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INDICATE LIFE

Data management plan

Deliverable 1.4

NOTE FOR REVIEW KU Leuven: We are still waiting for some partners to provide us with information for Table 8 and for Tables in Section 3.

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Executive Summary

This Data Management Plan (DMP) outlines the framework for managing data generated and reused in the INDICATE LIFE project. The plan ensures compliance with the FAIR (Findable, Accessible, Interoperable, and Reusable) principles and addresses the data lifecycle, from collection and storage to dissemination and long-term preservation. It supports the project's goal of facilitating industry and policy efforts in reducing the climate impact of the building sector, while concurrently aiding in the development of national Life Cycle Assessment (LCA) methodologies, benchmarks, and policy recommendations.

This deliverable (D.1.4) details the types of data collected, their sources, and how they will be used to meet project objectives. It emphasizes the application of FAIR principles by describing provisions for metadata, open accessibility, interoperability across platforms, and strategies for ensuring long-term data reusability. Additionally, it explains how data will be stored, secured, and shared while adhering to GDPR and ethical standards.

Key sections cover resource allocation for data management, data security protocols, and ethical considerations to safeguard sensitive information. Plans for long-term preservation include the use of trusted repositories to maintain data integrity and accessibility. Specific datasets and their utility to researchers, policymakers, and industry stakeholders are also outlined, highlighting the data's broader relevance.

By establishing robust protocols for data handling and FAIR compliance, the DMP enhances transparency, collaboration, and the project's overall impact on the implementation of the WLC aspects of the EPBD in terms of benchmark and target development and the definition of decarbonization pathways and sustainable design strategies.



Acronyms

Most used acronyms in the GA:

BPIE	Building Performance Institute Europe
D	Deliverable
DMP	Data Management Plan
DOI	Digital Object Identifier
DPO	Data Protection Officer
FAIR	Findable, Accessible, Interoperable, and Reusable
KU Leuven	Katholieke Universiteit Leuven
LCA	Life Cycle Assessment
OAI-PMH	Open Archives Initiative Protocol for Metadata Harvesting
PID	<u>P</u> A-persistent <u>I</u> D-identifier
ROR	Research Organization Registry
WLC	Whole Life Carbon
WP	Work Package
WorldGBC	World Green Building Council



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1. Introduction

The purpose of this first Data Management Plan (DMP) is to provide an analysis of the main elements of the project's data management policy.

The DMP is a living document that describes the data management starting from its collection, including its processing and handling during the INDICATE LIFE project and, finally, its later archiving and dissemination.

The document helps project partners to determine how the data can be managed efficiently and effectively and reduce the risk of data loss and conflicts. Ethical issues and data security are also briefly discussed within the document. Finally, the plan ensures consistent resource and budgetary planning for data management related costs.

The plan lists and briefly describes the types and specifications of data that is and will be collected, generated, processed or generally, used, during the project. The DMP also includes details on how the research data will be handled both during the project and afterwards.

The DMP aligns with the principles of FAIR (Findable, Accessible, Interoperable, and Reusable), as advocated by Horizon Europe guidelines. It addresses all stages of the data lifecycle, from generation and organization to long-term preservation and potential reuse. This document also ensures adherence to the highest standards of data quality, security, and ethical responsibility, safeguarding sensitive information and respecting privacy regulations.

The DMP will evolve during the lifespan of the project, particularly whenever significant changes arise within the management of the consortium and the generation of datasets.

Upcoming versions of the DMP may get into more detail on particular issues such as the possible use of data generated by third parties.

This report follows to the template¹ provided by the European Commission and will be updated periodically throughout the project's duration. Section 2 provides information on the project. Section 3 summarizes the collected data, while Section 4 emphasizes the application of FAIR principles. Resource allocation is outlined in Section 5, and data security is discussed in Section 6. Ethical considerations are explored in Section 7, followed by a description of the Risk Management in Section 8.

