainable growth and adoption:



- **Short term (1–2 years):** Pre-commercial production and deployment within research and municipal networks, supported by calibration and maintenance services.
- **Medium term (2–4 years):** Partnership with smart-building and IoT providers to integrate AQBIIE into data-driven BMS.
- **Long term (4+ years):** Expansion into European and international markets, including low- and middle-income countries seeking accessible and reliable air-quality solutions.

The ROI is twofold:

- **Commercial ROI:** Estimated at 15–18%, achieved through tenfold monitoring coverage at equivalent cost to current reference systems.
- **Societal ROI:** Improved IAQ is expected to reduce absenteeism in schools and workplaces by 5–10%, with healthcare cost savings offsetting network investments within two to three years.

AQBIIE delivers value across the economic, social, and environmental dimensions, contributing directly to the Green Deal, the ZPAP, and the SDGs.

#### 4.3 Citizen Empowerment and Policy Enablement

Building on the strong scientific evidence base established through EDIAQI's research outputs and the technological tools and methodologies validated and refined in its innovation portfolio, this final group of actions focuses on maximising impact, visibility, and policy influence. It translates the project's results into education, awareness, and engagement instruments that empower citizens, institutions, and policymakers alike. In addition to the initiatives listed below, the project has also enabled a range of further impact activities – such as the public radio campaign conducted in Zagreb – which demonstrate how these materials continue to foster awareness and behavioural change beyond the original project scope.

Europe is currently governed by a fragmented patchwork of legislation that regulates only selected pollutants in particular indoor environments – often differing not only between Member States but even across regions or localities. In close cooperation with the other IDEAL Cluster projects, EDIAQI directly addresses this gap by:



This project has received funding from the European Union's Horizon Europe Framework Programme under grant agreement N° 101057497.

- Providing the **scientific evidence base** needed for coherent, European-wide IAQ policy development;
- Delivering **practical tools and digital solutions** that allow public authorities, schools, and businesses to monitor and manage IAQ effectively;
- **Empowering citizens and professionals** to take ownership of their own IAQ through awareness, education, and behavioural change; and
- Supporting the **formulation of evidence-based policies** to ensure that all Europeans – and communities beyond Europe’s borders – can enjoy the fundamental right to clean and healthy indoor air.

Together, these initiatives demonstrate how EDIAQI moves from knowledge generation to societal transformation – bridging science, technology, and governance to advance Europe’s ambition for cleaner, safer, and more equitable indoor environments.

Table 6 - EDIAQI Tools and Initiatives for Citizen Empowerment and Policy

| Innovation (Owner, TRL)                                                                       | Purpose and Public Value                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Indoor Air Quality Awareness and Advocacy Campaign</b> ( <i>EDIAQI Consortium, TRL 9</i> ) | A flagship behavioural-change initiative combining citizen-science activities, multilingual educational materials, and social media campaigns. It builds a European movement for indoor air literacy, empowering citizens, schools, and policymakers to act on IAQ and providing a replicable model for future awareness programmes.                                                                   |
| <b>EDIAQI Knowledge Base (Wiki) and IAQ Simulation Tool</b> ( <i>TalTech, TRL 9 / 6</i> )     | A dual public-knowledge platform combining a multilingual Wiki with an interactive simulation tool. It transforms scientific data into accessible learning and decision-making resources, enabling users to explore pollutant dynamics and identify healthier indoor practices, while offering future potential for integration into Building Information Monitoring (BIM) and smart-building systems. |
| <b>Training Materials KIT (Ages 6–18)</b> ( <i>USEV and EDIAQI Consortium, TRL 7</i> )        | A comprehensive, multilingual educational kit designed for primary and secondary schools. It embeds IAQ awareness within science and health curricula, cultivating environmental literacy and lifelong healthy habits among Europe’s youth through workbooks, teacher guides, and interactive media.                                                                                                   |
| <b>Indoor Air Quality Educational Video Series</b> ( <i>EDIAQI Consortium, TRL 8–9</i> )      | A multilingual set of short educational videos that translates complex IAQ science into clear, accessible messages for the general public. The series promotes healthier daily practices, supports large-scale awareness campaigns, and provides a                                                                                                                                                     |



|                                                                                                                   |                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                   | reusable audiovisual resource for schools, municipalities, and NGOs across Europe.                                                                                                                                                                                                                                |
| <b>Training Course for Teachers and Building Managers</b> ( <i>USEV and EDIAQI Consortium, TRL 9</i> )            | An open-access, multilingual online course that empowers teachers and facility managers to translate IAQ science into daily practice. It strengthens professional competence in ventilation, monitoring, and maintenance, directly contributing to healthier, energy-efficient learning and working environments. |
| <b>EDIAQI Webinar Series – Public Engagement and Policy Dialogue Platform</b> ( <i>EDIAQI Consortium, TRL 9</i> ) | A cross-sectoral dialogue platform connecting science, policy, and society. With 20 recorded sessions in collaboration with the IDEAL Cluster, it establishes an enduring open-access knowledge base and a replicable model for communicating evidence and fostering policy literacy on IAQ across Europe.        |
| <b>EDIAQI Policy Intelligence Framework</b> ( <i>EDIAQI Consortium</i> )                                          | A strategic evidence and policy framework integrating findings from all project components. It provides the analytical foundation and actionable recommendations for future European Union and national IAQ legislation, ensuring that scientific insight informs long-term regulatory and societal change.       |

#### 4.3.1 Indoor Air Quality Awareness and Advocacy Campaign

**TRL: 9** (fully developed and piloted; ready for replication and policy integration)

The EDIAQI IAQ Awareness and Advocacy Campaign represents a cornerstone of the project’s public-value mission. It builds a cultural and behavioural shift towards recognising IAQ as a critical determinant of health by engaging citizens, schools, policymakers, and professional communities. Through surveys, workshops, webinars, social-media campaigns, city labs, and blog series, the campaign combines science communication, citizen empowerment, and participatory learning. Its methodology – rooted in behavioural insights and co-creation – translates complex scientific data into practical actions for everyday health and sustainability.

##### 4.3.1.1 Innovation Profile and Value Creation

The campaign delivers a replicable model of public engagement and behavioural change, linking IAQ awareness to European Union public-health and environmental priorities.

Key strengths and outputs include:

- **Validated assessment tools:** Long- and short-form questionnaires offering reliable baseline data on public perception and behavioural trends.



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- **Educational toolkit:** Audience-specific materials (workbooks, videos, teachers' guides, and online courses) translated into ten languages.
- **City labs and citizen-science pilots:** Hands-on activities combining low-cost sensors with perception surveys, adaptable to different indoor environments.
- **Integrated communication strategy:** Multi-channel outreach through social media, blogs, and webinars managed by a dedicated dissemination team.
- **Partnership model:** Collaboration with schools, municipalities, libraries, as well as school and educational associations ensures reach and continuity.

This combination of data-driven insight, participatory learning, and multi-stakeholder partnerships creates a strong foundation for policy uptake, public health improvement, and private-sector alignment.

#### *4.3.1.2 Implementation Barriers and Market Landscape*

The campaign's success is balanced by several operational and contextual challenges:

- **Ownership and licensing:** Campaign materials are jointly owned by partners; commercial reuse requires prior agreement.
- **Ethical compliance:** Data from surveys must adhere to GDPR and approved ethical frameworks.
- **Uneven engagement:** Certain demographics (e.g., young males, lower-educated groups) remain harder to reach.
- **Resource dependence:** Workshops and city labs require trained facilitators and technical equipment.
- **Policy fragmentation:** Lack of European Union-wide IAQ legislation limits immediate policy traction.
- **External competition:** Existing initiatives (WHO, EEA, national campaigns) focus on standards rather than behavioural awareness, underscoring EDIAQI's unique contribution.

Despite these constraints, the campaign's combination of scientific rigour and participatory design positions it as a model for awareness-raising in environmental health.



#### 4.4.1.3 Opportunities, Stakeholders, and Impact Outlook

Growing attention to healthy buildings and post-pandemic ventilation standards creates a timely policy window for adoption. The initiative targets a broad range of stakeholders to ensure systemic change and cross-sectoral uptake.

- **Target groups:** public-sector bodies (municipalities, ministries, EU agencies), the education sector (schools and universities), health and environmental authorities (applying EDIAQI's questionnaires for preventive action), private-sector partners (smart-building, HVAC, and sensor companies), and civil-society organisations (NGOs and community groups leading awareness and citizen-science initiatives).

The solution is ready for deployment, with widespread institutional adoption considered feasible within two to three years. The return on ROI is twofold:

- **Societal ROI:** Reduced healthcare costs and absenteeism through improved indoor environments, increased public understanding of IAQ, and enhanced overall quality of life.
- **Economic ROI:** Indirect market stimulation for IAQ products and services – such as ventilation systems, eco-cleaning solutions, sensors, and filters – supporting SMEs and driving green innovation.

Its scalability across languages, educational systems, and governance levels ensures a lasting impact well beyond the project's lifetime.

#### 4.3.2 EDIAQI Knowledge Base (Wiki) and Indoor Air Quality Simulation Tool

**TRL:** Wiki – 9 | Simulation Tool – 6

The EDIAQI Wiki and Simulation Tool together form an integrated public knowledge and engagement platform designed to advance awareness, education, and decision-making on IAQ. The Wiki provides clear, multilingual information on pollutants, ventilation strategies, sensor interpretation, and health impacts, while the Simulation Tool allows users to model and compare indoor scenarios (e.g. ventilation frequency, heating type, occupancy patterns).

The Wiki also hosts two additional web-based tools that expand its practical utility:

- **Airtightness in Mediterranean Housing Tool:** an online estimator that predicts airtightness levels in social housing using region-specific models.



- **Disease Risk Airborne Tool:** an intuitive calculator and visualiser for airborne transmission risk across different environments.

Together, these resources link evidence, education, and interactivity — enabling citizens, schools, and professionals to understand indoor environments more clearly and apply data-driven improvements, while directly supporting the EDIAQI mission and contributing to ZPAP objectives.

[Access the Airtightness in Mediterranean Housing Tool](#)

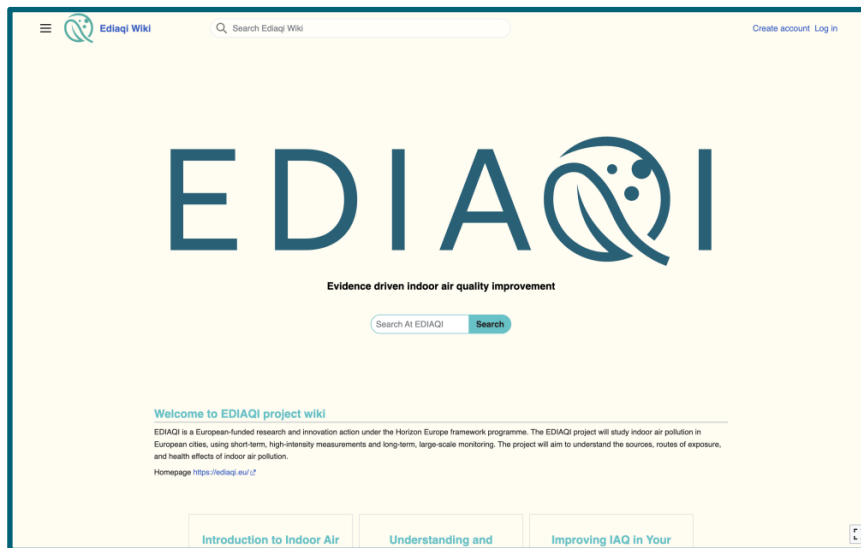


Figure 14 - The EDIAQI Wiki Home Page

#### 4.3.2.1 Innovation Profile and Value Creation

The Wiki and Simulation Tool deliver high societal and educational value by translating complex IAQ science into accessible, actionable knowledge. The Wiki acts as a freely available reference point for citizens, teachers, and policymakers, while the Simulation Tool transforms that knowledge into practical learning by visualising how changes in ventilation or materials affect pollutant levels. From an exploitation perspective, the open-access Wiki supports long-term public-value creation and continuous dissemination of EDIAQI results. The Simulation Tool, meanwhile, presents potential for commercial adaptation – for instance, integration into BIM systems, smart-home platforms, or IAQ consulting services. Together, they enable a seamless continuum from awareness to technical application.



Figure 15 - EDIAQI Simulation Tool Home Page

#### 4.3.2.2 Implementation Barriers and Market Landscape

A few structural and operational challenges must be managed to ensure sustainability.

These include:

- **Continuous expert input** and maintenance are required to keep the content accurate and the simulation datasets current.
- Some pilot-derived data are bound by **ethical or data-sharing agreements**, and integration of **third-party APIs** (e.g. weather data) requires ongoing licence compliance.
- The **absence of a formal hosting commitment** beyond the project end could risk discontinuity if no institutional custodian is designated.