¹ https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/temp-form/report/data-management-plan_he_en.docx

2. Project background

INDICATE LIFE is a 26-month project which launched in October 2024 and is co-funded by the European Union's LIFE programme. The project is coordinated by Smith Innovation and supported by project partners: Building Performance Institute Europe (BPIE), Katholieke Universiteit Leuven (KU Leuven), and WorldGBC.

Building on the successes of the original INDICATE project, which implemented pilots in Ireland, Spain, and the Czech Republic, INDICATE LIFE seeks to address gaps in Life Cycle Assessment (LCA) data for Whole-Life Carbon (WLC) regulations in Austria, Croatia, Italy, Luxembourg, and Hungary.

3. Data summary

Data collection and generation has an important role in the INDICATE LIFE project. As data will be collected throughout the duration of the project and within different tasks that are a part of specific working packages, Table 1 provides an overview of all project datasets expected to be collected during the duration of the project. As the project moves forward, the chapters and tables will be updated with new information.

Table 1: Project datasets

Project data	Institution in charge	WP
INDICATE_1_Project_Partner This dataset consists of consortium members and their contacts.	SMITH	1
INDICATE_2_Advisory_Board This dataset consists of Advisory Board Members and their contacts.	SMITH	1
INDICATE_3_WLC_indicate_life_allcountries This dataset consists of categorized data on WLC of representative building cases per pilot country	KU Leuven	2
INDICATE_4_WLC_indicate_life_Austria This dataset consists of categorized data on WLC of representative building cases for Austria	TU Graz	7
INDICATE_5_WLC_indicate_life_Luxembourg This dataset consists of categorized data on WLC of representative building cases for Luxembourg	E&E	7

Project data	Institution in charge	WP
INDICATE_6_WLC_indicate_life_Croatia This dataset consists of categorized data on WLC of representative building cases for Croatia	UZ-FCE	7
INDICATE_7_WLC_indicate_life_Italy This dataset consists of categorized data on WLC of representative building cases for Italy	Polimi	7

3.1 Purpose of Data Generation or Re-Use

The purpose of data generation or reuse is to support the project's objectives by providing the necessary information for analysis, validation, and decision-making. Generated data ensures that project-specific insights are captured, while reused data leverages existing knowledge and resources to enhance efficiency and build on prior work. Together, these approaches enable the project to achieve its goals more effectively, aligning all data-related activities with the overarching objectives. Table 2 provides an overview of the datasets and their contribution to the project's objectives.

Table 2: Overview of dataset generation or re-use

Project dataset	Generation or Re-Use of Existing Data
INDICATE_1_Project_Partner	Generated
INDICATE_2_Advisory_Board	Generated
INDICATE_3_WLC_indicate_life_allcountries	Generated and re-used
INDICATE_4_WLC_indicate_life_Austria	Generated and re-used
INDICATE_5_WLC_indicate_life_Luxembourg	Generated and re-used
INDICATE_6_WLC_indicate_life_Croatia	Generated and re-used
INDICATE_7_WLC_indicate_life_Italy	Generated and re-used

3.2 Types and Formats of Data

This chapter outlines the types and formats of data the project will generate or re-use. It provides a detailed overview of how the data will be structured, managed, and utilized to support the project's objectives efficiently. For example, the

project may generate quantitative data in CSV or Excel formats, and qualitative data from interviews stored as text files or PDFs,. Additionally, reused datasets may include publicly available statistics in XML or JSON formats or legacy project data archived in institutional repositories. Table 3 provides an overview of the types and formats of data.

Table 3: Types and Formats of Data

Project dataset	Types and Formats of Data
INDICATE_1_Project_Partner	Textual data: PDF
INDICATE_2_Advisory_Board	Textual data: PDF
INDICATE_3_WLC_indicate_life_allcountries	Tabular data: csv, xlsx Image data: jpg, jpeg, bmp Code data: py
INDICATE_4_WLC_indicate_life_Austria	
INDICATE_5_WLC_indicate_life_Luxembourg	
INDICATE_6_WLC_indicate_life_Croatia	
INDICATE_7_WLC_indicate_life_Italy	

3.3 Re-use of Existing Data

This section examines the potential reuse of existing data within the project, detailing how it will be utilized to support project objectives. It also addresses any instances where the reuse of existing data was considered but ultimately discarded, providing the rationale behind such decisions. The re-use of existing data is summarized in Table 4.

Table 4: Re-Use of existing data

Project dataset	Re-use of Existing Data
INDICATE_4_WLC_indicate_life_Austria	Re-use of data from completed and ongoing research projects. E.g.: building geometries, energy use, bill of quantities, impact assessments, BIM-models, etc.
INDICATE_5_WLC_indicate_life_Luxembourg	Text.
INDICATE_6_WLC_indicate_life_Croatia	Text.
INDICATE_7_WLC_indicate_life_Italy	Text.

3.4 Origin of the Data

This section provides information on the origin and provenance of the data used in the project, whether generated or re-used. It highlights the sources of the data and ensures their reliability, relevance, and alignment with the project's objectives.

Table 5: Origin of the Data

Project dataset	Origin of the Data
INDICATE_4_WLC_indicate_life_Austria	Generated from case-specific data and derived from building stock simulations. Sources include national statistics, building registries, energy certificate reports, past research projects, and building projects from national partners.
INDICATE_5_WLC_indicate_life_Luxembourg	Generated from case-specific data and derived from project simulations. Sources include building registries, energy audit reports and past research projects.
INDICATE_6_WLC_indicate_life_Croatia	Generated from case-specific data and derived from project simulations. Sources include building registries, energy audit reports and past research projects.
INDICATE_7_WLC_indicate_life_Italy	Generated from case-specific data and derived from project simulations. Sources include building registries, energy audit reports and past research projects.

3.5 Data Utility

In this section potential external beneficiaries of the project data are identified, highlighting its broader utility and relevance beyond the project's immediate scope. It outlines how various stakeholders, such as researchers, policymakers, industry professionals, or the general public, might find the data valuable. An overview is presented in Table 6.

Table 6: Data Utility

Project dataset	Origin of the Data
INDICATE_4_WLC_indicate_life_Austria	Provides detailed WLC emissions categorized per building, building element, building material and life cycle
INDICATE_5_WLC_indicate_life_Luxembourg	
INDICATE_6_WLC_indicate_life_Croatia	

Project dataset	Origin of the Data
INDICATE_7_WLC_indicate_life_Italy	module enabling researchers to study WLC patterns and policymakers to design targeted WLC reduction pathways and renovation strategies.

4. FAIR data

4.1 Making Data Findable, Including Provisions for Metadata

4.1.1 Persistent Identifier

A persistent identifier (PID) is a unique and long-lasting reference to an object, resource, or piece of information that remains constant over time, even if the location or other metadata associated with it changes. The goal of a PID is to ensure that a resource can be reliably located and cited, even after many years.

PIDs are commonly used in digital contexts, such as academic publishing, data repositories, or libraries, where they help linking to research papers, datasets, or other content. Examples of PIDs include:

- **DOI (Digital Object Identifier):** Used for academic papers, books, and datasets to provide a permanent link.
- **ORCID:** A PID for researchers that ensures their work is correctly attributed to them.
- **ROR (Research Organization Registry):** A PID for research organizations, ensuring consistent identification and linking across academic and institutional records².

In our project, the data generated and re-used will be organized to guarantee discoverability and traceability, leveraging standardized identification methods such as PIDs. The naming convention for project datasets will be structured as outlined in Table 7.