On the competition side, existing commercial IAQ simulators focus mainly on energy optimisation rather than public-health literacy, leaving a unique niche but also highlighting the need for strong communication and positioning.

#### 4.3.2.3 Opportunities, Stakeholders, and Impact Outlook

This dual-component innovation benefits from strong policy and societal momentum around Healthy Buildings, Zero Pollution, and Renovation Wave initiatives. It aligns with a growing public demand for transparent, science-based information on indoor environments.

- **Target audiences include:** public authorities and municipalities (developing IAQ or health-promotion programmes), educational and cultural institutions (schools, universities, museums), NGOs and citizen groups advancing sustainability and health



literacy, building managers and technical professionals using the simulation tool for training, and researchers and policymakers shaping IAQ standards and awareness initiatives.

The Wiki will be fully operational by the end of the project and has already been deployed and is available via the website. In addition, the simulation tool is undergoing refinement and will be fully operational by the end of project although there is the possibility to make a more professional tool for commercial purpose.

The expected ROI is twofold:

- **Societal/environmental return:** Increased IAQ literacy, behavioural change toward healthier practices, and measurable health benefits such as reduced respiratory symptoms and improved wellbeing.
- **Economic/innovation return:** Foundation for commercial spin-offs or partnerships with HVAC and IT companies, and potential cost savings from better-informed building management and reduced healthcare burden.

#### 4.3.3 Training Materials KIT

**TRL: 7** (fully operational and ready for educational deployment)

The EDIAQI Training Materials KIT is a comprehensive educational package designed to raise awareness of IAQ from an early age, nurturing healthy and sustainable behaviours that extend into adulthood. By embedding IAQ topics within existing school curricula (Science, Health Education, Environment), the KIT promotes a systemic, long-term approach to environmental health literacy. Developed collaboratively within the EDIAQI consortium, the materials serve as a public and educational innovation that directly contributes to European efforts in sustainability, child health, and clean indoor environments.

##### 4.3.3.1 Innovation Profile and Value Creation

The KIT enables children and educators to explore complex IAQ concepts through accessible and interactive resources, strengthening environmental awareness in formal and informal learning contexts.





Figure 16 Example Pages from the Workbooks

Key features include:

- **Dual-level structure:** Two tailored versions for ages 6–12 and 13–18, progressively introducing IAQ principles such as CO<sub>2</sub>, PM, VOCs, ventilation, and filtration.
- **Multi-format design:** Includes workbooks, a teacher's guide, an animated video, and participation diplomas to engage learners and educators alike.
- **Modular integration:** Compatible with multiple national curricula and easily embedded into Science, Environmental Studies, or Health Education courses.
- **Multilingual accessibility:** Available in ten languages (Italian, Spanish, Croatian, Lithuanian, Greek, Slovenian, German, Danish, Estonian, and English).
- **Synergy with other EDIAQI outputs:** Reinforces public engagement activities and complements IAQ monitoring and awareness campaigns.

By combining visual tools, didactic structure, and multilingual accessibility, the KIT represents a scalable European model for IAQ education that can be integrated into schools, libraries, museums, and science centres.

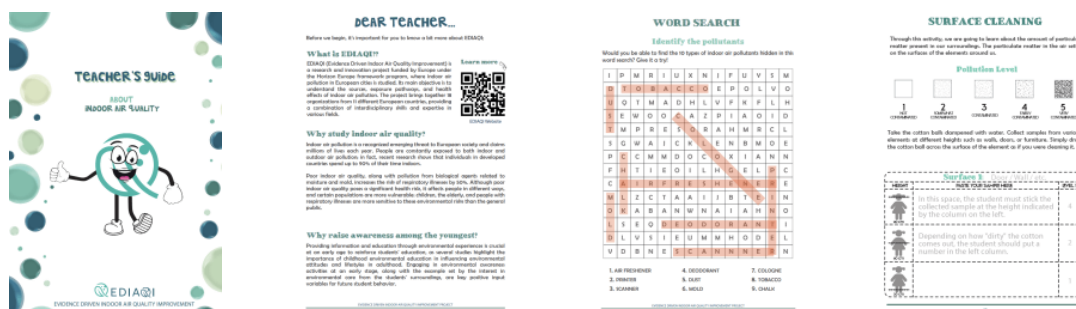


Figure 17 Example pages from the Teacher's guide



This project has received funding from the European Union's Horizon Europe Framework Programme under grant agreement N° 101057497.

#### 4.3.3.2 Implementation Barriers and Market Landscape

While the KIT's educational and social value is strong, certain factors may affect widespread adoption:

- **Copyright and usage rights:** Materials are consortium-owned; external use requires agreement or licensing.
- **Dependence on institutional adoption:** Implementation relies on school engagement and support from education authorities.
- **Need for teacher training:** Limited educator knowledge of IAQ may slow uptake without capacity-building initiatives.
- **Administrative variability:** Differences in national curricula can delay formal integration.
- **Sustainability challenges:** Long-term visibility depends on ongoing funding or institutional endorsement post-project.
- **Competition:** Other environmental education programmes often focus on climate change, recycling, or energy efficiency, overshadowing IAQ topics

#### 4.3.3.3 Opportunities, Stakeholders, and Impact Outlook

The KIT aligns with key European policy priorities on child health, sustainable education, and environmental justice, generating momentum for institutional adoption. It engages a wide spectrum of users and multipliers to ensure both pedagogical and societal impact:

- **Primary audiences:** Schools and teachers integrating IAQ content into formal curricula.
- **Secondary audiences:** Municipalities, NGOs, libraries, museums, and citizen-science networks conducting workshops and public awareness activities.
- **Policy alignment:** Directly supports the European Green Deal, the Zero Pollution Action Plan, and the UN Sustainable Development Goals (SDGs 3, 4, 11, and 13).
- **Deployment timeline:** Ready for immediate use, with formal policy integration expected within two to three years.
- **Early validation:** Partners such as ANT (Croatia) have successfully piloted the materials in national educational contexts (May 2025).

The expected impact and ROI are substantial:



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- **Societal return:** Greater public understanding of IAQ, adoption of healthier indoor practices, and reduced incidence of respiratory illness among children and teachers.
- **Economic return:** Improved school attendance and well-being leading to lower healthcare costs and reduced productivity loss.
- **Scalability:** Digital expansion through applications, gamified learning, and audiovisual media can significantly broaden outreach and sustain engagement beyond the project's duration.



Figure 18 - Student Diploma as EDIAQI Education Training Course for Children

Distribution will be ensured through open educational licences available on the EDIAQI website and partner platforms, supported by teacher training and institutional partnerships to guarantee long-term integration and sustained impact.

#### 4.3.4 Awareness Video Series for the General Population

**TRL: 7** (fully operational and ready for large-scale dissemination)

The EDIAQI Awareness Video Series is a multilingual audiovisual package designed to communicate essential indoor air quality concepts to the general population. By translating scientific evidence into short, engaging, and accessible messages, the series promotes healthier daily practices and strengthens public understanding of IAQ risks and solutions. Developed collaboratively across the consortium, the videos form a core communication asset that advances European objectives on public health, environmental literacy, and clean indoor environments.





Figure 19 Some images from the general information video

#### 4.3.4.1 Innovation Profile and Value Creation

The video series enables citizens of all ages to understand key IAQ concepts through clear visual explanations and expert-informed content. It supports behavioural change by encouraging practical actions such as adequate ventilation, pollutant reduction, and proper maintenance of household equipment. Key features include:

- **Concise, engaging format:** Short videos simplifying scientific concepts for broad public audiences.
- **Modular design:** Each video functions independently or as part of a complete awareness campaign.
- **Multilingual accessibility:** Produced in ten consortium languages to maximise inclusivity and reach.
- **AI-enhanced production:** Voiceovers and language adaptation supported by AI tools for efficient, scalable deployment.
- **Cross-sector usability:** Suitable for schools, municipalities, NGOs, health agencies, and social media outreach.
- **Complementarity:** Strengthens and extends the impact of EDIAQI educational materials, dashboards, campaigns, and monitoring outputs.

By merging scientific accuracy, visual clarity, and multilingual reach, the video series provides a replicable European model for IAQ awareness and public-health communication.

#### 4.3.4.2 Implementation Barriers and Market Landscape

The video series is robust and widely usable, but several factors may influence uptake:

- **IP and usage rights:** Scripts and visual content are consortium-owned; external reuse requires agreement.



- **Reliance on dissemination channels:** Effective reach depends on visibility strategies of partners and institutions.
- **Variable public engagement:** Competing environmental messages may reduce attention without targeted promotion.
  - **Content updates:** Emerging research and new IAQ standards may require periodic revision to maintain relevance.

In terms of competition, existing environmental videos focus mainly on outdoor pollution or climate change, limiting awareness of indoor environments.

#### *4.3.4.3 Opportunities, Stakeholders, and Impact Outlook*

The series aligns with major European initiatives on public health, environmental justice, and citizen engagement. It serves as a highly deployable tool with wide relevance across sectors.

- **Target audience:** The general population, including families and communities; schools and educators integrating IAQ topics into learning; municipalities and local authorities running public-health or environmental campaigns; NGOs and civil society groups engaged in awareness and advocacy; health agencies and public institutions promoting preventive behaviours; and digital platforms or media channels seeking accessible, reliable environmental content.

The video series aligns directly with the European Green Deal, the ZPAP, and the SDGs, 4, 11, and 13). Final production is underway, with full dissemination readiness expected by mid-2026, and early piloting by partners has already demonstrated strong engagement and positive feedback, confirming its suitability for large-scale awareness and educational use across Europe. Expected impact and return includes:

- **Societal return:** Improved IAQ literacy, healthier daily practices, and reduced exposure to indoor pollutants.
- **Economic return:** Indirect benefits through improved well-being, reduced illness, and more efficient household behaviour.
- **Scalability:** Strong potential for integration into digital platforms, municipal programmes, EU awareness campaigns, and blended-learning initiatives.



Distribution will be ensured through the EDIAQI website, social-media channels, partner institutions, and open-access licences, supported by coordinated communication strategies to ensure long-term reach and sustained public impact.

#### 4.3.5 Training Course for Teachers and Building Managers

**TRL: 7** (fully operational and ready for deployment)

The EDIAQI Training Course for Teachers and Building Managers strengthens two key professional communities – educators and facility operators – who play a crucial role in improving indoor environments. Teachers gain the tools to integrate IAQ awareness into curricula, inspiring behavioural change among students, while building managers learn how to optimise ventilation, filtration, and maintenance practices in schools, offices, and public buildings. The course contributes directly to European Union goals on sustainability, energy efficiency, and public health, fostering a new culture of prevention, awareness, and environmental responsibility across Europe.

##### 4.3.5.1 Innovation Profile and Value Creation

This innovation translates complex scientific evidence on IAQ into practical, user-friendly modules tailored to real-world application. Key features include:

- **Dual-target structure:** Five shared thematic units (covering IAQ science, monitoring, ventilation, health impacts, and management) plus specific modules for each audience (teachers and building managers).
- **Interactive learning:** Self-assessment quizzes and final practical exercises to consolidate learning outcomes.
- **Flexible delivery:** Online format enabling asynchronous learning across Europe.
- **Multilingual access:** Available in ten consortium languages, ensuring inclusivity and scalability.
- **Expert-driven design:** Developed by leading IAQ researchers and practitioners, ensuring scientific accuracy and credibility.

The course model is replicable and scalable, suitable for adoption by ministries of education, facility-management associations, and environmental agencies. It also provides a foundation



for potential certification or continuing education programmes on sustainable and health-conscious building operation.

#### *4.3.5.2 Implementation Barriers and Market Landscape*

Several challenges could affect full-scale adoption:

- **Ownership and licensing:** Course content is consortium-owned; reuse requires prior agreement.
- **Institutional uptake:** Lack of official accreditation could limit participation without endorsement from ministries or associations.
- **Didactic depth:** Developed by IAQ experts, further pedagogical adaptation may enhance learning experience.
- **Updating content:** Ensuring alignment with evolving IAQ regulations and technologies will require ongoing effort.
- **Competition:** Existing training courses tend to focus on energy efficiency or occupational health rather than IAQ.

Despite these barriers, EDIAQI's course stands out as the first dedicated, open-access European training focusing on indoor air quality, connecting science, education, and building management through an interdisciplinary approach.

#### *4.3.5.3 Opportunities, Stakeholders, and Impact Outlook*

The course aligns with the Green Deal, the ZPAP, and the EPBD, creating a strategic opportunity for integration into both national and European-level training frameworks. It is designed to reach a wide audience of educators, practitioners, and sustainability professionals:

- **Primary audiences:** Teachers, facility and building managers working in schools, universities, and public offices.
- **Secondary audiences:** Environmental agencies, professional associations, NGOs, and sustainability networks promoting healthier indoor environments.
- **Policy alignment:** Reinforces European Union and national commitments to healthy, energy-efficient indoor environments and supports the implementation of post-COVID ventilation standards.