Table 7: Naming Conventions of Datasets

Type of Data	Naming Convention	Examples
Deliverable	INDICATELIFE_D[n umber of	INDICATELIFE_D1.4 _Data

² <https://www.nlm.gov/guides/data-glossary/persistent-unique-identifier>

Type of Data	Naming Convention	Examples
	deliverable]_[description of deliverable]_[version].[format]	management plan_v1.pdf
Photographs and audio/visual recordings	INDICATELIFE_[event][date of event][description of event/content]	INDICATE_DesignS printCroatia_2025_GroupPicture.jpg
Datasets	INDICATELIFE_[dataset name]_[partner initials]_v[n°version].[format]	INDICATELIFE_WL CItaly _PoLiMi_v2csv
Other Documents	INDICATELIFE_[document type]_[Work package]_[partner initials]_[version].[format]	INDICATELIFE_Data management plan_WP1_KUL_v1.docx

Document filenames are kept concise to prevent excessively long paths and consistently include the last partner who edited the document along with a version identifier. All project documentation is stored in a SharePoint folder managed by SMITH Innovation dedicated to the relevant work package, providing complete control over editing permissions for project participants.

4.1.2 Metadata

The goal is to provide rich metadata to support the discovery and reuse of datasets, but the extent to which metadata can be created and the standards followed will depend on the nature of each dataset.

We promote data discoverability by encouraging the use of metadata standards³ and offering detailed information tailored to data related to engineering, social and behavioural sciences, research applications, and more. A list of key elements of metadata description are provided in .

4.1.3 Search Keywords

For datasets to be easily discoverable, we aim to incorporate search keywords that are relevant to the dataset's content. Partners should provide keywords or terms that best describe their dataset's subject and scope.

³ <https://rdamsc.bath.ac.uk/>

4.1.4 Harvesting and Indexing Metadata

Data harvesting and indexing refer to the processes that enable datasets and their associated metadata to be automatically collected and organized for easier discovery. Harvesting involves gathering metadata from datasets, typically using standardized protocols like OAI-PMH (Open Archives Initiative Protocol for Metadata Harvesting)⁴, which allows external systems, such as data repositories or search engines, to collect this information. Once harvested, the metadata is indexed, meaning it is stored in a searchable database, making it easier for users to find and access the datasets. These processes ensure that data can be discovered and reused by a wider audience.

4.2 Making Data Openly Accessible

4.2.1 Repository

At this stage of the project, the specifics regarding data deposition in a trusted repository are yet to be determined. As data is collected and processed throughout the project, we will identify and explore appropriate repositories that align with the requirements of our datasets and ensure their long-term preservation and discoverability. Additionally, we will evaluate whether the selected repositories assign persistent identifiers (e.g., DOIs) to datasets and ensure these identifiers resolve to the corresponding digital objects. These considerations will be addressed in collaboration with project partners and stakeholders as part of our ongoing data management planning.

4.2.2 Data

The only data that will not be made openly accessible are those containing personally identifiable information (e.g., individual evaluation forms) and data related to deliverables that are covered by confidentiality agreements. Personal data processed in the project will remain closed and inaccessible to third parties.

4.2.3 Metadata

At this stage of the project, the specifics regarding metadata availability, licensing, and documentation are still being defined. As the project progresses, we will determine whether metadata will be made openly available and licensed under a public domain dedication (CC0) ~~as required by the Grant Agreement~~. If this is not possible, we will provide clear justification for the decision. Additionally, we will ensure that metadata includes sufficient information to enable users to access the data and understand its context.

The duration for which the data remains available and discoverable will be outlined as we finalize our data management plan. We will also ensure that metadata will remain accessible even if the data itself becomes unavailable.

As for documentation and software requirements, we will evaluate whether any software is necessary for accessing or reading the data and will include appropriate documentation for this purpose. If applicable, we will explore the possibility of making the relevant software available, potentially as open-source

⁴ <https://www.openarchives.org/pmh/>

code, to facilitate data access and reuse. These details will be addressed in later stages of the project as data collection and processing progresses.

4.3 Making Data Interoperable

To ensure data interoperability and facilitate data exchange and reuse across disciplines, we will follow widely accepted data and metadata standards, formats, and methodologies relevant to our project. Where possible, we will adhere to community-endorsed interoperability best practices to enhance the discoverability and reusability of our data.