- **Deployment timeline:** Course modules are finalised and ready for immediate release, with institutional uptake anticipated within two years.
- **Hosting platform:** Available on OpenLearn Create and the EDIAQI website, ensuring free, multilingual, and open access for learners across Europe.

The expected returns are both tangible and enduring:

- **Societal ROI:** Enhanced IAQ management, reduced exposure to indoor pollutants, and healthier learning and working environments.
- **Economic ROI:** Lower absenteeism, improved energy performance, and increased well-being translating into higher productivity.
- **Environmental ROI:** Promotion of sustainable ventilation and maintenance practices consistent with European Union climate objectives.

The open-access, multilingual format guarantees long-term sustainability and integration into professional training ecosystems, supporting the continued development of healthy and energy-efficient buildings across Europe.

#### 4.3.6 EDIAQI Webinar Series: Public Engagement and Policy Dialogue Platform

**TRL:** 9 (fully operational; 20 episodes recorded by project end)

The EDIAQI Webinar Series is the flagship communication and engagement platform of the project, designed to promote dialogue between science, policy, and society on IAQ. Each episode convenes experts, policymakers, and citizens to exchange evidence, experiences, and policy insights, bridging the gap between research outcomes and public understanding.

The series has become a recognisable brand within the IDEAL Cluster, establishing EDIAQI as a reference point in the European IAQ ecosystem and contributing to cross-project visibility and knowledge exchange.



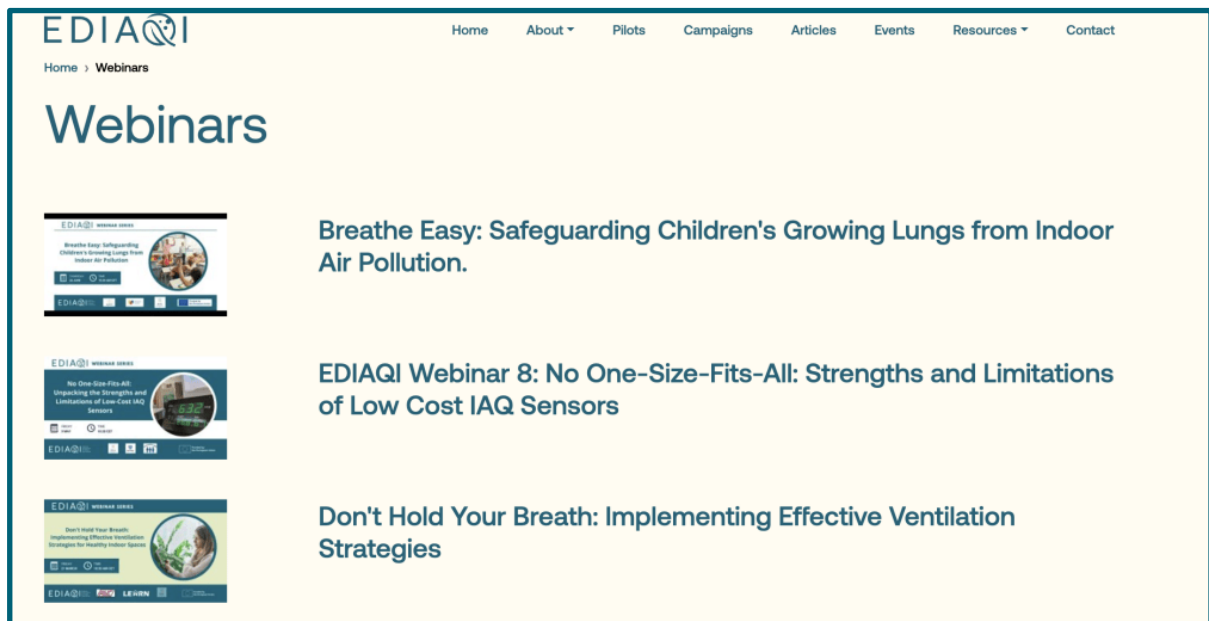


Figure 20 - EDIAQI Webinar Series on the Project Website

#### 4.3.6.1 Innovation Profile and Value Creation

The webinar series demonstrates a powerful model for interactive, cross-sectoral communication in European Union research projects.

Key features include:

- **Cross-sector reach:** Integrates policymakers, researchers, educators, industry, and citizens in an open dialogue.
- **High-quality content:** 20 episodes produced in collaboration with IDEAL Cluster projects, featuring leading experts and European Union officials.
- **Strong visual identity:** Consistent branding and messaging across all sessions reinforce trust and recognition.
- **Accessible format:** Freely available recordings hosted on YouTube and the EDIAQI website for long-term viewing.
- **Strategic alignment:** Thematically structured around five pillars – visibility, influence, engagement, identity, and network leverage.

Beyond outreach, the series creates a digital legacy of open-access knowledge resources, directly supporting policy literacy, public health promotion, and awareness.



This project has received funding from the European Union's Horizon Europe Framework Programme under grant agreement N° 101057497.

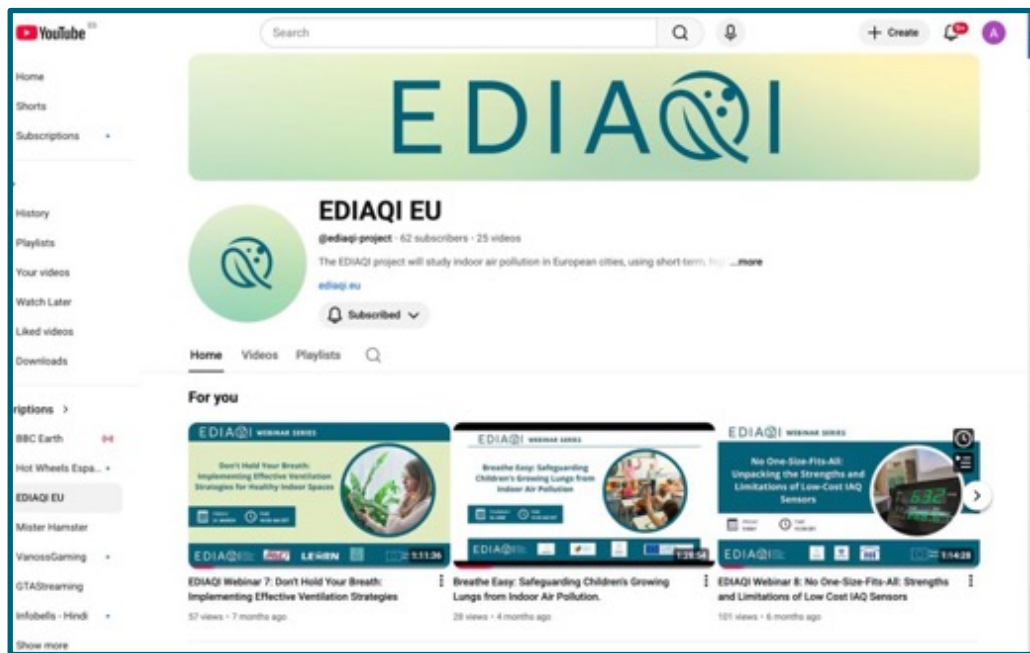


Figure 21 - EDIAQI Webinar Series on Project YouTube Channel

#### 4.3.6.2 Implementation Barriers and Market Landscape

While highly successful, several challenges may affect post-project sustainability:

- **Sustainability:** Requires continuous communication investment and coordination among partners.
- **Audience saturation:** Webinar fatigue in digital event formats may reduce engagement over time.
- **Legacy management:** Without dedicated funding, maintaining the online library and promotion may become challenging.

Unlike conventional “competitors”, EDIAQI operates within a collaborative policy ecosystem. Other actors – such as IDEAL Cluster projects, WHO, and environmental NGOs – are strategic allies whose alignment strengthens the shared goal of a comprehensive European IAQ framework.

#### 4.3.6.3 Opportunities, Stakeholders, and Impact Outlook

The webinar series directly contributes to European policy objectives under the ZPAP by fostering informed, inclusive, and evidence-based debate. It serves as a key mechanism for translating research insights into policy dialogue and practical action across sectors.



- **Target audiences:** European Union institutions (DG SANTE, DG ENV), national health and education ministries, policymakers, educators, NGOs, citizen groups, and industry representatives from the IAQ, HVAC, and smart-building sectors.
- **Deployment timeline:** Fully completed by M48, with legacy recordings and materials to remain accessible after the project's conclusion.

The expected returns are both societal and financial:

- **Societal ROI:** Greater public and institutional awareness of IAQ, a strengthened community of practice, and tangible policy influence in the fields of air quality, health, and building regulation.
- **Financial ROI (indirect):** Increased partner visibility, expanded collaboration and funding opportunities, and potential monetisation.

The webinar model offers a cost-efficient, scalable, and replicable approach to stakeholder engagement. Its modular format and open-access recordings ensure it remains an enduring and valuable pillar of the project's legacy and public value.

#### 4.3.7 EDIAQI Policy Intelligence Framework

The EDIAQI Policy Intelligence Framework represents a strategic output that consolidates evidence from across the project into a single, actionable knowledge base. Its purpose is to provide an integrated evidence platform to inform European Union and national policies on IAQ, supporting the design of a potential European-level policy instrument analogous to the Ambient Air Quality Directives.

##### 4.3.7.1 Innovation Profile and Value Creation

The framework's strength lies in its ability to translate interdisciplinary research into policy-relevant intelligence. Core value propositions include:

- **Evidence consolidation:** Integrates epidemiological, environmental, behavioural, and digital data from multiple project outputs.
- **Policy alignment:** Provides structured recommendations for DG SANTE, DG ENV, DG ENER, EEA and other European Union bodies.
- **Tool integration:** Promotes continued use of low-cost sensors and digital tools for monitoring, citizen engagement, and policy evaluation.



- **Guidance and dissemination:** Supports policy briefs, white papers, and targeted recommendations for institutions and public agencies.
- **Strategic synergy:** Engages with IDEAL Cluster projects and international partners (e.g., WHO Europe, EEA) to ensure complementarity and broader uptake.

This multi-dimensional approach ensures policy relevance, scientific credibility, and transferability across diverse European contexts.

#### *4.3.6.2 Implementation Barriers and Market Landscape*

Several constraints may affect policy translation and adoption:

- **Fragmented outputs:** The diversity of project tools (Wiki, surveys, digital twins) requires careful narrative integration for coherent policy messaging.
- **Legislative complexity:** Policy uptake depends on timing, political priorities, and alignment with existing European Union frameworks.
- **Sustained advocacy need:** Without strategic coalition-building, results risk remaining within research circles.
- **Shifting priorities:** Geopolitical and budgetary pressures may reduce attention to environmental health topics post-COVID.

#### *4.3.6.3 Opportunities, Stakeholders, and Impact Outlook*

The current European policy landscape provides fertile ground for the integration and long-term uptake of EDIAQI's results. The initiative is well aligned with European Union ambitions for cleaner air, healthier environments, and greater citizen protection, ensuring relevance across institutional, national, and international levels.

- **Policy backdrop:** Anchored in the European Green Deal, the ZPAP, and the EPBD.
- **Emerging trends:** Growing policy attention to environmental rights, AI ethics, and children's health reinforces the urgency and timeliness of EDIAQI's approach.
- **Implementation horizon:**
  - **Short term (1–2 years):** Integration into ongoing European Union policy processes through policy briefs, consultation inputs, and targeted engagement activities.
  - **Medium to long term (5+ years):** Contribution to the development of a dedicated European Union IAQ Directive or related legislative framework.



The expected returns are multidimensional:

- **Societal ROI:** Improved health outcomes, particularly for vulnerable populations such as children, and reduced exposure to indoor pollutants.
- **Environmental ROI:** Reinforcement of European climate and zero pollution.
- **Economic ROI (indirect):** Reduced healthcare expenditure, productivity gains, and stimulation of the IAQ technology and innovation market.

The path to policy impact builds on strategic engagement and knowledge co-creation:

- Development of policy briefs and white papers under EDIAQI and the IDEAL Cluster.
- Organisation of stakeholder dialogues and co-creation events with European Union and national authorities.
- Coalition-building with academia, civil society, and private-sector actors to amplify shared messages.
- Alignment with WHO frameworks and international environmental health agendas to ensure global policy coherence and reach.

#### 4.4 EDIAQI Innovation Management Log and Exploitable Results

The following table presents the current inventory of exploitable results identified within the EDIAQI project – the collective innovation stock upon which the consortium will build to maximise impact and ensure long-term sustainability. Each entry summarises the innovation’s ownership, maturity level (TRL), related tasks, and potential for exploitation, while indicating whether it is considered a Key Exploitable Result (KER) at this stage. EDIAQI considers a KER as a high-value output of the project – scientific, technical, digital, or methodological - that is novel, innovative, and mature enough to be used, adopted, or further developed by stakeholders, and capable of generating lasting scientific, societal, or economic impact beyond the project’s lifetime. This table therefore serves a dual purpose:

- **first**, as a structured stock-taking of the diverse scientific, technological, and empowerment assets generated by EDIAQI; and
- **second**, as a strategic tool for prioritising which of these assets can most effectively deliver measurable outcomes and legacy value. It reflects the project’s progress in transforming research into policy, educational, and market-ready innovations.



It should be noted that this list is not exhaustive. As the project advances toward its conclusion, additional exploitable results and innovations may emerge, particularly through ongoing validation, policy engagement, and clustering activities. This is the first iteration of the Innovation Log, to be expanded and refined in the two forthcoming deliverables.



Table 7 - EDIAQI Innovation Compendium and Key Exploitable Results

| <i>Exploitable Result (ER)</i>                                                               | <i>Contributor<br/>s</i> | <i>Short Description of the Innovation / Result / Current TRL (0-9)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <i><u>Key</u> Exploitable Result (KER)</i> |
|----------------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Indoor/outdoor microplastic properties, source apportionment and inhalation index evaluation | FTMC                     | This result provides the first Northern European assessment of airborne microplastics in schools, comparing indoor and outdoor concentrations, sources, and exposure risks. Using advanced micro Fourier transform infrared analysis and a new inhalation risk index, it identifies key indoor sources and quantifies outdoor infiltration from traffic emissions. The harmonised, size-resolved reporting framework enables comparability across studies and supports policy uptake. The findings supply evidence for IAQ standards, which currently do not address microplastics. <b>TRL: n/a</b> | No                                         |
| Novel in vitro 3D cell models                                                                | NIB                      | Novel in vitro 3D hepatic cell models that better reflect in vivo conformation and provide more relevant outcomes for human exposure. These 3D models have better metabolic capacity therefore they are appropriate for evaluation of adverse effects of xenobiotic compounds. In addition, they allow chronic exposures that are more relevant for real exposure scenarios. The involution of the model is translation to genotoxicity testing for xenobiotic substances. <b>TRL: 3</b>                                                                                                            | No                                         |

|                                                                                                            |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Biomarkers of health effects of indoor air pollution- IAP (metabolites, differential RNA expression, etc.) | SCH, IMROH, ANT                      | Novel biomarkers linked to IAP, including target cells, specific metabolites and RNA expression profiles, have the potential to improve diagnostics, enable earlier identification of disease subtypes, and support treatment monitoring in respiratory and allergic conditions. They may also inform new prevention strategies and personalised disease management guidelines. Overall, these innovations could enhance healthcare services and improve quality of life for vulnerable groups . <b>TRL: 0</b> | No                                                                                                                                                                                    |
| IAQ Monitoring – Zagreb Pilot (Indoor Air Impacts on Human Health)                                         | IMROH                                | A pilot integrating citizen engagement, biomarker analysis, and educational activities to link IAQ data with health outcomes. Demonstrates how research and community participation can improve awareness and preventive behaviour. <b>TRL: 6-7</b>                                                                                                                                                                                                                                                            | <b>Yes.</b> Validated real-world model for citizen-centred environmental health monitoring. Replicable and policy-relevant.                                                           |
| EDIAQI Scientific Publications and Publication Strategy                                                    | All Partners                         | A structured open-access publication ecosystem ensuring coordinated, high-quality dissemination of EDIAQI's findings. Establishes transparent workflows, author guidelines, and policy-linked publication formats to maximise scientific credibility, visibility, and legacy impact. <b>TRL: n/a</b>                                                                                                                                                                                                           | <b>Yes.</b> Represents a core scientific and policy legacy ensuring long-term citation, visibility, and policy relevance of project outputs.                                          |
| IDEAL Cluster Collocation Study – Comparative Validation of Low-Cost IAQ Sensors                           | IDEAL Cluster projects               | A joint validation campaign comparing low-cost IAQ sensors with high-precision reference instruments in real-world environments. The study generates open, harmonised datasets and protocols for data reliability, supports citizen science, and informs European Union-wide monitoring and procurement frameworks. <b>TRL: 6</b>                                                                                                                                                                              | No                                                                                                                                                                                    |
| Comprehensive Evaluation Framework for Low-Cost IAQ Sensors                                                | (WINGS, LAS, THINNECT, All partners) | A harmonised methodology for assessing low-cost IAQ sensors through performance testing, calibration procedures, field validation, and URSA analysis. It improves data reliability, supports procurement, and enables comparable IAQ assessments across schools, municipalities, and networks. <b>TRL: 5</b>                                                                                                                                                                                                   | <b>Yes.</b> Provides a robust, replicable method with strong potential for standardisation, municipal use, vendor adoption, and integration into European IAQ policy and procurement. |

This project has received funding from the European Union's Horizon Europe Framework Programme under grant agreement N° 101057497.

|                                                                              |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                    |
|------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LAS Multi-Sensor System for Indoor Air Quality Monitoring (NetPID™ EDIAQI)   | (LAS)   | A high-precision, calibratable, and traceable IAQ monitoring system integrating particulate, gas, and environmental sensors. Provides reliable, continuous measurements aligned with ISO 16000 and emerging EU standards. Tested in schools and municipal buildings under the Ferrara Pilot. <b>TRL: 9</b>                                                                                                                                                                                                                                                                                                                        | <b>Yes.</b> Fully market-ready and aligned with Air Quality Directive 2024/2881. Strong commercial and consultancy potential supporting professional IAQ services. |
| AIRWINGS Multi-Pollutant Environmental Monitoring System                     | WINGS   | A multi-pollutant sensor and cloud-AI platform providing continuous monitoring, prediction, and alerts for indoor and outdoor air quality. Measures gases, particulates, and environmental parameters, enabling neighbourhood-scale assessments and integration with health-related exposure studies. Used in EDIAQI for clinical follow-up of asthmatic children. <b>TRL: 9</b>                                                                                                                                                                                                                                                  | <b>Yes.</b> Fully commercial, scalable solution with strong relevance for schools, clinics, municipalities, and smart-city operators.                              |
| Simulating and adjusting seasonal variance using a periodic Gaussian process | RegionH | A Bayesian pipeline that applies a periodic Gaussian process to sparse indoor air data, with full posterior inference via the No-U-Turn Sampler and balanced training using a Kennard-Stone split. Multi-model imputation addresses missing indoor and outdoor inputs, and numerical integration produces a scaling factor that reduces intra-individual variance while preserving indoor-outdoor correlations. The model performs well for pollutants with strong seasonality (BC and NOx) and modestly for weaker signals, capturing overall trends but explaining limited household variance beyond these cases. <b>TRL: 3</b> | No                                                                                                                                                                 |

|                                                                          |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EDIAQI Dashboard                                                         | KNOW         | The EDIAQI Dashboard is a user-friendly application designed to visualise, monitor, and compare the large volume of streaming data generated during the EDIAQI pilots and campaigns. It includes three modules: 1) <b>Data Monitoring</b> : Provides an overview of all FROST Server data and flags gaps, irregular streaming, missing feeds, and duplicates. 2) <b>Data Troubleshooting</b> : Identifies value-related issues, unit or resolution errors, and statistical anomalies to support hardware correction or post-processing. 3) <b>Air Quality Comparison</b> : Evaluates IAQ against user-defined thresholds and compares IAQ across devices and locations. <b>TRL: 8</b> | <b>Yes.</b> The EDIAQI Dashboard can serve as a long-term visualisation tool for EDIAQI data and can be used by the public, researchers, or health institutions. It can be adapted for other non-profit projects that generate large data volumes or developed as a commercial application for private sector use with the necessary modifications and services. |
| EDIAQI Digital Twin for IAQ Simulation and Decision Support              | Ascalia      | A web-based hybrid modelling tool integrating CFD, AI, and sensor data to visualise pollutant dispersion and optimise ventilation strategies. Provides interactive simulations to support evidence-based building management and policy evaluation. <b>TRL: 6</b>                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Yes.</b> High innovation potential bridging scientific modelling and practical decision support. Ready for integration and professionalisation within 12-24 months.                                                                                                                                                                                           |
| Integrated IAQ Monitor: Air Quality Beacon & Immission Evaluator (AQBIE) | TROPOS       | A compact, portable IAQ monitor combining advanced aerosol measurement with affordability. Provides traceable particle size and BC data for research, policy enforcement, and public awareness. <b>TRL: 8-9</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Yes.</b> Field-validated system bridging research and commercial use. Offers scalable, cost-efficient IAQ monitoring supporting ZPAP targets.                                                                                                                                                                                                                 |
| IAQ Awareness and Advocacy Campaign                                      | All Partners | A European-wide behavioural-change campaign combining citizen science, surveys, multilingual educational materials, and social-media outreach. Promotes IAQ literacy, empowers citizens, and builds policy momentum for healthy indoor environments. <b>TRL: 9</b>                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Yes.</b> Proven, replicable awareness model linking behavioural science and public health. Strong exploitation potential for cities, schools, and NGOs.                                                                                                                                                                                                       |

|                                                      |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EDIAQI Knowledge Base (Wiki) and IAQ Simulation Tool | TalTech, All Partners | A dual innovation: (1) a multilingual open-access Wiki providing authoritative IAQ information; and (2) an interactive simulation tool visualising pollutant dynamics and ventilation effects. Together, they transform research data into public knowledge and decision support.<br><b>TRL: Wiki 9 / Tool 6</b>                                                                                                                                                                                                              | <b>Yes.</b> Strong societal, educational, and policy value; scalable for BIM and smart-building integration. Core legacy asset for citizen empowerment.                                                                                                                                                                    |
| Training Materials KIT for schools                   | USEv                  | A Training Materials KIT has been developed to raise awareness about IAQ among children and teenagers. The KIT includes two age-specific workbooks, a teacher's guide, an animated video, and a participation diploma, all translated into ten consortium languages. Designed to be easily integrated into school subjects such as Science, Health Education, and Environmental Studies, these materials offer engaging content to promote healthier indoor environments and long-term behavioural change.<br><b>TRL: 7.5</b> | <b>Yes.</b> Represents a complete, ready-to-use educational product that can be directly implemented in schools across Europe. Its multilingual, age-specific design allows integration into national curricula and ensures broad applicability, enabling replication and long-term educational impact beyond the project. |
| Awareness videos for General Population              | USEv                  | A series of short awareness videos has been produced to improve public understanding of IAQ. Each video features an expert explaining key themes such as ventilation, pollutants, filtration, and maintenance in a clear and accessible format. The videos will be available in all consortium languages on the EDIAQI website, helping to translate scientific knowledge into engaging content that supports healthier indoor environments.<br><b>TRL: 6</b>                                                                 | <b>Yes.</b> Converts EDIAQI's research outcomes into engaging, multilingual audiovisual content that can be freely reused by schools, municipalities, NGOs, or media outlets. Its format ensures wide dissemination, adaptability, and long-term visibility, extending the project's social and educational legacy.        |

|                                                                        |              |                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Training Course to Teachers and Building Managers                      | USEv         | A six-module online training course has been developed to equip teachers and building managers with the knowledge and practical skills needed to understand and improve IAQ in educational and professional environments. The course covers pollutants, ventilation, filtration, and maintenance, and includes self-assessment quizzes and practical final exercises. <b>TRL: 7.5</b> | <b>Yes.</b> This course translates EDIAQI scientific findings into a practical training tool that can be used by educational institutions and public authorities. It strengthens institutional capacity and supports sustained improvement in IAQ management across Europe.       |
| EDIAQI Webinar Series – Public Engagement and Policy Dialogue Platform | All Partners | A 20-episode cross sector dialogue series connecting scientists, policymakers, and citizens on IAQ. Establishes a recognisable communication format and a long-term repository for public education, policy literacy, and stakeholder engagement. <b>TRL: n/a</b>                                                                                                                     | <b>Yes.</b> Flagship dissemination and policy-dialogue product.                                                                                                                                                                                                                   |
| EDIAQI Policy Intelligence Framework                                   | All Partners | The EDIAQI Policy Intelligence Framework consolidates the project’s scientific evidence, stakeholder input, and practical tools into a single strategy to inform European IAQ policy. It advances the Clean Air Roadmap by supporting cross-cutting policy development and the possible creation of a dedicated EU IAQ instrument, aligned with the Green Deal and the ZPAP.          | <b>Yes.</b> The EDIAQI Policy Intelligence Framework translates project evidence into practical policy guidance. It brings together findings from child cohorts, pilots, sensor assessments, and awareness work into a scalable approach that supports European level IAQ policy. |

#### 4.5 The Integrated EDIAQI Solution: From Evidence to Action

The **EDIAQI Solution** represents the synthesis of the project’s full innovation portfolio - scientific discoveries, technological tools, awareness and educational materials, as well as policy frameworks – brought together into a cohesive, user-centred package. It translates multidisciplinary research into tailored solutions for diverse audiences and settings:

- **Schools and universities**, to protect children’s health and raise awareness from an early age;
- **Hospitals and healthcare facilities**, to improve patient recovery and staff wellbeing through cleaner indoor air;
- **Local authorities and policymakers**, to plan, regulate, and monitor IAQ effectively;
- **Communities and NGOs**, to promote citizen science and behavioural change; and
- **Private-sector actors** such as hotels, gyms, and offices, to enhance comfort, compliance, and sustainability in their own indoor environments.