We also intend to include qualified references to other relevant datasets, whether from our own project or previous research, to create a more interconnected data ecosystem. As the project advances and data is identified and collected, additional details on ensuring data interoperability will be provided in later versions of the DMP.

4.4 Increase Data Re-Use

To facilitate data analysis validation and ensure data reusability, we will provide comprehensive documentation, such as readme files containing information on methodology, codebooks, data cleaning processes, analyses, variable definitions, units of measurement, and other relevant details. This documentation will ensure that users can understand and interpret the data accurately.

We intend to make the data freely available in the public domain, ensuring the widest possible reuse, and will license the data deliverables under standard reuse licenses, in accordance with FAIR principles. The data produced during the project will be designed for long-term usability by third parties, even after the conclusion of the project.

The provenance of the data will be thoroughly documented, following appropriate standards to ensure transparency regarding its origins and any transformations it undergoes. We will implement relevant data quality assurance processes to maintain the integrity and reliability of the data, ensuring that it meets high standards of accuracy and consistency.

5. Allocation of resources

Each partner is generally responsible for arranging the proper storage of the internal data they manage for the project, which includes covering the expenses related to hardware, maintenance, administration, and backups. However, all project related data is safely stored on the shared SharePoint held on the servers of Smith Innovation. The cost of the project SharePoint is covered by Smith Innovation. A detailed description of allocation of resources by the partners is provided in Table 8.

Table 8: Description of allocation of resources

Consortium Partner	Brief description of allocation of resources
SMITH INNOVATION APS	Project related data will be stored on the secure shared INDICATE LIFE SharePoint provided by

Consortium Partner	Brief description of allocation of resources
	Smith. Data will also be stored on Smiths secure internal SharePoint.
BUILDINGS PERFORMANCE INSTITUTE EUROPE ASBL	Project related data will be stored on BPIE's internal SharePoint which is 2FA-protected, files are encrypted both in transit and at rest, and restoring files is possible through version history. Data and files will also be stored on the project-dedicated SharePoint provided by Smith Innovation.
WORLDGBC EUROPE	Project-related data is stored on the All Partners and Project Group SharePoint provided by Smith. Additionally, project data is securely stored on WorldGBC's internal SharePoint and Teams, which provide controlled access and version recovery
KATHOLIEKE UNIVERSITEIT LEUVEN	Project related data will be stored on SharePoint provided by Smith Innovation and KU Leuven SharePoint (2FA) or in the KUL's secure network drive on servers with extensive version recovery system.
OGNI GMBH	Project related data will be stored on SharePoint provided by Smith Innovation and on OGNI GMBH SharePoint (2FA) or on OGNI's secure network drive on servers in the office with an extensive version recovery system.
ATP SUSTAIN GMBH	General project-related data for data exchange between the partners is stored on the SharePoint provided by Smith Innovation. The internal SharePoint for the Austrian consortium is used for processing and exchanging internal data. For data that is processed and stored locally, the own server with backup copies and version recovery system is used.
einszueins architektur ZT GMBH	Text.
TECHNISCHE UNIVERSITAET	The project internal data will be stored on the

Consortium Partner	Brief description of allocation of resources
GRAZ	internal server of the working group and party, if needed on the cloud of the university. Both places have a daily safety backup and require 2FA.
HRVATSKI SAVJET ZA ZELENU GRADNJU	General project-related data for data exchange between the partners is stored on the SharePoint provided by Smith Innovation and the GBC Croatia servers.
SVEUCILISTE U ZAGREBU GRADEVINSKI FAKULTET	General project-related data for data exchange between the partners is stored on the SharePoint provided by Smith Innovation.
ENERGETSKI INSTITUT HRVOJE POZAR	General project-related data for data exchange between the partners is stored on the SharePoint provided by Smith Innovation.
GREEN BUILDING COUNCIL ITALIA	Project-related data will be stored on a Google drive folder hosted by GBC Italy accessible for GBC Italy and the Italian consortium partners. Regular synchronisation is foreseen with the project SharePoint folder set up by SMITH Innovation and with GBC Italy's servers.
HARPACEAS SRL	Project-related data will be stored on SharePoint provided by Smith Innovation and the Harpaceas' one, with daily security backups and requiring 2FA. At the same time, the Italian consortium data is stored in a Google Drive shared folder provided by the Italian consortium leader (Green Building Council Italia).
POLITECNICO DI MILANO	Text.
POLITECNICO DI TORINO	Text.
UNIVERSITA' DEGLI STUDI DI BERGAMO	Text.
AGENZIA NAZIONALE PER LE NUOVE TECNOLOGIE, L'ENERIT	Text.
MINISTERE DE L'ENERGIE ET	Text.