At its core, the **EDIAQI Solution functions as a modular system** that can be adapted to the needs of each context, combining the right mix of data, technology, education, and policy guidance. It embodies EDIAQI’s vision of moving *from evidence to empowerment*, ensuring that scientific excellence directly benefits people, institutions, and the environment.

##### 4.5.1 Conceptual Model

The EDIAQI Solution can be visualised as a four-tiered triangle, showing the cumulative journey from foundational research to tailored application. Each tier represents a distinct dimension of innovation, collectively forming an integrated pathway toward healthier indoor environments.

| Triangle Tier | Title                        | Description                                                                                                                                                                                                                    |
|---------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Base Layer    | Scientific and Evidence Base | The foundation of the EDIAQI Solution – comprising validated datasets, biomarkers, exposure models, and sensor validation studies that establish robust knowledge of pollutant sources, exposure pathways, and health impacts. |



|                     |                                                        |                                                                                                                                                                                                                                                                                                                          |
|---------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Second Layer</b> | <b>Innovative Tools and Technologies</b>               | A suite of interoperable, user-ready instruments – including the LAS multi-sensor system, AQBIE portable monitor, EDIAQI Dashboard, and Digital Twin – enabling reliable data collection, visualisation, and decision support for managing IAQ in real-world settings.                                                   |
| <b>Third Layer</b>  | <b>Awareness, Empowerment, and Policy Intelligence</b> | The translation layer turning evidence into societal change: training materials, campaigns, webinars, and the Policy Intelligence Framework that inform citizens, educators, professionals, and decision-makers, linking research to regulatory and behavioural transformation.                                          |
| <b>Apex</b>         | <b>Tailored IAQ Solutions for Specific Challenges</b>  | The final layer, where evidence, tools, and awareness combine into customised packages for target users – from school improvement plans and hospital consultations to municipal IAQ strategies or private-sector consultancy services. These integrated solutions deliver measurable impact and ensure long-term legacy. |

Together, these layers reflect EDIAQI’s ability to deconstruct complex challenges into individual components – scientific, technological, behavioural, and policy-related – and then reassemble them into coherent, context-specific solutions. Whether addressing a single school, a regional health authority, or a multinational enterprise, the EDIAQI Solution provides a flexible framework that adapts to each actor’s capacity, data availability, and objectives, ensuring that every community has the tools and knowledge to take meaningful action for cleaner and healthier indoor environments.

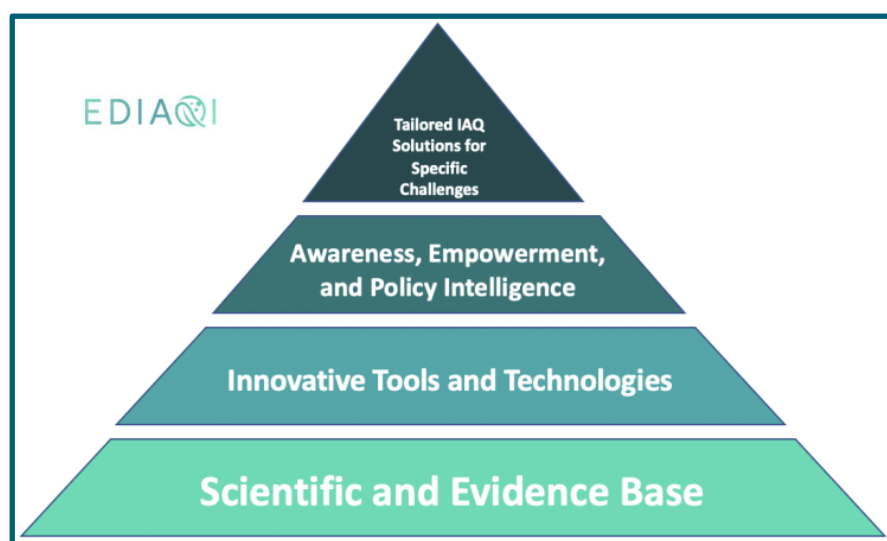


Figure 22 - EDIAQI Value Pyramid: From Scientific Evidence to Tailored IAQ Solutions



#### 4.6 Transition to Exploitation and Sustainability Planning

Building on this integrated understanding of the EDIAQI Solution and its components, the project proceeded to identify how these scientific, technological, and societal assets could evolve into a sustainable operational model beyond the project's lifetime. Based on the innovation analysis and stock-taking presented above, the consortium developed four complementary pillars for potential exploitation and long-term sustainability through the creation of the EDIAQI NPO:

- **Green Building Certification and Label Schemes**, translating EDIAQI's evidence and tools into practical benchmarks for healthy, energy-efficient indoor environments.
- **Sponsorship and Partnership Models**, leveraging collaboration with public and private actors to support continued awareness, education, and citizen-science initiatives.
- **Guidance and Advisory Services for Public Buildings**, particularly those hosting vulnerable populations such as children, the elderly, and patients, enabling municipalities to design, implement, and evaluate IAQ improvement plans; and
- **Compliance-as-a-Service and Consultancy**, offering tailored solutions, monitoring, and policy-alignment support for institutions and businesses seeking to meet emerging IAQ standards.

These focus areas form the foundation of the market and competitor analysis, the stakeholder and partnership mapping, and the social and public-value assessment presented in the following sections. Together, they explore:

- The potential **social and policy impact** of the EDIAQI Solution for communities and decision-makers.
- The expected **public-value outcomes** and indicators that will measure how EDIAQI contributes to healthier, more sustainable living and working environments.
- The **revenue-generating scenarios** underpinning the NPO's long-term viability; and
- The proposed **governance and organisational structure** to ensure continuity, transparency, and mission alignment.



## 5. The EDIAQI network

Over the past 36 months, the EDIAQI project has established a strong and diverse network of organisations that will be essential for maximising the reach, uptake, and long-term sustainability of the EDIAQI solution. This network now spans European research consortia, international academic partners, industry leaders, policymakers, civil-society actors, and national education and health organisations. Together, they form a strategic community that not only strengthens EDIAQI's current dissemination and policy influence, but also provides the ecosystem required for future exploitation, legacy planning, and sustained impact beyond the project's lifetime.

### 5.1 Collaboration Within the IDEAL Cluster

As one of the seven Horizon Europe projects in **the IDEAL Cluster**, EDIAQI has played an active role in joint scientific, policy, and communication activities. Key contributions include:

- Co-authoring the IDEAL Cluster Policy Brief and supporting its dissemination among policymakers and standardisation bodies.
- Contributing to cluster working groups, including policy (WG1), communication (WG3), standardisation (WG4), sensors (WG5), health outcomes (WG6), in vitro (WG7) and leading WG8 on the microbiome.
- Jointly organising the EDIAQI webinar series, which has consistently attracted European parliamentarians, national leaders, and senior experts.
- Participating in shared scientific initiatives such as the Collocation Study, harmonising sensor protocols across projects.
- Leading the Clean Air Roadmap, now a cluster-wide task uniting all projects working on this topic.
- Coordinating the IDEAL Cluster's final event, to be held in Brussels on 9 June 2026.

For readers seeking more information on the IDEAL Cluster, full details are provided in the EDIAQI Communications Strategy (Deliverable D7.2). Through these activities, EDIAQI has strengthened its position within a pan-European scientific network that will remain central to the project's legacy and future policy influence under the ZPAP.

[Access the IDEAL Cluster website.](#)



This project has received funding from the European Union's Horizon Europe Framework Programme under grant agreement N° 101057497.

## 5.2 Collaboration with External Projects and Scientific Partners

Beyond the IDEAL Cluster, EDIAQI has established relationships with several other international research initiatives, contributing knowledge exchange, training material, and co-organised events:

- **SAMHE (UK):** Cooperation on a joint webinar and presentation of EDIAQI educational and training materials for school environments.
- **Global Open Air Quality Standards (GO AQS):** Mutual participation in workshops and webinars, with shared dissemination on IAQ monitoring solutions.
- **AeroFOLD Project:** EDIAQI represented both the project and the IDEAL Cluster at their final event, strengthening scientific exchange on filtration technologies.
- **Brown University (USA):** Sharing EDIAQI training materials, awareness campaign content, and methodological insights for educational outreach.
- **American University of Beirut:** Participation in a webinar with a postgraduate researcher presenting tunnel-filtration work relevant to EDIAQI's scientific themes.

These collaborations support EDIAQI's open-science objectives and amplify its global visibility.

## 5.3 Collaboration with Industry and Standardisation Stakeholders

EDIAQI has increasingly engaged industry and standardisation actors whose expertise is essential for future exploitation and sustainability:

- **Mann + Hummel:** A key IAQ industry actor participating in the EDIAQI webinar series and also represented across several IDEAL cluster projects.
- **Eurovent:** Participation in a joint webinar and dissemination of their ventilation and IAQ manifesto, enabling alignment between EDIAQI's findings and standardisation trends.
- **Allergy Standards (ASTM-aligned):** Participation in workshops and webinars, including early exploration of exploitation pathways, certification logic, and public-facing validation schemes.
- **Air Infiltration and Ventilation Centre (AIVC):** Collaboration through knowledge exchange and participation in webinar, strengthening links between EDIAQI's



outputs and one of Europe's leading network on ventilation and indoor environment performance.

These interactions expand EDIAQI's access to technical know-how, market intelligence, and end-user needs, all of which will inform the exploitation scenarios.

#### 5.4 Collaboration with Policy Actors and Civil-Society Organisations

EDIAQI has cultivated links with organisations that combine public communication, community engagement, and policy influence:

- **DG RTD:** Collaboration through joint webinar and ongoing support related to scientific communication and IAQ research priorities.
- **EEA:** Participation in the EDIAQI-hosted workshop at the Comfort and the Extremes conference in Seville.
- **DG ENV:** Exchange of EDIAQI findings during the IDEAL Cluster event in Braga, strengthening connections to European environmental policy processes.
- **DG ENER:** Engagement through knowledge sharing on IAQ, ventilation, and building performance in the context of energy-efficient buildings.
- **Swiss Green Liberal Party and Austrian SPÖ representatives:** Participation in EDIAQI webinars and follow-up exchanges on IAQ mainstreaming in European and national environmental policy agendas.
- **Clean Air / iAIR Institute:** Collaboration on awareness-raising activities and participation in EDIAQI events addressing public understanding of IAQ.
- **Geneva Health Forum:** Developing collaboration to support their scientific output, conference programme, and policy-relevant publications, particularly on IAQ and health.

These partnerships strengthen EDIAQI's credibility among decision-makers and public-health advocates.

#### 5.5 Collaboration with National and Local Organisations

EDIAQI has also cooperated with national networks and educational platforms:



- **CARNET (Croatia):** Dissemination of EDIAQI school materials through the Croatian academic and research educational network, promoting uptake within schools, teachers, and public institutions.

This ensures that EDIAQI's training outputs and IAQ awareness campaigns have a tangible pathway to end-users.

## 5.6 Summary: A Growing Community for Long-Term Impact

Collectively, these partnerships form a robust and diverse network that will support:

- Ongoing joint scientific activities (e.g., sensor testing, educational tools, policy briefs).
- Co-development of exploitation pathways (consulting, certification, data services).
- Broader dissemination, visibility, and public engagement.
- Deeper influence on IAQ policy across national and European governance levels.
- Stronger positioning of EDIAQI within the IDEAL Cluster and the wider IAQ ecosystem.

This networking ecosystem directly underpins EDIAQI's future work in D7.4 Market, Innovation and Applicability Analysis and will be further consolidated in D7.11 the final EDIAQI Legacy report, ensuring that the project's outputs, community, and impact endure beyond the project's lifetime.



## 6. Analysis of Ecosystem and Market Trends

Based on this initial foundation, the project next developed a structured ecosystem and market-trends analysis to understand the broader landscape in which the EDIAQI Solution and the future NPO will operate. This analysis maps the evolving regulatory environment, emerging IAQ technologies, citizen and institutional demand patterns, and cross-sector dynamics shaping the market for healthy indoor environments across Europe. It also identifies key actors, competitors, and potential partners – from public authorities and schools to sensor manufacturers, building-management firms, and environmental-health organisations – providing the strategic context for defining EDIAQI’s unique value proposition and positioning within the wider IAQ ecosystem.

This section is organised into four parts:

- **IAQ Market Trends and Drivers:** Provides an overview of the main forces shaping the global IAQ market, including growing health awareness, technological innovation, post-pandemic priorities, impacts of wildfires and climate change, and sector-specific growth in IAQ devices and monitoring tools.
- **Green Building Market Evolution:** Summarises key trends in the rapidly expanding global green building sector, highlighting the scale of the economic opportunity, main growth drivers, regional dynamics, and the increasing importance of health-focused certification systems.
- **Policy Landscape and Public-Health Context:** Examines the fragmented and inconsistent regulatory frameworks governing IAQ across different jurisdictions, emerging guidelines, priority pollutants and settings, and the growing movement to recognise IAQ as the next major public-health frontier.
- **Key European and International Legislative Framework:** Presents a chronological mapping of major international and European Union policy instruments relevant to IAQ, summarising their implications for EDIAQI’s scientific outputs, data tools, pilots, and long-term policy value.
- **Mapping Key Stakeholders and Potential Partners:** Identifies the main actors across certification bodies, government agencies, NGOs, industry associations, and



technology providers who can support or collaborate with the EDIAQI NPO in driving healthier indoor environments and democratising access to green-building principles for public buildings.

## 6.1 IAQ Market Forecast

The global IAQ market is experiencing significant growth, driven by a convergence of factors. Key trends driving this market include:

- **Growing Health Awareness:** Consumers and businesses are increasingly aware of the detrimental health effects of poor IAQ, such as respiratory issues, allergies, and chronic diseases. This heightened consciousness, spurred by public health crises, has fuelled demand for solutions that create healthier living and working environments.
- **Technological Advancements:** The market is being propelled by innovations in air purification and monitoring technologies. This includes the development of more efficient and effective filtration systems, as well as smart, IoT-enabled devices that can monitor air quality in real-time and automatically adjust ventilation or filtration.
- **Impact of COVID-19 and Other Public Health Crises:** The COVID-19 pandemic underscored the importance of IAQ in preventing the spread of airborne pathogens. This crisis, along with concerns over seasonal illnesses like influenza has accelerated the adoption of advanced ventilation and purification systems in both residential and commercial spaces. Also, seasonal wildfires and climate change are contributing to public concerns.
- **Urbanisation and Industrialisation:** Increasing air pollution in urban areas and industrial settings has led to a greater need for air purification solutions. Businesses are investing in systems to meet emission standards and ensure health and safety.
- **Growth in Specific Market Segments:** The market for IAQ monitors, which provide real-time data on pollutants, is seeing particularly strong growth. Additionally, the adoption of High-Efficiency Particulate Air (HEPA) technology continues to dominate.

The global green building market is a rapidly expanding sector of the construction industry. While precise figures vary slightly between different market research reports, the consensus indicates a significant and sustained upward trajectory.



## 6.2 Green Buildings

In 2024, the market size was estimated to be in the range of \$565 billion to over \$782 billion. Projections for future growth are strong, with the market expected to more than double in the coming years. According to a World Economic Forum report, the green building revolution could unlock a significant \$1.8 trillion global market opportunity by 2030. This growth is driven by a compound annual growth rate (CAGR) that is consistently estimated to be around 9-10% from 2025 to 2030 and beyond (WEF and Boston Consulting Group, 2024).

Key drivers of this growth include:

- Increased environmental awareness and a global focus on reducing carbon emissions.
- Government regulations and incentives promoting energy-efficient and sustainable building practices.
- Technological advancements in sustainable materials and smart building systems.
- Need for certifications and acknowledgment.
- Growing demand from consumers and businesses for healthier, more efficient, and more valuable properties.

The market is segmented by product type (exterior, interior, and building systems), application (residential and non-residential), and region. While North America and Europe have historically held significant market shares, the Asia-Pacific region is projected to be the fastest-growing market due to rapid urbanisation and increasing investment in sustainable infrastructure.

## 6.3 Policy Trends and Public Health

The policy landscape for IAQ is evolving, with a growing recognition of its importance as a public health issue. However, significant challenges and inconsistencies remain.

- **Inconsistent Regulatory Frameworks:** Unlike outdoor air quality, which is often governed by clear European Directives, national laws and agencies, IAQ regulations, within the European Union, are notably fragmented, with member states exhibiting a wide range of approaches and standards. While some countries have established



specific legislations and policies, there is a lack of uniformity in the pollutants addressed and the limits set. For instance, Spain has set a limit for PM<sub>2.5</sub> at 20  $\mu\text{g}/\text{m}^3$  indoors, while neighbouring France has no specific indoor air limit for this pollutant, and Portugal has a different limit of 25  $\mu\text{g}/\text{m}^3$ . This inconsistency highlights the absence of a unified, comprehensive European-wide standard. Furthermore, even in countries with regulations in place, enforcement is often lax, leading to a gap between policy and practice. This piecemeal approach to IAQ regulation within the European Union underscores the challenges in ensuring a consistently healthy indoor environment for all citizens.



Figure 23 - Indoor Air Quality Regulation across the European Union (Settimo, 2020)

- Emergence of Guidelines and Standards:** Despite the lack of a unified regulatory approach, numerous organizations worldwide, including the WHO and GO AQS, have established IAQ guidelines. These guidelines provide a scientific basis for setting pollutant concentration limits and inform the development of legally enforceable standards at regional and national levels.



- **Increased Focus on Specific Pollutants and Settings:** Policy and research efforts are increasingly focused on addressing specific indoor air pollutants, such as, PM2.5 and PM10, and biological contaminants like mould and bacteria. There is also a growing emphasis on improving IAQ in high-occupancy public buildings like schools and hospitals, where the risk of pathogen transmission and negative health impacts on vulnerable populations is particularly high.
- **The "Next Public Health Frontier":** There is a growing movement to frame indoor air quality as the "next great public health challenge." Advocates are calling for new policies that would require better standards for IAQ in public buildings, mandate regular commissioning of mechanical systems, and fund research into new technologies for air purification.
- **Integration with Other Public Health and Environmental Goals:** IAQ policy is becoming intertwined with broader efforts to improve public health and address climate change. This includes promoting the use of clean energy sources in buildings and integrating IAQ monitoring into "green" building designs and smart home systems.

#### 6.4 Mapping Key European and International Legislative Framework

The table below summarises the major international and European policy frameworks relevant to indoor air quality, presented chronologically and with implications for the EDIAQI solution and its scientific, digital, and policy outputs.

Table 8 - European and International Normative and Legislative Framework

| Framework (Year)                                                                           | Relevance to EDIAQI Solution and Innovative Outputs                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EU Workplace Minimum Health &amp; Safety Requirements – Directive 89/654/EEC (1989)</b> | Requires adequate fresh air and safe working conditions. EDIAQI provides practical methodologies, digital tools, and sensor-based monitoring protocols that help public authorities and employers meet ventilation and pollutant-control requirements, especially in non-industrial workplaces like schools and public offices.                   |
| <b>WHO Guidelines for Indoor Air Quality (2010, 2009–2021)</b>                             | Establishes scientific thresholds for major indoor pollutants (benzene, PAHs, formaldehyde, CO, PM2.5, etc.). EDIAQI aligns its measurements, modelling, risk assessment, and sensor-validation work with WHO guidance, enabling policymakers to operationalise these guidelines through evidence-backed interventions and monitoring strategies. |



|                                                                                           |                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>UN Sustainable Development Goals (2015)</b>                                            | IAQ is directly relevant to SDG 3 (Health), SDG 7 (Clean Energy), SDG 11 (Sustainable Cities), and SDG 13 (Climate Action). EDIAQI provides the tools, datasets, and behavioural insights necessary to translate SDG commitments into concrete policy actions at the building, municipal, and national levels.     |
| <b>European Green Deal (2019)</b>                                                         | Frames climate action, pollution prevention, and healthier environments as strategic EU priorities. EDIAQI supports this agenda by providing the scientific and digital underpinnings for pollution reduction indoors, enabling synergies between energy efficiency, renovation, and public health.                |
| <b>Human Right to a Clean, Healthy and Sustainable Environment (UN 2022)</b>              | Recognises environmental quality, including clean air, as an inalienable human right. EDIAQI generates robust evidence and actionable tools to translate this normative right into practical IAQ improvements in public buildings, schools, and communities—including vulnerable groups.                           |
| <b>Zero Pollution Action Plan (2021)</b>                                                  | Identifies air pollution as a leading health risk, emphasises child vulnerability, and calls for reduced pollution exposure by 2030. EDIAQI provides harmonised IAQ datasets, school-focused evidence, and digital tools that can anchor future EU-level IAQ policy and effectively address this acknowledged gap. |
| <b>EU Strategy on Adaptation to Climate Change (2021)</b>                                 | Emphasises resilience in the built environment. EDIAQI demonstrates how IAQ improvements and smart ventilation can support climate-resilient buildings, especially as temperatures rise and airtightness increases, amplifying indoor pollution risks.                                                             |
| <b>Horizon Europe Programme (2021–2024)</b>                                               | Funds research on clean environments, climate, and health. EDIAQI is a flagship example of integrated environmental-health research operationalised into policy intelligence, technical tools, IAQ modelling, and community-level guidance.                                                                        |
| <b>Directive (EU) 2022/431 – Carcinogens, Mutagens &amp; Reprotoxic Substances (2022)</b> | Establishes occupational exposure limits for carcinogenic pollutants found both indoors and outdoors. EDIAQI’s pollutant measurements, modelling, and validation of sensors contribute to safer environments in mixed-use buildings, including schools where staff are legally protected workers.                  |
| <b>UN General Comment No. 26 on Children’s Rights &amp; the Environment (2023)</b>        | Explicitly recognises children’s right to a clean, healthy, and sustainable environment. EDIAQI pilots in schools, child-specific indicators, and behavioural insights offer a blueprint for operationalising these rights in real European settings.                                                              |
| <b>European Data Act – Regulation (EU) 2023/2854 (effective 2024)</b>                     | Guarantees access to user-generated data from devices such as IAQ sensors. EDIAQI supports compliance by pioneering interoperable, ethical, and secure approaches to IAQ data spaces, enabling cross-building comparison and evidence-based action by citizens, schools, and local governments.                    |



|                                                                                  |                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Artificial Intelligence Act (2024)</b>                                        | Regulates high-impact AI systems and emphasises transparency and safety. EDIAQI's AI-enabled modelling and digital decision-support tools illustrate how AI can be responsibly deployed for environmental health, aligning with the Act's risk-based requirements.                                                     |
| <b>Ambient Air Quality Directive – Recast (Directive (EU) 2024/2881)</b>         | Sets stricter outdoor pollution limits and embeds child-specific protections—while acknowledging that IAQ remains outside its scope. EDIAQI bridges this gap by linking outdoor–indoor exposures and offering data, indicators, and policy mechanisms that protect vulnerable groups indoors, particularly in schools. |
| <b>Ecodesign for Sustainable Products Regulation – Regulation (EU) 2024/1781</b> | Introduces sustainability and non-toxicity criteria for product design, highlighting ventilation systems as a priority group. EDIAQI provides performance evidence, pollutant data, and modelling outputs relevant to future ecodesign standards for healthy, energy-efficient ventilation.                            |
| <b>Energy Performance of Buildings Directive – Recast (2024)</b>                 | First European law to explicitly require Member States to address IAQ within building performance frameworks. EDIAQI offers practical implementation support: sensor protocols, IAQ criteria, training materials, digital compliance tools, and behavioural insights essential for national transposition by 2026.     |

## 6.5 Mapping of Key Stakeholders and Potential Partners

EDIAQI NPO's unique value proposition – democratising green building principles for public buildings – positions it to collaborate with a diverse range of stakeholders who share a common interest in improving IAQ and public health. Unlike private entities that can invest heavily in certifications, public buildings often require cost-effective, scalable solutions. The following is a list of potential partners, categorised by their role in the green building and air quality ecosystem.

### 6.5.1 Building and Public Health Certification Bodies

These organisations set the standards for what constitutes a "green" or "healthy" building. Partnering with them would allow EDIAQI NPO to develop tailored, simplified certification programs or benchmarks specifically for public buildings.

- **WELL Building Institute:** Focuses on the health and well-being of building occupants, with a strong emphasis on air, water, nourishment, light, fitness, comfort, and mind.