Consortium Partner	Brief description of allocation of resources
DE L'AMENAGEMENT DU TERR Luxembourg	
LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY	Text.
Conseil pour le Développement Economique de la Construction	Project related data will be stored on our internal CDEC SharePoint (2FA) and on the Sharepoint provided by Smith Innovation
Energie et Environnement Ingénieurs-conseils S.A.	The project internal data will be stored on the internal server of Energie et Environment. The system has a daily safety backup and requires 2FA.
MAGYAR KORMYEZETTUDATOS EPITES EGYESULETE	Text.

6. Data security

6.1 Data usage by Consortium Members

All INDICATE LIFE partners implement appropriate measures to ensure data security (e.g., measures for virus protection, data encryption, and password-secured files and computers). Secure storage is crucial to ensure the security of data. For this reason, the project documentation and data on project's SharePoint is restricted to individuals with access to the folder. The Project Coordinator (Smith Innovation) determines these permissions. The data remains confidential and is not disclosed to individuals outside the research team until it has been finalized for publication and approved for release by the project consortium.

Additionally, partners using their own data storage to work on the project will follow the same precautions to ensure all project data is collected, stored, protected, and shared in adherence to stringent security protocols and in full compliance with applicable EU legislation.

6.2 Long term Preservation and Curation

If any data generated or reused as part of the datasets listed in Chapter 3 requires long-term preservation, it will be stored in secure and trusted repositories that adhere to international standards for long-term preservation and curation. To ensure the secure management and future usability of project data, these repositories must provide:

- **Data Integrity:** Reliable mechanisms to safeguard against data corruption or loss over time.
- **Accessibility:** Persistent identifiers (e.g., DOIs) to ensure data remains discoverable and reusable.
- **Compliance:** Full adherence to FAIR principles (Findable, Accessible, Interoperable, Reusable) and applicable data protection regulations.
- **Support:** Comprehensive, ongoing support for data curation, including metadata updates and maintenance.

These measures collectively guarantee that the project's data remains secure, accessible, and usable for future research and applications. Throughout the project duration, we will continuously monitor and assess these repositories to ensure they meet the evolving standards and requirements for data preservation and accessibility.

7. Ethical aspects

There are no ethical aspects related to sharing or long-term preservation of the data generated/collected in the project.

Consent forms are crucial for maintaining ethical standards and complying with legal requirements during project activities involving personal data or media. They may be needed for recording or photographing organized events and for using these materials in project reports, promotional content, or on social media platforms such as LinkedIn and the project website. Additionally, consent is required when participants take part in surveys that collect personal data, ensuring their rights are respected and providing transparency about how their information will be utilized.

Consent for data sharing and long-term preservation will be included in any questionnaires involving personal data. The consent process will ensure that participants are fully aware of how their data will be used, stored, and preserved. A preliminary version of the consent form can be found in .

8. Risk Management

Risk management outlines potential challenges or uncertainties that could affect the project's data handling processes and how those risks will be mitigated. This chapter helps ensuring that data is managed effectively, securely, and responsibly throughout the project. Potential risks, their assessment and mitigation strategies are provided in the table below.