- **International Living Future Institute (ILFI):** Promotes a "Living Building Challenge" with ambitious standards for creating regenerative buildings. EDIAQI NPO could work with them to create a scaled-down, accessible version for public institutions.
- **Green Building Initiative (GBI):** Offers Green Globes, a certification system that evaluates the sustainability, health, and resilience of commercial real estate. GBI has a specific program for U.S. government buildings, which aligns with EDIAQI's focus.
- **Green Business Certification Inc. (GBCI):** Manages the LEED (Leadership in Energy and Environmental Design) rating system. While LEED can be complex, GBCI also offers other certifications like the Sustainable SITES Initiative rating system for sustainable landscapes, which could be relevant to the outdoor-indoor air quality connection.

#### 6.5.2 International Organisations

Collaborating with these entities is crucial for policy advocacy, funding, and widespread adoption.

- **WHO Regional Office for Europe:** The WHO/Europe's guidelines on indoor air quality, provide a scientific basis for EDIAQI NPO's mission. A partnership could involve co-developing educational materials or advocating for stronger national policies. However, I think this collaboration needs to be established through the Geneva Health Forum.
- **Public Health Agencies:** These agencies are concerned with public health outcomes and can be key partners for promoting IAQ as a public health priority. For example, the European Centre for Disease Prevention and Control and national-level Ministries of Health.
- **European Commission and national governments:** Partnering with government bodies is essential for securing grants, influencing legislation, and implementing IAQ programs in public buildings like schools, hospitals, and municipal offices. The European Union's push for energy efficiency and decarbonisation in buildings creates a window of opportunity for EDIAQI NPO to integrate IAQ into these initiatives.



- **International Finance Corporation (IFC):** The IFC's EDGE program, which provides a fast and affordable way to design and certify green buildings, is an excellent model for EDIAQI NPO. This partnership could help in democratizing the green building movement to public buildings by providing technical support and certifications.

### 6.5.3 European and International Bodies

Collaboration with key European and international institutions is essential for ensuring policy coherence, strengthening scientific legitimacy, and maximising the visibility and uptake of the EDIAQI solution.

- **DG ENV:** Supports European Union environmental policy and provides a strategic platform for aligning EDIAQI evidence with emerging air-quality legislation, including Zero Pollution objectives and the implementation of cleaner, healthier environments across Member States.
- **DG SANTE:** Anchors EDIAQI within European Union public health priorities, enabling integration with health promotion, disease prevention, and environmental health strategies, particularly regarding vulnerable populations and school environments.
- **EEA:** Offers authoritative data, assessments, and policy insights on air quality across Europe. Collaboration can enhance EDIAQI's monitoring frameworks, benchmarking activities, and contributions to Europe-wide knowledge systems.
- **HADEA:** Serves as a key funding and programme management agency for health, digital, and environmental innovation. Engagement can support future scaling of EDIAQI tools, pilots, and cross-project synergies within Horizon Europe.
- **DG ENER:** Drives European Union energy efficiency, building performance, and decarbonisation policies – including the EPBD recast – providing a crucial entry point for embedding IAQ within national energy and building regulations.
- **DG RTD:** Facilitates alignment with European Union research agendas, innovation ecosystems, and long-term scientific strategies. DG RTD's focus on mission-oriented research offers opportunities to position EDIAQI within future frameworks on climate, health, and resilient societies.



#### 6.4.4 Non-Profit Organizations and Advocacy Groups

These groups can help amplify the mission, conduct research, and mobilize public support.

- **Global Open Air Quality Standards (GO AQS):** The mission of the GO AQS is to establish a benchmark for clean air, creating a world where everyone breathes equally clean and healthy air, regardless of location, race, or socioeconomic status. It aligns with WHO for some of the pollutants, but it is also more protective as it embeds up-to-date research and limits from a variety of other organizations. Potentially the openness and better communication approaches are making GO AQS a better partner.
- **World Green Building Council (WorldGBC):** The WorldGBC and its network of national Green Building Councils are already working to promote a healthier built environment. A partnership could help EDIAQI NPO connect with a global network and advocate for IAQ in policy discussions.
- **Air quality-focused non-profits:** These organizations already have a strong focus on air quality and can provide scientific data, policy advocacy, and public education resources. Examples would be Clean Air Task Force, Clinically Vulnerable Families, Clean Air for Kids, The Safer Air Project, Lovexair Foundation, etc.

#### 6.4.5 Professional and Industry Associations

These groups represent the professionals who design, build, and maintain buildings.

- **Architects and Engineers Associations:** These groups can promote the use of IAQ-focused design principles and materials in public building projects.
- **HVAC (Heating, Ventilation, and Air Conditioning) Associations:** The HVAC industry is a direct partner in delivering the solutions needed for better IAQ. Collaboration could involve setting new standards for ventilation systems in public buildings. Key partners would be the Federation of European Heating, Ventilation and Air Conditioning Associations (REHVA), Eurovent, and potentially the Nordic Ventilation Group.
- **Building Material Manufacturers:** Partnering with manufacturers who produce low-VOC and non-toxic materials is essential for ensuring healthy buildings by design.



By strategically collaborating with these diverse stakeholders, EDIAQI NPO can build a powerful coalition to effectively address the IAQ challenge in public buildings and make a tangible impact on public health.



Figure 24 - Mapping of Key EDIAQI Stakeholders and Potential Partners

## 7. Scenarios for Exploitation and Long-Term Sustainability

As EDIAQI progresses towards establishing a long-term organisational and governance structure, the project has identified a series of preliminary sustainability scenarios. At this early stage, these serve as conceptual options, intended to map the breadth of possible pathways for exploitation and post-project continuity. The future EDIAQI NPO may ultimately adopt all, some, or a hybrid combination of these approaches. These ideas represent the first iteration of a structured sustainability roadmap. They will be refined, prioritised, stress-tested, and costed throughout the next project year within D7.4 Market, Innovation and Applicability Analysis, and consolidated further in the Final Project Legacy Report at M48, which will define the final model and operational blueprint for the NPO. The scenarios outlined below reflect the versatility of the EDIAQI solution, demonstrating its potential to create substantial public value while also supporting diversified, sustainable revenue streams.

- **Scenario 1:** Fee-for-Service and Social Enterprise Activities (including consultancy, training, certification, and Data & Analytics as a Service)
- **Scenario 2:** Product Validation and Endorsement Programme
- **Scenario 3:** Strategic Corporate Partnerships
- **Scenario 4:** Community-Based and Bottom-Up Funding Models
- **Scenario 5:** Government, Public-Sector and Institutional Partnerships
- **Scenario 6:** Open-Access Stewardship Model
- **Scenario 7:** Green Building Certification and IAQ Accreditation Pathway
- **Scenario 8:** Hybrid Integrated Model (combined approach; most likely outcome)

### 7.1 Scenario 1: Fee-for-Service and Social Enterprise Activities

In this model, the NPO maintains its mission-driven non-profit status while developing a fee-based extension for financially sustainable services directly linked to the EDIAQI solution.

These could include:

- **IAQ consulting and audits** for schools, municipalities, SMEs, offices, and public buildings.



- **Tailored IAQ improvement plans**, including ventilation strategies, risk assessments, and sensor deployment support.
- **Professional training and micro-credentials** for facility managers, HVAC technicians, school staff, building inspectors, and public-health practitioners.
- **Certification programmes**, complementing existing schemes (e.g. WELL, RESET, Green Building Councils), offering an EDIAQI-recognised evidence-based quality mark.

#### 7.1.1 Data and Analytics as a Service

Based on EDIAQI's large-scale data and scientific expertise, the NPO could:

- Sell **anonymised datasets**.
- Offer **subscription-based access** to an IAQ data platform for researchers, municipalities, and policymakers.
- Provide **data insights or trend dashboards** for building operators and local governments.

Similar initiatives (e.g. EPFL's Global IAQ Database) indicate that long-term success requires institutional backing beyond a single research project. For EDIAQI, this avenue remains viable but requires careful design to ensure sustainability and mission alignment.

Revenue generated under Scenario 1 would support the NPO's core public-good activities.

#### 7.2 Scenario 2: Product Validation and Endorsement Programme

Leveraging EDIAQI's rigorous scientific protocols and real-world pilot data, the NPO could create a voluntary validation system for IAQ-related products, such as:

- Low-cost sensors and monitoring devices
- Ventilation systems and air purifiers
- Filtration and HVAC technologies
- Building automation and smart-building solutions

Industry partners would receive:

- A **scientific validation report**,
- Optionally, an **"Endorsed by EDIAQI"** quality seal (governed by strict ethics and independence criteria).



This scenario provides a trusted, evidence-based framework that can help companies differentiate products in a rapidly growing European IAQ market.

### 7.3 Scenario 3: Strategic Corporate Partnerships

This scenario focuses on long-term collaborations with companies whose business models intersect with IAQ, environmental health, or building technologies. Potential pathways include:

- **Cause-marketing arrangements**, where a portion of product sales supports the NPO.
- **Research and development co-creation**, enabling companies to test innovations within the EDIAQI ecosystem.
- **Shared-value partnerships**, supporting employers who benefit from improved worker health and reduced absenteeism.
- **Corporate sponsorships**, providing visibility and scientific advisory services in return for financial backing.

This represents a major component of the future **profit-oriented exploitation stream**, to be defined in detail in D7.4.

### 7.4 Scenario 4: Community-Based and Bottom-Up Funding Models

This pathway strengthens EDIAQI's direct engagement with citizens, schools, and communities through participatory and grassroots mechanisms:

- **Membership or subscription schemes**, offering guidance, toolkits, or helpdesk services.
- **Crowdfunding campaigns** for specific IAQ interventions (e.g. schools in vulnerable areas).
- **Data-for-action programmes**, where schools or community centres purchase subsidised monitoring kits while contributing anonymised data to support research.

Although the revenue may be modest, this scenario deepens societal impact and fosters public empowerment.



## 7.5 Scenario 5: Government, Public-Sector and Institutional Partnerships

This scenario positions the EDIAQI NPO as a trusted scientific and advisory partner for public authorities. Possible options include:

- **Policy and regulatory consulting**, supporting ministries and agencies in developing IAQ standards and procurement guidelines.
- **Pilot implementations** for cities, schools, hospitals, or public offices.
- **Consortium-based grant acquisition**, enabling the NPO to participate in Horizon Europe, LIFE, Digital Europe, or national calls.
- **Cross-sector collaborations**, including links to climate adaptation, energy efficiency, and occupational health initiatives.

This scenario aligns closely with the European Union's increasing focus on Indoor Environmental Quality (IEQ) and environmental health.

## 7.6 Scenario 6: Open-Access Stewardship Model

In this model, the NPO serves primarily as a custodian of EDIAQI's open-access assets, ensuring their continuous maintenance, evolution, and accessibility. This includes:

- The EDIAQI Wiki
- EDIAQI Dashboard
- The Digital Twin
- Simulation and modelling tools
- Educational materials and training kits
- Open datasets
- Awareness campaigns, webinars and public resources

This scenario preserves the mission of democratising IAQ knowledge, even without substantial revenue-generation.

## 7.7 Scenario 7: Green Building Certification and IAQ Accreditation Pathway

This scenario focuses on integrating the EDIAQI solution into the growing green building and healthy building certification landscape. As building standards increasingly recognise the importance of indoor environmental quality, EDIAQI could position itself as a



complementary certification pathway – specifically tailored to public buildings, schools, and vulnerable communities where existing certifications are often too costly or complex.

Under this scenario, the EDIAQI NPO would develop:

- **A streamlined IAQ certification module** designed for public buildings, small organisations, and municipalities.
- **An EDIAQI IAQ Scorecard**, enabling schools and public facilities to benchmark performance across ventilation, filtration, occupancy, and pollutant metrics.
- **A complementary certification track** that can plug into WELL, RESET Air, BREEAM, LEED or national green building programmes as a specialised IAQ layer.
- **A low-cost “public sector standard”**, accessible even to under-resourced municipalities or schools.
- **Verification or commissioning services**, providing third-party assessments of building performance and compliance.

This model leverages EDIAQI’s evidence base, tools, and behavioural insights to create a health-focused, socially inclusive certification pathway, differentiating it from existing commercial schemes that may be inaccessible to public buildings or smaller institutions.

It also creates opportunities for:

- Revenue generation through certification fees
- Public-sector adoption through procurement frameworks
- Alignment with European Union initiatives such as the EPBD and ZPAP.

This scenario is particularly relevant given the rapid growth of the green building market and the emerging requirement for health-centric indicators in building performance assessments.

## 7.8 Scenario 8: Hybrid Integrated Model (Most Likely Outcome)

The most realistic long-term pathway is a **hybrid approach**, combining:

- A **non-profit legacy core**, stewarding all open-access outputs and protecting EDIAQI’s mission,
- A **targeted portfolio of fee-based services**, such as consultancy, certification, training, validation, and strategic partnerships,



- A **modular deployment model**, enabling the EDIAQI solution to be reassembled into tailored packages for public authorities, schools, municipalities, workplaces, or vulnerable communities.