Table 9: Naming Conventions of Datasets

Description of the risk	Likelihood	Impact	Severity	Mitigation strategies
Data loss or	Medium: Possible to	Loss of progress,	Medium	Creating regular data backups, storing in

Description of the risk	Likelihood	Impact	Severity	Mitigation strategies
corruption	occur (20-50% probability).	delays, reduced data quality, increased costs, loss of trust and stakeholder inconvenience		different locations in case of hardware failure, restricting access to limit who can access, modify, or delete data.
Data access and security	Medium: Likely to occur (30-60% probability).	Unauthorized access, data breaches, loss of sensitive or confidential data, reputational harm.	High	Data anonymization, adherence to GDPR, informed consent, and confidentiality agreements to protect sensitive data.
Compliance with legal and ethical standards	Low: Unlikely to occur (10-20% probability).	Fines, reputational damage, project delays, inability to share data across regions.	High	Data anonymization, consulting legal experts, ensuring compliance with GDPR and ethics.
Data quality issues	Medium: Possible to occur (20-50% probability).	Inaccurate analyses, misinformed decisions, reduced project credibility, additional resource costs.	Medium	Defining quality criteria (accuracy, completeness, timeliness, and consistency), using standardized templates, enforcing data collection protocols, metadata, quality review of the deliverables.
Data availability	Medium: Likely to occur (30-60% probability).	Loss of access to important datasets, inability to reproduce research results, or future use	Medium	Using trusted repositories, ensuring data redundancy by saving in multiple formats, and applying persistent identifiers to ensure long-term discoverability.

Description of the risk	Likelihood	Impact	Severity	Mitigation strategies
		limitations.		



<https://www.indicatedata.com/>

Appendix 1: List of Key Metadata Information

1. General Information

- **Title:** A clear and descriptive title for the dataset or resource.
- **Creator/Author:** Names of individuals or organizations responsible for creating the data.
- **Contributor(s):** Additional individuals or entities that contributed to the dataset.
- **Identifier:** Persistent identifiers like DOI, ORCID, or other unique references.

2. Content Description

- **Abstract or Summary:** A brief overview of what the data represents.
- **Keywords/Tags:** Relevant terms or phrases to aid discoverability.
- **Discipline/Domain:** The field or area of study the data pertains to.

3. Technical Details

- **File Format:** Types of files included (e.g., CSV, JSON, PDF).
- **Size:** Total size of the dataset.
- **Software/Tools Needed:** Tools or software required to use or analyze the data.

4. Data Context

- **Date of Creation:** When the dataset was created.
- **Version:** If applicable, the version of the dataset.
- **Geographic Location:** Information about the location or area the data pertains to (if relevant).

5. Accessibility

- **Access Rights:** Conditions for accessing the data (e.g., open, restricted, embargoed).
- **License:** Terms under which the data can be used, shared, or modified.
- **Contact Information:** Details of whom to contact for questions about the data.

6. Methodological Details

- **Data Collection Methods:** How the data was gathered or created.
- **Provenance:** History of the data, including how it was processed or transformed.
- **Quality Assurance:** Steps taken to ensure data accuracy and reliability.

7. Related Information



- **References:** Citations for any related publications or datasets.
- **Related Projects:** Links to associated research or initiatives.

8. Interoperability

- **Standards Used:** Metadata standards applied (e.g., Dublin Core, DataCite, ISO 19115 for geospatial data).
- **Metadata Format:** Format of the metadata itself (e.g., XML, JSON, RDF).
- **Optional Additional Details**
- **Ethics and Compliance:** Information on ethics, consent, or compliance (if sensitive data is involved).
- **Updates:** Information on how and when the data will be updated.