This integrated model reflects the dual exploitation logic and offers the resilience needed for long-term sustainability.

## 7.9 Next Steps

The scenarios presented above form the conceptual basis for the next phase of exploitation and sustainability planning. Over the next year, the consortium will:

- Assess **feasibility, operational requirements, and governance models**.
- Prepare the **SROI** structure and **risk management plan**, which is now drafted and will be fully developed in the final deliverable.
- Identify **priority revenue streams** and refine the business logic.
- Develop **early prototypes** of consultancy, validation, and data services.
- Define the **scope and governance** of the future NPO.
- Integrate outcomes into **D7.4** and the **Final Project Legacy Report (M48)**.

Together, these steps will transform early ideas into a concrete, evidence-based sustainability model that ensures EDIAQI's long-term public value and operational viability.



## 8. Next Steps

The networking and collaboration activities documented in this first version of the EDIAQI Legacy report form the foundation for EDIAQI's long-term sustainability, policy relevance, and post-project impact. Throughout the document, the consortium outlines the emerging ecosystem surrounding EDIAQI – including scientific partners, co-IDEAL Cluster members, international organisations, standards bodies, citizen and patient groups, and public- and private-sector stakeholders. The report also summarises how these relationships support:

- Knowledge exchange and alignment across the IDEAL Cluster.
- Early policy engagement at European and national levels.
- Technical complementarity between EDIAQI tools, datasets, and methodologies.
- Exploration of long-term structures to preserve and scale EDIAQI's outcomes.

In addition, the report introduces the preliminary proposal for establishing an EDIAQI NPO, explores potential exploitation pathways, and reflects on the social and public value potential of the project's innovations.

### 8.1 Next Steps Toward D7.4 and D7.11

The work presented in this document will be expanded, deepened, and formalised in the upcoming sustainability deliverables. Several components that remain preliminary in this version – such as the detailed business plan for the NPO, the full project observatory, and the quantified ROI and risk analyses – will be further developed in the next steps and incorporated into the subsequent deliverables.

#### 8.1.1 Deliverable D7.4 – Market, Innovation and Applicability Analysis (Month 42)

D7.4 will build directly on the foundations laid in this first legacy report. It will:

- Consolidate the **market watch**, mapping trends, competitors, and regulatory developments.
- Refine the **stakeholder and ecosystem analysis**, including potential partners and beneficiaries.
- Evaluate and prioritise the **exploitation scenarios** outlined in this report.
- Translate conceptual ideas (e.g., NPO models, certifications, validation services) into **structured business models**.



- Develop the **dual exploitation logic**, combining a public-value NPO core with targeted paid services.
- Clarify issues related to **open-source strategy, IPR management, and data governance**.
- Identify early **costing, feasibility parameters, and revenue projections**.
- Prepare the **groundwork** for the detailed **NPO business plan, ROI model, and forecast** assumptions to be finalised in D7.11.

D7.4 will therefore act as the analytical bridge between the exploratory concepts documented here and the operational blueprint required for long-term sustainability.

#### 8.1.2 Deliverable D7.11 – EDIAQI Legacy (Version 2, Month 48)

The final legacy deliverable will bring together all sustainability components developed throughout T7.3 and T7.4. In particular, D7.11 will:

- Update and finalise the **mapping of networks**, alliances, and collaboration activities.
- Complete the **full SROI analysis** and **risk management plan**, building on the draft structure,
- Consolidate the final **EDIAQI NPO proposal**, including governance and operational arrangements.
- Integrate the results of the **market, innovation, and applicability analysis**.
- Present the final **exploitation plan and quantified business perspectives** for partners and for the EDIAQI platform.
- Include the detailed **business plan for the NPO**, the operationalisation of the **EDIAQI Observatory**, the consolidated **ROI model, forecasts, and risk assumptions**.
- Document the **long-term preservation** of EDIAQI assets, such as:
  - Open access materials
  - Datasets, tools, and demonstrators
  - Policy links and institutional partnerships
  - The integration of EDIAQI into the wider IDEAL Cluster ecosystem



## 9. Conclusion

This document is the first iteration of the EDIAQI legacy reports on networking and collaboration activities. It sets the foundation for EDIAQI's long-term sustainability framework and provides a clear starting point for defining the project's post-funding direction. Its central purpose is to ensure that EDIAQI's scientific, technological, empowerment, and policy-related outputs continue to generate lasting value for European citizens and wider international communities long after formal support has ended.

In doing so, it brings together a consolidated compendium of project outputs, an initial exploitation strategy, early market insights, and the first SWOT-based assessment of partner and pilot-level innovations. At the same time, several elements remain preliminary at this stage, including the detailed NPO business plan, the full project observatory, and the quantified ROI, forecast, and risk modelling work, all of which will be completed in the next reporting phase.

The deliverable first outlined the methodologies that guided the analysis, including desk research, the market survey, the Public Value Canvas, and the SWOT assessment. It then presented the results of the Public Value Canvas exercise conducted during the project meeting in Ljubljana in June 2025. This led into the most substantial chapter, which combined the SWOT analysis and the EDIAQI Innovation Compendium. This section defined the EDIAQI solution as a modular ecosystem of scientific, technological, empowerment, and policy intelligence tools, structured as a triangle that moves from scientific foundations to technological outputs, and then to empowerment and policy intelligence.

The report then provided an overview of the EDIAQI network that will be mobilised to maximise the reach and impact of the EDIAQI solution. An examination of wider market trends and the evolving European policy landscape followed, positioning EDIAQI's innovations within the broader environmental health and digital transformation context. The deliverable also highlighted the significant public value potential of the EDIAQI solution and explored a set of potential revenue generation scenarios for the proposed EDIAQI NPO. A hybrid model emerged as the most viable long-term approach.



This was complemented by an outline of scenarios for the proposed establishment of the EDIAQI NPO, while noting that the final structure will be further refined in upcoming work. The forthcoming deliverables, notably D7.4 and the final legacy deliverable D7.11, will also incorporate the additional components not yet included here, such as the detailed business plan, the operationalisation of the EDIAQI Observatory, and the full ROI, forecast, and risk analyses required to finalise the sustainability strategy.

Taken together, this first iteration sets a strong and ambitious trajectory for EDIAQI's long-term legacy. It establishes the analytical baseline, the compendium of EDIAQI's findings, innovations, network, and empowerment and policy tools as well as the potential exploitation scenarios to create a durable NPO capable of advancing healthier indoor environments. supporting better public health outcomes across Europe, and contributing to the zero pollution 2050 ambition. This report therefore remains a living document and will continue to evolve until the publication of the final project legacy report (D7.11).



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## Annexes

### Annex 1 – SWOT Analysis Templates

#### **SWOT Analysis for EDIAQI**

To support market analysis, business modelling, and public value modelling, which are essential for ensuring the long-term sustainability of the EDIAQI Project outcomes, the implementation of a SWOT (Strengths, Weaknesses, Opportunities, and Strengths) analysis is regarded as a critical step. This analysis will serve as a strategic tool to evaluate both internal and external factors that are fundamental to fully exploiting and sustaining project outcomes.

In this context, **a clear distinction** is made between the approaches required by **different types of partners**:

- **For-profit and private-sector** organisations are expected to consider the potential for **commercial exploitation** of project innovations/results.
- **Not-for-profit entities**, including public bodies and civil society organisations, should focus on generating **public value** and supporting **broader societal impact**.

To ensure a **comprehensive approach** to the project legacy, **it is essential that**:

- **Each EDIAQI partner conducts an individual SWOT analysis**, taking into account their specific organisational and geographical contexts.
  - Partners are welcome to **submit more than one SWOT analysis** if they are contributing multiple innovations or results.
  - A **separate SWOT analysis** must be provided for **each innovation** or result included in the **Compendium of EDIAQI Innovations and Results**.
- **Collective insights** are drawn from these analyses to inform the development of a consolidated EDIAQI Project Legacy Strategy.

Following this, the **Work Package 7 team will**:

- **Synthesise** the individual analyses into a **unified strategic document**, incorporating both an exploitation strategy and quantified business plans for the project and for each partner, irrespective of whether they operate on a for-profit or non-profit basis.
- **Share the analysis** with **Deda** group for **Task 7.3** (Market, Innovation and Applicability Analysis) and the associated deliverable **D7.4** (Market, Innovation and Applicability Analysis Report).
- **Utilise the resulting input** for the following:
  - **D7.10 EDIAQI Legacy** – Reports on Networking and Collaboration Activities, Version 1 (due in Month 36).



- **D7.11 EDIAQI Legacy** – Reports on Networking and Collaboration Activities, Version 2.
- **D6.3 EDIAQI Clean Air Act 2050 Roadmap.**

### Step-by-Step Guide for Completing the SWOT Analysis Template:

#### 1. Innovation Overview:

- List the specific innovation/result.
- Identify any background intellectual property or blockers.
- Note the initial TRL (M01) and the projected TRL (M48) if related to an innovation.

#### 2. Analyse Potential Exploitation

##### a. For Commercial/Business Exploitation:

- Describe the method of commercialisation or business application.
- Assess and record the potential for market exploitation.
- Address any potential IP conflicts.

##### b. For Non-Commercial / Not-for-Profit Exploitation:

- Describe the method of societal or public benefit application.
- Assess and record the potential for uptake by public or civil society actors.
- Identify and address any barriers to non-commercial exploitation.

#### 3. SWOT Analysis:

- Enumerate the strengths related to the innovation/results or project as a whole.
- Acknowledge the weaknesses or areas of improvement to the innovation/results or project as a whole.
- Identify opportunities externally that may benefit the project and support longevity of outcomes.
- Outline any external threats that could impact the project.

#### 4. Market Analysis:

- Analyse the competitive landscape (both profit and non-profit).
- Define the target market and customer/beneficiary base.
- Estimate the time required to enter the market.
- Provide initial Return on Invest (ROI) estimations, both commercial and public value.

### Glossary of Acronyms:

- **SWOT:** Strengths, Weaknesses, Opportunities, Threats
- **TRL:** Technology Readiness Level
- **TRL M01:** Technology Readiness Level at Month 1
- **TRL M48:** Technology Readiness Level at Month 48
- **IP:** Intellectual Property
- **KER:** Key Exploitable Results



- **ROI:** Return on Investment
- **EC:** European Commission
- **WP7:** Work Package 7
- **WP7 Leader:** Work Package 7 Leader

| Innovation/ Results                                                                                                                                                | Owner | TRL M01 | TRL M48 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------|---------|
|                                                                                                                                                                    |       |         |         |
| <b>Commercial or public value exploitation</b><br>(e.g. market offering, policy input, service improvement, etc.)                                                  |       |         |         |
|                                                                                                                                                                    |       |         |         |
| <b>Exploitation potential</b><br>(Describe how the result could generate economic or societal value, including scalability or replicability)                       |       |         |         |
|                                                                                                                                                                    |       |         |         |
| <b>Conflicting IP or other blockers</b><br>(Note any intellectual property or rights-related constraints or other blockers that could affect use or dissemination) |       |         |         |
|                                                                                                                                                                    |       |         |         |
| <b>Strengths</b><br><i>(Core capabilities, expertise, or resources that support successful exploitation or uptake)</i>                                             |       |         |         |
|                                                                                                                                                                    |       |         |         |
| <b>Weaknesses</b><br><i>(Internal gaps or limitations that may hinder implementation, adoption, or value delivery)</i>                                             |       |         |         |
|                                                                                                                                                                    |       |         |         |
| <b>Opportunities</b><br><i>(External conditions or trends that can enhance uptake (e.g. new markets, policy momentum, funding opportunities, public needs))</i>    |       |         |         |
|                                                                                                                                                                    |       |         |         |



|                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Threats</b><br><i>(External risks or barriers (e.g. regulation, lack of awareness, competing agendas, funding instability))</i>                |
|                                                                                                                                                   |
| <b>Competition</b><br><i>(Existing solutions, technologies, or approaches that fulfil a similar need in the market or public domain)</i>          |
|                                                                                                                                                   |
| <b>Target Market</b><br><i>Intended users, beneficiaries, or sectors (e.g. customers, public authorities, communities)</i>                        |
|                                                                                                                                                   |
| <b>Time to Market estimate</b><br><i>(Estimated timeframe for commercialisation or integration into practice/policy)</i>                          |
|                                                                                                                                                   |
| <b>Expected ROI</b><br><i>Initial projections of financial return or societal/environmental benefit</i>                                           |
|                                                                                                                                                   |
| <b>Path to market</b><br><i>How will the result be embedded? (e.g. through products, services, policies, partnerships, organisational change)</i> |
|                                                                                                                                                   |





Deliverable D7.10

# **EDIAQI Legacy – Reports on Networking and Collaboration Activities – Version 1**

Work Package 7

Exploit

Version: Final



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