Appendix 2: Consent Forms

Consent Form for the Participation in Study

<p style="text-align: center;">GDPR Consent Form Template for Participation in [Project/Study Name]</p> <p style="text-align: center;">FOR USE WHEN COLLECTING PERSONAL DATA IN/FROM EUROPEAN UNION</p> <p style="text-align: center;">Required by European Union General Data Protection Regulation 2016/679 ("EUGDPR")</p>
<p>INDICATE Information Sheet</p> <p>About the project:</p> <p>INDICATE LIFE is a 26-month project which launched in October 2024 and is co-funded by the European Union's LIFE programme. The project is coordinated by Smith Innovation and supported by project partners: Building Performance Institute Europe (BPIE), Katholieke Universiteit Leuven (KU Leuven), and WorldGBC.</p> <p>Building on the successes of the original INDICATE project, which implemented pilots in Ireland, Spain, and the Czech Republic, INDICATE LIFE seeks to address gaps in Life Cycle Assessment (LCA) data for Whole-Life Carbon (WLC) regulations in Austria, Croatia, Italy, Luxembourg, and Hungary.</p> <p>Purpose of the [activity/study/project]:</p> <p>We are conducting a [name of activity] which aims to [briefly describe the purpose and goals of the activity]. Your participation will help us [specific contribution or outcome].</p> <ul style="list-style-type: none">- <i>Description of the activity</i>- <i>Description of the data that will be retrieved</i>- <i>Justification: Why we need these data? What will we use it for?</i> <p>If you agree to participate, you will be asked to [describe the activities involved, e.g., complete a survey, participate in an interview, provide data, etc.]. This will take approximately [duration].</p>
<p>Consent Form</p> <p>As we are collecting personal information along with your answers, we are informing you that we are only collecting the data, which is necessary for the [activity name]. The categories of personal data you are being asked to consent to the collection and use are your name and last name, email address, and [include description of any other personal data collected].</p> <p>Use of Data: The data you provide will be used for [describe the intended use, such as publication, presentation, or educational purposes]. [Include information about persistent identifiers or metadata, if relevant.] The data may be shared with other users who have a proper legal basis for it. Details about</p>

collecting, storing and processing your information can be found on [add a link to the website].

Voluntary participation: Participation in this activity is completely voluntary, and you may choose to withdraw at any time without any penalty or loss of benefits to which you are otherwise entitled. If you have any questions about the study, your rights as a participant, or if you wish to withdraw your consent, please contact: [add contact information].

Confidentiality: Your information will be treated as confidential. Data collected will be [describe storage, anonymization, and sharing procedures, e.g., "stored on secure servers," "anonymized before analysis," "used only for this project"]. [If applicable, include information about third-party sharing or data repositories.]

Contact Information: [Institution Name] is the controller of your personal data. You may contact the data protection officer by phone and email at: [Insert name, email and phone of a person responsible for data management].

I consent to [specify for what purpose the consent is being requested. If the personal data will be processed for several purposes, you need to request consent separately for each purpose.] (check all that apply):

- ☐ You have read and understood the information provided.
- ☐ You voluntarily agree to participate in this project.
- ☐ You understand that you can withdraw your consent at any time
- ☐ having my photo(s) and/or video(s) taken of me during the event/meeting
- ☐ having my photo(s) and/or video(s) used in the INDICATE LIFE projects communication activities
- ☐ having my photo(s) and/or video(s) published on the INDICATE LIFE projects website
- ☐ having my photo(s) and/or video(s) published on the INDICATE LIFE projects LinkedIn account
- ☐ add more or adapt to your topic

Please give your name and organization along with your signature:

Name:

Organization:

Date:

Signature*:

*Please upload a file. If you do not have an electronic signature, you can easily create one using the following website: <https://www.signwell.com/online-signature/> Once created, please upload the file.

Consent Form for Online Registration to the Events

Throughout the project, events will be conducted both online and in person. Event registration will be **managed digitally, via Google Forms**, where personal data including name, surname, and email address will be collected. To ensure compliance with data protection regulations, the following consent statement will be included in the registration form.

Consent to collect personal data:

As we are collecting personal information along with your answers, we are informing you that we are only collecting the data, which is necessary for the organization of the [event name]. The data may be shared with other users who have a proper legal basis for it. Details about collecting, storing and processing your information can be found on [website link].

☐ I have read the conditions and agree with collecting and using the submitted information for organizational purposes only.

